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Camel Model Analysis: Performance Effectiveness of Selected Banking Companies in India

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Abstract

CAMEL (Capital adequacy, Asset Quality, Management Efficiency, Earnings Quality and Liquidity Ratio) model analysis is used to measure the banking performance effectiveness. This study applied this technique to measure the performance of selected banks in India. Eight different banks belonging to different sectors are selected and data for the last four years are taken to be analyzed for getting a correct picture about the performance of various banks selected for the study. As per the analysis, BOB (67.09) is on highest position with the highest average, followed by FDB (54.47) and CBOI (53.49) AXB with lowest average 38.40, spotted last position.

Introduction

The banking system of a country plays an important role in the economic development of any country. Banking system contains the financial organizations working in the nation. Banking framework involves from the national bank to all financial foundations which are working and giving budgetary offices to any formative area like horticulture, ventures, exchange, lodging and so on. Under the Indian financial structure national bank for the sake of the Reserve Bank of India which manages, coordinates and controls the financial foundations. Separate foundations are working to meet the money related prerequisite of the various divisions of the economy. Indigenous financiers and moneylenders do predominant in the sloppy area. Provincial Rural Banks are meeting the necessity of the rustic populace. Cooperatives are attempting to meet the prerequisite of medium, short and long haul credit for farming area. Advancement banks are

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meeting the business and modern necessities. In this manner, we can say that the structure of Indian financial framework has a universal level financial framework which can meet the monetary necessities of globalized world.

The monetary improvement of a nation relies more upon genuine factors, for example, the mechanical development and advancement, modernization of farming, extension of interior exchange and outside exchange. The job and significance of banking segment and the money related system can't be under-assessed in the improvement of a country. Subsequently the banks and monetary foundations assume critical and essential job by contributing in Economic arranging, for example, resting of explicit objectives and allotting specific measure of cash that establish the financial arrangement of the legislature. A sound budgetary framework is irreplaceable for the development of a solid and energetic economy. A sound financial industry involves a central segment of the monetary administrations part. Execution of the financial division is a compelling measure and pointer to check the exhibition of any economy to an enormous degree. The financial area's presentation is seen as the imitation of monetary exercises of the economy as a sound financial framework plays as the bedrock of financial, social and modern development of an economy. Banking framework in our economy has been assigned a significant and essential job in financing the arranged monetary development. Banks are assuming pivotal and critical job in the economy in capital arrangement because of the inalienable nature, in this manner banks ought to be given more consideration than some other sort of financial unit in an economy. Assessment of money related execution of the financial area is a viable measure and marker to check the sufficiency of monetary exercises of an economy. The financial part's presentation is seen as the reproduction of monetary exercises of the economy. The phase of improvement of the financial business is a decent impression of the advancement of the economy. There is a generous improvement over the previous supervisory arrangement of banking area as far as recuperation, the executives productivity, resources quality, acquiring quality and inner control framework to manage the degree of hazard and money related practicality of business banks. The controllers have increased bank supervision by utilizing CAMEL (capital sufficiency, resource quality, the board quality, income and liquidity)

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rating rule to survey and assess the exhibition and money related adequacy of the exercises of the bank. The CAMEL supervisory standard in banking area is a noteworthy and impressive improvement over the previous measures as far as recurrence, check, spread over and fixation. During this period, the financial segment has encountered a worldview change and it was an ideal opportunity to make execution examination of tasks.

Statement of Problem

Centrality of execution assessment in an association, for supportable development and advancement, has been perceived since long. This requires a framework that first measures and assesses the presentation, and afterward draws out the qualities and shortcomings of the association with the end goal of further improvement. Proficient execution assessment framework envelops all parts of an association. With the advances in computational devices, execution assessment frameworks have developed over some stretch of time from single-angle frameworks to increasingly extensive frameworks covering all parts of an association. In addition, pretty much every industry, that imagines significance of assessment, can receive numerous techniques to assess the presentation. It end up being better for execution estimation, assessment and vital making arrangements for future development and advancement of the Indian banks in the light of changing prerequisites of this part so to break down the near budgetary exhibition of banks for the money related periods 2009 - 2014. The banks will be positioned dependent on their money related execution. This will help the financial business for the improvement or change in their plan of action

Literature Review

A study recommended that such types of rating would help the Reserve Bank of India to identify the banks whose performance needs special supervisory attention. The main attempt of CAMEL system is to find out problems which are faced by the banks themselves and catch up the comparative analysis of the performance of various banks (Bodlaand Verma, 2006). Stressed that

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the bank’s CAMEL rating is highly confidential, and only exposed to the bank’s senior management for the purpose of projecting the business strategies, and to appropriate supervisory staff. CAMEL is an acronym for five components of bank safety and soundness: capital adequacy, asset quality, management quality, earning ability, liquidity (Hirtleand Lopez, 1999). There is definitely a relationship between bank efficiency scores and financial ratios used to proxy a bank's CAMEL rating (Lace and Stephen, 2001). “CAMEL rating criteria has become a concise and indispensable tool for examiners and regulators”. This rating criterion ensures a bank’s healthy conditions by reviewing different aspects of a bank based on variety of information sources such as financial statement, funding sources, macroeconomic data, budget and cash flow (Barretal, 2002). CAMEL rating methodology to evaluate the liquidity, solvency and efficiency of Japanese Banks, the study evaluated capital adequacy, assets and management quality, earnings ability and liquidity position (Said and Saucier, 2003).

A study that analyzed the adequacy of CAMEL in evaluating the performance of bank, This empirical research was implemented to find out the ampleness of CAMEL in examining the overall performance of bank, to find out the importance of each component in CAMEL and finally to look out for best ratios that bank regulators can adopt in assessing the efficiency of banks. The analysis was performed from a sample of eleven commercial banksoperating in Nigeria. The study covered data from annual reports over a period of nine years (1997-2005). The analysis disclosed theinability of each componentinCAMEL to congregate the full performance of a bank. Moreover the best ratios in each CAMEL parameter were determined (Wirnkar and Tanko, 2008). Globally all the banking supervisory authorities are using CAMEL rating system for many years. In this synthesis financial ratios were applied to calculate components of CAMEL ratings for the period of 1996-2000. The financial ratios were also employed to anticipate the delegation of commercial banks in 2001 to the SDIF by adopting discriminant analysis, logistic regression and neural network models. However the conclusion revealed that it was impossible to predict the transfer of a bank to SDIF by mode of CAMEL ratios (Cinko&Avci, 2008)

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A study which utilized CAMEL model to examine the performance of low efficiency vs. high efficiency community banks in conjunction with the logistical regression analysis. The analysis used data which are based on quarterly reports by commercial banks. The discriminant model derived from the CAMEL parameters is tested among data for 2006, 2007, 2008. Its results concluded that the model accuracy floats from approximately 88% to 96% for both original and cross-validations data sets (Hays, Lurgio& Arthur, 2009). Financial performance and thereby the sustainability of micro finances institutions (MFIs) in India by employing the CAMEL model (Agarwal&Sihna, 2010). Analysis of commercial banks operating in India with reference to CAMEL approach- In his article he has categorized the banks into Public sector Bank, Private sector Banks and Foreign Banks. He used the CAMEL analysis technique with the purpose of ranking the banks. Each component of CAMEL has been interpreted using two ratios and a final composite index has been established. The data tools which were used was a sample of 28 public sector, 26 private sector and 28 Foreign banks and the data used was in secondary nature which was collected from statistical tables related to the Banks in India in the financial year 200-01 to 2006-07. The experiment revealed that the best bank from the public sector has been awarded to Andhra Bank and State Bank of Patiala. In the category of private sector banks, Jammu and Kashmir Bank has been assigned the first rank succeeded by HDFC Bank. Among the foreign sector banks, Antwerp has bagged the first rank followed by JP Morgan Chase Bank (Kaur, 2010).

Methodology

The present study is based on secondary data which are collected from the official website of RBI. For the purpose of evaluating the performance of banks, CAMEL model is adopted. As per the proposed model, **c**apital adequacy, **a**sset quality, **m**anagement efficiency, **e**arning quality, **l**iquidity position of banks were evaluated. Data for the last four years are taken to be analyzed for getting a correct picture about the performance of various banks selected for the study. Eight different banks belonging to different sectors are selected for the study.

Selected Sample Profile

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PUBLIC SECTOR BANKS
STATE BANK OF INDIA (SBI)
BANK OF BARODA (BOB)
CENTRAL BANK OF INDIA (CBOI)
CANARA BANK (CNB)
PRIVATE SECTOR BANKS
A.OLD PRIVATE SECTOR BANKS
FEDERAL BANK (FDB)
SOUTH INDIAN BANK (SIB)
B.NEW PRIVATE SECTOR BANKS
AXIS BANK (AXB)
INDUSTRIALCREDITANDINVESTMENT
CORPORATION OF INDIA (ICICI)

CAMEL- Ratios used for the Analysis

Sl No.	***CAMEL***	***Variables/Rations***
1	***C-*** Capital adequacy ratio	(Tier I+TIER II)
2	***A- Asset Quality Ratios***	Net NPA's to net advance
3	***M- Management Efficiency***	Business per employee, Composite Management Efficiency Ratio, Profit per employee
4	***E-Earning Quality***	Earning quality ratio (net interest margin to total asset)

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5	***L-Liquidity Ratio***	Cash to deposit ratio, Credit +investment to deposit ratio, Composite liquidity ratio
COMPOSITE RANKING (OVERALL PERFORMANCE)		C+A+M+E+L

Analysis and Interpretation

The present study is a humble attempt to evaluate the performance of major banking companies belonging to different groups. CAMEL model is adopted to evaluate the performance the sample banking companies are ranked on the basis of their performance in different areas.

CAPITAL ADEQUACY RATIO

Table 1

Capital adequacy ratio (Tier I+TIER II)

BANKS	**YEARS**				**AVERAGE**	**RANK**
	2016	**2017**	**2018**	**2019**		
SBI	12.44	12.00	13.12	13.11	12.66	5
BOB	12.28	12.61	13.18	12.24	12.57	4
CBOI	9.87	10.90	10.40	10.94	10.52	1
CNB	10.63	10.56	11.08	12.86	11.28	2
FDB	15.14	15.46	13.93	12.39	14.23	6
SIB	12.42	12.01	11.82	12.37	12.15	3
AXB	16.07	15.09	15.29	14.95	15.35	7
ICICI	17.70	17.02	16.64	17.39	17.18	8

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From the above table 1, CBOI (10.52) is on the highest rank with least average followed by CNB (11.28) on second position, SIB (12.15) on third position and the ICICI (17.18) is on the last rank with highest average.

ASSET QUALITY RATIO

Table 2

Net NPA's to net advance

BANKS	YEARS				AVERAGE	RANK
	2016	**2017**	**2018**	**2019**		
SBI	2.57	2.12	3.81	3.71	3.0525	4
BOB	1.52	1.89	5.06	4.72	3.0525	3
CBOI	3.75	3.61	7.36	10.20	6.23	1
CNB	1.98	2.65	6.42	6.33	4.345	2
FDB	0.74	0.73	1.64	1.28	1.0975	7
SIB	0.78	0.96	2.89	1.45	1.52	6
AXB	0.44	0.46	0.74	2.27	0.9775	8
ICICI	0.97	1.61	2.98	5.43	2.7475	5

From the above table 2, CBOI is on highest position with highest average of 6.23 followed by CNB (4.345) on second position; BOB (3.0525) on third position and on the last position is AXB with least average of0.9775.

MANAGEMENT EFFICIENCY RATIO

Table 3

Business per employee

BANKS	YEARS	AVERAGE	RANK

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	2016	2017	2018	2019		
SBI	106.37	123.4	141.1	162.4	133.31	4
BOB	186.5	188.9	168	174.9	179.57	1
CBOI	143.83	143.50	144.46	144.27	144.02	2
CNB	102.54	113.77	119.47	118.13	113.48	7
FDI	123	137.1	148.4	140	137.12	3
SIB	99.7	111.5	120.3	144.9	119.1	6
AXB	74.7	83.2	94.3	98.9	87.77	8
ICICI	119.9	115.4	125.5	148.4	127.3	5

From the above table 3, BOB is on highest position with highest average of 179.57 followed by CBOI (144.02) on second position, FDI (137012) on third position and on the last position is AXB with least average of 87.77

Table 3.1

Profit per employee

BANKS	**YEARS**				**AVERAGE**	**RANK**
	2016	**2017**	**2018**	**2019**		
SBI	0.485	0.602	0.47	0.511	0.517	5
BOB	1	0.7	-1	2.6	0.825	3
CBOI	0.5	0.5	-0.5	0.2	0.175	7
CNB	-0.311	0.153	-0.376	-0.649	-0.29575	8
FDI	1.5	1.7	1.8	0.7	1.425	1
SIB	0.8	0.9	0.4	0.7	0.7	4

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AXB	1.4	1.6	1.4	1.2	1.4	2
ICICI	0.7	0.4	0.4	0.5	0.5	6

From the above table 3.1, FDI is on highest position with highest average of 1.425 followed by AXB (1.4) on second position; BOB (0.825) on third position and on the last position is CNB with least average of -0.29575

Table 3.2

Composite Management Efficiency Ratio

BANKS	**YEARS**				**AVERAGE**	**RANK**
	2016	**2017**	**2018**	**2019**		
SBI	106.86	124.00	141.57	162.91	133.83	4
BOB	187.5	189.6	167	177.5	180.4	1
CBOI	144.338	144.00	143.96	144.47	144.19	2
CNB	102.237	113.92	119.10	117.48	113.18	7
FDI	124.5	138.8	150.2	140.7	138.55	3
SIB	100.5	112.4	120.7	145.6	119.8	6
AXB	76.1	84.8	95.7	100.1	89.175	8
ICICI	120.6	115.8	125.9	148.9	127.8	5

From the above table 3.2, BOB is on highest position with highest average of 180.4 followed by CBOI (144.19) on second position, FDI (138.55) on third position and on the last position is AXB with least average of 89.175.

EARNING QUALITY RATIO

Table 4.2

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Earning quality ratio (net interest margin to total asset)

BANKS	YEARS				AVERAGE	RANK
	2016	2017	2018	2019		
SBI	2.93	2.86	2.60	2.44	2.71	4
BOB	1.98	1.92	1.84	1.98	1.93	7
CBOI	1.98	1.86	1.77	1.74	1.84	8
CNB	2.33	2.41	2.29	2.06	2.27	6
FDI	3.30	3.37	3.36	3.17	3.30	1
SIB	3.06	3.02	2.83	2.91	2.96	3
AXB	2.91	3.07	3.11	2.91	3.00	2
ICICI	2.67	2.39	2.46	2.43	2.49	5

From the above table 4.1 FDI is on highest position with highest average of 3.37 followed by AXB (3.07) on second position, SIB (2.96) on third position and on the last position is CBOI with least average of 1.84.

LIQUIDITY RATIO

Table 5

Cash to deposit ratio

BANKS	YEARS				AVERAGE	RANK
	2016	2017	2018	2019		
SBI	6.09	7.35	7.49	6.26	6.80	2

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BOB	3.27	3.64	3.78	3.79	3.62	8
CBOI	5.27	4.64	4.31	4.02	4.56	7
CNB	4.97	5.52	5.29	25.31	10.27	1
FDI	6.07	6.15	6.25	7.45	6.48	4
SIB	5.20	4.77	4.77	4.69	4.86	5
AXB	6.57	7.10	6.43	6.47	6.64	3
ICICI	4.63	4.70	4.44	4.66	4.61	6

From the above table 5, CNB is on highest position with highest average of 10.27 followed by SBI (6.87) on second position, AXB (6.64) on third position and on the last position is BOB with least average of 3.62.

Table 5.1

Credit +investment to deposit ratio

BANKS	**YEARS**				**AVERAGE**	**RANK**
	2016	**2017**	**2018**	**2019**		
SBI	115.4	113.0	117.8	114.3	115.1	3
BOB	90.2	88.2	87.8	85.2	87.9	8
CBOI	101.7	99.6	97.3	99.4	99.5	6
CNB	109.7	108.9	101.0	78.0	99.4	7
FDI	122.3	123.6	131.4	121.1	124.6	2
SIB	113.1	101.5	105.1	104.0	105.9	4
AXB	155.4	150.9	141.3	127.7	143.8	1
ICICI	106.5	99.2	100.2	99.5	101.4	5

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From the above table 5.1, AXB is on highest position with highest average of 143.8 followed by FDI (124.6) on second position, SBI (115.1) on third position and on the last position is BOB with least average of 87.9

Table 5.2

Composite liquidity ratio

BANKS	YEARS				AVERAGE	RANK
	2016	2017	2018	2019		
SBI	121.5	120.3	125.3	120.6	121.9	3
BOB	93.5	91.8	91.6	89.0	91.5	8
CBOI	107.0	104.2	101.6	103.4	104.1	6
CNB	114.7	114.4	106.3	103.3	109.7	5
FDI	128.4	129.7	137.6	128.5	131.1	2
SIB	118.3	106.3	109.9	108.7	110.8	4
AXB	162.0	158.0	147.7	134.2	150.5	1
ICICI	111.1	103.9	104.6	104.2	106.0	6

From the above table 5.2, AXB is on highest position with highest average of 150.5 followed by FDI (131.1) on second position, SBI (121.9) on third position and on the last position is BOB with least average of 91.5.

COMPOSITE RANKING (OVERALL PERFORMANCE) OF SELECTED PUBLIC, OLD PRIVATE AND NEW PRIVATE BANKS (Table no.6)

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Table no.6

Composite ranking ratio of all banks and all ratios

BANK	C	A	M	E	L	AVERAGE	RANK
BOB	12.58	8.29	180.4	67.09	67.1	67.09	1
FDB	14.23	10.62	138.55	54.47	54.5	54.47	2
CBOI	10.53	5.76	144.19	53.49	53.5	53.49	3
SBI	12.67	12.67	133.8	53.06	53.1	53.06	4
ICICI	17.19	12.59	127.8	52.53	52.5	52.53	5
SIB	12.16	7.58	119.8	46.51	46.5	46.51	6
CNB	11.28	6.64	113.18	43.70	43.7	43.70	7
AXB	15.35	10.68	89.18	38.40	38.4	38.40	8

Above the Table 6.Depicts the overall performance of camel ratio average of the eight banks in India for the period of 2014-2017. It is found that BOB (67.09) is on highest position with the highest average, followed by FDB (54.47) on the second position and CBOI (53.49) on the third position and the last position is the AXB with lowest average 38.40.

Conclusion

Due to radical changes in the banking sector in the recent years, the Bank of Baroda all around the India has improved their quality and techniques. In evaluating the function of the banks, many of the developed countries are now following uniform financial rating system (CAMEL RATING) along with other existing procedures and techniques. Various studies have been conducted in India as well on various banks using CAMEL framework. Different banks are ranked according to the ratings obtained by them on the five parameters. The results show that there is a statistically significant difference between the CAMEL ratios of all the Public Sector Banks and Private Sector Banks in India, thus, signifying that the overall performance of Public

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Sector Banks and Private Sector Banks is different. Also, it can be concluded that the banks with least ranking need to improve their performance to come up to the desired standards.

Suggestions

- AXB should take adequate measures to improve total composite performance.
- The banks ought to adjust rapidly to evolving standards.
- The framework is getting universally institutionalized with the happening to BASELL II agrees so the Indian banks ought to reinforce interior procedures in order to adapt to the models.
- Have great examination aptitudes, framework, and legitimate follow up to guarantee that banks are over the hazard.

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