

A PERFORMANCE OF CAPITAL ADEQUACY RATIO INDICATOR IN PRIVATE SECTOR BANKS - AN EMPIRICAL STUDY

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ABSTRACT

A bank's capital is calculated using the capital adequacy ratio (CAR). The Basel Committee's recommendations for banking supervision state that each Indian commercial bank must maintain a desired level of capital adequacy ratio, which is computed as a percentage of a bank's risk-weighted credit exposures. It serves to safeguard depositors as well as improve the performance and stability of financial institutions. This number represents the capital-to-risk ratio of a bank. A bank's capacity to cover all potential scenarios is demonstrated by the ratio. To evaluate the performance of the banking industry in this study, the capital adequacy ratio is employed. For analysing the effectiveness of capital adequacy, ten Private sector Banks were chosen from the banking industry based on their market capitalization.

Key Words: Private sector Banks, BASEL Committee, Capital adequacy ratio, and financial performance

1. INTRODUCTION

The present situation of Private sector Banks indicates an integral risk of insolvency due to the continuous rise in nonperforming assets. Due to the bank's high level of debt, a run on the bank might occur at any time if the market deems its reserves to be insufficient. Therefore, if Private sector Banks are to survive, they must maintain enough capital. The amount of capital that should be maintained is typically recommended by central banking institutions across the world and is evaluated as a "capital adequacy ratio". The main measure of future occurrences is called the capital adequacy ratio. Bank solvency is a subject that shouldn't be ignored in the banking industry. This is because banks keep the country's savings in their safes. Therefore, the economy would quickly come to an end if the banking system failed. Capital ratios are developed and put into use by regulatory agencies and organizations. International banking institutions have an impact on it as well. The quantity of money that banks may produce is meant to be constrained by the reserve requirements. There are no reserve requirements at all in certain nations, such as the United Kingdom and Canada. Banks are unable to continue printing unlimited money in this situation either. Considering that the quantity of credit is also impacted by the capital adequacy ratio.

2. LITERATURE REVIEW

A systematic review of the facts, statistics, and compilation of the key results of prior researchers on a given issue is known as a review of the literature, and it is helpful to comprehend what has previously occurred in the field. A review of the literature can also assist to find research gaps and direct studies to address them.

Khalid Ashraf Chishty (2022) examined how capital adequacy standards affected the profitability of Private sector Banks in India. In 2023, Tariq Zafar, Adeel Maqbool, and Syed

Imran Nawab Ali evaluated the financial performance of 10 Indian Private sector Banks in terms of capital adequacy, asset quality, management effectiveness, earnings effectiveness, and liquidity.

Narasimhan and Mridula Goel (2022-2023) studied the importance of capital adequacy to the Indian banking industry. The study by Mandeep Kaur and Samriti Kapoor (2014) found that many banks that fell short of the minimum capital requirement had also received capital from the government to meet the necessary performance of the top Indian banks. Suman Goel and Raj Kumar (2016) examined and contrasted Indian public sector banks' capital adequacy ratios. According to the study, banks with strong CRAR can easily absorb that their productivity is ultimately increased.

Rakesh Kumar and Bimal Anjum (2017) evaluated and contrasted the capital adequacy ratio as a measure of the Indian banking industry's performance.

Vasu and Harsha (2018) The authors of the report recommended that HDFC, ICICI, and IndusInd Bank take the required steps to increase their capital sufficiency and effectiveness, as well as to boost the bank's financial performance.

3. OBJECTIVES OF THE STUDY

1. To analyse the selected Private Sector Bank's performances by applying the CAMEL model.
2. To examine the effect of the CAMEL factor on the return on equity, asset and investment of the selected Private sector Banks.

4. RESEARCH METHODOLOGY

The number of banks chosen for this study is limited to ten in numbers. The research only uses secondary data, the majority of which was taken from the yearly release of the RBI's "Statistical tables relating to the bank in India." Additionally, several articles, reports, and research papers on capital adequacy have been cited. So, the study is basically secondary in nature.

5. LIMITATIONS OF THE STUDY

1. The study is based on secondary data published by RBI and other reports.
2. Lack of accuracy and relevance is also associated while using secondary data sometimes.

6. CAMEL FRAMEWORK

Data comprises ten Private sector Banks for 10 years based on their total asset worth from 1st April 2013 - 31st March 2023. Research work used secondary data which was collected from various banks' Annual reports, CMIE Centre for Monitoring Indian Economy Prowess, and RBI website. CAMEL framework is applied for evaluating banks' performance on the following five parameters.

CAMEL Framework	
Capital Adequacy	<ul style="list-style-type: none"> • Capital Adequacy Ratio • Govt. Sec to Total Investment • Total Advances / Total Assets • Debt - Equity Ratio (Times)
Assets Quality	<ul style="list-style-type: none"> • Total Investment to Total Assets • Net NPAs to Net Advances • Gross NPAs to Net Advances • Net NPAs to Total Assets
Management Efficiency	<ul style="list-style-type: none"> • Total Advances to Total Deposits • Profit / Employee (₹ in Lakh) • Business / Employee (₹ in Lakh)
Earning Capacity	<ul style="list-style-type: none"> • Interest Income to Total Income • Spread to Total Assets • Operating Profit to Working Funds • Net Profit / Average Assets • Non-Interest Income / Total Income
Liquidity	<ul style="list-style-type: none"> • Liquid Asset to Total Deposits • Govt. Secs to Total Assets

CAMEL Framework	
	<ul style="list-style-type: none"> • Liquid Assets / Total Assets • Liquid Asset / Demand Deposits

Collected secondary data have been conveniently tabulated under classified heads to use in the CAMEL framework. Mean, Standard Deviation, and Annual Compound Growth Rate (ACGR) are employed in the study.

Table -1
Capital Adequacy Ratio - Capital Adequacy

Banks	Mean	SD	CV	ACGR	Rank
HDFC Bank	16.05	0.7051	5.333	-0.33(0.607)	2
ICICI Bank	17.89	1.4662	12.012	-3.58 ^a (0.001)	1
Axis Bank	15.08	1.0043	7.532	-2.08 ^a (0.002)	3
KMB	11.97	0.8785	7.342	-0.55(0.531)	9
IndusInd Bank	12.74	1.5874	12.453	-2.08(0.133)	7
YES	11.79	0.9572	8.113	-1.88 ^b (0.021)	10
FBL	12.05	1.3224	10.985	-1.73(0.141)	8
SIB	13.22	0.9021	5.626	-1.19 ^b (0.044)	5
KVB	12.21	1.2741	7.126	-0.21(0.809)	6
CUB	13.33	1.3871	9.206	1.54(0.144)	4

Note: Fig. in parenthesis is the p-value. ‘a’ & ‘b’ denotes 1 % & 5 % significant level. Table No.1 exhibits the Coefficient of variation, Standard deviation, and Mean & (ACGR) Annual Compound growth rate of the Bank’s Capital adequacy ratio. Rank has been provided based on Avg. of capital adequacy ratio in descending order. The mean value of the capital adequacy ratio is highest in ICICI Bank at 17.89 and lowest in Yes Bank at 11.79% during the study period, which is greater than 9 % - RBI’s prescribed level. ACGR of Capital Adequacy Ratio was negative at Private sector Banks like Yes Bank, City Union Bank, Axis Bank, KMB, and SIB are negatively significant, which shows that a drastic decrease is there in capital adequacy ratio throughout the study period. IndusInd Bank and ICICI Bank have reduced their capital adequacy ratio compared with other sampled Private sector Banks, supported the by highest coefficient of variation (12.45%). ACGR of capital adequacy ratio of Private sector Banks proves a positive trend over the study period. The capital adequacy ratio is positive and above RBI’s prescribed norm. As far as ranking is concerned, ICICI Bank ranks first, HDFC Bank Second, and AXIS Bank third place respectively. The tenth position, or last, is occupied by Yes Bank.

Table -2
Debt Equity Ratio

Banks	Mean	SD	CV	ACGR	Rank
HDFC Bank	8.74	0.622	7.11	-1.37(0.066)	2
ICICI Bank	6.41	0.430	6.72	1.91 ^a (0.002)	1
Axis Bank	9.89	1.322	13.38	-2.96 ^b (0.019)	3
KMB	17.31	1.239	7.16	0.63(0.471)	10
IndusInd Bank	15.66	0.480	3.06	-0.01(0.985)	7
YES	17.19	0.644	3.75	0.62(0.135)	9
FBL	14.80	2.653	17.92	-3.22(0.060)	5
SIB	15.08	1.191	7.89	-0.96 (0.297)	6
KVB	13.88	0.922	6.64	-0.85 ^a (0.240)	4
CUB	15.73	0.723	4.60	-0.24 ^b (0.0065)	8

Note: Fig. in the parenthesis is the p-value. ‘a’ & ‘b’ denotes 1 % & 5 % significant level respectively.

Table No. 2 exhibits the Coefficient of variation, Standard deviation, Mean & ACGR of Banks’ Debt equity ratio. Rank has been provided based on the average debt-equity ratio in ascending order. Mean value of Debt – Equity Ratio is low in ICICI Bank at 6.41 and high in KMB at 17.3

during the study period. However, the ACGR of Debt – Equity Ratio is negative in the cases of FBL Bank, Axis Bank, HDFC Bank, and SBI while the ACGR of Debt – Equity Ratio is highest at -3.22 in the case of IDBI Bank. Analysis of the Debt – Equity Ratio shows that it is significant at ICICI Bank & non-significant at AXIS Bank. Private sector Banks have less than 10 times of Debt-Equity ratio. It is indicating Private sector Banks are concentrating more on reducing their financial leverage, which is confirmed by its negative ACGR and standard deviation except for ICICI Bank. ICICI bank has the lowest debt-equity ratio, exhibits positive ACGR (1.91%), and a standard deviation of 0.430. It indicates the reaping of the benefit of leverage during the study period.

Table -3
Advances to Total Assets

Banks	Mean	SD	CV	ACGR	Rank
HDFC Bank	61.93	4.237	6.84	-0.03(0.969)	3
ICICI Bank	62.13	2.621	4.22	-1.02 ^b (0.018)	2
Axis Bank	60.60	2.985	4.93	-1.36 ^a (0.002)	6
KMB	61.70	3.131	5.07	-0.94(0.090)	4
IndusInd Bank	61.16	1.998	3.27	-0.72 ^b (0.033)	5
YES	63.93	2.888	4.52	0.14(0.796)	1
FBL	58.23	4.218	7.24	-1.91 ^a (0.008)	9
SIB	60.11	3.599	5.99	1.83 ^a (0.000)	7
KVB	56.41	3.561	6.31	1.49 ^b (0.022)	10
CUB	59.99	2.837	4.73	1.44 ^a (0.000)	8

Note: Fig. in the parenthesis is the p-value. ‘a’ & ‘b’ denotes 1 % & 5 % significant level respectively.

Table No. 3 shows the Coefficient of variation, Standard deviation, Mean & ACGR of banks’ Advance to total assets. Rank has been provided based on the average of the Advances / Total Assets ratio in descending order. Advances to Total Asset Ratio’s mean value are low in ICICI Bank (56.41%) and high in YES Bank (63.93%) during the study period. However, ACGR of Advances / Total Assets Ratio is negative at ICICI Bank, Axis Bank, FBL, and IndusInd Bank. While ACGR of Advances / Total Assets Ratio is highest in HDFC Bank (1.83%). The analysis of the Advances to Total Assets shows that private bank has significant ACGR during the study period. It is indicating that all Private sector Banks have improved advances over the study period. Advances to total assets mean value of IDBI Bank, AXIS Bank & ICICI Banks are less than 60 %. Whereas Private sector Banks have more Advances to Total Assets ratio than PSU banks after 2016 & it shows a decreasing trend in the Advances to total assets ratio. It may be due to currency demonization that is after the overall business environment of the country. IDBI bank has the highest negative ACGR among the sample banks. It shows that the banks have decreased the Advances to Total Assets ratio during the study period.

Table- 4
Govt. Securities to Total Investment

Banks	Mean	SD	CV	ACGR	Rank
HDFC Bank	81.96	1.901	2.32	-0.14(0.609)	5
ICICI Bank	82.73	2.606	3.15	-0.88 ^a (0.001)	4
Axis Bank	87.49	2.963	3.39	0.85 ^a (0.010)	3
KMB	88.73	2.732	3.08	0.39(0.280)	1
IndusInd Bank	87.97	2.314	2.63	0.17(0.584)	2
YES	79.03	2.200	2.78	-0.01(0.966)	6
FBL	78.71	8.128	10.33	0.44(0.730)	8
SIB	78.96	5.097	6.45	-1.28(0.051)	7
KVB	62.45	7.675	12.29	2.04(0.138)	10
CUB	63.16	6.705	10.62	2.70 ^b (0.018)	9

Note: Fig. in the parenthesis is the p-value. ‘a’ & ‘b’ denotes 1 % & 5 % significant level respectively.

Table No. 4. Shows the coefficient of variation, standard deviation, mean & ACGR of govt. securities to total investment of banks. Rank provided based on Govt. Securities to total investment ratio’s mean value in descending order. A govt. security to Total Investment Ratio Mean value was low at KVB (62.45%) and high in KMB (88.73%) during the study period. However, Government Securities to Total Investment Ratio’s ACGR is negative in the cases of ICICI Bank, YES Bank, HDFC Bank, and SIB while the ACGR of Government securities to total Investment are found highest in CUB bank (2.70%). The analysis of the Govt. securities to Total Investment shows that CUB and Axis Bank have significant ACGR during the study period. It indicates that both banks have improved their investment in Government securities over the study period, which denotes a conservative approach to investment. The mean value of Govt. Sec to Total Investment for KVB and CUB banks are less than 70 %. Whereas, Govt. Securities to Total Investment ratio of Private sector Banks have b/w 62 % & 73 % during the study period. Last two years, Private sector Banks have improved investment in Govt. Securities in maintaining a low-risk portfolio of investment.

Table 5
Ranking of Banks According to Capital Adequacy

Banks	Capital Adequacy Ratio	Debt Equity Ratio	Advances To Total Assets	Govt. Securities to Total Investment	Mean Rank	Rank
HDFC Bank	5	4	3	5	4.25	1
ICICI Bank	7	6	2	4	4.75	3
Axis Bank	4	8	6	3	5.25	5
KMB	9	10	4	1	6	8
IndusInd Bank	6	7	5	2	5	4
YES	10	9	1	6	6.5	9
FBL	8	5	9	8	7.5	10
SIB	2	2	7	7	4.5	2
KVB	1	1	10	10	5.5	6
CUB	3	3	8	9	5.75	7

Table No. 5 comprises the ratios of overall Capital Adequacy. HDFC Bank, SIB Bank & ICICI Bank stands at First, Second, and third positions respectively. IndusInd Bank, Axis Bank, KVB, and CUB occupy Fourth, Fifth, Sixth & Seventh place. Axis Bank, KMB, YES Bank, and FBL Bank ranked eighth, Ninth & Tenth places respectively on Capital Adequacy.

Table – 6
Gross NPAS to Net Advances

Banks	Mean	SD	CV	ACGR	Rank
HDFC Bank	3.68	1.831	49.75	-8.72(0.257)	10
ICICI Bank	2.95	1.795	60.83	2.75(0.678)	8
Axis Bank	1.71	0.978	57.20	4.84(0.438)	3
KMB	2.54	1.188	46.82	-2.57(0.599)	5
IndusInd Bank	1.84	0.902	48.98	-2.75(0.593)	4
YES	2.60	1.198	46.11	-3.69(0.490)	6
FBL	2.79	1.564	56.09	7.28(0.257)	7
SIB	1.12	0.338	30.11	-5.88 ^b (0.013)	1
KVB	3.10	1.670	53.87	-13.36 ^b (0.024)	9
CUB	1.17	0.331	28.43	-3.39(0.352)	2

Note: Fig. in the parenthesis is the p-value. ‘a’ & ‘b’ denotes 1 % & 5 % significant level respectively.

Table No.6 shows the Coefficient of variation, Standard deviation, Mean & ACGR of Gross NPA's to Net Advances ratio of banks. Rank is provided based on Gross NPA's to Net Advances ratio's mean value in ascending order. Gross Nonperforming Assets to Net Advances ratio Mean value is low in SIB (1.12%) and high in HDFC (3.68%) during the study period. However, ACGR of Gross NPA's to Net Advances Ratio is negatively significant in cases of SIB and KVB, while ACGR of Gross NPA's to Net advances ratio has been found positive for ICICI Bank, Axis Bank, and FBL banks. It clearly indicates that there is poor recovery management of the loans. Among the Private sector Banks, KVB has the highest mean value of Gross NPA's to Net Advances ratio (3.10%) & ACGR is - 13.36 %. SIB and KVB made a good recovery system for the loan during the study period. Figure 4.14 shows the Mean value of Gross NPA's to Net Advances ratio of Private sector Banks during the study period. In 2011, Private sector Banks have a higher gross NPA's to net advances ratio, and Gross NPA's to net Advances ratio decreased from 2017 to 2018 and increased from 2018 to 2019. The result shows that banks have developed a good recovery strategy and loan assessment system to curb the increases in Gross NPA

Table -7
Net NPAS to Net Advances

Banks	Mean	SD	CV	ACGR	Rank
HDFC Bank	2.70	1.327	49.16	13.41 ^a (0.000)	5
ICICI Bank	3.99	3.870	96.89	54.01 ^a (0.000)	9
Axis Bank	2.15	2.107	97.99	45.23 ^a (0.000)	3
KMB	3.45	3.021	87.51	36.41 ^a (0.000)	8
IndusInd Bank	3.18	2.534	79.80	27.71 ^a (0.000)	7
YES	3.09	2.716	87.82	37.65 ^a (0.000)	6
FBL	4.82	5.665	117.44	39.85 ^a (0.000)	10
SIB	0.30	0.136	45.65	-0.66(0.888)	1
KVB	2.16	1.714	79.34	14.99(0.101)	4
CUB	0.93	1.124	121.39	26.24 ^a (0.004)	2

Note: Fig. in the parenthesis is p-value. 'a' & 'b' denotes 1 % & 5 % significant level respectively.

Table No.7 shows the Coefficient of variation, Standard deviation, Mean & ACGR of Net Non-Performing Assets to Net Advances ratio of banks. Rank is provided based on Net NPAs to Net Advances ratio's mean value in ascending order. The net NPAs to Net Advances ratio's mean value is low in SIB (0.30%) and high in FBL (4.82%) during the study period. ACGR of Net NPAs to Net Advances ratio is found significant for all sampled Private sector Banks. It clearly indicates that there is poor recovery management of the loans of Private sector Banks. KVB Bank has the highest mean value of Net NPAs to Net Advances ratio (2.16%) and ACGR is 14.99 %. Private sector Banks made a good recovery system for the loan during the study period, which is indicated by the mean value of the Net NPAs to Net Advances.

Table-8
Total Investment to Total Assets

Banks	Mean	SD	CV	ACGR	Rank
HDFC Bank	25.22	3.234	12.82	0.21(0.887)	7
ICICI Bank	25.89	0.954	3.68	-0.20(0.663)	6
Axis Bank	19.97	2.291	11.47	-1.38(0.290)	10
KMB	21.73	1.963	9.04	-1.93 ^b (0.036)	9
IndusInd Bank	26.13	1.555	5.95	-0.77(0.255)	5
YES	24.74	2.253	9.11	-2.23 ^b (0.015)	8
FBL	29.04	2.781	9.58	-1.14(0.295)	1
SIB	26.29	2.802	10.66	-2.43 ^b (0.018)	4
KVB	27.36	4.159	15.20	-3.12(0.060)	3
CUB	28.19	4.287	15.21	-4.24 ^a (0.003)	2

Note: Fig. in the parenthesis is the p-value. ‘a’ & ‘b’ denotes 1 % & 5 % significant level respectively.

Table No. 8 shows the Standard deviation, Coefficient of variation, Mean & ACGR of Total investment to total asset ratio of banks. Rank has been provided based on total investment to total asset ratio’s mean value in descending order. The total Investment to Total Asset ratio’s mean value was low at KMB (19.97%) & high in FBL (29.04%) during the study period. However, the ACGR of total investment to total asset ratio was found negative for all the banks except HDFC Bank. KMB, YES Bank, SIB, and CUB were found non-significant. It clearly shows the bank tried to reduce the investment over the study period and diverted the fund towards lending activities. It shows the conservative approach to the lending activities of Private sector Banks. There is a gradual decrease in the total investment to total asset ratio during the study period. Private sector Banks have rapidly reduced investment in 2018. It shows the Private sector Banks’ changes from a conservative approach at the beginning of the study period into an aggressive approach in lending activities towards the end of the study period. Private sector Banks have steadily reduced total investment to total assets till 2019 and then increased in 2020.

Table – 9
Net NPAS to Total Assets

Banks	Mean	SD	CV	ACGR	Rank
HDFC Bank	0.17	0.073	44.01	12.45 ^a (0.000)	2
ICICI Bank	0.66	0.584	88.32	-1.02(0.929)	6
Axis Bank	0.37	0.263	71.77	2.31(0.762)	4
KMB	1.31	1.300	98.91	7.85(0.455)	10
IndusInd Bank	1.07	1.029	96.51	2.24(0.807)	7
YES	1.17	0.948	81.13	13.36(0.168)	8
FBL	1.24	1.012	81.78	9.89(0.160)	9
SIB	0.18	0.070	38.47	1.20(0.788)	3
KVB	0.16	0.099	62.43	7.27(0.374)	1
CUB	0.59	0.742	126.83	28.31 ^a (0.003)	5

Note: Fig. in the parenthesis is the p-value. ‘a’ & ‘b’ denotes 1 % & 5 % significant level respectively.

Table No. 9 shows the Coefficient of variation, Standard deviation, Mean & ACGR of Net NPAs to total asset ratio of banks. Rank is provided based on Net NPAs to total asset ratio’s mean value in ascending order. Net NPAs to Total Asset ratio’s mean value is low in KVB Bank (0.16%) & high in KMB (1.31%) during the study period. However, the ACGR of Net NPAs to Total Asset Ratio is positive for all the banks excluding ICICI Bank, which has a negative ACGR. It clearly indicates that there is poor recovery management of the loans. CUB Bank and HDFC Bank have significant ACGR. Private sector Banks made a good recovery system for the loan during the study period, which is indicated by the mean value of the Net NPAs to total asset ratio. Commercial Banks have maintained Net NPAs to total asset ratio till 2020 and increase in 2022-2023.

Table No. 10
Ranking of Banks According to Asset Quality

Banks	Gross NPAs to Net Advances	Net NPAs to Net Advances	Total Investment to Total Assets	Net NPAs to Total Assets	Mean Rank	Rank
HDFC Bank	10	5	7	2	6.00	6
ICICI Bank	8	9	6	6	7.25	9
Axis Bank	3	3	10	4	5.00	4
KMB	5	8	9	10	8.00	10
IndusInd Bank	4	7	5	7	5.75	5
YES	6	6	8	8	7.00	8

FBL	7	10	1	9	6.75	7
SIB	1	1	4	3	2.25	1
KVB	9	4	3	1	4.25	3
CUB	2	2	2	5	2.75	2

Table No. 10 comprises In case of overall Asset quality. SIB Bank, CUB Bank & KVB Bank stand at First, Second and third position respectively. Axis Bank and IndusInd Bank stand in Fourth and fifth place respectively. HDFC Bank, FBL, YES, and ICICI Bank are ranked Sixth, Seventh, Eighth, and ninth place in terms of Asset quality. KMB backs Tenth place.

7. OVERALL PERFORMANCE UNDER CAMEL MODEL

The overall ranking of Banks under CAMEL Models. SIB Bank holds 1st rank & KVB Bank & CUB Bank in Second and third position respectively. These banks dominate in terms of Earning capacity, Management Efficiency & Asset Quality. Axis Bank shared the Third rank with CUB. HDFC, IndusInd Bank, and ICICI Bank have Fifth, Sixth & seventh ranks respectively. HDFC is one of the largest banks that do minutes on capital adequacy. KMB and YES Bank shared Eighth place. FBL Bank ranked last due to a lack of capital Adequacy, Earning Capacity, Liquidity, and Asset Quality.

**Table No. 11
Variance Inflation Factor of CAMEL Framework**

Variables	Before	After
CA-Capital Adequacy Ratio	3.364	3.364
CA-Debt to Equity	4.405	4.405
CA-Advances to Total Asset	1.133	1.133
CA-G. Sec to Total Investment	1.929	1.929
AQ-Gross NPAs / Net Advances	1.003	1.003
AQ-Net NPAs / Net Advances	1.131	1.131
AQ-Total Investment to Total Assets	1.069	1.069
AQ-Net NPAs to Total Assets	1.103	1.103
ME-Total Advances to Total Deposits	1.220	1.220
ME-Business per Employee	1.164	1.164
ME-Profit per Employee	1.392	1.392
EC-Operating Profit to Working Funds	9.792	Removed
EC-Spread to Total Assets	4.436	1.697
EC-Net Profit to Average Assets	2.142	1.573
EC-Interest Income to Total Income	1269.016	1.157
EC-Non-Interest Income to Total Income	1250.193	Removed
LQ-Liquid Asset to Total Assets	10.855	Removed
LQ-G. Securities to Total Assets	1.389	1.329
LQ-Liquid Asset to Demand Deposits	2.522	1.715
LQ-Liquid Asset to Total Deposits	8.852	2.121

Table No. 11 displays the VIF model's results. VIF shows multicollinearity issues in the formative measurement model. The model consists of 20 variables in the CAMEL framework. The VIFs threshold level is five. So the presence of collinearity issues is found in earning capacity & liquidity. In earning capacity, Interest income / total income & non - interest income / total income have the highest multicollinearity. So, the non-interest income / total income have been dropped.

Operating profit / working funds and liquid assets / total assets have dropped due to the multicollinearity problem. So, the final model consists of 17 variables.

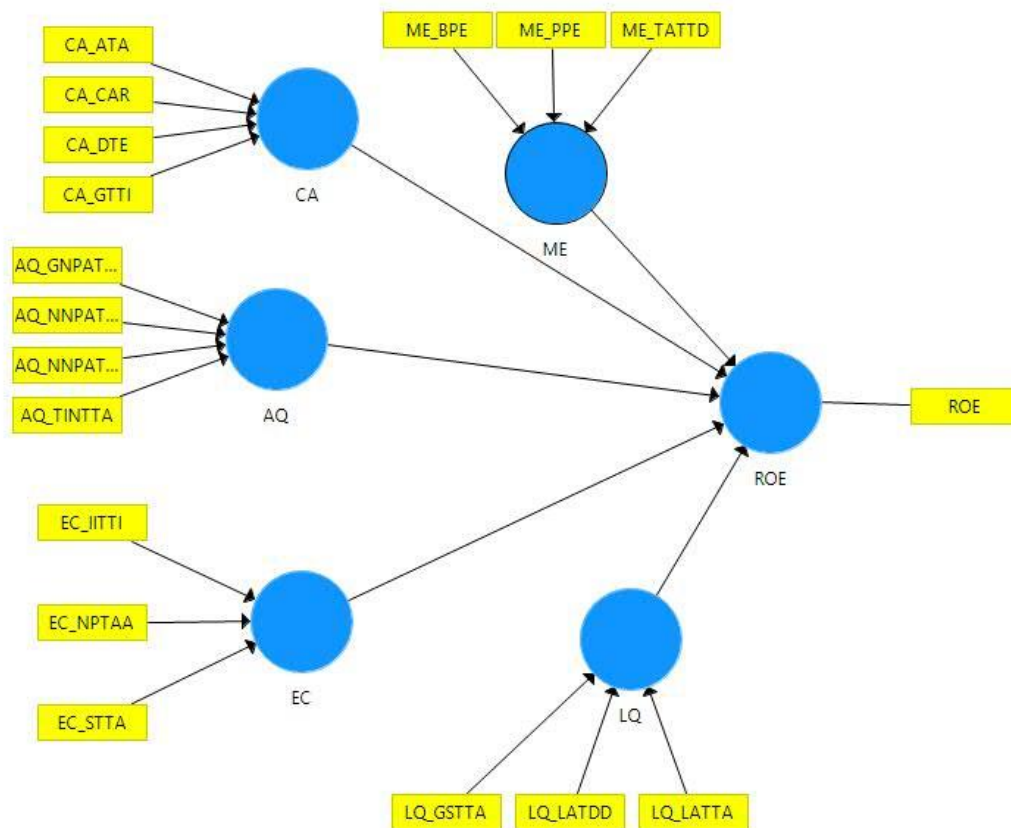


Figure 1 Camel Frameworks Model

Table 12
Result of SEM Model

Criteria Variable		Explanatory Variable	SRW	t-statistics	p-value	Decision H ₀
ROA	←	Capital Adequacy	0.022	0.507	0.612	Accepted
ROA	←	Asset Quality	-0.161	2.395	0.017	Rejected
ROA	←	Management Efficiency	0.423	1.995	0.046	Rejected
ROA	←	Earning Capacity	0.612	3.868	0.000	Rejected
ROA	←	Liquidity	-0.065	1.992	0.047	Rejected
ROI	←	Capital Adequacy	0.080	0.957	0.339	Accepted
ROI	←	Asset Quality	-0.364	2.285	0.023	Rejected
ROI	←	Management Efficiency	0.438	1.944	0.045	Rejected
ROI	←	Earning Capacity	0.442	2.378	0.018	Rejected
ROI	←	Liquidity	-0.070	1.952	0.041	Rejected
ROE	←	Capital Adequacy	0.040	0.757	0.225	Accepted

ROE	←	Asset Quality	-0.117	2.985	0.002	Rejected
ROE	←	Management Efficiency	0.349	2.944	0.002	Rejected
ROE	←	Earning Capacity	0.386	1.378	0.010	Rejected
ROE	←	Liquidity	-0.048	1.962	0.026	Rejected

Table No. 12 shows the results of the Structural Equation model. Capital adequacy construction failed to establish a significant relationship with Return on Equity, Investment & Asset. Capital adequacy has a weak path coefficient of 0.022 for Return on Assets, 0.080 for Return on Investment & 0.040 for Return on Equity. The entire coefficient found to be positive sign indicates that banks have enough buffer capital level over the prescribed norm and the null hypothesis 1 is accepted in all three cases. Asset quality construction established a non-significant relationship with Return on Equity, Investment & Asset. Asset quality has a path coefficient of -0.161 for ROA, -0.364 for Return on Investment & -0.117 for ROE. The coefficient of Return on Investment is slightly higher than ROE & ROA. Asset quality decreases, and there is an increase in return for the banks i.e. when NPAs of the bank decrease; it will create huge revenues for the banks. Management efficiency construction has a positive significant association with Return on Equity, Investment & Assets. Management efficiency has a positive path coefficient of 0.423 for Return on Asset, 0.438 for Return on Investment & 0.349 for Return on Equity. The second largest coefficients are found in all three cases. It clearly indicates that Management Efficiency is a significant factor in enhancing banks' returns. Null hypothesis 3 is rejected in all three cases. Earning capacity construction exhibits a significant relationship with Return on Equity, Investment & Asset. Earning capacity has a strong positive path coefficient of 0.612 for Return on Assets, 0.442 for Return on Investment & 0.386 for Return on Equity. Earning capacity highlights the key factors among the CAMEL framework by its coefficients. The null hypothesis 4 is rejected in all three cases. Liquidity construction established a non-significant relationship with Return on Asset, Investment & Equity. Liquidity has a path coefficient of -0.065 for Return on Assets, -0.070 for Return on Investment, and -0.048 for Return on Equity. Liquidity has an adverse effect on banks' returns. Lowering banks' liquidity will affect the primary functions of banks. So, the banks have to maintain an optimum level of liquidity in the balance of functions as well as the profit of the banks. The null hypothesis 5 is rejected in all cases. Management efficiency and earning capacity are the main factors that drive the Return on Assets, Equity and Investment.

8. SUMMARY

In this chapter, selected Private sector Banks' performance is calculated and compared using the CAMEL model. The data comprises 10 Private sector Banks from 1st April 2013 to 31st March 2023 (10 Years period). As per HDFC Bank holds 1st rank and is followed by KVB Bank & CUB Bank in Second position respectively. These banks dominate in terms of Earning Capacity, Management efficiency & Asset Quality. HDFC Bank, IndusInd Bank, and ICICI Bank have Fifth, Sixth & seventh ranks respectively. HDFC is one of the largest banks that dominate capital adequacy. KMB & YES Bank shared Eighth place. FBL Bank ranked last due to a lack of capital Adequacy, Earning Capacity, Liquidity, and Asset Quality. The second phase of analysis contains the Structural Equation Model to know the relationship b/w CAMEL factors & banks' soundness (Return on Investment, Assets & Equity). Liquidity, Earning Capacity, Management Efficiency & Assets quality has a significant relationship with Return on Investment, Assets, and Equity.

9. CONCLUSION

The CAMEL model is used in the research study to assess the performance of particular Private sector Banks. The top three positions are currently held by SIB Bank, KVB, and CUB Bank. When it comes to profit potential, management effectiveness, and asset quality, these institutions are unbeatable. CUB and Bank of Baroda tied for third place. The rankings for HDFC Bank, IndusInd Bank, and ICICI Bank were five, six, and seven, respectively. KMB and Yes Bank tied for eighth place. Due to inadequate capital, earning capacity, liquidity, and asset quality, FBL Bank placed overall tenth place. The second goal of the research project is to uncover important CAMEL characteristics that influence return on equity, investment, and assets. The structural equation model aids in identifying the

relationships between variables. The model design has five exogenous factors namely Liquidity, Earning Capacity, Management Efficiency, Asset Quality & Capital Adequacy with 20 variables. Research results suggest that Liquidity, Earning Capacity, Management Efficiency, Asset Quality & Capital Adequacy are playing a crucial role in Return on Assets, Equity, and Investment.

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