

Capital Adequacy Ratios of SBI and HDFC Banks of India a Comparative Study

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Abstract

Capital Adequacy Ratio (CAR) is a measure of a bank's capital in relation to its Risk-Weighted Assets (RWAs) and it is used to protect the depositors and promote the stability and efficiency of financial systems of any country. The ratio confirms that how much extent a bank can cover its losses in the future and it ensures that banks can absorb a reasonable amount of loss and protects depositors and the financial system as a whole. In this article, an attempt has been made to compare the Capital Adequacy Ratios of selected Public and Private sector banks SBI (from public sector group) and HDFC (from private sector group) banks during the period of recent ten years i.e., 2014-2015 to 2023-2024. The study concludes that HDFC banks perform better than the SBI in terms of CAR.

Keywords: Capital Adequacy Ratio, Return on Assets, Return on Equity, Return on Advances and Year-on-Year Growth.

I. INTRODUCTION OF THE STUDY

Capital adequacy ratios ensure the efficiency and stability of a nation's financial system by lowering the risk of banks becoming insolvent. The mandate of the commercial bank is to maintain the stability of the monetary and banking system and capital adequacy is key to doing that, in addition to other measures. Depositors want their money to be safe and a safe bank should have a healthy balance sheet. The CAR of banks and the financial system is monitored by national financial regulators to ascertain how well they can withstand a fair level of loss. Components of CAR is Tier 1 Capital (Core capital) is Equity capital added with disclosed reserves, High- quality capital that absorbs losses without a bank ceasing operations. Tier 2 Capital (Supplementary capital) is Subordinated debt, hybrid instruments, absorb losses in the event of a winding-up. Risk-Weighted Assets (RWAs) is Assets weighted by credit risk, operational risk, and market risk. CAR requirements are defined under the Basel Accords (Basel I, II, III) – international regulatory frameworks developed by the Bank for International Settlements (BIS) is Basel III minimum CAR requirement: 8% (international), though most countries impose stricter norms (e.g., India: 11.5%). Regulators are also required to ascertain if a bank's existing CAR conforms to the laws' statutory capital requirements. In India, the Reserve Bank of India (RBI) mandates the CAR for scheduled commercial banks to be 9%, and for the public sector banks, the CAR to be maintained is 12%. It is therefore, appropriate to assess the soundness and sustainability of this crucial and well-recognized system.

II. REVIEW OF RELATED LITERATURE

A plethora of research studies have been conducted on various aspects of capital adequacy. The literature is a systematic survey on the facts, figures, and collection of major findings of past researchers on a particular topic and is useful to understand what has happened in the subject during the past. A review of the literature is further helpful to identify the research gap and lead the study to fill in such a gap. In this section, several studies conducted in the area of capital adequacy ratios are briefed below:

Manmeet Singh and Vyas (2009) in their study analyzed the capital adequacy in the scheduled commercial banks of India. The study found that scheduled commercial banks are strong in terms of Capital-to-risk weighted assets ratio (CRAR) and there is a significant difference in Capital-to-risk weighted assets ratio (CRAR) of State Bank of India and its associates and foreign banks.

Khalid Ashraf Chishty (2011) in his study found out that the non-risk weighted capital adequacy measure (i.e., the equity capital ratio) is negatively related with the probability of a bank (as measured by eight profitability ratios). These findings are significant in the sense that the risk adjustment helps to account for the uncertainty associated with a bank's capital levels. This acts a reliable measure of the nature and the composition of capital inherent in a bank's capital structure.

Narasimhan and Mridula Goel (2013) in their study examined the capital adequacy and its relevance to the Indian banking sector. The study found that Indian banks exhibit stability in such times of crisis due to their capital structure and its regulatory environment.

Nikhath Fatima (2014) in her study entitled “Capital Adequacy: A Financial Soundness Indicator for Banks” examined that top Indian banks are maintaining adequate level of CRAR. The study also found that ICICI bank has maintained the highest level of CAR followed by HDFC and Axis Bank while Bank of India has the lowest. The study finally concluded that private sector banks are in good position as compared to the public sector banks in maintaining the capital adequacy ratio.

Suman Goel and Raj Kumar (2016) in their study compared five Indian public sector banks before and after the implementation of Basel II norms. The study concluded that the public sector banks maintained “a capital to risk weighted assets ratio (CRAR)” more than 9% as prescribed RBI.

Balagurusamy (2017) in his study attempted to analyze the capital adequacy ratios public sector banks in India. The study found that there is a significant difference in the capital adequacy ratio, ratio of advances to total assets, ratio of government securities to total investments and debt-equity ratio in the selected banks.

Rakesh Kumar and Bimal Anjum (2017) in their study entitled, “Capital Adequacy Ratio as performance Indicator of Banking Sector in India-An Analytical Study of Selected Banks” analyses the banking sector performance in the light of capital adequacy ratio. The study concludes that in public and private sector banks, there is statistically significant change was seen in the level of CAR but in the foreign sector banks no such change was seen.

Jayesh J Jadhav and Ashish Kathale & Shreeya Rajpurohit (2021) in their study investigate the changing trend of capital adequacy ratio and subsequent impact on the profitability of the private sector banks in India. The study found that increase in capital adequacy ratio has resulted in an increase in the overall profitability and return on assets for private sector banks in India.

Amit Agarwal & Ashitsaha (2023) in their study examined the capital adequacy ratio and profitability as a case study of Indian banks and highlighted the importance of maintaining adequate capital levels for ensuring profitability and financial stability of commercial banks in India.

Kalpeshkumar Patel and Preteek Kanchan (2024) in their study investigates impact of capital adequacy ratio with operating performance, profitability and return ratio as a compared to the selected public and private sector banks in India. The study found that private sector banks performed better than public sector banks.

Ashwath and Sachindra (2025) in their study suggested that public sector banks need to strengthen capital buffer to enhance resilience to financial shocks and maintain long-term stability, possibly through equity infusions or retained earnings.

OBJECTIVES OF THE STUDY

The following objectives set for the study:

- (i) To study the trend of capital adequacy ratios maintained by the SBI and HDFC banks.
- (ii) To compare and analyze the performance of both the banks in relation to its CAR and how it performs with variables like Return on Assets (ROA), Return on Equity (ROE) and Return on Advances (ROAD).
- (iii) To offer valuable suggestions to improve the performance with regard to the CAR of the selected banks.

HYPOTHESIS OF THE STUDY

Hypotheses framed and tested with the study are as follows;

- (i) (a) There is no significant difference in maintaining the CAR between SBI and HDFC banks (H0)
- (b) There is a significant difference in maintaining the CAR between SBI and HDFC banks (H1)

III. DATA ANALYSIS AND INTERPRETATION

Capital Adequacy Ratio (CAR)

The capital adequacy ratio (CAR) is to appraise the bank's capital. As per the necessities of the Basel Committee on banking supervision, all commercial banks must maintain a desirable level of capital adequacy ratio, and it is stated as a percentage of a bank's risk-weighted credit exposures. It is also recognized as a capital-to-risk weighted assets ratio (CRAR), and it is used to protect the depositors and promote the stability and efficiency of financial systems. The year-wise capital adequacy ratios maintained by SBI and HDFC banks during the study period are given in Table 1.

TABLE 1
Capital Adequacy Ratios maintained by SBI and HDFC Banks

YEARS	SBI	YoY GROWTH	HDFC BANK	YoY GROWTH
2014-15	12.00	-	16.79	-
2015-16	13.12	9%	15.53	-8%
2016-17	13.11	0%	14.55	-6%
2017-18	12.60	-4%	14.82	2%
2018-19	12.72	1%	17.11	15%
2019-20	13.06	3%	18.52	8%
2020-21	13.74	5%	18.79	1%
2021-22	13.83	1%	18.90	1%
2022-23	14.68	6%	19.26	2%
2023-24	14.28	-3%	18.80	-2%
Average	13.31	-	17.31	-
SD	0.815	-	1.81	-
CV (%)	6.12	-	10.46	-

Source: Statistical Tables Relating to Banks in India-Published by RBI.

An introspection of the table 1 reveals that the capital adequacy ratios of both the banks (SBI & HDFC) in the last ten years have been well-above the norm of RBI i.e. 8% level. The average CAR of HDFC bank (17.31) is significantly higher than SBI (13.31) indicating a stronger capital buffer. SBI has lower variability in CAR with on SD of 0.815 and the CV of 6.12%. HDFC bank has more fluctuations with on SD of 1.81 and CV of 10.46% implying relatively higher volatility in his capital adequacy. Both banks showed a decline in CAR with SBI dropping by 3% and HDFC bank by 2% which might indicate increase the lending, higher risk-weighted assets, or regulatory changes.

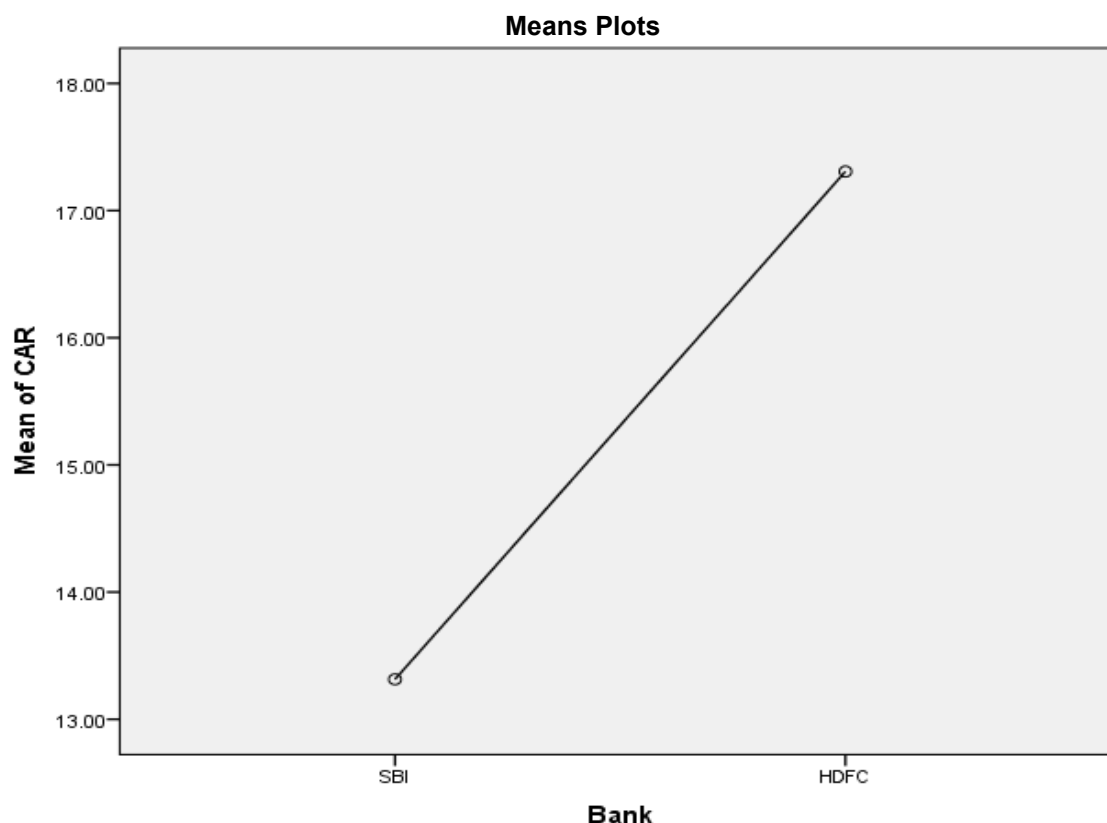
To test the hypothesis listed, One-Way ANOVA has been performed. The test result is furnished in Table 2.

TABLE 2
ANOVA RESULTS

CAPITAL ADEQUACY RATIO

	Sum of squares	Df	Mean Square	F	Sig.
Between Groups	79.720	1	79.720	40.443	.000
Within Groups	35.481	18	1.971		
Total	115.202	19			

The table above shows that F test values along with degrees of freedom (1, 18) and significance of .000. Given that $P < .05$, the null hypothesis is rejected and hence, it is concluded that there is a statistically significant difference between the CAR maintained by the SBI and HDFC banks.



The mean plot is a pictorial representation of mean scores of the variables (CAR of SBI and CAR of HDFC Bank). A closer examination of the means plot reveals that the mean scores of CAR by SBI is 13.31% whereas the mean scores of CAR by HDFC bank is 17.31%. Therefore, it is concluded that there is a small difference between percentages of means scored by the banks chosen under study.

Performance Indicators such as Return on Assets (ROA), Return on Equity (ROE) and Return on Advances (ROAD)

Return on Assets (ROA)

Return on Assets (ROA) is a profitability ratio that evaluates how efficiently a company uses its assets to generate earnings. It is calculated by dividing net income by average total assets, reflecting asset utilization and operational effectiveness. This ratio indicates the returns earned on assets deployed by the bank.

Return on Equity (ROE)

The Return on Equity ratio can be described as a financial ratio that helps measure a company's proficiency to generate profits from its shareholders' investments. This profitability helps to gauge a company's effectiveness when it comes to using equity funding to run its daily operations.

Return on Advances (ROAD)

Return on Advances is also known as Yield on advances (YoA). This ratio reflects how much interest a bank earns on its loan portfolio relative to the amount of loan it has outstanding. Yield on advances is a key financial ratio used to assess the profitability and efficiency of a bank's lending operations.

Table 3 gives the snapshot about these performance indicators of the State Bank of India.

TABLE 3
PERFORMANCE OF SBI WITH REGARD TO ROA, ROE, ROAD

YEARS	ROA (%)	ROE (%)	ROAD (%)
2014-15	0.68	10.62	8.95
2015-16	0.46	7.30	8.37
2016-17	0.41	6.31	7.88
2017-18	-0.19	-3.21	8.06
2018-19	0.02	0.39	7.85

2019-20	0.38	6.40	7.97
2020-21	0.48	8.40	7.18
2021-22	0.67	11.86	6.63
2022-23	0.96	16.53	7.46
2023-24	1.04	17.33	8.35
Average	0.49	8.19	7.87
Rank	3	1	2
SD	0.379	6.419	0.656

Source: Statistical Tables Relating to Banks in India-RBI.

It can be observed from Table 3 that Return on Assets (ROA) of SBI 0.68% in 2014-2015, it went up to 1.04% in 2023-2024. The increase over the period was 1.53 times. In the case of Return on Equity (ROE) it was 10.62% in 2014-2015 which increased to 17.33% in 2023-2024 reflecting the upward growth. The increase over the period was 1.63 times. As far as the Return on Advances (ROAD) is concerned, it was 8.95% in 2014-2015 which went down to 8.35% in 2023-2024.

By comparing the various ratios on the basis of the average value for the period, it has been noted that the ratio of ROE is very high as the average value is 8.19 (ranked as 1). Next is the place of Return on Advances (ROAD) whose value is 7.87 (ranked 2) and the Return on Assets (ROA) whose value of mean is 0.49 (ranked 3).

The degree of variation is very low in Return on Assets (ROA) as the value of standard deviation is 0.379 and the variations are high in both the cases of Return on Equity (ROE) and Return on Advances (ROAD) as the values of standard deviations are 6.419 and 0.656 respectively.

Researcher wanted to determine the effect of Return on Assets (ROA), Return on equity (ROE), and Return on Advances (ROAD) on the CAR maintained by the State Bank of India (SBI). For which a Standard (Simultaneous) Regression Analysis has been employed and the results are furnished below.

TABLE 4
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.887 ^a	.787	.681	.46036

a. Predictors: (Constant), ROAD, ROA, ROE

b. Dependent variable: SBICAR

All the three independent variables together explain 78.7 percent of the variance (R- Square) in CAR of SBI, which is highly significant as indicated by the F- value of 7.406 in the following.

TABLE 5
ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	4.708	3	1.569	7.406	.019 ^b
Residual	1.272	6	.212		
Total	5.980	9			

a. Dependent variables: SBICAR

b. Predictors: (Constant), ROAD, ROA, ROE

An examination of the t- values indicates that all the three predictors (ROA, ROE and ROAD) do not contribute to the prediction of CAR of the SBI.

(i) ROA= not Statistically significant (p >.246)

(ii) ROE= not Significant (p >.211)

(iii) ROAD = not significant (p > .879)

TABLE 6
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	13.322	3.752		3.550	.012
ROA	-15.344	11.940	-.7139	-1.285	.246

ROE	.992	.708	7.813	1.400	.211
ROAD	-.077	.481	-.062	-.159	.879

a. Dependent variable: SBICAR

TABLE 7
PERFORMANCE OF HDFC WITH REGARD TO ROA, ROE, ROAD

YEARS	ROA (%)	ROE (%)	ROAD (%)
2014-15	2.02	19.37	11.12
2015-16	1.89	18.26	10.80
2016-17	1.88	17.95	10.22
2017-18	1.93	17.87	10.33
2018-19	1.90	16.50	10.50
2019-20	2.01	16.40	10.12
2020-21	1.97	16.61	8.92
2021-22	2.03	16.66	7.88
2022-23	2.07	16.96	8.56
2023-24	1.98	16.88	10.14
Average	1.97	17.35	9.86
SD	0.065	0.975	1.047
Rank	3	1	2

Source: Statistical Tables Relating to Banks in India-RBI.

It is observed from Table 7 that Return on Assets (ROA) of HDFC 2.02% in 2014-2015 it went down to 1.97% in 2023-2024. The increase over the period was 0.97 times. In the case of Return on Equity (ROE) it was 19.37% in 2014-2015 which decreased to 16.88% in 2023-2024 reflecting the downward growth trend. The increase over the period was 0.87 times. As far as the Return on Advances (ROAD) is concerned, it was 11.12% in 2014-2015 which went down to 10.14% in 2023-2024.

By comparing the various ratios on the basis of the average value for the period, it has been noted that the ratio of ROE is very high as the average value is 17.35 (ranked 1). Next is the place of Return on Advances (ROAD) whose value is 9.86 (ranked 2) and it is lowest in place of Return on Assets (ROA) as it is 1.97 (ranked 3).

The degree of variation is very low in Return on Assets (ROA) as the value of standard deviation is 0.065 and the variation is very high in case of Return on Advances (ROAD) as the value of standard deviation is 1.047. In order to determine the effect of Return on Assets (ROA), Return on equity (ROE), and Return on Advances (ROAD) on the CAR maintained by the Housing Development and Finance Corporation (HDFC) the Standard (Simultaneous) Regression Analysis has been performed and the output of the results are furnished below.

TABLE 8
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.930 ^a	.865	.798	.81337

a. Predictors: (Constant), ROAD, ROA, ROE

b. Dependent variable: HDFCCAR

All the three independent variables together explain 86.5 percent of the variance (R- Square) in CAR of HDFC, which is highly significant as indicated by the F- value of 12.864 in the following.

TABLE 9
ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	25.532	3	8.511	12.864	.005 ^b
Residual	3.969	6	.662		

Total	29.502	9			
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a. Dependent variables: HDFCCAR

b. Predictors: (Constant), ROAD, ROA, ROE

An examination of the t- values indicates the all the three predictors (ROA, ROE and ROAD) do not contribute to the prediction of CAR of the HDFC.

(i) ROA = statistically significant ($p < .008$)

(ii) ROE = significant ($p < .025$)

(iii) ROAD = not statistically significant ($p > .674$)

TABLE 10
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	-5.538	11.894		-.466	.658
ROA	20.008	5.086	.725	3.934	.008
ROE	-1.051	.355	-.566	-2.958	.025
ROAD	.173	.391	.100	.442	.674

a. Dependent variable: HDFCCAR

IV. FINDINGS

(i) The study divulges that both the banks (SBI & HDFC) have maintained the RBI prescribed level of 12% throughout the study period. HDFC bank has most favoured CAR during the period of study.

(ii) It is found from the study that the YoY growth rate indicates HDFC bank experience the higher fluctuation whereas, SBI where more stable growth, therefore HDFC bank maintains a stronger capital positions, and SBI while stable has lower capital buffer compared to HDFC bank.

(iii) The study reveals that there is a statistically significance difference between CAR maintained by the State Bank of India (SBI) and Housing Development Finance Corporation (HDFC) banks during the study.

(iv) The study found that all the three performance indicators (ROA, ROE and ROAD of the SBI) are not a significant predictor i.e., CAR of the SBI Bank.

(v) The study discloses that the performance indicators chosen for this study i.e., ROA, ROE and ROAD are high in HDFC Bank when compared with the SBI.

(vi) The study found that the two variables (ROA, ROE of the HDFC) are significant predictor. The variable (ROAD of the HDFC) is not a significant predictor. i.e., CAR of the HDFC Bank.

V. SUGGESTIONS

The following suggestions were offered to improve and maintain a strong Capital Adequacy Ratio (CAR).

Banks can focus an increase in the capital base and reducing Risk-weighted assets. This can be achieved by retaining more earnings, ratio additional capital through issuance and managing loan portfolio effectively. As far as reducing weighted assets are concerned, the banks are suggested diversifying their loan portfolio, focusing on lower risk-lending and closely monitoring loan-equity can significantly reduce risk-weighted assets. For that the bank has suggested the non-performing loans and finally banks are suggested to invest less risky assets. By implementing these strategies, the commercial bank in India can effectively improve, and they are maintained Capital Adequacy Ratio (CAR) ensuring they are financial stability and resilience.

VI. CONCLUSION

Capital Adequacy Ratio has become an important benchmark of banking industry. The performance and solvency position of banks are judged by CRAR. Banks with reasonable CRAR can absorb the unexpected losses easily and their cost of funding is also reduced which ultimately improve the profitability of banks. Financial crisis in the world has increased the importance of capital adequacy requirements. In India, banking fundamentals are strong and well- regulated; hence impact of global financial crisis is low.

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