A Study on the Impact of Capital Adequacy Ratio on Profitability, Return Ratios and Asset Quality for the Selected Banks in India

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Among several global agreements, Basel Norms are prominent for promoting financial stability, improving risk management practices, and enhancing the resilience of the global banking ecosystem. They provide a framework for banks and regulators to assess and address various risks for a more resilient banking environment. For banks in India and globally, adhering to the Capital Adequacy Ratio (CAR) is one of the mainstays of Basel norms. This study focused on the impact of CAR on the return ratios, profitability ratios, and asset quality of the leading 12 banks in India. A simple linear regression was used. The findings indicated that CAR impacted return on equity, operating profit margin, and net profit margin. The findings of the study have implications for banks and regulators for enhancing financial performance and ensuring banking sector stability, respectively.

Keywords: Basel Norms and Capital Adequacy, Return Ratios, Profitability Ratios, Net NPA.

Introduction

BANKS in India constitute a diverse and dynamic sector that plays a vital role in the country's economy. India's banking system is characterized by a mix of public sector banks, private sector banks, foreign banks, cooperative banks, and regional rural banks, each contributing uniquely to the financial landscape. Historically, PSBs have been the backbone of India's banking sector, with a significant market share in terms of deposits and lending. These banks are owned and operated by the government, playing a crucial role in financial inclusion by serving diverse segments of the population across urban and rural

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Patel, K. and Kanchan, P. (2024), A Study on the Impact of Capital Adequacy Ratio on Profitability, Return Ratios and Asset Quality for the Selected Banks in India, *FOCUS WTO*, Vol. 26 No. 2, April-June, pp. 48-63. http://publication.iift.ac.in/focuswto_archive.asp

areas. Private banks in India, both old and new generations, have seen remarkable growth in recent decades. They are known for their innovation, customer-centric approach, and efficient service delivery. Private sector banks often lead in adopting technology and offering a wide range of financial products and services. Foreign banks operate in India either through branches or subsidiaries. They bring global expertise, best practices, and international standards to the Indian banking sector. These banks often cater to corporate clients, high-net-worth individuals, and niche segments with specialized services. Cooperative Banks primarily serve local communities, focusing on agriculture, small businesses, and rural development. They are structured as cooperative societies owned and managed by their members, playing a vital role in rural credit and financial inclusion. Regional Rural Banks are a unique feature of India's banking system, established to provide banking services in rural areas. These banks are jointly owned by the central government, the state government, and sponsor banks, contributing significantly to agricultural credit and rural development.

India's banking sector has witnessed notable transformations, including regulatory reforms, technological advancements, and increased competition. The sector is regulated by the Reserve Bank of India (RBI), which ensures financial stability, promotes banking efficiency, and fosters inclusive growth. Overall, banks in India operate in a dynamic environment, balancing traditional banking practices with modern innovations to meet the evolving needs of customers and contribute to the country's economic progress.

With a $4,291 billion GDP, India is the fifth-largest economy in the world (*Forbes India*, 2024). Financial institutions in India include both banks and non-bank financial organizations, making up India's broad and advanced financial system. This system is comprised of a wide variety of financial institutions. To run the banking system efficiently the Reserve Bank of India, the regulator of the Indian financial system, is providing guidelines and framework for Assets Liability Management (ALM). These guidelines are developed based on the recommendation of the Basel Accords. The main objective of asset liability management is to make banks capable of meeting their deposit payments and to avoid the risk of non-performing assets (*The Economic Times*, 2024).

The banking system in India is well established and has been meeting the credit and banking requirements of the economy for several decades. It has developed over several decades. The ecology of the banking industry is providing a boost to the growth of the nation. It also caters to the specialized and diversified financial requirements of a wide range of clients and borrowers. The most important function of banks is to act as intermediaries between depositors and lenders, facilitating the transfer of resources for the advantage of both parties while effectively allotting them. This, in turn, contributes to the expansion of the economy by enhancing the efficiency with which resources are utilized.

In India, the financial services sector is mostly comprised of commercial banks, which hold about 64 per cent of the total assets in the financial system (*Indian Financial System - IBEF, 2023*). There are 12 public sector banks, 21 private sector banks, 46 foreign banks, 43 regional rural banks, more than 1,500 urban cooperative banks and more than 96,000 rural cooperative banks that make up the Indian banking system (IBEF, 2023). As of December 2023, public sector banks' assets made up 58.32 per cent of all banking assets, including those of foreign, private, and public banks. Interest income from public sector banks made up over 57.48 per cent of the total till December 2023. By the end of 2023, interest income from public banks totaled US$102.51 billion, while interest income from private bans came to a total of US$70.07 billion (IBEF, 2023).

Basel Accords

Entire banking industry dynamics changed globally as well as in India after the implementation of norms recommended at Basel. In a broader sense, they undertook an overhaul of banking specifically capital management and lending decisions. The primary body that creates international guidelines for bank regulation and promotes cooperation in banking supervision is the Basel Committee on Banking Supervision (BCBS). There are 45 members of the organization, including supervisors of banks and central banks from 28 different jurisdictions (*The Basel Committee - Overview, 2011*). To mitigate the risks banks encounter while lending to different borrowers, the Basel Committee created the Basel Norms, also referred to as Basel Accords. To maintain stability in the banking industry, these norms, which encompass public deposits, equity, and debt, mandate that banks set aside a specific portion of capital as security against non-recovery risks (*The Basel Committee - Overview, 2011*).

In the year 1988, the Basel Committee (known as BCBS) unveiled the Basel Capital Accord which was a capital measurement system. It was limited to credit risk. It set a minimum capital maintenance requirement for banks that stood out to be 8 per cent of risk-weighted assets (RWAs). Assets having varying risk profiles are referred to as RWA. For instance, compared to personal loans, which lack collateral, an asset secured by collateral would be less risky (*The Basel Committee - Overview, 2011*).

The RBI published recommendations requiring all scheduled commercial Banks to maintain their CARs by Basel standards. The percentage of a bank's total risk-weighted assets to capital that is held as shareholders' equity and in certain other designated classes of capital is known as the capital ratio of shareholders' equity. A CAR of 9 per cent is required for scheduled commercial banks in India, whereas a CAR of 12 per cent is required for public sector banks. These directions come from the Reserve Bank of India. The ratio can be calculated

using Tier -1 capital, Tier -2 capital and total risk-weighted assets. It is given as under:

CAR = (Tier -1 capital + Tier -2 capital)/ Total Risk Weighted Assets

Tier 1 capital: It consists of the equity, reported reserves, and core capital of a bank as they show up on their financial statements. Tier 1 capital is a safety net that enables banks to withstand setbacks and continue operating even in the case of large losses (*Reserve Bank of India*).

Tier 2 capital: It specifies the additional capital that a bank possesses, such as unreported reserves and unsecured subordinated debt instruments with a minimum initial duration of five years. Since Tier 2 capital is more difficult to calculate and liquidate correctly than Tier 1 capital, it is regarded as less dependable than the latter (*Reserve Bank of India*).

The purpose of banking legislation is to strengthen prudential controls to lessen the risks that banks incur. Capital level monitoring is important because it affects banks' competitiveness, risk appetite and financial health.

CAR and Bank Profitability

Various research attempts directed toward finding the nature of the relationship between CAR and the profitability of banks were found. Research outcomes were found advocating both sides of the construct. The ratio of total deposits to total assets and operational efficiency are two elements that affect commercial banks' financial performance. Negative indicators include the core capital ratio and the risk-weighted ratio, whilst positive indicators include the bank's operational efficiency, loan ratio, and loan loss provision (Pradhan & Shrestha, 2017). Research has indicated that a bank's capital level has a favourable impact on its financial performance (Salike & Ao, 2017). There is a positive albeit modest correlation between capital ratio and profitability (Naeem *et al.*, 2017).

The literature shows that the profitability of a bank is meaningfully impacted by its capital adequacy. It concerns whether the capital is sufficient to resist any prospective future uncertainties (Williams, 2007). It is discovered that the capital adequacy ratio has a variable effect on bank earnings. Empirical research indicates that the assets ratio and earnings of banks are positively correlated (Berger, 1995).

Literature Review

The research on banks' financial performance analysis has increased significantly with the implementation of rules laid out under Basel norms. Research indicates that a bank's profitability is influenced by certain internal elements and external economic conditions. Capital adequacy has an impact on banks' profits. It denotes uncertain and unpredictable future risks and outcomes that can be guarded against through capital adequacy by a bank (Kannan, Narain, & Ghosh, 2001).

The Basel standards aim to ensure that banks maintain sufficient capital to safeguard the interests of depositors and the broader public. While it is widely agreed that statutory capital requirements are necessary to mitigate moral hazard and prevent failures, the discussion revolves around determining the adequate level of capital. Capital adequacy has a different relationship with the profitability of a bank. Capital assets ratio and bank profit are directly correlated, according to empirical studies (Ben Naceur, 2003).

The goal of using bank capital is to cover all expenses related to the organization's operating activities. A bank will be seen as having solid operations if its capital adequacy is strong. Capital is crucial to the growth of banks and the preservation of public confidence.

Commercial banks in Ethiopia have a positive and insignificant relationship with profitability, with CAR levels ranging from 10 to 26 per cent. High CAR may attract customers and investors but may drain profit. Capital requirement ratios impact bank profitability, influenced by operational management, risks, and lending activities, contributing towards financial consistency. In addition to that, they create a challenging environment (Asfaw Sole & Babu, 2024).

A study of 37 banks listed in India was conducted. Ten years of data (2009-2018) were collected and it was found that capital adequacy is inversely correlated with asset quality and non-interest income. Outcomes showed a strong positive relationship with net interest margin, return on assets and liquidity ratios. Net interest margin significantly influences return on assets (Senan *et al.*, 2022).

A different study indicates that a high credit deposit ratio impacts banks' capital adequacy and profitability negatively. Banks should focus on cleaning their loan books to enhance capital management. Banks with access to reliable and low-cost Current Account and Savings Account (CASA) deposits can attain higher Net Interest Margins (NIMs). Financial institutions with higher capital adequacy ratios are more capable of withstanding financial difficulties, maintaining their capital base, and ensuring continued profitability. It is essential to uphold a strong asset quality and employ ways to reduce this risk to ensure continued profitability. The proportion of gross non-performing loans in a bank's loan portfolio significantly impacts lost earnings due to increased provisions (Bandyopadhyay, 2022).

According to the findings of a study conducted on Vietnamese commercial banks, the characteristics of bank capital sufficiency and net interest margin have a positive relation with profitability. The measures of non-performing loans impact negatively on bank profitability. Additionally, it was shown that the adequate capitalization of a bank has a favourable effect on the return on assets as well as net interest margin. Interest margin was positively related to the profitability of banks (Nguyen, 2020).

Al-Sharkas & Al-Sharkas (2022) researched the effects of capital adequacy, NPA loans and cost-to-income ratio on bank profitability in Jordan. ROA and ROE are metrics utilized to assess the profitability metrics of banks. Banks' profitability which is measured through Return on Assets is inversely impacted by the capital adequacy ratio, but Return on Equity is directly influenced by capital adequacy. The cost-to-income ratio (CIR) is inversely correlated with both profitability indicators. Furthermore, the data indicate that both bank profitability metrics are adversely impacted by the non-performing loan ratio. According to the findings, a growth in capital adequacy has led to an improvement in overall profitability, as well as an increase in net profit margin and return on assets (Jadhav *et al.*, 2021).

In Nigeria, domestic and private banks were contrasted to determine how capital adequacy affected bank profitability. The findings showed that capital sufficiency had a favourable effect on bank profitability in local banks but had no effect on international banks operating in Nigeria. The study's most significant finding is that capital sufficiency has a significant role in determining how profitable deposit-taking banks in Nigeria can be. In Nigeria, having enough capital increases the confidence of depositors, the general public, and the regulatory body by acting as a buffer against losses that cannot be made up by current earnings (Olalekan & Adeyinka, 2013).

The effect of capital adequacy on profitability, loans and advances and credit risk was measured for 24 Nigerian banks from 2010 to 2014. Bank profitability was measured through profit after tax, loans and advances were taken from the balance sheet and credit risk was measured through non-performing assets. Following the investigation, it was discovered that capital adequacy significantly affects bank profitability. In actuality, banks are more profitable the larger their capital. It can play a significant role in enhancing banks' robustness and safety due to its favourable impact on bank profitability (Agbeja, O. *et al*., 2015).

Chisty (2011) discovered that the equity capital ratio, a non-risk weighted capital adequacy metric, and a bank's profitability (as measured by eight profitability metrics) have a negative link. These findings are significant because they show how the risk adjustment helps to take the level of uncertainty surrounding bank capital levels into consideration. While there is existing literature examining the impact of Capital Adequacy Ratio on various financial metrics such as profitability, return ratios, and asset quality in the banking sector, there is a noticeable gap in research specifically focusing on the nuances of these relationships within the context of selected banks in India. Most studies generalize findings across different geographical regions or banking systems without delving into the unique factors and regulatory environments that characterize Indian banks. Therefore, there is a need for a comprehensive study that analyzes how CAR influences profitability, return ratios, and asset quality in Indian banks.

Research Methodology

The research methodology outlines objectives, hypothesis, overall approach, data collection and data analysis techniques. The primary goal of this study is to determine how capital adequacy impacts selected dependent variables; bank profitability, return on assets, return on equity, net profit margin, operating profit margin, net interest margin and non-performing assets.

For this study, panel data was collected from twelve sample Indian banks over ten years (2014-2023). These banks included six public sector banks and six private sector banks. According to India: Largest Private Indian Banks by Asset 2024, Statista, 2024, these twelve banks control between 70 to 80 per cent of assets controlled by the banking industry in India. The information was obtained from the standalone balance sheet, and profit & loss account. Respective banks' key ratios were also collected for each of the sample banks. In this investigation, secondary data were utilized. The websites Money Control and Stockedge were the primary sources of information for the aforementioned variables during the period spanning from 2014 to 2023. The capital adequacy ratio was calculated to determine the level of adequate capital. To determine the profitability of the bank, the following metrics were incorporated: return on assets, return on equity, net profit margin (%), net interest margin (%), operating profit margin (%), and net non-performing asset ratio (%). Linear regression was performed to comprehensively examine the impact of the capital adequacy ratio on all six variables under consideration. This statistical method was chosen to elucidate and quantify the relationship between the capital adequacy ratio and each of the above six variables, providing a deeper understanding of their interdependencies.

Data Analysis

Finding a statistical relationship between two or more variables is known as regression. There are only two variables in basic regression: one is the independent variable, which determines how the other one behaves, and the other is the dependent variable. Only physical phenomena can be interpreted via regression, meaning that independent variable X must physically influence dependent variable Y (Kothari, 1990).

$$Y = a+bX$$

Regression Assumptions

Before performing linear regression tests using SPSS, assumptions were tested. According to the Boston University School of Public Health (2016), a linear regression model is related to four different assumptions; linearity, homoscedasticity, independence and normality. It was found that there was a

relationship that may be described as linear between the mean of Y and the variable X. Variance of residual is the same for different values of X, which is referred to as homoscedasticity. It was tested and the results satisfied the assumptions of homoscedasticity. For each regressing equation, observations were independent of one another. The normality assumption was also tested and satisfied. Following are the results of linear regression. The results are described as under:

Capital Adequacy Ratio and ROA

The first pair of linear regression was CAR and ROA. The following regression equation was tested:

$ROA = \alpha + \beta CAR$

Simple linear regression analysis was conducted to evaluate the extent to which Capital Adequacy Ratio could predict Return on Assets. A significant regression was found ($F([1], [118]) = 92.543$, $p<0.001$. The R^2 was 0.440, indicating that CAR explained approximately 44 per cent of the variance in ROA. That is, for each unit of increase in CAR, the predicted ROA increased by approximately 0.263 units of measurement. Confidence intervals indicated that we can be 95 per cent certain that the slope to predict ROA from CAR is between 0.209 and 0.318 (Table 1). The regression equation was: ROA = -3.368 +0.263 CAR.

TABLE 1

COEFFICIENTS[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-3.368	.409		-8.232	.000	-4.179	-2.558
	Capital Adequacy Ratio	.263	.027	.663	9.620	.000	.209	.318

[a] Dependent Variable: Return on Assets.

Capital Adequacy Ratio and ROE

The second regression equation was formed between CAR and ROE. The following regression equation was examined:

$ROE = \alpha + \beta CAR$

Simple linear regression analysis was conducted to evaluate the extent to which Capital Adequacy Ratio could predict Return on Equity. A significant regression was found ($F([1], [118]) = 55.823$, $p<0.001$. The R^2 was 0.321, indicating

that CAR explained approximately 32.1 per cent of the variance in ROE. That is, for each unit of increase in CAR, the predicted ROE increased by approximately 2.893 units of measurement. Confidence intervals indicated that we can be 95 per cent certain that the slope to predict ROE from CAR is between 2.126 and 3.660 (Table 2).

The regression equation was: ROE = -39.042 + 2.893 CAR

TABLE 2

COEFFICIENTS[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
2	(Constant)	-39.042	5.785		-6.749	.000	-50.497	-27.587
	Capital Adequacy Ratio	2.893	.387	.567	7.471	.000	2.126	3.660

[a]Dependent Variable: ROE.

CAR and NPM

A third regression equation was formed between CAR and NPM. The following regression equation was tested:

NPM = α+ βCAR

Simple linear regression analysis was conducted to evaluate the extent to which Capital Adequacy Ratio could predict Net Profit Margin. A significant regression was found ($F([1], [118]) = 90.382$, $p<0.001$. The R^2 was 0.434, indicating that CAR explained approximately 43.4 per cent of the variance in NPM. That

TABLE 3

COEFFICIENTS[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
3	(Constant)	-46.493	5.738		-8.103	.000	-57.855	-35.130
	Capital Adequacy Ratio	3.651	.384	.659	9.507	.000	2.891	4.412

[a]Dependent Variable: Net Profit Margin.

is, for each unit of increase in CAR, the predicted NPM increased by approximately 3.651 units of measurement. Confidence intervals indicated that we can be 95 per cent certain that the slope to predict NPM from CAR is between 2.891 and 4.412 (Table 3).

The regression equation was: NPM = - 46.493 + 3.651 CAR

CAR and OPM

The fourth regression equation was formed between CAR and OPM. The following regression equation was formed:

$OPM = \alpha + \beta CAR$

Simple linear regression analysis was conducted to evaluate the extent to which Capital Adequacy Ratio could predict Operating Profit Margin. A significant regression was found ($F([1], [118]) = 45.132$, $p<0.001$. The R^2 was 0.277, indicating that CAR explained approximately 27.7 per cent of the variance in ROA. That is, for each unit of increase in CAR, the predicted OPM increased by approximately 2.871 units of measurement. Confidence intervals indicated that we can be 95 per cent certain that the slope to predict OPM from CAR is between 2.025 and 3.718 (Table 4).

The regression equation was: OPM = -54.459 + 2.871 CAR

TABLE 4

COEFFICIENTS[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
4	(Constant)	-54.459	6.386		-8.528	.000	-67.105	-41.813
	Capital Adequacy Ratio	2.871	.427	.526	6.718	.000	2.025	3.718

[a] Dependent Variable: Operating Profit Margin.

CAR and NIM

The fifth regression equation included CAR and NIM. The following regression equation was tested:

$NIM = \alpha + \beta CAR$

Simple linear regression analysis was conducted to evaluate the extent to which Capital Adequacy Ratio could predict Net Interest Margin. A significant regression was found ($F([1], [118]) = 174.639$, $p<0.001$. The R^2 was 0.597,

indicating that CAR explained approximately 59.7 per cent of the variance in NIM. That is, for each unit of increase in CAR, the predicted NIM increased by approximately 0.186 units of measurement. Confidence intervals indicated that we can be 95 per cent certain that the slope to predict NIM from CAR is between 0.209 and 0.318 (Table 5).

The regression equation was: NIM = -0.013 + 0.186 CAR

TABLE 5

COEFFICIENTS[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
5	(Constant)	-.013	.210		-.061	.952	-.428	.403
	Capital Adequacy Ratio	.186	.014	.773	13.215	.000	.158	.213

[a] Dependent Variable: NIM.

CAR and Net NPA

The sixth regression equation was formed between CAR and Net NPA. The following regression equation was tested:

NNPA = α+ βCAR

Simple linear regression analysis was conducted to evaluate the extent to which Capital Adequacy Ratio could predict Net Non-Performing Assets. A significant regression was found (F([1], [118]) = 89.809 , p<0.001. The R^2 was 0.432, indicating that CAR explained approximately 43.2 per cent of the variance in NNPA. That is, for each unit of increase in CAR, the predicted NNPA decreases

TABLE 6

COEFFICIENTS[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
6	(Constant)	14.056	1.159		12.132	.000	11.762	16.350
	Capital Adequacy Ratio	-.735	.078	-.657	-9.477	.000	-.888	-.581

[a] Dependent Variable: Net Non-Performing Asset.

by approximately 0.735 units of measurement. Confidence intervals indicated that we can be 95 per cent certain that the slope to predict NNPA from CAR is between -0.888 and -0.581 (Table 6).

The regression equation was: NNPA = 14.056- 0.735 CAR

All six regression models indicated a significant impact between variables.

Findings and Discussion

Altogether, these formulas imply that better financial performance measures in several areas, such as profitability (ROA, ROE, NPM), operational efficiency (OPM), interest income management (NIM), and asset quality (NNPA), are linked to CAR. This emphasizes how crucial capital adequacy is concerning the stability and health of the financial system in the context of this analysis. Significant correlations between CAR and selected financial performance measures are shown in regression models. Positive gains are consistently linked to greater CAR in several areas of financial performance.

The study measured the impact of CAR on selected measures of bank profitability and asset/credit quality. The regression models indicated: (i) ROA increased by 0.263 units for every unit increased in CAR and this model explains 44 per cent of the variance in ROA; (ii) ROE increased by 2.893 units for every unit increase in CAR, explaining 32.1 per cent of the variance in ROE; (iii) NPM increases by 3.651 units for every unit increase in CAR, explaining 43.4 per cent of the variance in NPM; (iv) OPM increases by 2.871 units for every unit increase in CAR, explaining 27.7 per cent of the variance in OPM; (v) NIM increases 0.186 units for every unit addition in CAR and that model explained 59.7 per cent of the variance in NIM; (vi) NNPA decreases 0.735 units for every unit addition in CAR. Here, the model explained 43.2 per cent of the variation in NNPA.

Higher CAR shows positive gains in Return on Equity (ROE), Return on Assets (ROA), and Net Profit Margin (NPM), indicating that better profitability is correlated with stronger capital adequacy. While having a somewhat lower explanatory power, the operating profit margin (OPM) likewise has a favourable connection with CAR. The data suggests that institutions with higher capital adequacy also typically manage their interest revenue more successfully, as evidenced by the considerable positive connection between Net Interest Margin (NIM) and CAR.

The concept of capital adequacy is central to the stability, resilience, and effective functioning of banks worldwide. Through this research, the relationship between capital adequacy and key aspects of banking performance, including profitability, return ratios, and asset quality, have been explored with a specific focus on selected banks in India. The findings of this study underscore the

critical importance of maintaining adequate capital levels in banks. A sufficient capital buffer not only enhances a bank's capacity to absorb losses during economic downturns or adverse scenarios but also instills confidence among depositors, investors, and regulators.

Firstly, regarding profitability, our analysis reveals a positive correlation between higher capital adequacy and improved profitability metrics. Banks with robust capital bases are better positioned to sustain profitability over the long term, as they can withstand market fluctuations, credit risks, and operational challenges more effectively. *Secondly,* return ratios such as Return on Assets and Return on Equity exhibit a favourable association with capital adequacy. Banks with higher capital adequacy ratios tend to demonstrate superior returns on their assets and equity, indicating efficient utilization of resources and sound risk management practices. *Lastly,* asset quality indicates that banks maintaining adequate capital levels exhibit better asset quality metrics, including lower levels of non-performing assets (NPAs) and healthier provisioning ratios.

Conclusion

In conclusion, this study has contributed to the significant impact of the Capital Adequacy Ratio on profitability, return ratios, and asset quality of selected banks in India. The findings reveal a strong correlation between CAR levels and financial performance indicators, emphasizing the crucial role of capital adequacy in maintaining a healthy banking system. It is crucial to keep a healthy Capital Adequacy Ratio to maintain or improve banks' profitability, asset quality, operational effectiveness, and financial health.

However, the outcomes of this study need to be comprehended considering certain limitations. While the study draws upon data from selected banks in India, there are limitations regarding the granularity, completeness, and timeliness of the data. These limitations can stem from factors such as data reporting practices, data quality issues and availability of historical data. This limited sample size can constrain the generalizability of the findings and conclusions to the broader banking landscape in India. Furthermore, the research operates within a defined time frame, which can influence the relevance and applicability of the results. Moreover, external factors beyond the scope of the research such as macroeconomic fluctuations, regulatory reforms, geopolitical events and market disruptions, can exert significant influence on banking performance and capital adequacy. While these factors are not directly addressed in the study, they remain critical considerations that can affect the interpretation and practical application of the research outcomes.

In addition, it will be interesting and useful to conduct a comparative analysis of CAR's impact across different banking sectors (e.g., public, private, and foreign banks) over a longer period to identify sector-specific trends and

challenges. Additionally, longitudinal studies tracking the evolution of CAR and its implications over time could offer a broader perspective on its role in shaping the banking landscape. Looking ahead, future research could explore the dynamic impact of changing regulatory environments and economic conditions on the relationship between CAR and financial performance. Incorporating qualitative analyses, such as case studies or interviews with industry experts, could also enrich our understanding of the multifaceted nature of this relationship. Overall, ongoing research in this area will contribute to refining risk management strategies and fostering sustainable growth in the banking sector.

Conflict of Interest

The author declares that they have no conflict of interest.

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