“The impact of Basel III implementation on the financial performance of the banking industry in Bangladesh”

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THE IMPACT OF BASEL III IMPLEMENTATION ON THE FINANCIAL PERFORMANCE OF THE BANKING INDUSTRY IN BANGLADESH

Abstract

The implementation of Basel III regulations has become a crucial factor influencing the financial performance of the banking sector in Bangladesh. The primary objective of this study is to examine the impact of Basel III implementation on the financial performance of the banking industry in Bangladesh. The research utilizes secondary data from 20 commercial banks in Bangladesh, including state-owned, private, and Islamic banks. It offers a diverse and representative sample of Bangladesh's banking sector, covering the period from 2014 to 2023. This variety ensures a comprehensive understanding of different banking models and their challenges, representing the scenario of the whole industry. A multivariate regression model with fixed effects, determined by the Hausman test, was employed to analyze the relationship between capital adequacy (CRAR, Core Capital Tier-1, Tier-1, and Tier-2 Capital Ratios) and bank-specific factors (size, provisions) on performance indicators (ROA and NPL). The findings reveal that higher capital adequacy, particularly the Tier-1 Capital Ratio, and CRAR, positively influences bank profitability (measured by ROA) and reduces NPLs. Conversely, larger bank size correlates with lower ROA and higher NPLs, and increased provisions also lead to higher NPLs. These results underscore the significance of Basel III in enhancing the financial performance and stability of the banking sector in Bangladesh, suggesting that more substantial capital buffers can improve profitability and reduce risks associated with non-performing loans.

Keywords Basel III, capital adequacy, financial performance, banking sector, profitability, non-performing loans, credit risk management, Bangladesh

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INTRODUCTION

The banking industry is critical to economic growth and stability, particularly in emerging economies. The financial crisis of 2007–2008 exposed significant vulnerabilities in the banking sector, leading to widespread reforms to improve economic stability and mitigate systemic risk (Birindelli et al., 2022). In response to the crisis, international regulatory frameworks such as Basel III were developed to strengthen the resilience of banks by introducing more stringent capital adequacy requirements and promoting better risk management practices (Admati et al., 2013; Acosta-Smith et al., 2020). Basel III, with its emphasis on higher capital buffers, liquidity requirements, and leverage ratios, has reshaped the regulatory landscape of the global banking industry (Best, 2021). However, implementing these reforms in emerging markets, such as Bangladesh, raises pertinent questions regarding their impact on local banks' financial performance and stability.

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In Bangladesh, the banking sector has long faced challenges such as high levels of non-performing loans (NPLs), limited capital adequacy, and inefficiencies in risk management (Akter et al., 2019). The adoption of Basel III guidelines, designed to address these issues, could have far-reaching implications for individual banks' performance and the broader financial system. Although several studies have examined the effects of Basel III on banking sectors in developed countries (Birindelli et al., 2022; Fritsch & Siedlarek, 2022), there needs to be more research on its impact in developing countries, particularly in the South. The challenges that Bangladesh faces – such as a less-developed regulatory environment (Al Mamun et al., 2022), a lack of adequate infrastructure for risk management (Ghosh & Saima, 2021), and the specific dynamics of the local banking sector (Mozumder et al., 2024) – make the implementation of Basel III particularly complex.

1. LITERATURE REVIEW

The literature on capital adequacy and its impact on bank performance has been well-established, particularly about implementing Basel III in global banking systems. However, its effects must be more understood within emerging markets such as Bangladesh (Hasan & Suzuki, 2021a). This review focuses on three key themes relevant to this research: the relationship between capital adequacy and profitability (Chandrasegaran, 2020), the effect of capital adequacy on non-performing loans (NPLs) (Lata, 2015), and the role of bank-specific factors in shaping these relationships (Gatzert & Wesker, 2012).

A growing body of literature suggests that higher capital adequacy enhances banks' profitability by reducing the likelihood of insolvency and improving financial stability. Under Basel III, stricter capital requirements, particularly the emphasis on Common Equity Tier 1 (CET1) and capital-to-risk-weighted Assets Ratio (CRAR), are intended to reduce systemic risks and support bank profitability (Poudel, 2012; Akter et al., 2019). Studies in developed markets indicate that banks with more substantial capital buffers enjoy better profitability due to reduced borrowing costs and improved investor confidence. In the context of Bangladesh, however, studies like those by Kinyua (2023) highlight the challenges state-owned and smaller banks face in meeting these capital adequacy ratios, suggesting a mixed effect on profitability in developing economies (Hasan & Suzuki, 2021b).

Capital adequacy plays a critical role in determining banks' financial health and profitability, particularly in the context of regulatory frameworks like Basel III. Adequate capital buffers are essential for absorbing financial crisis shocks, reducing insolvency risk, and maintaining overall stability (Akter et al., 2019). Banks that meet or beat the needed capital adequacy ratios (CAR), like the Capital to Risk-Weighted Assets Ratio (CRAR) and Tier-1 Capital Ratio, are better able to handle financial problems and keep running their businesses without significant problems (Birindelli et al., 2022). Several studies have highlighted a positive relationship between capital adequacy and profitability, suggesting that higher capital ratios enhance investor confidence, improve access to capital, and reduce funding costs, all of which contribute to higher Return on Assets (ROA) (Gabriel, 2016; Gatzert & Wesker, 2012; Zheng et al., 2017). Moreover, banks with sufficient capital reserves are less likely to experience a rise in non-performing loans (NPLs), as they are better equipped to absorb credit losses and maintain liquidity, thus enhancing profitability (Le et al., 2023). Implementing Basel III's capital adequacy requirements in Bangladesh is meant to make banks more financially stable. Early research shows that banks with larger capital buffers do better financially, especially when making money (Hasan & Suzuki, 2021a; Kowoon et al., 2022). However, the relationship between capital adequacy and profitability can be complex, with excessive capital potentially leading to lower returns on equity (ROE), mainly if not deployed effectively (Liu & Stentoft, 2021). This nuanced interaction between capital levels and profitability is an important area of study for understanding the full impact of Basel III on the banking sector, particularly in emerging markets like Bangladesh.

Another critical area of research is the relationship between capital adequacy and non-performing loans (NPLs). A higher capital adequacy ratio

has positively impacted asset quality by enhancing banks' ability to absorb losses and manage risk (Zheng et al., 2017; Mahyoub & Saıd, 2021). In Bangladesh, where NPLs are a persistent issue, studies have found that banks with higher capital buffers are better equipped to manage loan defaults and mitigate financial instability (Mustary, 2021). However, the size and structure of a bank are crucial in determining the extent to which capital adequacy influences NPLs. Larger banks may face higher levels of NPLs due to their more extensive loan portfolios, though their more vital capital positions enable them to absorb these risks better (Osei-Assibey & Asenso, 2015).

Capital adequacy is crucial in managing non-performing loans (NPLs) within the banking sector. Capital buffers, like the Capital Risk-Weighted Assets Ratio (CRAR) and Tier-1 Capital Ratio, help banks handle losses that might come from bad assets (Akter et al., 2019; Birindelli et al., 2022). Banks with higher capital adequacy ratios are generally better equipped to manage credit risk and mitigate the adverse effects of loan defaults, as they have sufficient reserves to cover potential losses without compromising their financial stability (Hasnat & Talukder, 2017; Hasan & Suzuki, 2021a). A well-capitalized bank is less likely to experience a significant rise in NPLs, as it can afford to make more prudent lending decisions and adjust its risk management strategies accordingly (Zheng et al., 2017). Moreover, a strong capital base enables banks to maintain their solvency even during economic stress, which can reduce the likelihood of a sharp increase in NPLs (Le et al., 2023). In the case of Bangladesh, implementing Basel III's capital adequacy requirements has been shown to play an essential role in stabilizing the banking sector and limiting the accumulation of NPLs. The empirical evidence suggests that banks adhering to Basel III capital standards are more resilient to credit risk, thus experiencing fewer NPLs (Kowoon et al., 2022; Mozumder et al., 2024). However, despite the general observation of a positive relationship between capital adequacy and lower NPLs, excessively high capital buffers may lead to reduced credit supply, especially in high-risk lending segments, potentially resulting in a trade-off between capital levels and credit expansion (Fritsch & Siedlarek, 2022). Consequently, understanding the dynamic relationship between capital adequacy and NPLs is vital for assessing the broader impact of capital regulation in the banking sector, particularly in emerging economies such as Bangladesh.

Beyond capital adequacy, bank-specific factors such as bank size, provisions for loan losses, and operational efficiency also play a significant role in shaping the impact of Basel III on financial performance. Research shows that larger banks are more likely to meet capital adequacy requirements but may suffer from inefficiencies that negatively impact profitability (Al-Kattan, 2015; Kowoon et al., 2022; Fritsch & Siedlarek, 2022). In Bangladesh, studies like those by Ahsan and Nishadi (2023) indicate that while larger banks generally maintain better capital ratios, they may face challenges in terms of higher NPLs and operational inefficiencies (Ahmed et al., 2015), which can offset the positive effects of higher capital adequacy (Rahman et al., 2015).

Bank-specific factors, such as size, provisions, and operational efficiency, significantly influence the financial performance of banks, including profitability and the management of non-performing loans (NPLs). The size of a bank plays a dual role in its performance. In contrast, larger banks often benefit from economies of scale and greater market power. However, they can also face challenges in maintaining high profitability, as evidenced by the negative relationship between bank size and return on assets (ROA) in some studies (Akter et al., 2019; Kowoon et al., 2022). Larger banks tend to have more complex operations, which may lead to inefficiencies and reduced profitability (Gatzert & Wesker, 2012).

On the other hand, provisions for insufficient loans, which are reserves set aside to cover potential loan losses, are critical for maintaining the stability of a bank's financial position. Higher provisions can act as a safeguard against rising NPLs, but excessive provisioning may signal underlying issues in loan quality, leading to a decline in profitability (Hasan & Suzuki, 2021a). Additionally, the level of capital adequacy, a bank-specific factor, directly influences how banks respond to credit risk and manage NPLs. The study by Zheng et al. (2017) highlights that well-capitalized banks with robust risk management frameworks are likelier to maintain healthy

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NPL ratios, as they can absorb losses without severely impacting their financial stability.

Moreover, factors such as the bank's risk appetite, governance structure, and management practices also play a significant role in determining the bank's financial performance and resilience to external shocks (Liu & Stentoft, 2021; Hasnat et al., 2025). In Bangladesh, these bank-specific factors are crucial in understanding the broader effects of Basel III implementation on the banking sector's profitability and NPLs. Mozumder et al.'s (2024) research reveals that while capital adequacy positively influences bank performance, individual banks' ability to manage these internal factors also determines the effectiveness of Basel III regulations. Thus, a nuanced approach, considering both regulatory frameworks and internal bank-specific dynamics, is essential for evaluating the overall stability of the banking industry.

In summary, the existing literature suggests that capital adequacy positively correlates with bank profitability and asset quality, though the impact varies based on bank size and specific market conditions. While the benefits of Basel III in enhancing capital buffers are clear, its effects in emerging markets, such as Bangladesh, still need to be explored. This research aims to contribute to understanding how capital adequacy influences profitability (ROA) and non-performing loans (NPLs) in Bangladesh's banking sector.

The primary objective of this study is to examine the impact of Basel III implementation on the financial performance of the banking industry in Bangladesh.

H1: *There is a significant positive relationship between capital adequacy (CRAR, Core Capital Tier-1) and bank profitability (ROA) in Bangladesh's banking industry.*

H2: *There is a significant negative relationship between capital adequacy (CRAR) and non-performing loans (NPLs) in Bangladeshi banks.*

H3: *Bank size negatively affects profitability (ROA) but positively affects non-performing loans (NPLs) in Bangladesh's banking sector.*

2. RESEARCH METHODOLOGY

This study employs a quantitative research methodology to examine the impact of Basel III capital adequacy requirements on the financial performance of banks in Bangladesh. The research uses secondary data from the financial reports of 20 commercial banks operating in Bangladesh from 2014 to 2023. The selected banks include a mix of state-owned, private, and Islamic banks, comprehensively representing the country's diverse banking sector. The banks in the study are City Bank, Jamuna Bank, N.C.C. Bank, One Bank, Trust Bank, U.C.B. Bank, Al Arafah Islami Bank, Bank Asia, BRAC Bank, Dhaka Bank, Dutch Bangla Bank, Islami Bank Bangladesh, Rupali Bank, Janata Bank, Premier Bank, Prime Bank, South East Bank, I.F.I.C. Bank, Eastern Bank, and Pubali Bank. The characteristics of the selected banks are given in the Appendix.

The selection of these 20 banks, encompassing both state-owned (e.g., Rupali Bank, Janata Bank), private commercial banks (e.g., BRAC Bank, Dutch Bangla Bank), and Islamic banks (e.g., Islami Bank Bangladesh, Al Arafah Islami Bank), ensures a diverse and representative sample of the banking sector in Bangladesh. This variation in banking models allows for a comprehensive understanding of the challenges different types of banks face in meeting Basel III requirements and their impact on profitability and non-performing loans (NPLs).

To analyze the data, a multivariate regression model is used, employing ROA (Return on Assets) and NPLs (Non-Performing Loans) as dependent variables, with capital adequacy ratios (CRAR, Tier-1, and Tier-2 capital ratios) and bank-specific characteristics (size, provisions) as independent variables. The fixed-effect model will be applied to account for unobserved heterogeneity across banks, while the Hausman test will be conducted to determine the model's suitability.

3. RESULTS AND DISCUSSION

Statistical analysis of regression investigates the correlation between dependent and independent variables, demonstrating the impact of changes

in one or more independent variables on the dependent variables (Sarstedt & Mooi, 2019). It helps evaluate the strength of these relationships and can be used to predict future interactions. This study applied a multivariate regression model to assess how capital adequacy and bank-specific factors impacted ROA and NPL. Because the research is focused on analyzing the concurrent correlations between Profitability indicators and Capital adequacy with associated bank-specific variables, this model proved helpful and acceptable (Chatterjee & Simonoff, 2013). This study creates a model between Performance indicators, i.e., ROA and NPL, with different variables related to capital adequacy, mainly to banks, such as CRAR, Core Capital Tier-1, Tier-1 Capital Ratio, Tier-2 Capital Ratio, Bank SIZE, and Provision, based on both theoretical and empirical literature that was evaluated.

Model-1:

$$ROA = \beta 0 + \beta 1 CRAR + \beta 2 (CCT - 1) + \beta 3 BS + \beta 4 Prov + \varepsilon_{it}. \quad (1)$$

Model-2:

$$ROA = \beta 0 + \beta 1 CRAR + \beta 2 (T - 1) CR + \beta 3 T - 2 CR + \beta 4 Prov + \varepsilon_{it}. \quad (2)$$

Model-3:

$$NPL = \beta 0 + \beta 1 CRAR + \beta 2 (CCT - 1) + \beta 3 BS + \beta 4 Prov + \varepsilon_{it}, \quad (3)$$

where *CRA*R = Capital to Risk-Weighted Ratio; *CCT*-1 = Core Capital Tier-1; *T-1 CR* = Tier-1; Capital Ratio *T-2CR* = Tier-2 Capital Ratio; *BS* = Bank Size; *Prov* = Provision; β0 = constant of the equation.

The data under consideration for use in regression are described in depth in Table 1. Statistical information and specifics were gathered from the records of 20 Scheduled Banks between 2014 and 2023, including State-owned, privately owned conventional banks, and Islamic banks in Bangladesh. As a result, there are 200 data points for each variable (Thornton et al., 1997). The descriptive statistics measured include the minimum, maximum, mean, standard deviation, skewness, and kurtosis. Skewness assesses how asymmetrical a distribution is. In an asymmetrical distribution, one tail is longer than the other. If the skewness is positive, the distribution leans to the right, while negative skewness means it leans to the left. A skewness of zero suggests a perfectly balanced distribution (MacGillivray & Balanda, 1988). All variables are symmetric except for ROA and NPL, as their skewness falls between –0.5 and 0.5 (MacGillivray & Balanda, 1988). Since the return on assets (ROA), one of the dependent variables, shows negative skewness, its values are distributed unevenly, with a long tail extending to the left. The other dependent variable, NPL, has positive skewness, implying a long distribution tail on the right.

The independent variables – CRAR, Core Capital-Tier-1, T-1 Capital Ratio, Provision, T-2 Capital

Table 1. Descriptive statistics

Variables	ROA	NPL	CRAR	CCT–1	T–1CR	T–2CR	BS	PROV
Mean	0.85	23.00	12.70	23.60	8.94	3.63	26.32	22.63
Median	0.87	22.91	12.62	23.61	8.96	3.56	26.30	22.68
Mode	0.70	22.70	14.70	#N/A	10.40	1.11	25.71	22.41
Standard Error	0.04	0.05	0.15	0.03	0.12	0.11	0.04	0.06
Standard Deviation	0.52	0.77	2.13	0.47	1.76	1.62	0.56	0.80
Sample Variance	0.27	0.60	4.55	0.22	3.08	2.62	0.32	0.63
Kurtosis	22.97	2.07	1.76	0.05	1.86	–0.49	0.58	1.36
Skewness	–2.80	1.12	–0.45	–0.11	–0.45	0.28	0.48	–0.25
Range	5.52	4.64	14.23	2.72	11.97	7.62	3.12	5.48
Minimum	–3.50	21.28	3.70	22.18	1.85	0.82	25.01	19.18
Maximum	2.02	25.92	17.93	24.90	13.82	8.44	28.12	24.66
Sum	169.14	4599.34	2540.12	4719.06	1788.73	726.00	5263.07	4526.09
Count	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00
Largest (1)	2.02	25.92	17.93	24.90	13.82	8.44	28.12	24.66
Smallest (1)	–3.50	21.28	3.70	22.18	1.85	0.82	25.01	19.18

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Table 2. Correlation matrix

Variable	ROA	NPL	CRAR	CCT–1	T–1CR	T–2CR	BS	PROV
ROA	1.00	–	–	–	–	–	–	–
NPL	–0.56	1.00	–	–	–	–	–	–
CRAR	0.37	–0.28	1.00	–	–	–	–	–
CCT–1	–0.0005	0.51	0.36	1	–	–	–	–
T–1CR	0.573	–0.48	0.63	0.12	1.00	–	–	–
T–2CR	–0.11	.10	0.60	0.255	–0.14	1	–	–
BS	–0.39	.71	0.12	0.74	–0.28	0.36	1.00	–
PROV	–0.48	.78	0.002	0.66	–0.31	0.28	.76	1.00

Ratio, and bank size – are symmetric. Positive kurtosis indicates a distribution with more extreme data points (outliers) than a normal distribution, resulting in fatter tails, known as leptokurtic distributions. In contrast, negative kurtosis suggests fewer extreme data points, creating thinner tails, referred to as platykurtic distributions. The table above clarifies that, except for the T-2 capital ratio, all the variables exhibit leptokurtic distributions (Cristelli et al., 2012).

The correlation matrix in Table 2 shows how strongly each pair of variables is linearly related, giving a snapshot of the relationships across the dataset. Correlation coefficients range from -1 to +1, where positive values suggest a linear relationship, and a value of 0 means there's no linear connection (Ramsay et al., 1984). This matrix helps spot multicollinearity, which occurs when independent variables are highly correlated. Since all correlations are below 0.80, multicollinearity is not an issue (Farrar & Glauber, 1967; Hasnat et al., 2024).

The present work conducted the Hausman test on the regression outcomes to determine the most suitable model between fixed and random effects. The Hausman test, established by Hausman in 1978, is extensively employed to compare coefficient estimates in fixed and random effects models (Baltagi, 2008). This methodology evaluates a significant correlation between the regressors and the unobserved random effects specific to each individual. The test findings in the accompanying tables demonstrate that the pertinent effects are statistically significant. Therefore, the null hypothesis is rejected, and the fixed effects model is optimal for Models 1, 2, and 3 in Table 3.

$$ROA = 13.06 + .03CRAR + .0007(CCT - 1) - 0.43BS - 0.39Prov + \varepsilon_{it}. \quad (4)$$

Table 4. Model 1 (Fixed effect)

ROA	Coefficient	Std. err	t	P > T
CRAR	.03**	.019	1.84	0.068
CCT1	.00007***	.00004	6.36	0.00
BS	–0.43***	0.10	–4.27	0.00
Prov	–0.39***	.081	–4.87	0.00
Cons	13.06	2.07	9.59	0.00

Note: ** and *** denote significance levels; ** p < 0.05; *** p < 0.01.

The equation under consideration is elucidated in Table 4 as follows: It may be asserted that a significant relationship exists between all the independent factors and the dependent variable, namely ROA. The CRAR regression coefficient is 0.03, which is positive and significantly related to ROA in a positive way. This means that for every additional degree of CRAR, ROA will increase by 0.03 on average if other variables remain constant (Sen, 1968). In many researches, it has been found that with adequate capital maintenance, banks' profitability rises. The regression coefficient for the CCT -1 is 0.00007, indicating a positive relationship. This implies that for every extra degree of rise in CCT -1, the Return on Assets will necessarily increase by 0.00007 points, assuming all other variables remain constant (Asuero et al., 2006). The regression coefficient of the Bank Size

Table 3. Hausman test

Description	TEST-1	TEST-2	TEST-3
PROB > CHI2	0.0377	0.1	0.0022
CHI2(N)	8.44	5.62	16.67
TEST TO BE PERFORMED	Fixed	Fixed	Fixed

is -0.43, which is negatively related to ROA (Sen, 1968). This means that for every additional degree of bank size, ROA will decrease by 0.43 on average if other variables remain constant. As the total asset is the denominator in ROA, the ROA will decline with an increasing total asset. The regression coefficient of provision is –0.39, indicating a harmful dependency between provision and ROA. Each incremental rise in provision will result in a corresponding fall of 0.39 points in the Return on Assets, assuming all other factors stay the same (Asuero et al., 2006; Liu & Stentoft, 2021). As the provision is subtracted from the operational profit, a higher provision will lead to a lower profit. In conclusion, the null hypothesis is refuted, indicating a substantial correlation between CRAR, Core Capital Tier-1, Bank Size, and regulatory provision with ROA (Kinyua, 2023).

$$ROA = -0.5 + 0.076CRAR + 0.093(T-1)CR - 0.10(T-2)CR + \varepsilon_{it}. \quad (5)$$

Table 5. Model 2 (Fixed effect)

ROA	Coefficient	Std. err	t	P > t
CRAR	0.076**	.045	1.67	0.095
T-1CR	0.093**	.044	2.12	0.034
T-2CR	–0.10**	.047	–2.21	0.027
Cons	–0.5	.22	–2.54	0.011

Note: ** and *** denote significance levels; ** p < 0.05; *** p < 0.01.

The dependent variable, ROA, is substantially correlated with all of the independent variables in this equation in Table 5. The CRAR regression coefficient is 0.076, which is positive and significantly related to ROA in a positive way (Sen, 1968). This means that for every additional degree of CRAR, ROA will increase by .076 on average if other variables remain constant. As the total asset is the denominator in ROA, the ROA will decline with an increasing total asset (Rossignolo, 2020). The regression coefficient of the T-1CR is 0.093, which is positively related to ROA. This means that for every additional degree of T-1CR, ROA will increase by 0.093 on average if other variables remain constant (Asuero et al., 2006). The regression coefficient of the T-2CR is 0.10, which is negatively related to ROA. This implies that the average ROA will diminish by 0.10 for each additional degree of T-2CR, provided that other variables remain constant. Therefore, the null hypothesis is refuted, and it can be concluded that ROA significantly correlates with CRAR, T-1 capital ratio, and T-2 capital ratio (Kowoon et al., 2022).

$$NPL = 0.31 - 0.039CRAR + 0.054(CCT-1) + 0.60BS + 0.26Prov + \varepsilon_{it}. \quad (6)$$

Table 6. Model 3 (Fixed effect)

NPL	Coefficient	Std. Err.	t	P > T
CRAR	–0.039**	0.01	–2.19	0.030
CCT1	0.054	0.11	0.48	0.633
BS	0.61***	0.08	6.86	0.00
Prov	0.26***	0.07	3.61	0.00
Cons	0.31	1.88	0.17	0.869

Note: ** and *** denote significance levels; ** p < 0.05; *** p < 0.01.

The following explains this equation in Table 6: It is possible to assert that the dependent variable, NPL, is substantially correlated with all independent variables except CCT-1. The regression coefficient of CRAR is –0.039, which is harmful and significantly negatively related to NPL (Sen, 1968). This means that for every additional degree of CRAR, NPL will decrease by .039 on average if other variables remain constant. As with increasing adequate capital, profitability increases, and as profitability and NPL are negatively related, CRAR is also negatively related to NPL. The regression coefficient of the CCT-1 is 0.054, but the relationship between CCT-1 and NPL is insignificant. The regression coefficient of the Bank Size is 0.61, which is positively related to NPL (Asuero et al., 2006). This means that for every additional degree of bank size, NPL will increase by 0.61 on average if other variables remain constant. Provision is positively related to NPL as the regression coefficient of provision is 0.26 (Mozumder et al., 2024). This implies that every time there is an increase in provision by an additional degree, the non-performing loan will also increase by 0.26 points if other variables remain constant (Sen, 1968). As banks need to keep provisions against classified loans, it is evident that with increasing NPL, the level of provision will also rise. So, the null hypothesis is rejected, and it can be said that CRAR, Bank Size, and regulatory provision have a significant relationship with NPL (Osei-Assibey & Asenso, 2015; Mahyoub & Saıd, 2021).

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CONCLUSION

The primary objective of this study was to examine the impact of Basel III implementation on the financial performance of the banking industry in Bangladesh, focusing on the relationship between capital adequacy and key performance indicators such as profitability and non-performing loans (NPLs). The analysis, based on secondary data from 20 commercial banks over the period 2014–2023, revealed that higher capital adequacy, particularly the Tier-1 capital ratio and the Capital to Risk-weighted Assets Ratio (CRAR), positively influenced the profitability of banks and contributed to a reduction in NPLs.

These findings suggest that the implementation of Basel III regulations has had a beneficial effect on the stability and financial health of the banking sector in Bangladesh. Higher capital buffers enhance banks' ability to absorb shocks, improving their profitability and reducing credit risk. This suggests that the capital adequacy measures introduced by Basel III are practical tools for strengthening the financial performance of Bangladeshi banks, especially in the context of emerging market challenges.

However, while the results indicate a positive influence on profitability and NPLs, the study also highlights that the full benefits of Basel III have yet to be fully realized, mainly due to challenges such as limited regulatory enforcement and infrastructural gaps. Therefore, further efforts are needed to ensure the smooth and effective implementation of Basel III and a more robust risk management framework to maximize its potential benefits for the Bangladeshi banking sector.

In conclusion, this study provides valuable insights into the impact of Basel III on the financial performance of banks in Bangladesh, underlining the importance of capital adequacy in maintaining stability and profitability within the banking industry.

AUTHOR CONTRIBUTIONS

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CONFLICT OF INTEREST STATEMENT

Author(s) reported no conflict of interest.

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APPENDIX A

Table A1. List of selected banks

No.	Bank name
1	City Bank
2	Jamuna Bank
3	N.C.C. Bank
4	One Bank
5	Trust Bank
6	U.C.B. Bank
7	Al Arafah Islami Bank
8	Bank Asia
9	BRAC Bank
10	Dhaka Bank
11	Dutch Bangla Bank
12	Islami Bank Bangladesh
13	Rupali Bank
14	Janata Bank
15	Premier Bank
16	Prime Bank
17	South East Bank
18	I.F.I.C. Bank
19	Eastern Bank
20	Pubali Bank

Table A2. Characteristics of banks

Bank name	Characteristics
City Bank	Leading private sector bank, offers retail, corporate banking, and innovative digital services
Jamuna Bank	Focuses on retail and SME banking, known for its customer-centric approach and community outreach
N.C.C. Bank	Provides retail and corporate banking, with a strong focus on rural and SME financing
One Bank	Emphasizes corporate and institutional banking, with a growing focus on retail and digital services
Trust Bank	A private commercial bank, known for offering diversified financial services, including remittances
U.C.B. Bank	Known for offering a variety of personal banking products, and strong corporate banking services
Al Arafah Islami Bank	An Islamic bank offering Shariah-compliant products, including corporate and retail banking services
Bank Asia	Focuses on SME banking, retail banking, and innovative digital banking solutions
BRAC Bank	Offers retail, SME, and corporate banking services, known for its strong focus on financial inclusion
Dhaka Bank	Provides a full range of banking services with a strong emphasis on corporate banking
Dutch Bangla Bank	Known for its technological advancements in banking, especially in mobile banking and digital services
Islami Bank Bangladesh	One of the largest Islamic banks in Bangladesh, offering Shariah-compliant financial services
Rupali Bank	Offers a variety of banking services with a focus on trade finance and remittance services
Janata Bank	One of the largest state-owned commercial banks, providing services to individuals and businesses
Premier Bank	Known for its commercial banking services and focus on lending to SMEs.
Prime Bank	Offers both retail and corporate banking services, with a strong presence in the capital market
South East Bank	Provides a full range of banking services with a focus on trade and project financing
I.F.I.C. Bank	Focuses on retail banking and Islamic banking services, offering Shariah-compliant products
Eastern Bank	Known for its strong corporate banking portfolio and retail services with modern digital solutions
Pubali Bank	Offers a range of retail and corporate banking products, with a focus on SME financing and remittances

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