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A Critical Review of the Impact of Capital Adequacy on Bank Performance and the Mediating Factors in the Causal Relationship

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Abstract

The critical review aims to evaluate the direct and indirect impact of capital adequacy on banking performance. The current review summarizes research on the impact of capital adequacy and mediating factors on commercial bank performance. Most studies used panel data regression, while some used structural equation modeling. Methodological differences affect the results and comparability between studies.

Research gaps include the need for longitudinal studies and the impact of risk management strategies.

Studies have shown a positive relationship between capital adequacy ratios (CAR) and profitability. Studies suggest that high CARs help banks absorb losses and reduce the risk of bankruptcy. Contradictory evidence exists, with some studies showing negative effects on profitability. Furthermore, the review showed that credit risk is affected by non-performing loans, which threatens bank stability. High CARs can also lead to excessive lending, which impacts profitability. Credit risk also negatively impacts profitability measures such as return on equity/return on assets. The critical review indicated that liquidity risk affects a bank's ability to meet its short-term obligations, and that high capital can help withstand liquidity shocks, but overdrawn balances are detrimental. High capital adequacy ratios may lead to increased operating costs, impacting profitability. Macroeconomic factors, such as growth, inflation, and interest rates, also shape the relationship between capital and performance. Furthermore, previous studies have indicated that developments in financial technology (FinTech) complicate the relationship between capital adequacy and performance. New technologies can improve efficiency, but they require adequate capital, and studies have shown mixed effects of capital

adequacy on performance in the FinTech context. The discrepancy in results may be due to differences in one or more of the methodological elements used.
The review recommends that future research focus on long-term effects, the interactions of mediating factors, and evolving regulatory implications.

Keywords: Capital Adequacy, Bank Performance, Credit risk, Liquidity Risk, Macroeconomic Conditions, Fintech and Innovations in Technology

Introduction

The relationship between capital adequacy and bank performance is a central topic in financial stability research. Adequate capital provides a buffer against losses, enhancing a bank's resilience to economic shocks and preventing failures (Adeyoti, 2022, David, 2023). However, the precise nature of this relationship and the mediating factors influencing it remain a subject of ongoing research.

This paper aims to provide a critical review of the existing literature on the relationship between capital adequacy and bank performance, which may inform policymakers and banking institutions of effective strategies to maintain financial stability. It also aims to identify and analyze the mediating factors influencing this relationship. Furthermore, the critical review highlights gaps in current research methodologies and suggests areas for future research.

The significance of this research lies in its ability to deepen the understanding of how capital adequacy affects bank performance. By addressing the complexities and multifaceted nature of this relationship, the critical study seeks to contribute to the broader debate on financial regulation and risk management in the banking sector.

This critical study contributes to a comprehensive synthesis of existing studies, uncovering a range of findings related to the relationship between capital adequacy and profitability, and identifying the complexities and potential conflicting effects of various intervening factors, such as credit risk, liquidity risk, and macroeconomic conditions. Finally, the critical study highlights the need for effective methodologies and comparative analyses in future research and studies to develop a more comprehensive understanding of the relationship between capital adequacy and banking performance.

Direct Effect of Capital Adequacy on Bank Performance

Capital adequacy is the amount of capital that financial institutions must hold to meet regulatory requirements and ensure their financial stability (AlZoubi, 2021). Bank performance is multidimensional; it can be approached from the perspective of bank efficiency, risk tolerance, and market competition (Marco, Zhou, Yong, & Hua, 2016). In addition, Dang (2020) used the approach of the relationship between lending and fee-based activities to assess bank performance. There is an abundant amount of literature looking into the connection between capital adequacy and bank performance, which is frequently gauged in terms of return on assets (ROA), or return on equity (ROE) (Karki, 2019), (Rayamajhi, 2024). In general, it is established that there is a positive relationship between capital adequacy ratios (CAR) and profitability (Mir, NaN), (Hamah, NaN). This means that banks which hold more capital are in a better position to absorb losses, which lowers the risk of bankruptcy and increases the chances of profitability.

For instance, a study conducted by Rayamajhi and Bhandari on the commercial banks of Nepal found that the CAR contributed positively to the ROA of the bank. This is all due to the increased stability of the financial system, decreased funding costs, and increased lending profitability. There is, however, dissenting evidence of this positive impact. For example, Lee's study finds that CAR has contrasting effects on banking performance as it has negative effects on profitability (ROA) and asset quality (NPL), yet increases efficiency (BOPO) (Lee, 2023). This elucidates the complexity of the relationship, which leaves room for the assumption that capital adequacy depends on a combination of other factors concerning the particular performance indicator in question. The study done by Oba (Oba, 2015) was focused on Nigerian banks.

Mediating Factors: Credit Risk

Credit risk is chiefly impacted by the not repaid loans, the existing ones constitute an enormous threat (Karki, 2019; David, 2023). Banks with higher CARs are more likely to capture market share via increased aggressive lending, which reduces the value of capital in terms of profits (Mafumbo 2020). Capital also enhances performance because strong capital shields the adverse impacts of credit defaults which the entity would otherwise suffer from (Rosita, 2024). Existing literature indicates that credit risk lowers profitability, as was showcased in Karki and Aryal's study on commercial banks in Nepal with the negative relations of ROE/ROA with loan loss provision, non-performing loans. Similar findings were reported by David and Sola concerning microfinance banks in Nigeria where the ratio of non-performing loans was proven to have a negative substantial effect on the banks' return on assets (David, 2023). This data depicts the importance of proper and active management of credit risks to ensure the benefits of sufficient capital are achieved. Evidence from Mafumbo's (2020) study in Uganda also showed that the magnitude of Non-Performing Loans have a significant negative impact on the performance of banks, credit risk management being paramount.

Mediating Factors: Liquidity Risk

Liquidity risk is another significant mediating element that captures a bank's potential failure to fulfill short-term operational tasks (Karki, 2019; Margono, 2020). Although higher capital may enhance a bank's ability to withstand liquidity shocks, a severely overdrawn balance, termed overextended inadequate liquidity, is pernicious regardless of the CAR (Iman, 2017). Karki and Aryal suggested that liquidity ratios which correspond to maximum profits ought to be preserved, as they found adverse relations to ROE/ROA with liquidity ratios (Karki, 2019). Adequate liquidity, on the other hand, allows banks to better manage their assets and take advantage of lending opportunities, which can result in improved profitability (Margono, 2020). Iman, Nurdin and Azib (Iman, 2017) pointed out that Loan to Deposit Ratio (LDR) and Capital Adequacy Ratio (CAR) had significant and positive effect on Return on Asset (ROA) of Indonesian banks, demonstrating that both liquidity and capital adequacy positively impact. Nonetheless, Rubitha Rosita has reversed that study confirming that capital adequacy of Indonesian banks has no significant impact on financial performance confirming the enormous effect liquidity risk (LDR) entails (Rosita, 2024). Clearly, this demonstrates that more attempts are necessary to address the mediating inf

Mediating Factors: Operating Efficiency

Amidst other factors, operating efficiency—defined as a bank's ability to control its costs—meditates as well (Lee, 2023; Muhadzdzib, 2022). High CARs may result in some banks being more willing to incur operating cost which may lower profitability (Margono, 2020). Despite that, strong capital positions are said to allow the financial slack needed to spend on technologies and processes of greater efficiency (Siagian, 2023). One Lee study shows that capital has a positive effect on efficiency (BOPO) but that imposing a moderating role of fintech renders the effect statistically insignificant (Lee, 2023). It implies that the influence of capital on efficiency is not straightforward. The study by Muhadzdzib and Leon remarked that management efficiency had a strikingly negative value for financial performance, underlining the need for cost control to enhance performance.

Mediating Factors: Macroeconomic Conditions

The relationship between capital adequacy and banking performance can be significantly shaped by macroeconomic factors like economic growth alongside inflation and interest rates (Dao, 2020; Muhoho, 2019). All banks experience increased profitability during economic expansion periods without regard to their capital levels (Hamah, NaN). Banks with weaker capital positions face more severe consequences during economic downturns according to Majid (2020). The research by Dao and Nguyen in Vietnam showed significant impacts of GDP growth on CAR and ROE which emphasized the significance of macroeconomic factors (Dao, 2020). The research by Muhoho, Kanini, and Abayo in Kenya revealed that money supply has a direct impact on banking performance and the moderating influence of capital adequacy varies with different macroeconomic variables (Muhoho, 2019). These research outcomes emphasize the need to incorporate macroeconomic factors in the evaluation of capital adequacy's effect on banking performance.

Mediating Factors: Fintech and Innovations in Technology

The combination of the development of fintech and advancement in technology has been found to complicate the relationship between capital adequacy and banking performance (Lee, 2023; Nuralya, 2024). Fintech solutions can mitigate the negative profit margin impact emanating from increased capital requirements because of improved efficiency and cost reduction (Amal, 2024). According to Nuralya (2024), the new technologies require funding which can stress resources when capital levels are insufficient. In Lee's research, he mentioned finch as an important moderator on how capital is related to various performance measures (Lee, 2023). Ulfah Nuralya, Putri and Leon Ulfah Nuralya conducted the Indonesian study that demonstrated the positive effect of internet banking on financial performance, but stated that capital adequacy ratios did not significantly affect the results (Nuralya, 2024). The impact of fintech on capital redefines how it affects organizational performance.

Cross-Country Comparisons and Regional Differences

Various countries demonstrate the differences for the relation of capital adequacy and banking performance (Karki, 2019), (Rayamajhi, 2024), (David, 2023), (Hamah, NaN). These differences might be products of eclectic regulatory systems, macroeconomic factors, banking systems, and stages of economic development (Yakubu, 2021). Nepal (Karki, 2019), (Rayamajhi, 2024), Vietnam (Dao, 2020), Nigeria (David, 2023), (Oba, 2015), and Ghana

(Hamah, NaN) studies showed capital adequacy assessing performance relations with differing powers. However, the strength and significance of this relation varies with contexts. The study by Yakubu and Bunyaminu (Yakubu, 2021) focused on sub-Saharan Africa and described the necessity of institutional quality considerations for the effects of capital requirements on bank stability. These differences give importance to the need for specific studies on each country rather than general analyses on the relationship between capital adequacy and banking performance.

Considerations for Research Methods and Remaining Gaps

Out of the five post-2000 studies reviewed, the majority utilized panel data regression analysis while some used structural equation modeling (Mir, NaN), (Dao, 2020), (Almanaseer, NaN). The methodology utilized along with the inclusiveness of specific variables tends to affect the results (Siagian, 2023). While some studies had controls for heteroscedasticity and autocorrelation (Mir, NaN), others did not which relatively decreases the accuracy of their results (Rosita, 2024). In addition, how banking performance is defined as well as measured differs from study to study making it difficult to compare more than two studies at a time (Muhadzdzib, 2022). These gaps need to be filled. Explore the effects of capital adequacy on performance over time, the interplay of various mediating factors, the changeable nature of regulation with technology (Amal, 2024). There is a need to study how some risk management strategies impact capital adequacy and the performance of a bank (Mafumbo, 2020). Research that incorporate and compare different banking systems with differing environments to deduce findings that can be generalized would be helpful.

Conclusion

The impact of capital adequacy on banking performance is complex and multifaceted. While a positive correlation is often observed, the precise nature of this relationship is influenced by several mediating factors, including credit risk, liquidity risk, operating efficiency, macroeconomic conditions, and technological advancements. Studies reveal a range of findings, with some showing a consistent positive relationship between capital adequacy and profitability, while others highlight the complexities and potential for conflicting effects depending on various factors and specific performance metrics. Cross-country comparisons reveal variations stemming from differences in regulatory environments, economic conditions, and banking systems. Addressing the identified research gaps through robust methodologies and comparative analyses is crucial for developing a more comprehensive understanding of this crucial relationship and informing effective policymaking. Future research should focus on the long-term effects, interactions among mediating factors, and the impact of evolving regulatory frameworks and technological changes on the relationship between capital adequacy and banking performance.

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