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Article

The Impact of Bank Stability and Operational Risk on Bank Performance

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Abstract

This study examines the impact of bank stability and operational risk on the performance of scheduled banks in Pakistan over the period 2014–2023. Bank stability is measured using the Z-score, operational risk is assessed via the Basic Indicator Approach (BIA), and bank performance is evaluated using Return on Assets (ROA). Firm-specific control variables, including firm age and firm growth, are also incorporated. Data were collected from the State Bank of Pakistan and the annual reports of scheduled banks, and analyzed using dynamic panel data regression (Arellano-Bond GMM) along with descriptive statistics and correlation analysis. The findings reveal that past performance significantly predicts current profitability, emphasizing the persistence of bank outcomes over time. Contrary to initial expectations, higher Z-scores are associated with lower ROA, suggesting that excessive conservatism may constrain income-generating activities in a highly regulated environment. Surprisingly, higher BIA values show a positive association with performance, indicating that operational scale and income potential may outweigh risks captured by this measure. Firm age positively affects profitability, highlighting the advantages of experience and institutional maturity, while rapid firm growth negatively impacts ROA, reflecting the operational and managerial challenges of aggressive expansion. These results provide important insights for bank managers, regulators, and investors. Banks should balance stability with strategic risk-taking, adopt more nuanced operational risk management practices, and pursue carefully planned growth to sustain long-term profitability. The study contributes to the literature by jointly examining financial stability and operational risk in Pakistan, offering a deeper understanding of their complex effects on bank performance. Limitations and directions for future research are also discussed.

Keywords: bank stability; Z-score; operational risk; basic indicator approach; return on assets; scheduled banks; State Bank of Pakistan; firm age; firm growth; panel regression

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1. Introduction

The banking sector plays a very important role in the financial stability and economic development of any nation (Chiaramonte et al., 2024). In Pakistan, the banking sector is highly regulated and forms the backbone of the entire financial system. Increasing attention from researchers, regulators, and practitioners has been directed toward the study of bank performance and the analysis of factors that influence it. Among the various determinants of bank performance, bank stability and operational risk are particularly important; however, they are often overlooked in developing countries such as Pakistan (Irum & Abbas, 2025).

Bank stability reflects a bank's ability to withstand unfavorable economic conditions and its likelihood of survival during periods of financial stress (Safiullah & Paramati, 2024). In contrast, operational risk refers to the risk of losses resulting from inadequate or failed internal processes, human errors, system failures, or external events (Nazir et al., 2024). Ineffective management of bank stability or operational risk can seriously undermine a bank's profitability and financial soundness (Maeenuddin et al., 2024). Therefore, the primary objective of this study is to examine the impact of bank stability, measured by the Z-score, and operational risk, measured using the Basic Indicator Approach (BIA), on bank performance, proxied by Return on Assets (ROA). Firm age and firm growth are included as control variables. This study utilizes data from all scheduled banks in Pakistan over the period from 2014 to 2023.

Although extensive research has been conducted on traditional banking risks such as credit risk and market risk, limited attention has been given to operational risk and financial stability in the context of bank performance in Pakistan. The growing complexity and digitization of banking services have increased banks' exposure to operational risks, while maintaining financial stability has become essential for sustainable performance. Accordingly, this study addresses the following research problem: What is the impact of bank stability and operational risk on the performance of scheduled banks in Pakistan?

This study contributes to a better understanding of risk management practices in Pakistani banks and their implications for overall performance. While previous studies have largely focused on credit and market risks, this research examines two relatively underexplored areas—operational risk and financial stability. By focusing on these dimensions, the study provides fresh insights into the banking and finance literature, particularly in the Pakistani context, where banking practices are rapidly evolving. The findings are expected to benefit policymakers, bank managers, and financial regulators. Policymakers may use the results to design regulations that promote both safety and profitability, while bank managers can identify critical risk areas that require greater attention to improve performance without increasing exposure. Financial regulators may also use the findings to reassess existing risk evaluation frameworks to better align them with sectoral needs.

Operational risk, which includes losses arising from internal system failures, employee errors, or external shocks, is often underestimated in Pakistan. This study highlights the importance of effective operational risk management in protecting banks from unexpected losses. At the same time, financial stability, measured through the Z-score, indicates a bank's capacity to absorb financial shocks, emphasizing the close relationship between stability and profitability—a balance that every bank seeks to achieve. Overall, this study not only contributes to academic literature but also provides practical insights. By using real-world data from 2014 to 2023, it offers timely and reliable evidence that can help strengthen the banking sector and support its long-term growth.

Understanding the factors that influence bank performance is crucial for financial stability and economic growth. This study examines the effects of bank stability, operational risk, and firm-specific characteristics on the performance of scheduled banks in Pakistan. To achieve this objective, the study addresses the following research questions:

Q1: What is the impact of bank stability (Z-score) on the performance (ROA) of scheduled banks in Pakistan?
Q2: What is the impact of operational risk, measured using the BIA, on bank performance (ROA)?
Q3: What is the impact of firm age and firm growth on bank performance?

2. Literature Review

The performance of banks is influenced by a combination of internal and external factors, among which financial stability, operational risk management, and firm-specific characteristics play a central role (Ahmad, 2025). In developing economies, banking systems often operate under conditions of macroeconomic volatility, regulatory pressure, and rapid technological change, making the examination of these factors particularly important (Chai et al., 2022).

2.1. Bank Stability and Bank Performance

Bank stability refers to a bank's capacity to absorb financial shocks and continue operating without experiencing distress or insolvency (Saadaoui & Ben Salah, 2023). A commonly used measure of stability is the Z-score, which combines profitability, leverage, and earnings volatility into a single indicator of insolvency risk. A higher Z-score indicates a lower probability of failure and, therefore, a more stable banking institution. The literature consistently emphasizes that stable banks are more resilient to adverse economic conditions and are better equipped to sustain profitability over time. Financial stability enables banks to maintain consistent lending activities, manage liquidity effectively, and retain investor and depositor confidence (Salim et al., 2023). Stable banks typically experience lower earnings volatility, which reduces uncertainty and supports long-term planning and investment (Nguyen et al., 2022). This stability also allows banks to adopt more efficient asset allocation strategies, leading to improved financial performance indicators such as ROA (Elnahass et al., 2021). In periods of economic stress or financial turbulence, stable banks tend to outperform less stable institutions. Their stronger capital buffers, prudent risk management practices, and diversified income sources allow them to withstand shocks and continue generating profits. While some studies suggest that highly stable banks may adopt conservative lending strategies that limit short-term profitability, the prevailing view is that stability enhances long-term performance by reducing insolvency risk and fostering sustainable growth. In the context of developing economies such as Pakistan, bank stability is particularly critical. Banks operate in environments characterized by regulatory reforms, inflationary pressures, and evolving financial markets (Khattak et al., 2023). Under such conditions, stable banks are more capable of managing uncertainty and maintaining profitability. Consequently, the literature supports a positive relationship between bank stability and bank performance.

H1: Bank stability is positively related to bank performance.

2.2. Operational Risk and Bank Performance

Operational risk arises from failures in internal processes, people, systems, or from external events. Unlike credit and market risks, operational risk is often embedded in day-to-day banking activities and may not be immediately observable (Harb et al., 2023). However, its impact on bank performance can be substantial, particularly when internal controls and governance mechanisms are weak. In many developing countries, operational risk is commonly measured using the BIA due to its simplicity and limited data requirements. The literature indicates that higher operational risk is associated with increased operating costs, inefficiencies, and financial losses (Yousef et al., 2023). Banks facing elevated operational risk often incur higher expenses related to system failures, fraud, regulatory penalties, and process inefficiencies, which directly reduce profitability (Hunjra et al., 2022). Operational risk management has become increasingly important with the expansion of digital banking, electronic payment systems, and automated processes. While technological advancements improve efficiency, they also expose banks to new forms of risk, including cyber threats and system disruptions (Galletta et al., 2023). Banks that fail to invest in robust internal controls, staff training, and technological infrastructure are more likely to experience operational failures that negatively affect performance. Empirical studies generally find a negative relationship between operational risk and bank performance. Inefficient operations reduce returns on assets and weaken overall financial outcomes. Therefore, effective operational risk management is essential for improving efficiency, minimizing losses, and sustaining profitability.

H2: Operational risk is negatively related to bank performance.

2.3. Firm Growth and Bank Performance

Firm growth reflects the expansion of a bank's operations and is commonly measured through increases in assets, deposits, loans, or market share (Agarwal & Elston, 2001). Growth is often viewed as a signal of competitive strength, managerial effectiveness, and investor confidence. Expanding banks are generally able to exploit economies of scale, diversify income sources, and enhance revenue-generating capacity (Delfino, 2007). Firm growth positively influences bank performance by improving operational efficiency and profitability. As banks grow, fixed costs can be spread over a larger asset base, leading to lower average costs and higher returns (Homma et al., 2014). Growth also allows banks to expand into new markets, introduce innovative financial products, and attract a broader customer base, all of which contribute to improved financial performance. However, the growth must be managed carefully. Rapid expansion without adequate risk management can strain internal systems and increase exposure to credit and operational risks. Banks that successfully balance growth with strong governance and internal controls are more likely to achieve sustainable performance improvements (Bhutto et al., 2023). Overall, existing research supports the view that firm growth, when supported by effective management practices, has a positive impact on bank performance.

H3: Firm growth is positively related to bank performance.

2.4. Firm Age and Bank Performance

Firm age represents the length of time a bank has operated in the market and serves as a proxy for institutional maturity, experience, and accumulated knowledge (Fok et al., 2004). Older banks typically benefit from established customer relationships, strong brand reputation, and refined operational processes (Sinebe, 2021). These advantages contribute to improved decision-making and more effective risk management. Firm age is positively associated with bank performance (Coad et al., 2018). Mature banks tend to have well-developed internal systems, experienced management teams, and greater familiarity with regulatory requirements. This institutional knowledge enables them to navigate economic fluctuations and regulatory changes more effectively than younger banks (Danso et al., 2024). While younger banks may exhibit faster growth due to aggressive expansion strategies, older banks often demonstrate more stable and consistent profitability (Cowling et al., 2018). Their long-standing presence in the market enhances depositor trust and investor confidence, which supports financial stability and performance. In banking sectors characterized by regulatory complexity and economic volatility, such as Pakistan, firm age plays an important role in determining performance outcomes. Therefore, the literature supports a positive relationship between firm age and bank performance.

H4: Firm age is positively related to bank performance.

Figure 1 presents theoretical framework.

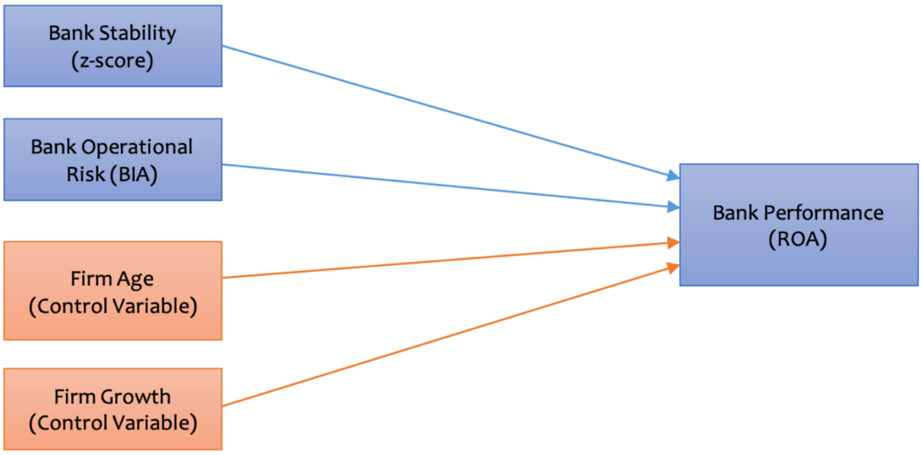

Figure 1. Theoretical framework.

3. Methodology

This study employs a quantitative research design to examine the impact of bank stability and operational risk on the performance of scheduled banks in Pakistan. A panel data approach is adopted, as it allows the analysis of both cross-sectional differences among banks and variations over time. The use of panel data enhances the reliability of the results by controlling for unobserved heterogeneity and improving estimation efficiency.

The population of the study consists of all scheduled banks licensed by the State Bank of Pakistan. The sample includes public and private commercial banks, Islamic banks, specialized banks, foreign banks, and microfinance banks, while investment banks are excluded due to their distinct operational structures and financial reporting practices. A census sampling technique is applied, and all banks with available and complete data for the period from 2014 to 2023 are included in the analysis. This approach ensures broad representation of the Pakistani banking sector.

Secondary data are collected from the annual reports of scheduled banks and publications of the State Bank of Pakistan. These sources provide reliable and consistent financial information necessary for empirical analysis. The data are compiled on an annual basis, resulting in a balanced panel dataset covering a ten-year period.

Bank performance is measured using ROA, which reflects the efficiency with which banks utilize their assets to generate profits. Bank stability is measured using the Z-score, which captures the likelihood of insolvency by combining profitability, leverage, and earnings volatility. Operational risk is proxied using the BIA, which reflects exposure to operational losses based on gross income. In addition, firm age and firm growth are included as control variables to account for bank-specific characteristics that may influence performance. Firm age is measured by the number of years a bank has been in operation, while firm growth is measured by the annual growth rate of total assets.

To examine the relationship between bank stability, operational risk, and bank performance, panel regression analysis is employed. Both fixed effects and random effects models are estimated, and the appropriate specification is selected based on diagnostic tests. Robust standard errors are used to address potential issues of heteroskedasticity and serial correlation, ensuring the validity of statistical inferences. The data analysis is conducted using STATA for econometric estimation, while Microsoft Excel is used for data organization and preliminary analysis. Descriptive statistics and correlation analysis are performed to summarize the data and assess the relationships among variables prior to regression analysis.

Table 1 presents the definitions and measurement of the variables used in this study. Bank stability is measured using the Z-score, operational risk is proxied through the BIA, and bank performance is captured by ROA. Firm age and firm growth are included as control variables to account for bank-specific characteristics. This study relies on secondary data collected from multiple reliable sources, including annual reports of scheduled banks, financial stability reports issued by the State Bank of Pakistan (SBP), the SBP's Banking Statistics of Pakistan, and official financial statements published on individual banks' websites. To ensure comparability across years, all financial data are collected in Pakistani Rupees (PKR) and standardized prior to analysis.

Table 1. Description of variables.

Variable	Definition
Z-score (Bank Stability)	Natural logarithm of (ROA + capital-to-asset ratio) / SD of ROA over a three-year period
BIA (Operational Risk)	Sum of annual gross income (positive) over three years × 15% (BCBS) / number of positive gross income years; percentage change in capital under BIA
ROA (Bank Performance)	Net income / total assets
Firm Age	Natural logarithm of firm age since incorporation
Firm Growth	(Total assets - Total assets$_{t-1}$) / Total assets$_{t-1}$

Note: ROA = Return on Assets; BIA = Basic Indicator Approach; BCBS = Basel Committee on Banking Supervision; SD = Standard Deviation.

To examine the relationship between bank stability, operational risk, and bank performance, panel regression models are specified. The baseline model incorporates both key explanatory variables along with firm-specific controls. Additional models are estimated to assess the individual effects of bank stability and operational risk on performance.

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To examine the relationship between bank stability, operational risk, and bank performance, panel regression models are specified. The baseline model incorporates both key explanatory variables along with firm-specific controls. Additional models are estimated to assess the individual effects of bank stability and operational risk on performance. The primary model is specified as follows:

Model 1 equation:

$$ROA_{it} = \beta_0 + \beta_1(Z\text{-}score_{it}) + \beta_2(BIA_{it}) + \beta_3(Firm\text{-}Age_{it}) + \beta_4(Firm\text{-}Growth_{it}) + \varepsilon_{it}$$

To isolate the effect of bank stability, the second model includes the Z-score along with control variables:

Model 2: Focus on Bank Stability (Z-score Only)

$$ROA_t = \beta_0 + \beta_1(Z\text{-}score_{it}) + \beta_2(Firm\text{-}Age_{it}) + \beta_3(Firm\text{-}Growth_{it}) + \epsilon_{it}$$

Similarly, to assess the individual impact of operational risk, the third model incorporates the BIA measure with firm-specific controls:

Model 3: Focus on Operational Risk (BIA Only)

$$ROA_t = \beta_0 + \beta_1(BIA_{it}) + \beta_2(Firm\text{-}Age_{it}) + \beta_3(Firm\text{-}Growth_{it}) + \epsilon_{it}$$

The purpose of Model 1 is to examine the combined impact of bank stability and operational risk on bank performance while controlling for firm age and growth. Model 2 evaluates the isolated effect of bank stability on performance, and Model 3 assesses the isolated effect of operational risk on performance, both while controlling for firm-specific characteristics.

4. Results

The results section presents the empirical findings of the study, beginning with descriptive statistics, followed by correlation analysis, regression diagnostics, and dynamic panel regression results. These analyses provide a comprehensive understanding of the characteristics of the dataset and the relationships among bank performance, stability, operational risk, and firm-specific factors. Table 2 presents the descriptive statistics of the study variables, summarizing their central tendency, dispersion, and range for the period 2014–2023.

Table 2. Descriptive statistics for study variables (2014–2023).

Variable	Observations	Mean	SD	Min	Max
ROA	419	0.001	0.05	-0.30	0.44
Z-score	420	-5.84	6.95	-7.07	9.42
FA	420	1.20	0.47	0.00	3.30
FG	420	0.57	3.55	-0.93	56.83
BIA	420	209.21	209.21	-96.01	77,879.53

Note: ROA = Return on Assets; BIA = Basic Indicator Approach; SD = Standard Deviation. Data were collected from scheduled banks in Pakistan over the period 2014–2023. Bank ID uniquely identifies each bank.

The descriptive statistics provide an overview of the financial and operational characteristics of Pakistani banks during the study period. The mean ROA is approximately 0.10%, indicating relatively low profitability across the sector. This suggests that banks in Pakistan operate under tight margins, where generating substantial profits relative to total assets is challenging. The Z-score, which measures bank stability, exhibits a wide range of values, reflecting substantial heterogeneity in financial stability across banks. This variation suggests that banks differ considerably in their ability to absorb financial shocks. Similarly, operational risk measured by BIA shows extreme dispersion, indicating that some banks face significantly higher operational exposure than others. This may reflect differences in scale, complexity, and operational activity. Firm growth also demonstrates high variability, implying that while some banks expanded rapidly during the period, others experienced contraction. Firm age, measured in logarithmic terms, indicates that most banks in the sample are relatively mature institutions, although notable differences exist. Overall, the descriptive statistics highlight the diversity of Pakistan's banking sector and provide a foundation for further empirical analysis. Table 3 presents the Pearson correlation matrix, which evaluates the linear relationships among the study variables and assesses the presence of multicollinearity.

Table 3. Correlation analysis.

Variable	ROA	Z-score	BIA	FG	FA
ROA	1				
Z-score	-0.07	1			
BIA	0.00	0.00	1		
FG	-0.01	0.01	0.52	1	
FA	0.13	-0.09	-0.01	-0.10	1

Note: ROA = Return on Assets; BIA = Basic Indicator Approach. Correlations are based on 420 observations (2014–2023).

The correlation results indicate that the relationships among the variables are generally weak. ROA shows a slight negative correlation with Z-score and firm growth, suggesting that increases in stability or rapid growth are marginally associated with lower profitability. Conversely, ROA has a weak positive correlation with firm age, indicating that older banks tend to perform slightly better. Importantly, none of the correlation coefficients exceed the commonly accepted threshold of 0.70, indicating the absence of serious multicollinearity concerns. This confirms that the explanatory variables are sufficiently distinct and can be included simultaneously in regression models without biasing the results. Consequently, the regression estimates are expected to be reliable and robust. To ensure the robustness of the empirical results, the study employs the Arellano–Bond Generalized Method of Moments (GMM) dynamic panel regression approach. This method is particularly suitable for panel data with a relatively large number of cross-sectional units and a shorter time dimension, as it accounts for unobserved heterogeneity, dynamic effects, and potential endogeneity. Several diagnostic tests were conducted to validate the model. The Wald chi-square test yielded a highly significant result, indicating strong overall explanatory power. Additional tests, including checks for autocorrelation and model specification, confirmed the suitability of the dynamic GMM framework. These diagnostics collectively provide confidence that the estimated results reflect genuine relationships rather than statistical artifacts. Table 4 reports the results of the Arellano–Bond GMM regression examining the determinants of bank performance.

Table 4. Panel regression results.

Variable	Coefficient	Std. Error	z-value	p-value	Significance	Interpretation
L1.ROA	0.17	0.04	4.44	0.000	***	Persistence of past performance
L2.ROA	0.16	0.13	4.11	0.000	***	Long-term performance continuity
Z-score	-8.91	3.39	-2.63	0.000	***	Stability negatively affects ROA
BIA	3.49	8.27	4.23	0.000	***	Operational activity increases ROA
Firm Age	0.03	0.02	1.66	0.090	**	Older banks perform better
Firm Growth	0.00	0.00	-4.30	0.000	***	Rapid growth reduces ROA
Constant	-0.04	0.02	-1.57	0.110	Not significant	Baseline effect insignificant

Note: *** $p < 0.01$; ** $p < 0.10$.

The regression results reveal several important insights. Both one-year and two-year lagged ROA are positive and highly significant, indicating strong persistence in bank performance. Banks that performed well in previous years are more likely to maintain superior performance, highlighting the importance of consistent management strategies and operational efficiency. Contrary to expectations, bank stability (Z-score) exhibits a significant negative relationship with ROA. This suggests that overly conservative banks may sacrifice profitability in favor of safety. In a highly regulated banking environment such as Pakistan's, excessive risk aversion may limit income-generating opportunities. Operational risk measured by BIA shows a positive and significant association with ROA. This unexpected result likely reflects the nature of the BIA measure, which is closely tied to gross income. Higher BIA values may therefore capture scale and operational intensity rather than actual risk exposure. Firm age has a marginally significant positive effect on performance, supporting the view that experience, reputation, and institutional learning contribute to profitability. In contrast, firm growth has a significant negative impact, indicating that rapid expansion may strain resources, increase costs, and reduce short-term profitability.

5. Discussion

This study investigates the impact of bank stability, operational risk, and firm-specific characteristics on the performance of scheduled banks in Pakistan using a dynamic panel framework. The empirical findings provide several important insights into the functioning of Pakistan's banking sector and contribute to the broader literature on banking performance by revealing both expected and unexpected relationships.

One of the most robust findings of the study is the strong and positive impact of lagged ROA on current bank performance. Both one-year and two-year lagged ROA are highly significant, indicating substantial performance persistence in Pakistani banks. Profitability is path-dependent and influenced by accumulated managerial expertise, organizational routines, and strategic continuity (Maeenuddin et al., 2024).

Banks that perform well in earlier periods are more likely to reinvest profits into technology, risk management systems, and service innovation, thereby strengthening future performance. Conversely, poorly performing banks may struggle to recover due to reputational damage, higher funding costs, and constrained investment capacity (Nguyen et al., 2022; Khattak et al., 2023). This result aligns with prior empirical evidence from emerging markets, where institutional inertia and regulatory frameworks reinforce performance persistence. For regulators and investors, this finding implies that historical performance remains a meaningful indicator of future outcomes in Pakistan's banking sector.

Contrary to the initial hypothesis and much of the existing literature, bank stability—as measured by the Z-score—exhibits a significant negative relationship with bank performance. This finding challenges the conventional view that financial stability uniformly enhances profitability by reducing risk exposure and earnings volatility.

In the context of Pakistan, this inverse relationship may reflect a stability–profitability trade-off. Highly stable banks tend to adopt conservative business models, emphasizing capital preservation, liquidity buffers, and regulatory compliance. While such strategies enhance resilience, they may limit exposure to higher-yield lending opportunities, innovative financial products, and risk-adjusted returns. As a result, excessively risk-averse behavior may suppress profitability, particularly in an environment where banks operate under stringent prudential regulations imposed by the State Bank of Pakistan.

Moreover, because all scheduled banks are required to maintain minimum capital adequacy and risk management standards, marginal differences in Z-scores may not translate into competitive advantages. Instead, banks with exceptionally high stability may incur opportunity costs by avoiding profitable but moderately risky ventures. This finding suggests that financial stability, while essential, does not automatically guarantee superior performance and must be complemented by efficient resource allocation and strategic risk-taking. Another notable finding is the positive and significant impact of operational risk, measured through the BIA, on bank performance. This result contradicts the conventional expectation that higher operational risk reduces profitability by increasing losses arising from system failures, fraud, or process inefficiencies. A plausible explanation lies in the construction of the BIA measure itself. Because BIA is derived from gross income, higher values may reflect greater operational scale and business activity rather than elevated operational vulnerability. Larger and more diversified banks typically generate higher gross income, which leads to higher BIA values, yet these institutions often possess stronger internal controls, advanced technology, and skilled personnel to manage operational challenges effectively.

In the Pakistani context, the positive association between BIA and ROA may therefore indicate that operational intensity and income-generating capacity outweigh the adverse effects of operational risk. This finding highlights a key measurement limitation of the BIA framework and suggests that it may not fully capture modern operational risks such as cyber threats, digital fraud, or complex technological failures. Consequently, policymakers and regulators should consider adopting more refined approaches—such as the Standardized Measurement Approach (SMA)—to better assess operational risk exposure. Firm age exhibits a positive and marginally significant relationship with bank performance, supporting the notion that experience and institutional maturity contribute to profitability. Older banks benefit from accumulated market knowledge, established customer relationships, brand recognition, and refined internal processes. These advantages enable them to operate more efficiently, manage risks effectively, and navigate economic fluctuations with greater confidence (Harb et al., 2023).

Although the effect is relatively modest, it underscores the importance of institutional learning in the banking sector. In emerging economies like Pakistan, where financial markets are evolving and regulatory frameworks continue to develop, experience can provide a competitive edge. Newer banks may face higher initial costs, learning curves, and reputational constraints, which can temporarily suppress performance. The negative and significant relationship between firm growth and ROA suggests that rapid expansion may adversely affect bank performance in the short run. This finding contradicts the common assumption that growth enhances profitability through economies of scale and market expansion.

In practice, aggressive growth often entails substantial upfront costs, including branch expansion, technology upgrades, staff recruitment, and integration challenges. These costs can erode short-term profitability, particularly if growth is not supported by adequate risk management and operational capacity. In Pakistan's banking sector, rapid expansion may also increase exposure to credit risk, operational complexity, and managerial inefficiencies.

Additionally, the benefits of growth may materialize only over the long term, while the associated costs are immediate. This temporal mismatch may explain the observed negative effect on ROA. The findings therefore emphasize the importance of sustainable and well-planned growth strategies, rather than rapid expansion driven by short-term market opportunities.

Taken together, the findings reveal that bank performance in Pakistan is shaped by a complex interaction of stability, operational activity, institutional experience, and strategic growth decisions. The results challenge the assumption that greater stability and faster growth always lead to higher profitability. Instead, they highlight the need for balance—between risk and return, expansion and efficiency, and short-term gains and long-term resilience.

The study also underscores the importance of contextual factors. In a heavily regulated banking environment, traditional measures of stability and risk may behave differently than in developed markets. As such, empirical evidence from Pakistan contributes valuable insights to the global banking literature by illustrating how institutional and regulatory settings influence performance dynamics.

6. Conclusion

This study examines the determinants of bank performance in Pakistan, focusing on bank stability, operational risk, firm age, firm growth, and past performance. Using dynamic panel data analysis through the Arellano-Bond GMM approach, the study highlights several key insights that have both theoretical and practical implications for banking management and policymaking. First, the persistence of past performance is a dominant factor in determining current profitability. Both one-year and two-year lagged ROA significantly influence present ROA, suggesting that banks' historical performance, managerial practices, and institutional continuity are critical for sustaining profitability. This underscores the importance of long-term strategic planning, organizational learning, and continuous performance monitoring. Second, the study reveals a counterintuitive negative relationship between bank stability (Z-score) and performance. While financial stability is essential for risk mitigation, overly conservative practices may constrain income-generating activities, especially in a highly regulated environment like Pakistan. This finding highlights the trade-off between stability and profitability and emphasizes the need for balanced risk-taking alongside prudent management. Third, operational risk, as measured by BIA, shows a positive association with profitability. This suggests that operational scale and income-generating capacity may outweigh potential operational vulnerabilities, reflecting a limitation of the BIA measure in fully capturing true operational risk. Bank managers and regulators should consider more nuanced approaches to operational risk assessment to better align risk measurement with actual exposure. Firm age is found to have a modest but positive impact on performance, indicating that experience, institutional maturity, and established customer relationships contribute to better financial outcomes. In contrast, rapid firm growth has a negative effect on profitability, highlighting that aggressive expansion can strain resources, increase operational complexity, and reduce short-term earnings if not managed carefully. The study demonstrates that bank performance in Pakistan is influenced by a combination of historical performance, strategic management, institutional characteristics, and contextual regulatory factors. The findings suggest that banks should adopt a balanced approach that integrates risk management, measured growth, and strategic utilization of experience to enhance profitability. For policymakers, the results underscore the importance of designing regulations that maintain financial stability without stifling growth and innovation. For managers, the study highlights the need for careful planning, continuous monitoring of performance trends, and prudent risk-taking to sustain long-term profitability.

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Validation: Muhammad Anjum Fareed.
Visualization: Bilal Iftikhar Makki.
Writing –original draft: Muhammad Anjum Fareed.
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