European Journal of Business and Management Research
www.ejbmr.org

Financial Stability Analysis of Islamic Banks in Bangladesh

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ABSTRACT

The paper intends to examine the key factors of financial stability of listed Shariah-based Islamic Banks of Bangladesh for a period of 2009 to 2019. Z-score is used here as a proxy for financial stability measurement, with independent variables including bank-specific, bank industry-specific, and macroeconomic factors. Bank specific determinants are nonperforming investment, bank size, capital adequacy, return on equity, earnings, liquidity and management efficiency. Development in the banking sector is a factor that is unique to the banking industry, while GDP and inflation are macroeconomic factors. To learn more about the factors that affect the financial health of Bangladesh's listed Shariah-based Islamic banks, pooled ordinary linear regression (OLS) analysis was used. The results demonstrate that capital adequacy, earning and banking sector development have a positive and statistically significant impact on financial stability of Islamic banks. On the other hand, nonperforming investment has a negative and statistically significant effect on the financial stability of Islamic banks. correlation matrix shows that non-performing investment and management efficiency is negatively correlated with financial stability. In contrast, return on equity and liquidity are positively correlated with financial health. The findings would add value in the decision makers of the bank supervisors to formulate strategies to maintain the financial stability. It would be one of the few papers on financial stability of Islamic banks in Bangladesh which has investigated macroeconomics as well as bank specific determinants altogether on the financial stability.

Keywords: Banking, Financial Stability, Islamic Banks.

Submitted: April 12, 2023

Published: June 21, 2023

ISSN: 2507-1076

DOI: 10.24018/ejbmr.2023.8.3.1953

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I. Introduction

A. Background of the Research

Banks as the financial intermediaries in a country transform the flow of funds into productive investments. Financial markets also play a role in assisting funds to move between savers and borrowers. The banks and the financial markets do not play the same role in developed and developing countries. Together, the banking system and financial markets facilitate the flow of capital in developed countries. In contrast, in developing countries, financial markets are undersized and sometimes completely absent (Habibullah & Sufian, 2009). Even the banks dominate in the South Asian Countries as these countries' capital market is underdeveloped (Kamarudin & Sufian,2012). However, the financial system of Bangladesh is dominated by the banking sector, as evidenced by the increased contribution of the banking sector to Bangladesh's economic growth over time (Siddique & Islam, 2001). In Bangladesh, bank credit contribution to GDP is 45.30% in 2019 (Bangladesh Bank) while the contribution of capital market in terms of market capitalization as a percent of GDP is only 12.30 in 2019 (DSE annual report, 2020). There are Islamic banks that do not charge interest as well as normal banks that do (Called Shariah-based) operating under private commercial bank's umbrella in Bangladesh. It is well known that a banking system that adheres to Islamic Sharia's principles is called Islamic banking. Islamic banking is an ethical value baked financial system that forbids speculation and only permits investments in genuine assets. It also forbids any illegal investments such as interest, alcohol, gambling, pork, and harmful behaviors. Islamic banking operates under the profit-loss sharing model and does not engage in any activities that are dependent on riba (interest), gharar (uncertainty), or maysir (speculation) (Yousuf *et al*., 2019). The goal of Islamic banks is to increase profits through financing that includes risk, profit, and loss sharing, as well as equitable participation. (Masood & Ashraf, 2012). All tools of Islamic banks are according to the Shariah mode of financing, which is interest-free (Asadullah, 2017). At present, the entire banking system in Sudan and Iran is based on Islamic finance principles. Islamic banks prevail in the Middle East and Southeast Asia and Europe, and the United States. Total financing from Islamic banks in 19 countries that complies with Shariah raised USD 1,052 billion in 2018 Q4 from USD 1,021 billion in 2017 Q4 (Bangladesh Bank, 2019). Bangladesh, being one of the greatest Muslim countries in the world, is warmly leading the Islamic lifestyle following the Holy Qur'an along with Sunnah. Therefore, the first Shariah-based private commercial bank of Bangladesh, namely

Islamic Bank Bangladesh Limited (IBBL), was in 1983. At present, the total number of Shariah-based Islamic banks of Bangladesh is ten (10). The sector's proportion of Islamic banking is approximately 25% of the entire banking sector (Bangladesh Bank, 2019). At the end of June 2018, the Islamic banking sector had more than one-fifth of the total amount of deposits and investments in the banking sector. (Bangladesh Bank, 2019). However, how a bank contributes depends on the stability of a country's financial system (Alshubiri, 2017). Financial stability refers to the system's ability to smoothly intermediate payments between individuals, businesses, and the government with the help of a variety of financial institutions and a variety of financial infrastructures. Financial stability is a steady state in which the main economic activities of commercial banks, such as the efficient allocation of resources, the distribution of risk, and the settlement of payments, are maintained. (David & Quintyn, 2003). Financial stability, then, is the capacity of the major markets and institutions that comprise the financial system to carry out their major tasks (Tsmoscos *et al*., 2012). Finally, according to Imam and Hossain (2017), financial stability is a state or situation where banks have the monetary strength to withstand financial shocks and can operate profitably, efficiently, and with confidence.

Financial instability entails high costs for an economy since the commercial banks' instability can increase the economic risks leading to bankruptcy and associated with poor mental health and deadly diseases (Roy *et al*., 2023) among population. It is crucial that every Islamic bank in the market assess the bank-specific, bank industry-specific, and macroeconomic elements to maintain their financial stability as a way to safeguard the financial industry's stability and the efficient performance of its financial intermediary role. So, this study's importance lies in determining the factors affecting the financial stability of the listed Shariah-based Islamic banks of Bangladesh. Therefore, this study aims to determine the bank specific, bank-industry specific and macroeconomic factors affecting the financial stability of listed Shariah-based Islamic banks of Bangladesh for a period of 2009-2019.

B. Problem Statement

Financial stability of banks has become a concerning issue both for developed and developing countries, evidenced by research worldwide. Z-score, non-performing loan (NPL) ratio or insolvency ratio, as well as loan loss coverage ratio, have been used as indicators of financial stability of banks in several studies (Saha *et al*., 2014; Kiemo *et al*., 2019; Altman, 2000; İskenderoğlu & Tomak, 2013; Imam & Hossain, 2017). NPL is considered NPI (Non-performing investment) in Islamic Banks, as Islamic Banks use the term Investment in place of the loan (Rahman & Jahan, 2018). Default loans in the Islamic banking sector grew to 4.79 percent in 2018 from 4.2 percent in 2017, which hurts the financial condition of Islamic banks. The Islamic banks' loans-to-deposit ratio increased to 90.8% in 2018 from 87.8% the year prior, exceeding the permitted maximum of 90%, suggesting that they were engaging in aggressive lending. The rising NPL was identified as a serious problem for the Islamic banking industry as well (Islamic Banking Operation of Banks-2018', BIBM). Islamic bank operates with the profit and loss approach, which increases the structure's viability as Islamic banks' principle motivates banks to diversify their investments to minimize risk and increase profit (Ahmed & Khan, 2022). There aren't many studies or research into how Islamic banks and conventional banks relate, particularly in Bangladesh. However, the purpose of the study is to determine the determinants affecting the financial stability of scheduled Shariah-based Islamic banks for a period of 2009 to 2019 where the banking sector of Bangladesh had undergone many regulations reforms, worldwide financial collapse, the implementation of norms for risk-based capital allocation, and heightened competition from new banks. Thus, the current study would generate new empirical evidence on the determinants of Islamic banks' banking stability covering the data for a long span of time (2009-2019).

C. Research Objectives and Hypotheses

This study's main objective is to find out the factors that influence the financial stability of listed Shariah-based Islamic banks of Bangladesh. Under the main objective, the following are the specific objectives:

- To identify the macroeconomic, bank-specific, and industry-specific drivers of the financial stability of listed Islamic banks of Bangladesh.
- To determine and evaluate the significant determinants of the financial stability of listed Islamic banks of Bangladesh.

Research hypotheses of the study are shown below:

- H1: Bank specific determinants affect the financial stability of listed Islamic banks.
- H2: Bank industry specific determinant affect the financial stability of Islamic banks.
- H3: Macroeconomic determinants affect the financial stability of Islamic banks.

II. Literature Review

Based to the literature that is currently available, researchers from both developed and developing nations have contributed to the study of bank financial stability. Theoretical and empirical investigations dominate the literature review of the financial stability of banks.

A. Theoretical Framework

Theoretical frameworks for financial stability, including those based on the information asymmetry proposed by Akerlof, the competition-fragility view, the competition-stability view, and other theoretical frameworks, provide support for the study of the financial health of Islamic banks. Asymmetric information is responsible for causing financial instability. Consumers fail to distinguish between high-quality products and low-quality products due to a lack of sufficient information. So, they demand a product at an average price, which is the price between the high quality and low-quality products. Therefore, there occurs market price distortion led by the inability to price the risks correctly which may further lead to financial instability.

The competition-fragility view opines that increased competition is detrimental to financial stability. A stable banking system deserves to have less competition as profits

act as a supportive tool for financial fragility (Beck *et al*., 2010, p. 18). To put it another way, fierce competition reduces profit margins by weakening the market's power. Bank franchise value is consequently declining. In this instance, banks' increased risk-taking is a result of efforts to increase returns. Financial stability may be distorted by increased banking industry competition. On the other hand, the competition-stability view states that financial fragility can be caused by low competition level and concentrated banking structures. Banks take more risks because of increased competition. The utilization of banks' own resources or other risk-mitigating strategies allowed the financial system to remain stable even while the risk level rose. A concentrated banking structure thereby distorts financial stability by causing systemic instability. Islamic Financial Services Board (IFSB) conducted a policy-oriented discussion in 2010 on Islamic finance's essential features, the theoretical balance sheet of typical Islamic banks and its importance to enhancing financial stability. It states that the existence of a Shariah board 'adds another level of oversight which essentially safeguards against malpractices and promotes a resilient Islamic financial system to reduce instability risk (Ahmed, 2021). The Islamic banking system has the potential to support global economic and financial stability.

Shafique *et al*. (2012) develop a descriptive framework by extracting key information and findings about Islamic banks' performance from various research during the 2008 Financial Crisis. It states that during global financial crisis Islamic Banks performed better than conventional banks which indicates Islamic banks' stability and risk is lower than their counterparts because of Islamic bank Interest free nature. Islami banks have significant contribution on the international trade in our country. Islam and Biswas (2020), and Jiban *et al*. (2022) analyzed that the financial stability of the Islami Banks can enhance the efficiency of the international trade and give a boost in the export performance.

B. Empirical Studies (Global Context)

Some empirical research works on the financial stability of commercial banks, including both conventional and Islamic banks.

Research conducted on 39 commercial banks in Kenya for the period 2000-2015 to gauge banks' financial stability using Z-score. It indicates that bank size, regulatory capital, bank funding and corporate governance had a positive and statistically significant effect on financial stability. This study indicated that commercial banks with low level of regulatory capital were comparatively highly financially unstable (Mwangi *et al*., 2019). However, it used only the bank-specific variables. Therefore, the present study includes a bank industry and macroeconomic variables.

In 48 African countries between 1996 and 2015, factors such as banking efficiency, foreign bank presence, banking concentration, size of the banking sector, effectiveness of the government, political stability, regulatory quality, investor protection, and unemployment rate were important predictors of banking stability (Ozil, 2018). Some of the variables of the present study are like the study of Ozil (2018).

Income diversity, bank size, market concentration, P/E ratio, inflation, gross demotic product growth, and government and regulation size were identified as the influential factors affecting Oman's commercial banks' stability over the period 2008-2014. The findings indicated that while macroeconomic and external governance issues had little bearing on bank stability, income diversity and P/E ratio had a substantial impact (Alshubiri, 2017). The research methodology used in the study of Alshubiri study was like the study of Ozilli (2018)

Hamisu *et al*. (2016) explored Islamic banks' financial stability in Malaysia for a period of 2008 to 2012 by using Z-score, Liquidity ratio, Nonperforming financing, and Credit risk ratio. High Z-score of Islamic banks indicates the stability of Islamic banks.

From 2008 to 2012, 16 Islamic banks in Malaysia were the subject of an investigation by Shukur *et al*. (2015) into the link between return on asset and independent factors (bank size, capital adequacy, liquidity, deposits, and asset quality). According to the study, there are just two factors that are positively and negatively correlated with profitability: bank size and asset quality.

Srairi (2013) used the ratio of nonperforming loans to total loans (NPLOAN) and the Z-score to investigate 137 commercial banks (94 conventional and 43 Islamic banks) operating in ten MENA countries between 2005 and 2009. The competitive-fragility theory is confirmed by the results, which show that banks with concentrated ownership have lower insolvency risk and lower asset risk.

Abbas and Shahid (2012) undertook a study on Islamic banking's financial stability in Pakistan from 2006 to 2009 on 6 Islamic banks operating in Pakistan and the top 10 conventional banks. Results showed that traditional banks were more effective than Islamic banks. Compared to conventional banks, Islamic banks had a lower loans-to-assets ratio, while traditional banks had more diversified earnings.

In order to compare the financial stability of 12 Islamic banks and 71 conventional banks in Indonesia from 2004 to 2009, Gamaginta and Rokhim (2012) used Z-score. The results show that Islamic banks are less stable than conventional banks, and fully fledged Islamic banks are less stable than regular banks' Islamic business units.

Rajhi (2012) used Z-score to compare the financial stability of 90 Islamic banks and 467 conventional banks for the time period of 2000-2008 in 16 countries (6 southeast Asian countries and 10 MENA countries). He presented evidence that the most frequent reasons for Islamic banks' collapse are credit risk and income diversity. This methodology is like the methodology used by Gamaginta and Rokhim (2012), and Yousuf *et al* (2019).

Using bank-level data from 39 fully-fledged IBs in 17 chosen countries, Ali (2011) has also employed Z-score, nonperforming financing, and capitalization ratio to analyze the influence of the Islamic banks market structure on the overall bank risk. Islamic banks benefit from greater stability and franchise value. The results of the research support the competitive stability theory, which holds that a portfolio of riskier loans is correlated with greater bank market power.

C. Empirical Studies (in the Context of Bangladesh)

Study of Yousuf *et al*. (2019) evaluated the financial stability of eight (8) fully-fledged Islamic banks in Bangladesh for the years 2010 to 2017 using the Z-score method in addition to other commonly used financial ratios like the NPF ratio, IDR ratio, and liquidity ratio. The results show that the majority of Islamic banks have recently had worse Z-scores. This finding conflicts with those of Hamisu *et al*. (2016).

Imam and Hossain (2017) analyze the relative financial stability of Islamic banks of Bangladesh using three different z-score (based on ROA, CAR and IR) based on 23 conventional and 6 Islamic banks from 2005 2016. This study develops a new z-score based on the bank's loan portfolio infection ratio that was not found in the previous literatures. According to 2-panel regressions of the Z score (based on infection ratio), Islamic banks are found to be more financially stable. The stability of all banks is also improved by the establishment of Islamic banks. However, one of the measures of Z-score (based on ROAA) has been employed in the present study.

Noman (2015) revealed that, between 2003 and 2013, the seven (7) Islamic banks in Bangladesh experienced a negative impact from credit risk, loan ratio, cost efficiency, and capitalization as well as a favorable impact from bank size. In addition, he made some important policy recommendations to boost Bangladesh's Islamic banks' profitability.

The solvency of the listed commercial banks of Bangladesh from 2004 to 2011 was significantly impacted by bank-specific factors, such as the ratio of income from securities to effective capital and the interaction term between Texas ratio and unemployment rate. The insolvency ratio is used to measure the financial stability of the commercial banks of Bangladesh However, it may include other macroeconomic variables such as GDP, inflation, and consumer price index (Saha *et al*., 2014).

To sum up, the findings of the several studies mentioned above are considerably different due to the different country status, variables and methodology chosen. This paper has extended the literature on bank stability by incorporating the bank specific, bank industry specific and macroeconomic variables as the previous studies ignored the compilation of all these variables together. Furthermore, the panel data of six (6) listed Islamic banks from 2009 to 2019 have been studied empirically, allowing better insight into the determining of Islamic bank's financial stability.

III. Research Methodology

A. Research Design

The present study adopted a descriptive quantitative research framework as the study has used quantitative data as proxies for independent and dependent variables.

B. Data & Variables (Dependent and Independent)

The data for this study comes from six fully functional Islamic banks in Bangladesh. These banks have a substantial market share and assets in the Islamic banking sector. The relevant data for the years 2009 through 2019 is taken from these banks' annual reports.

Continuing in accordance with the past studies, Z-score is chosen as a measure of financial stability. Z score is a statistical tool used to measure financial health, financial soundness, and banks' financial stability. The most popular proxy for evaluating the stability of Islamic financial intermediaries is the Z-score. Islamic banks appear to have a high Z-score due to their risk-sharing agreements, which create an additional protective buffer in deposit liabilities, is likely to draw criticism from those who believe that the z-score formula should not have been applied to Islamic banks. This claimed that the financial health of these institutions would be overestimated based on the book values of their capital and reserves (Oodha *et al*., 2019). A higher z-score corresponds to a lower upper bound of insolvency risk—a higher z-score therefore implies a lower probability of insolvency risk.

On the other hand, I have selected bank specific, bank industry specific and macroeconomic determinants of the financial stability of the Shahriah-based Islamic banks. Bank-specific variables are non-performing investment, bank size, capital adequacy, return on equity, liquidity, earnings, and management efficiency. As a bank industry specific determinant, banking sector development is selected while Gross domestic product and inflation have been chosen as macroeconomic determinants of Islamic bank's stability. (Khan, 2021).

Non-performing investment: It indicates the investments that have stopped generating income for the banks. The stability of the financial system is enhanced by a low non-performing investment ratio, which suggests higher asset quality (Ozili, 2015). Hence, I expect a negative relation between non-performing investment and financial stability.

Bank's size: Large-size banks typically have the potential cost benefits due to economies of scale in places where competition is not very intense or in regions where the market is mostly unexplored**.** In this sense, SIZE variable may have positive effect on the bank stability.

Capital Adequacy: The capital adequacy ratio measures how much risk capital banks are required to maintain for the risks they take. (Ozili, 2018). Therefore, bank stability is improved by increasing the amount of risk capital that banks must set aside to cover losses that result from their excessive risk-taking activities (Ahmed, 2021). So, a positive relationship between regulatory capital ratio and bank stability is expected.

Return on equity: The Return on Assets (ROE) ratio, which calculates a bank's profit or efficiency using its equity, illustrates the buffer that a bank has available to it against potential risk.

Liquidity: Ratio of total investment to total deposit is determined to measure the liquidity of banks (Hossain and Ahamed, 2015). Higher the liquidity, the higher funds can be channeled to third party funds leading to an increase of profitability. Therefore, I expect a positive impact of liquidity on financial stability.

Earnings: Total Investment Income to total asset ratio is used as the proxy of earning. Total investment income is the revenue generated from investment outstanding. Both variables have been divided by Total Asset to identify the portion of each income respective to asset (Hossain & Ahamed, 2015).

Management efficiency: Typically, the level of operational expenses is used to gauge how effectively a company's management is performing (Onuonga, 2014). This has resulted in a negative relationship since improved management of bank expenses lead to improved efficiency.

Banking sector development: Banking development (FD) is measured by the ratio of private credit of deposit money banks to GDP (Beck *et al*., 2000). It is used to show the impact of financial development on the performance of banks as well as to measure the importance of bank financing to the economy (Sufian, 2012).

GDP: Banking instability can be triggered by unpredicted fluctuations in economic cycles (Segoviano & Oodhart, 2009). GDP growth ensures the stability of the economy, and in that context, business risk for banks is greatly reduced.

Inflation: There is no association between banking sector stability and inflation (Ozilli, 2018). Since favorable macroeconomic conditions are positively associated with the profitability of Islamic banks (Abbas & Shahid, 2012, the study expect positive relationship with inflation and financial stability.

C. Empirical Model and Tests

The panel data estimations used in this work allow for the control of both observable and unobservable bank level and time level heterogeneity. The specification of the empirical model is given in (1).

$$Zscore_{ij} = \beta_0 + \beta_1 NPI_{ij} + \beta_2 \mathrm{LOG}A_{ij} + \beta_3 CA_{ij} + \beta_4 ROE_j + \beta_5 TIA_{ij} + \beta_6 IDR_{ij} + \beta_7 OPEX_{ij} + \beta_8 FD_{ij} + \beta_9 LNGDP_{ij} + \beta_{10} INF_{ij} + e_{ij} \quad (1)$$

where Zscore implies the calculated Z Score for the i^{th} bank in j^{th} time, the NPI indicates the non-performing investments, LOGA is the logarithm of the asset size of the banks, CA indicates the capital adequacy ratio, ROE implies return on equity, TIA is the ratio of total investment income to total assets of banks, IDR indicates the investment to deposit ratio, OPEX represents the log value of the operating costs of the banks, FD indicates private credit as a percentage of GDP, INF is the annual inflation rate of the year, GDP implies gross domestic product growth and Researchers have a few options for evaluating panel data, including Pooled Ordinary Least Square (POLS), the fixed-effect model, the random effect model, etc.

The fixed-effect model fits the best in regression analysis and variance analysis if the number of independent variables is fixed, and all the variables are represented in ratios (Alison, 2005). In this study, Pooled Ordinary Least Square (POLS) has also been used.

IV. Results and Discussion

The study is conducted using data from 2009-2019 for six banks encompassing 66 bank year observations. For linear model ordinary least square method is more effective and efficient. The study uses Pooled Ordinary Least Square Method to regress the Z-score against the bank specific, bank industry specific and macroeconomic determinants.

A. Estimation Results

Hypothesis 1: The Pooled OLS Method finds that non-performing investment has a negative and significant relationship with z score supported which also supports the result of Mwangi *et al*. (2019). This implies higher non-performing loans leads to lower financial stability. Higher investment income compared to assets also affects the stability of banking industry as high investment income leads to have more earnings leading to enhancing financial stability (Khan & Ahmed, 2022). Capital adequacy has positive and significant relation with the financial stability (Ozili, 2018). Higher capital leads to higher chance to have financial stability of a bank (Mwangi *et al*l,2019). Bank size (LOGA) and management efficiency (OPEX) have no significant relationship with financial stability which is contradictory to the result of Mwangi *et al*. (2019) and Sufian (2012) who states that bank size and operating expense have substantial impact on financial stability. In addition, return on equity (ROE) and liquidity (IDR) have no significant relationship with financial stability.

Hypothesis 2: This hypothesis compares the bank industry specific determinant with financial stability. The private credit to GDP ratio (FD) has positive and significant relation with financial stability. Higher private credit compared to GDP accelerates growth, enhance profitability, and reduces the risk of unstable economy. The Pooled Ordinary Least Square Method result demonstrates that higher financial development leads to have higher financial stability of banks which is very much like the hypothesized relationship.

Hypothesis 3: The regression results reveal that GDP growth and inflation has negative yet insignificant relation with financial stability. The finding is interesting here as it is inferring that higher GDP growth and prosperity leads to lower financial stability. The findings show that higher economic growth can create risk for banks financial stability. And higher inflation erodes the purchasing power and contributes to uncertainty in banks viability. Many of the empirical works did not find any significant relationship of GDP and inflation with bank's stability (Ozili, 2018).

B. Discussions on Correlation Matrix

The endogenous variable is a proxy of financial stability, while other variables are used to calculate the process and determine the relationship with predictor variables. Non-performing investments is a threat for banking sector viability and stability as it reduces profitability, creates liquidity problem, and enhances the cost of collections. The operating expense ratio indicates how the bank's management are efficient enough in generating higher earnings by keeping cost low. Non-performing investment (NPI) and management efficiency (OPEX) have significant negative correlation with the financial stability of banks implying that higher the non-performing investment and operating expenses of the bank, the lower will be the financial stability of financial institutions like the hypothesized relationship. And bank size, capital adequacy and earning are negatively correlated with financial stability which do not support the hypothesized relationship. It may happen as a large bank size provides higher liquidity access, investments, and financing facilities. Larger banks generally encounter critical new regulations and low growth opportunities in the industry which causes

decreased marginal profit. These results of correlation matrix do not support the results of Ali (2010) who states that higher earnings and more capital lead to have greater z-index of Islamic banks. Like the hypothesized relationship, Liquidity and return on equity are positively associated with financial stability. Higher investment-to-deposit ratio indicates that Islamic banks have access to greater finance ing which can increase financial stability as greater financing leads to have greater profitability. The potential losses from risky investment might be covered by higher equity. With respect to bank industry determinant of financial stability, private credit to GDP ratio (FD) is negatively correlated to financial stability. It may happen as higher exposure of banks to the loans increases the riskiness causing banks' profitability and financial stability to decline (Athanassglou *et al*., 2006). Inflation and other macroeconomic factors, such as GDP, can have an impact on supply and demand shock; thus, affecting the financial soundness. However, none of the macroeconomic variables have complied with the hypothesized relationship indicating that inflation and GDP have no impact on banks' financial stability like the results of Hesse and Chihak (2008).

It can also be noticed from the Correlation Matrix is that the multi-collinearity problem is not severe among variables except ROE an NPI (-0.56), FD and NPI (0.54), FD and LOGA (0.68), GDP and LOGA (0.67) and FD and GDP (0.87) similar to the study of Kozokov *et al*. (2009).

V. Conclusion

This research put bank specific as well as macroeconomic consideration altogether to reflects the determinants of financial stability for shariah based Islamic banks in Bangladesh. The study reveals that non-performing investment, capital adequacy, earning and banking sector development play a crucial role in maintaining financial stability of listed Shariah-based Islamic banks of Bangladesh. This study differs from previous research works due to the differences in country status, variables, and methodology. The study concludes that maintaining sufficient capital and investment income would enhance the Islamic banks' financial stability. In addition, keeping a balance between the disbursement of funds and collection of funds is essential to have a lower non-performing investment. And banks should explore new investment opportunities to keep in pace with the banking sector development. The study further ends with remarks that increase of return of equity and liquidity would improve the Islamic banks' financial stability while lower operating expenses would lead to have greater profitability and financial stability. Inflation and GDP do not have any effects on financial stability on such Sharia based banks which are also seen in the many empirical research works. Macroeconomic shocks like Covid-19 can also contribute to financial stability and long run growth of Islamic banks of Bangladesh. Future studies would consider it. In addition, future studies can also investigate the impact of financial inclusion and digital finance for the stability of Islamic banks of Bangladesh. Finally, this study concludes that the long run strategies and policies of the banks play the prime role in determining the direction of financial stability.

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