GO Green Research and Education

Journal of Business and Management Research

ISSN:2958-5074 pISSN:2958-5066

Volume No:3 Issue No:3 (2024)

Understanding the Effects of Volatility in Macroeconomic Indicators on Financial Stability: New Insights from the Banking Sector of Pakistan

Jamshid ur Rehman

Assistant Director, Directorate of Quality Assurance, Khushal Khan Khattak University, Karak

Ishfaq Ahmed

Lecturer in Management Science, Khushal Khan Khattak University, Karak

Khalid Hussain

Assistant Professor, Department of Business Studies, Bahria University, Islamabad, Pakistan

Abdul Latif

Lecturer in Management Science, Khushal Khan Khattak University, Karak

Abstract

This study examines how Pakistani commercial banks' financial stability is affected by changes in macroeconomic factors. The dynamic panel data set from 2013 to 2022 is used in the study. We employ the two-step system generalized method of moment (GMM) to observe the impact of the volatility of the macroeconomic variables. The estimation results demonstrate that the financial stability of commercial banks is adversely impacted by the volatility of macroeconomic conditions. Furthermore, the findings indicate that banks' financial stability declines with their asset size. Additionally, bank capital, deposits, and asset quality all contribute positively to the stability of the banks. The study's conclusion recommended that regulators and bank management comprehend the volatility of macroeconomic variables and develop plans to reduce their adverse effects.

Keywords: Exchange rate, Interest rate, Inflation rate, Bank-specific factors, Commercial banks

1. Introduction

Financial institutions are regarded as the lifeblood of the economy. Specifically, the banking industry is the most important sector for growth and economic development (Mabkhot & Al-Wesabi, 2022). Furthermore, banks are necessary to fund firms in the real economy and guarantee financial stability. Thus, a robust and successful banking sector supports growth, economic advancement, and financial stability. On the other hand, a decline in bank performance or stability has a detrimental impact on the expansion and growth of the economy (Olokoyo, 2019). Thus, the

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

financial stability of banks is significant for the progress and stability of an economy. According to Kozarić et al. (2020), the banking sector's financial stability is contingent upon the system's ability to withstand shocks without experiencing significant distortions in its current or future operations, nor any adverse effects on the overall economy.

Macroeconomic uncertainty arises from the volatility in macroeconomic variables. These variables reflect the legal and economic environment, which is not in the control of bank management and hence significantly affects the performance of financial institutions (Menicucci & Paolucci, 2016; Dodi et al., 2018). Therefore, the macrocosmic indicators are significant as bank-specific factors in examining the performance of an institution (Duraj & Moci, 2015). Numerous studies looked into the numerous elements and determinants that are crucial to the financial stability of commercial banks in various nations and areas. Such as Rashid & Khalid (2017) stated that sudden and unpredictable variations in the macroeconomic conditions have a vital role in the financial stability of banks. Further, banks are affected by certain macroeconomic key factors and adverse conditions like high levels of interest rates, inflation rates, unemployment rates, and negative economic growth (Castro, 2013). In addition, Baba & Nasieku (2016) reported that volatility in the unemployment rate, exchange rate, and real interest rate hurt the performance of commercial banks. Similarly, according to Altaee et al. (2013), the stability of banks is significantly impacted by market share, cost ratio, loans to total assets, income diversity, consumer price index (CPI), governance, and economic growth.

Currently, Pakistan has faced certain economic challenges that started with political instability, a high debt burden, and a COVID-19 breakout. For the past few years, Pakistan's macroeconomic indicators: inflation rates, interest rates, and exchange rates in particular have been unstable. The instability of macroeconomic indicators leads to disruptions in Pakistan's economy, which in turn has a negative impact on financial institutions' performance and stability. Hence, this study is undertaken to evaluate the impact of volatility in the macroeconomic indicators (interest rate, exchange rate, and inflation rate) on the financial stability of banks. The study documented important and novel results that provide evidence that volatility in macroeconomic indicators adversely affects the financial stability of banks. The remainder of the paper is organized as follows. The literature review pertaining to the development of the

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

hypothesis is presented in the next section. The study's methodology is explained in Section 3, which is followed by a discussion and interpretation of the findings. The conclusion and policy recommendation are found in the final section.

2. Literature Review

Financial stability refers to the positive net worth, solvability, and liquidity level of financial intermediaries. A bank is said to be financially unstable when becomes defaults in payment obligations from its source or due to the denial of interbank market or central banks to provide them credit facilities. On the opposite, a bank will be financially stable when fulfills its payments commitment from borrowed funds or its own internal resources (Ghassan & Krichene, 2017). In addition, a bank is considered stable in a situation when it is improving economic performance and removing inequities instigated by endogenous elements of unwanted or unexpected events from various banking risks (Djebali & Zaghdoudi, 2020). Previous studies evaluated the different factors that influence the financial stability of banks. Mirzaei (2010) stated that interest rate spread, market share, bank size, equity to total assets, overheads to total assets, cost to income ratio, domestic credit advanced by the banking system, market growth, growth of GDP, and inflation are the main factors having significant influences on the stability of commercial banks. Further, Nguyen et al. (2012) stated that bank market power, income diversification, bank size, cost efficiency, non-performing loans, interest margins, market concentration, capitalization, business cycle, financial development, ownership, and restriction are the main factors that influence the bank' stability.

Likewise, Rajhi and Hassairi (2013) reported that bank size, asset structure, credit risk, income diversity, liquidity risk, concentration, market share, GDP growth, inflation, exchange rate, London interbank offered rate, governance, and cost efficiency are the significant determinants of banks' stability. Examining the main determinants of Romanian banks' stability, Diaconua and Oanea (2014) concluded that interbank offer rate and GDP growth are the significant factors with a positive influence on financial stability. In addition, Adusei (2015) scrutinized the effect of funding risk and bank size on the stability of the rural banking industry in Ghana throughout 2009-2013, while controlling the other variables: profitability, liquidity and

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

credit risk, diversification in the business model, inflation, gross domestic product, and financial structure. The results revealed a positive impact of both variables on the stability.

Ozili (2018) documented that determinants of bank stability include regulatory capital ratio, cost efficiency, non-interest income, size of the banking sector, net interest margin, rule of law index, competition, control of corruption index, bank concentration, regulatory quality index, inflation, government effectiveness index, unemployment, economic growth, foreign bank presence, political stability and absence of terrorism index. Likewise, Muriithi et al. (2016) investigated the impact of foreign exchange rate and interest rate fluctuation on the performance of CBs in Kenya for the period 2005-2014. The results indicated that both show negative and significant impacts on bank profitability. Similarly, Ekinci (2016) investigated the sample of Turkish banks throughout 2002-2015. The results showed that the foreign exchange rate has a positive effect while interest rate risk has insignificant impacts on the profitability of Turkish banks. Furthermore, according to Al-Homaidi et al. (2018), Indian commercial banks are significantly impacted positively by inflation and negatively by changes in the interest rate and exchange rate. According to Pham et al. (2021), bank stability is negatively impacted by market share of loan loss provisions, mobilized capital, and market structure, while it is positively impacted by loan-to-asset ratio, foreign investment, bank size, equity-to-asset ratio, and revenue diversification from the prior year.

2.1 Exchange Rate Volatility and Banks' Stability

The price at which one unit of a nation's domestic currency can be exchanged for any other nation's currency worldwide is known as the exchange rate. In short, one currency's worth in reference to another currency (Chichi & Casmir, 2014). Because they provide a fundamental link between the domestic and international markets for various financial assets, goods, and services, exchange rates are essential to international commercial transactions (Reid & Joshua, 2004). Ani et al. (2013) asserted that foreign exchange is considered the major concept of international banking because it has a massive impact on the banks. The reason is that most banks are involved in the payments and settlement of international trade transactions. Thus, intermediation. International banking are not possible without foreign exchange (Osundina et al., 2016).

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

The expected stock return and cash flow of corporations are significantly impacted by exchange rate volatility (Aremu et al., 2010). In a similar vein, increasing exchange rates lead to higher bank deposits. As the economy grows more competitive and productive, for example, importers and exporters make more money from their operations and will therefore put more money into bank accounts (Solarin et al, 2018). According to studies by Muriithi et al. (2016), Nahar and Sarker (2016), and Al-Homaidi et al. (2018), excessive exchange rate volatility impairs banks' stability and performance.

H_1: The stability of commercial banks is significantly impacted negatively by exchange rate fluctuation.

2.2 Interest Rate Volatility and Banks' Stability

Interest rates have a significant effect on every area of an economy because banks deal directly with money, and thus they are most affected (Mushtaq & Siddiqui, 2017). Interest rates are a significant source of profitability and a frequent component of everyday banking operations. Nonetheless, it must be kept within a safe range to avoid creating interest rate risk (BCBS, 2004). According to Entrop et al. (2008), interest rate risk is the exposure of a bank's financial situation to unfavorable changes in interest rates (Entrop et al., 2008). Common bank characteristics, such as lending for extended periods and borrowing for short periods, are the primary cause of interest rate volatility because they result in maturity mismatches or re-pricing mismatches between liabilities and assets (Zainol & Kassim, 2012).

Rashid & Khalid (2017) documented that the performance of banks is highly exposed to interest rate volatility as variations in interest rates increase the cost of funding and decrease the return on equity and assets. Variations in interest rates make it difficult for investors to make their investment decisions accurately. Thus, the interest rate variation affects lending and investment opportunities Furthermore, the assets, liabilities, and off-balance sheet items of banks are extremely susceptible to changes in interest rates. The truth is that a significant portion of banks' credit portfolio consists of interest-rate mortgages (Ramlall, 2018). In particular, interest rate volatility impacts a bank's net interest margin, which in turn impacts profitability (English et al., 2018).

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

The effect of interest rates on the performance of commercial banks has been the subject of numerous studies. For example, it was shown by Hakan and Gulumser (2011) that changes in interest rates have a big effect on banks' performance. In a similar vein, Saraç and Zeren (2015) and Ergec and Arsalan (2013) found that interest rate volatility significantly affects bank performance. After examining the impact of interest rates on Nigerian banks' profitability, Ogunbiyi and Ihejirika (2014) concluded that interest rates had a negative impact on bank profitability. Similarly, Ahmed et al. (2018) and Khan and Sattar (2014) examined the impact of interest rate fluctuations on CB profitability in Pakistan. They discovered an inverse relationship between interest rate volatility and bank profitability.

H_2: The stability of commercial banks is significantly impacted negatively by interest rate fluctuation.

2.3 Inflation Rate Volatility and Bank Stability

The most important metric that significantly affects banks' performance is inflation (Zeitun, 2012). The overall percentage increase in the Consumer Price Index (CPI) for all goods is measured by the inflation rate (Anbar & Alper, 2011). While inflation rate risk is the unexpected fluctuations in the inflation rate over time (Rashid & Khalid, 2017). Variations in the inflation rate have an adverse impact on the financial stability of banks. Because in the situation of inflation rate variation, banks are unable to predict accurately real return on the loan and deposit. This may adversely affect the borrowing and lending decision and hence may increase bank insolvency risk (Ivipcisc et al., 2008).

The way depositors withdraw their money is determined by inflation. Because inflation reduces purchasing power, depositors often take out larger sums of money from their bank accounts and spend them right away in order to protect themselves from future drops in the value of money. As a result, banks are vulnerable to unstable financial conditions (Khaliq et al., 2017). Bank performance declines as a result of rising inflation, which is predicted to have a negative correlation with bank performance. Because banks may raise client fees to offset their operating expenses during periods of high inflation. Furthermore, banks hike interest rates to enhance revenue as inflation rises since there is a greater need for money to meet expenses. Second, in order to pay for the extra expense, consumers borrow more money. As a result, clients default on loans

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

and interest, which costs the bank interest income and ultimately reduces bank profitability (Amin et al., 2014). The other adverse impact of high inflation is the uncertainty about the future rate of inflation. This uncertainty has a worse effect on the bank's loan policy because it increases the withdrawal of money by customers from banks. Hence, it causes a shortage of bank resources and affects the lending behavior of banks because commercial banks do not agree to provide finance without increasing interest rates. When resources are limited, banks might not be able to meet their financial obligations on time, which could lead to their insolvency (Rashid & Khalid, 2017).

H_3: The stability of commercial banks is significantly impacted negatively by inflation rate fluctuation.

3. Methodology

3.1 Sample, Data Collection and Analysis

The target population for the said study is the commercial banks in Pakistan. The banking sectors of Pakistan include 34 commercial banks including full-fledge Islamic banks. We selected 22 banks as sample banks whose data are easily available for the sample period. We selected data from 2013 to 2022. The data regarding financial stability are collected thoroughly from the published annual report of each bank. Further, the State Bank of Pakistan reports are the source of the macroeconomics key variables data. The Generalised Method of Moments (GMM), a two-step system estimate technique, is used to analyze a dynamic panel data set.

3.2 Variable Description

The study's dependent variable is the banks' financial stability. Banks' financial stability was assessed using the Z-Score index. Many academics employ the well-known Z-score ratio to assess the financial stability of banks (Miah and Uddin, 2017; Ozili, 2018; Mabkhot & Al-Wesabi, 2022). The likelihood of bank insolvency risk has an inverse relationship with the Z-score index. While a low score indicates greater risk and financial instability, a higher score indicates less risk and greater financial soundness. Macroeconomic variables such as inflation, interest rates, and exchange rates are among the explanatory factors. The annual standard deviation of each variable's monthly rate is used to determine the volatility of the interest rate, inflation rate, and exchange rate.

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

Table 1: Description of Variables

Variables	Measurement Proxies	Reference
Bank Stability	Z-Score = $\frac{(RoA)_{it}+(\mathrm{TE/TA})_{it}}{\delta(RoA)_{it}}$ $(RoA)_{it}$ denotes return on asset for i bank at time t, $(T\mathrm{E/TA})_{it}$ represents the book value of total equity to total Assets for i bank at time t, and $\delta(RoA)_{it}$ is the standard deviation of return on asset for i bank at time t.	Miah and Uddin (2017), Mabkhot & Al-Wesabi, (2022), Chai et al. (2022)
Real interest rate volatility	The yearly standard deviation of monthly Lending interest rate	Rashid & Khalid (2017), Rehman & Rashid (2022)
Inflation rate volatility	The yearly standard deviation of the monthly Consumer Price Index	Rashid & Khalid (2017), Rehman & Rashid (2022)
Exchange rate volatility	The yearly standard deviation of the monthly Real Exchange Rate	Hasanov et al, (2018), Rehman & Rashid (2022)
Bank size	Natural Log of Total Assets	Rashid & Khalid (2017), Hasanov et al, (2018), Chai et al. (2022)
Bank Deposits	Log of total deposits	Rehman & Rashid (2022)
Assets Quality	Non-performing loan to total loans ratio	Rashid & Khalid (2017),
Bank capital	Total equity to Assets ratio	Rashid & Jabeen (2016)

Additionally, this study examines a number of bank-specific control variables, including bank size, bank deposits, loan quality, and bank capital. We use a natural log of assets as a measure of bank size, and bank deposits are the natural log of all bank deposits. Deposits are important for a bank's performance and stability because they are the primary source of funding for the bank; deposits also increase investment, which raises bank earnings and income. Similarly, the capital ratio, as determined by the total equity to assets ratio, is crucial for the performance and stability of a bank; a lower ratio indicates a highly leveraged balance sheet that poses a high default risk.

3.3 Empirical Model

Equation 1 shows the expected relationship between the explanatory variables and financial stability. Where FS_{it} is the financial stability of i bank at time t. FS_{it-1} is the first lagged

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

dependent variable that measured the persistence in financial stability of banks over time. Similarly,ΔExg_t denotes volatility in the exchange rate. Further, ΔInt_t signifies variation in interest rate while ΔInf_t is the variation in inflation rate at time t for each bank.

$$FS_{it} = \vartheta_0 + \vartheta_1 FS_{it-1} + \vartheta_4 \Delta Exg_t + \vartheta_3 \Delta Int_t + \vartheta_2 \Delta Inf_t + \vartheta_5 BS_{it} + \vartheta_6 TD_{it} + \vartheta_7 AQ_{it} + \vartheta_8 BC_{it} + \mu \quad (1)$$

$BS_{it}, TD_{it}, AQ_{it},$ and BC_{it} represent bank size, total deposits, assets quality and bank capital for i bank at time t. ϑ_0 is constant and $\vartheta_1, \vartheta_2, \vartheta_3, \vartheta_4, \vartheta_{,5}, \vartheta_6, \vartheta_{7,} \vartheta_8$ are slope coefficients. μ is the error term.

4. Results and Discussion

The descriptive statistics show the number of total observations, mean of values, standard deviation, minimum and maximum values. The total observations in the study include 198. The average value of the natural log of financial stability is 1.167 with a standard deviation of 0.309. Additionally, the real exchange rate, loan interest rate, and inflation rate all have average variation values of 2.416, 0.266, and 1.14, respectively. Moreover, the average size of banks is 8.527 with 0.56 standard deviation. Additionally, the banks have average deposits, asset quality and capital are 8.394, 0.939, 0.939 and 8.624.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Financial Stability	198	1.167	0.309	0.021	2.349
Real exchange Rate	198	2.416	0.801	1.438	3.884
Lending Interest Rate	198	0.266	0.196	0.052	.696
Inflation rate	198	1.14	0.463	0.365	1.684
Bank Size	198	8.527	0.56	7.12	9.98
Total Deposits	198	8.394	0.541	7.008	9.521
Assets Quality	198	0.939	0.297	0.127	1.629
Bank Capital	198	8.624	4.78	3.103	26.085

4.2 Estimation Results

This section indicates the diagnostic tests and estimation results and their interpretation. We present the Sargan and Hansen test. Instrument validity is tested using the Hansen J test, which examines the null hypothesis on the instruments' overall validity. If the null hypotheses are not rejected, the instrument selection is supported. The Sargan test makes the assumption that there

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

is no correlation between the instrument's variables and the residuals or error terms. The test is deemed valid after the null hypothesis—that the over-identifying instruments are valid—is accepted. The test for autocorrelation/serial correlation of the error term is also shown in order to test the null hypothesis that the differenced error term first and second-orders are serially correlated. The original error term may be serially uncorrelated, and the moment requirements may be properly provided, as indicated by the failure to reject the null hypothesis that there is no second-order serial correlation (i.e., the value of AR (2) >0.05). The Hansen statistics result (Prob > chi2 = 0.371) showed the validity of the instrumental variables, the Sargan test (Prob > chi2 = 0.482) for the validity of the over-identifying restrictions in the GMM estimation is accepted for all specifications, and the test for AR (2) (Pr > z = 0.403) rejected the second-order autocorrelation because it revealed that there was no second-order autocorrelation.

Table 3: Estimation Results

Panel A: Estimation Results		
Variables	**Financial Stability Coefficients**	**Standard Error**
Lagged Financial Stability	0.099***	(0.037)
Real Exchange Rate	-0.057***	(0.007)
Lending Interest Rate	-0.066***	(0.011)
Inflation Rate (CPI)	-0.093***	(0.013)
Bank Size	-0.372*	(0.144)
Total Deposits	0.620***	(0.179)
Assets Quality	0.176***	(0.066)
Bank Capital	0.322***	(0.003)
Constant	-0.614**	(0.305)
Panel B: Diagnostic Tests		
Banks	22	
No. of Observation	198	
No. of instruments	20	
AR (1)	0.045	
AR (2)	0.403	
J-state	0.371	
P-Value	2.78	
*** p<0.01, ** p<0.05, * p<0.1		

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

The coefficient of lagged financial stability indicates a positive value, according to the estimation results. This implies that long-term financial stability is maintained. Additionally, the findings support our initial hypothesis by showing that the real exchange rate's coefficient is considerable and negative. It also implies that fluctuations in the currency rate have a negative effect on banks' financial stability. This result suggests that increased exchange rate volatility leads to increased bank financial instability. The exchange rate's detrimental effect is in line with the conclusions of Al-Homaidi et al. (2018) and Muriithi et al. (2016). Similarly, the estimated coefficient of lending interest rate is statistically negative, consistent with the results of Muriithi et al. (2016), and Al-Homaidi et al. (2018). This result validates our second hypothesis. Moreover, the findings imply that greater variation in interest rates leads to grater instability in banks. Interest rates affect the demand for financial services, goods, instruments, and intermediaries in addition to influencing decisions about saving and investing. A high lending rate deters investors from taking out loans for investments and raises the cost of capital (Assefa et al., 2017). Additionally, a bank's financial stability is negatively impacted by inflation rate volatility, as indicated by the inflation rate coefficients. This finding indicates that banks' financial soundness declines with an increase in inflation. Our third theory is supported by this. prior empirical research, such as that conducted by Nor and Ahmed (2015). Rashid and Khalid (2017) similarly found that the inflation rate had a similar detrimental effect on banks' financial soundness.

Examine the impact of the control variables; at the 10% level, the bank size coefficient is negative and significant. It implies that larger banks are less stable financially and that bank size has a negative effect on banks' financial stability. The reason may be that large banks expectedly have higher operational cost. On the contrary, the coefficient of bank deposits signify the positive role of deposits in the enhancement of bank stability. This suggests that higher deposits increase the bank investment, which in turn enhances the return of the bank. Further, asset quality has statistically positive coefficients. This implies that the bank stability increases with the decrease of non-performing loan. On other hand, the results denote the positive impact of bank capital on banks' stability. Bank capital is a key element that adds strength to promote profitability and survive financial instability is a robust capital structure (Hasanov et al., 2018). Higher equity reduces the risk of default arising due to higher debt financing.

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

5. Conclusion

This study assessed how Pakistani commercial banks' financial performance was affected by the volatility of macroeconomic factors. The research assessed a panel data set covering the years 2013–2022. The findings of the two-step system GMM estimation showed that the financial stability of Pakistani banks is significantly and negatively impacted by fluctuations in the currency rate, interest rate, and inflation rate. Further contributing to the improvement of financial stability are bank-specific parameters including total deposits, asset quality, and bank capital. On contrary, the larger banks in term of asset size are financially less stable. The estimation results we derived in the study have several recommendations for investors, customers, bank management and policymakers. We derived certain driving indicators of the financial stability of banks that may be helpful for bank managers to improve the bank's financial stability. Moreover, it also assists in understanding the volatility in macroeconomic indicators that affect financial stability. For future studies, it is recommended to incorporate more macroeconomic indicators like the unemployment rate, real GDP rate, foreign direct investments, etc that may have vital impacts on bank stability. In addition, it is suggested to conducted the same study by differentiate the impacts on Islamic banks and conventional banks or may be conducted by comparing among countries or at regional level.

References

1. Adusei, M. (2015). The impact of bank size and funding risk on bank stability. *Cogent Economics and Finance*, *3(1)*, 1-19.
2. Ahmed, A., Rehan, R., Chapra, I. U., & Supro, S. (2018). Interest rate and financial performance of banks in Pakistan. *International Journal of Applied Economics, Finance and Accounting*, *2(1)*, 1-7.
3. Al-Homaidi, E. A., Tabash, M. I., Farhan, N. H., & Almaqtari, F. A. (2018). Bank-specific and macro-economic determinants of profitability of Indian commercial banks: A panel data approach. *Cogent Economics & Finance*, *6(1)*, 1-26.
4. Altaee, H. H. A., Talo, I. M. A., & Adam, M. H. M. (2013). Testing the financial stability of banks in GCC countries: Pre and post financial crisis. *International Journal of Business and Social Research*, *3(4)*, 93-105.

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

5. Amin, M. A. M., Sanusi, N. A., Kusairi, S., & Abdallah, Z. M. (2014). Inverse relationship of financial risk and performance in commercial banks in Tanzania. *Investment Management and Financial Innovations*, *11(4)*, 279-291.
6. Anbar, A., & Alper, D. (2011). Bank specific and macroeconomic determinants of commercial bank profitability: Empirical evidence from Turkey. *Business and Economics Research Journal*, *2(2)*, 139-152.
7. Ani, W. U., Ugwunta, D. O., & Okanya, O. (2013). The Effect of Foreign Exchange Reforms on Financial Deepening: Evidence from Nigeria. *American Journal of Business and Management*, *2(3)*, 204-209.
8. Aremu, O. S., Suberu, O. J., & Oke, J. A. (2010). Effective credit processing and administration as a panacea for non-performing assets in the Nigerian Banking System. *Journal of Economics*, *1(1)*, 53-56.
9. Assefa, TA, OA Esqueda and AV Mollick (2017). Stock returns and interest rates around the World: A panel data approach. Journal of Economics and Business, 89, 20–35.
10. Baba, S., & Nasieku, T. (2016). Effect of macroeconomic factors on financial performance of commercial banks in Nigeria. *International Journal of Social Science and Information Technology*, *2*(1), 1278-1299.
11. Castro, V. (2013). Macroeconomic determinants of the credit risk in the banking system: The case of the GIPSI. *Economic modelling*, *31*, 672-683.
12. Chichi, O. A., & Casmir, O. C. (2014). Exchange rate and the economic growth in Nigeria. *International Journal of Management Sciences*, *2(2)*, 78-87.
13. Djebali, N., & Zaghdoudi, K. (2020). Threshold effects of liquidity risk and credit risk on bank stability in the MENA region. *Journal of Policy Modeling*, *42*(5), 1049-1063.
14. Dodi, D., Supiyadi, D., Arief, M., & Nugraha, N. (2018). Islamic Bank Profitability: A Study of Islamic Bank in Indonesia. *The International Journal of Business Review*, *1(1)*, 51-62.
15. Duraj, B., & Moci, E. (2015). Factors influencing the bank profitability-empirical evidence from Albania. *Romanian Economic and Business Review*, *10*(1), 60.

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

16. Ekinci, A. (2016). The Effect of Credit and Market Risk on Bank Performance: Evidence from Turkey. *International Journal of Economics and Financial Issues*, *6(2)*.
17. English, W. B., Van den Heuvel, S. J., & Zakrajsek, E. (2018). Interest rate risk and bank equity valuations. *Journal of Monetary Economics*, *98*, 80-97.
18. Entrop, O., Memmel, C., Wilkens, M., & Zeisler, A. (2008). Analysing the interest rate risk of banks using time series of accounting-based data: Evidence from Germany. Bundesbank Discussion Paper No. 01/2008, retrieved on 16/06/2020 from SSRN: https://ssrn.com.
19. Ergec, E. H. & Arsalan, B. G. (2013): Impact of interest rates on Islamic and conventional banks: the case of Turkey. *Applied Economics*, *45(17)*, 2381-2388
20. Ghassan, H. B., & Krichene, N. (2017). Financial Stability of Conventional and Islamic Banks: A Survey. MPRA Paper No. 82372, online at https://mpra.ub.unimuenchen.de/82372/
21. Hakan and Gulumser. (2011). Impact of interest rate on Islamic and conventional Banks: The case of Turkey. *MPRA Paper No.29848.*
22. Ivipcisc, L., Kunovac, D., & Ljubaj, I. (June 2008). Measuring bank insolvency risk in CEE countries. *Fourteenth Dubrovnik Economic Conference*, *Dubrovnik*, *Croatia*, *25-28*.
23. Hasanov, F. J., Bayramli, N., & Al-Musehel, N. (2018). Bank-specific and macroeconomic determinants of bank profitability: Evidence from an oil-dependent economy. *International Journal of Financial Studies*, *6*(3), 78.
24. Khaliq, A., Thaker, H. M. T., Thaker, M. A. M. T., & Pitchay, A. A. (2017). Interest rate risk management and Islamic banking: evidence from Malaysia. *Journal of Islamic Finance*, *6(1)*, 16-30.
25. Khan, W. A., & Sattar, A. (2014). Impact of interest rate changes on the profitability of four major commercial banks in Pakistan. *International Journal of Accounting and Financial Reporting*, *4(1)*, 142-154.
26. Kozarić, K., & Dželihodžić, E. Ž. (2020). Effects of macroeconomic environment on non-performing loans and financial stability: Case of Bosnia and Herzegovina. *Journal of Central Banking Theory and Practice*, *9*(2), 5-17.

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

27. Mabkhot, H., & Al-Wesabi, H. A. H. (2022). Banks' financial stability and macroeconomic key factors in GCC Countries. *Sustainability*, *14*(23), 15999.
28. Menicucci, E., & Paolucci, G. (2016). The determinants of bank profitability: Empirical evidence from European banking sector. *Journal of Financial Reporting and Accounting, 14(10)*, 86-115.
29. Miah M.D., & Uddin, H. (2017). Efficiency and stability: A comparative study between Islamic and conventional banks in GCC countries. *Future Business Journal, 3 (2)*, 172-185
30. Mirzaei, A. (2010). The effect of market power on stability and performance of Islamic and conventional banks. *Islamic Economic Studies, 18(1)*, 51-89.
31. Muriithi, J. G., Muturi, W. M., & Waweru, K. M. (2016). The effect of market risk on financial performance of commercial banks in Kenya. *Journal of Finance and Accounting. 4(4)*, 225-233.
32. Mushtaq, S., & Siddiqui, D. A. (2017). Effect of interest rate on bank deposits: Evidence from Islamic and non-Islamic economies. *Future Business Journal, 3(1)*, 1-8.
33. Nahar, S., & Sarker, N. (2016). Are macroeconomic factors substantially influential for Islamic bank financing? Cross-country evidence. *Journal of Business and Management, 18(6)*, 20-27.
34. Nguyen, M., Skully, M., & Perera, S. (2012). Market power, revenue diversification and bank stability: Evidence from selected South Asian countries. *Journal of International Financial Markets, Institutions and Money*, *22*(4), 897-912.
35. Nor, A. M. (2015). Impaired financing determinants of Islamic banks in Malaysia. Information Management and Business Review, 7(3), 17-25.
36. Olokoyo, F., Ibhagui, O., Babajide, A., & Yinka-Banjo, C. (2019). The impact of macroeconomic variables on bank performance in Nigeria. *Savings and Development*, *43*, 1-13.
37. Osundina, C. K., Osundina, J. A., Jayeoba, O. O., & Olayinka, I. M. (2016). Exchange rate volatility and banks performance: Evidence from Nigeria. *International journal of economics and business management*, *2*(4), 1-11.

Journal of Business and Management Research
ISSN:2958-5074 pISSN:2958-5066
Volume No:3 Issue No:3 (2024)

38. Ozili, P. K. (2017). Bank profitability and capital regulation: Evidence from listed and non-listed banks in Africa. *Journal of African Business*, *18(2)*, 143–168.
39. Pham, T. T., Kieu Oanh Dao, L., & Chien Nguyen, V. (2021). The determinants of bank's stability: A system GMM panel analysis. Cogent Business & Management, 8(1), 1963390.
40. Rajhi, W., & Hassairi, S. A. (2013). Islamic banks and financial stability: a comparative empirical analysis between MENA and Southeast Asian countries. *Region et development*, *37*, 149-177.
41. Ramlall, I. (2018). A framework for financial stability risk assessment in banks. In the Banking Sector Under Financial Stability. *Emerald Publishing Limited*, *2*, 29-117.
42. Rashid, A., & Khalid, S. (2017). Impacts of inflation and interest rate uncertainty on performance and solvency of conventional and Islamic banks in Pakistan. *Journal of Islamic Business and Management*, *7*(2).
43. Reid, W., & Joshua, D. (2004). *The Theory and Practice of International Financial Management*. Upper Saddle River, NY: Prentice Hall.
44. Rehman, J.U. & RASHID, A. (2022). Impacts of bank-specific and macroeconomic risks on growth and stability of Islamic and conventional banks: An empirical analysis from Pakistan. *The Journal of Asian Finance, Economics and Business*, *9(2)*, 1-14.
45. Saraç, M. & Zeren, F. (2015). The dependency of Islamic bank rates on conventional bank interest rates: further evidence from Turkey. *Applied Economics*, *47(7)*, 669-679.
46. Solarin, S. A., Hammoudeh,S., & Shahbaz, M. (2018). Influence of Economic Factors on Disaggregated Islamic Banking Deposits: Evidence with Structural Breaks in Malaysia. *Journal of International Financial Markets, Institutions and Money*, 55, 13–28.
47. Zainol, Z., Kassim, S.H. (2012). Critical review of the literature on the rate of return risk in Islamic banks. *Journal of Islamic Accounting and Business Research*, *3(2)*, 121–137.
48. Zeitun, R. (2012). Determinants of Islamic and conventional banks performance in GCC countries using panel data analysis. *Global Economy and Finance Journal*, *5(1)*, 53-72.