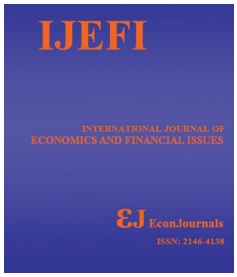

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Does Monetary Policy Affect the Stability of Islamic Banks?

Zakaria Savon*

Faculty of Legal, Economic and Social Sciences, Souissi, Mohamed V University, Rabat, Morocco. *Email: zakaria.savon@um5r.ac.ma

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ABSTRACT

The financial crisis of 2007-2008 compelled economists to reevaluate the impacts and trajectories of monetary policy. It highlighted the new challenges central banks face, particularly in integrating financial stability into the monetary policy-making process. Financial stability is closely connected to monetary policy. The financial sector plays a vital role as a channel for monetary policy to affect the real economy. Numerous studies have investigated the impact of monetary policy on the stability of conventional banking institutions. Nonetheless, a substantial study vacuum persists concerning the impact of monetary policy on the stability of Islamic financial institutions. Our research aims to investigate this matter. The study analyzed a sample of 34 financial institutions across 11 countries with dual banking systems, spanning the years 2013-2022. It utilized a random effects estimator and a system GMM estimator. The findings demonstrate a substantial and negative impact of the monetary policy rate on the stability of Islamic banks. The study's conclusions have significant consequences, especially for infrastructure and monetary policy. The advancement of the Islamic money market signifies a crucial development in the strength and expansion of Islamic financial organizations. Furthermore, monetary policymakers must evaluate the effects of interest rate-oriented monetary policy on the stability of Islamic banks.

Keywords: Monetary Policy, Islamic Banks, Stability, Z-score, GMM
JEL Classifications: E52, G21, C23

1. INTRODUCTION

The 2007-2008 financial crisis led economists to reconsider the impact and future of monetary policy (Smets, 2018). Critics argue that expansionary monetary policy was at the root of the crisis (Stein,2013; Grimm et al., 2023). Taylor (2007) noted that low interest rates encouraged financial institutions to take excessive risks in search of higher returns.

Borio and Drehmann (2009) pointed out that financial crises have raised new challenges for central banks, including the place of financial stability in monetary policy decision-making. Particular attention should be given to preserving financial stability while pursuing the primary objective of price stability (Nair and Anand, 2020; Venter, 2020).

Financial stability and monetary policy are intrinsically linked. This relationship is mutually complex. Maintaining financial stability is essential for implementing monetary policy. In a 2015 study, Kryvstov et al. highlighted that financial stability is a crucial factor in implementing monetary policy because it is a prerequisite for the smooth functioning of the financial system. The financial system provides the essential information needed by the central bank to execute monetary policy. The financial system also serves as a crucial channel for transmitting monetary policy to the real economy. Similarly, financial turmoil is more likely during periods of deflation or hyperinflation (Bordo et al., 2000).

A great deal of research has been conducted on the impact of monetary policy on the stability of conventional banks (Wang et al., 2022; Avalos and Mamatzakis, 2023). However, research on the effects of monetary policy on the stability of Islamic banks is very limited (Zaheer and Arby, 2023). Our work aims to conduct a study in this direction. The impact of monetary policy on stability is addressed in a panel study of countries with a dual banking system. This panel study is the first of its kind. It aims

to understand the existence and nature of the impact of interest rate-based monetary policy on the stability of individual Islamic banks, and to provide appropriate policy implications.

The next section of the study presents the literature on the impact of monetary policy on financial stability. Section 3 describes the methodology used in this study. Section 4 presents the empirical analysis and provides an interpretation of the results. Finally, Section 5 presents the conclusion and policy implications of the study.

2. LITERATURE REVIEW

The gravity of the recent financial crisis in several nations has prompted scholars and policymakers to reevaluate the correlation between monetary policy and financial stability. A prevalent argument posits that central banks, due to their pivotal position in the financial system, must undertake increased responsibility in averting financial crises (Billi and Vredin, 2014). During the 1990s and early 2000s, it was generally acknowledged that central banks needed to modify their interest rates solely in reaction to inflation and, sometimes, output levels. The legitimacy of this consensus has been challenged following the global financial crisis and the recent epidemic. In contrast to prevalent literature, several experts contend that financial crises are endogenous, asserting that central banks must also address the accumulation of financial imbalances; in essence, they must "lean against the wind" (Tobal and Menna, 2020). A previous issue in articulating financial stability and monetary policy is the absence of a universally accepted definition of financial stability in the literature, owing to the complexity and scope of the concept (Rieu-Foucault, 2018). Various definitions of financial stability have been suggested, encompassing the capacity to absorb or endure shocks and to remain resilient against financial hardship (Allen and Wood, 2006; Petrovska and Mihajlovska, 2013; Popovska, 2014; Schinasi, 2004). Central banks frequently characterize financial stability as the ability of the financial system to withstand unforeseen negative shocks. An alternate viewpoint on the definition of financial stability may be derived from the research of Allen and Wood (2006), De Graeve et al. (2008), and Tuzcuoglu (2020). Allen and Wood (2006) proposed that the optimal strategy is to initially identify the attributes of a financial instability episode and thereafter define financial stability as a state where instability is improbable.

Defining and quantifying financial stability is difficult due to the many interdependencies and interactions among various components of the financial system. Financial stability is intricately connected to the stability of the banking sector and other financial system elements (Swamy, 2014). The ECB (2023) characterized financial stability as a condition of the financial system, including banks, markets, and market infrastructures, that can endure and alleviate financial disturbances. Popovska (2014) contended that the robustness of the banking system is often seen as a critical determinant of financial stability.

There are several measures to assess the stability of the financial system (Wang et al., 2022). The z-score is the commonly used measure to assess financial stability at the level of individual institutions by comparing capitalization and returns with the volatility of returns. The z-score is a risk measure used to reflect the probability of insolvency of financial institutions. A higher z-score indicates a lower probability of insolvency and greater financial stability (Cihak, 2007; De Nicolo, 2001; Rajhi and Hassairi, 2013; Karim et al.,2018).

The formula for calculating a bank's z-score is given below:

$$z\text{-score} = (ROA - CAP)/\sigma$$

Where ROA is the return on assets, CAP is the capital-to-asset ratio, and σ is the standard deviation of ROA.

However, the z-score is limited by its reliance on accounting data and its focus on individual institutions, which may lead to neglecting the risk of default within various groups of institutions.

The regulatory capital-to-risk-weighted assets ratio and the non-performing loans ratio are also used to assess the soundness of financial institutions. Synthetic indices are developed to assess financial stability in addition to individual indicators (Kalsie and Pandey, 2020). The composite index could be used to assess the stability of individual entities as well as the entire system (systemic stability).

Monetary policy may substantially influence financial stability (Wang et al., 2022). When a central bank opts for an expansionary or contractionary monetary policy, its primary transmission channels are financial institutions (Bernanke and Blinder, 1992). Consequently, altering monetary variables in varying cyclical contexts may destabilize the financial system.

An expanding corpus of research investigates the relationship between monetary policy orientation and the risk-taking conduct of banks (e.g., Maddaloni and Peydro, 2011; Buch et al., 2014; Ioannidou et al., 2015; Brana et al., 2019; Heider et al., 2019; Bubeck et al., 2020). Expansive monetary policy may push banks to undertake greater risk in their asset and liability portfolios (Adrian and Liang, 2016). Risk perceptions may be modified in a low-interest rate environment, thereby heightening banks' inclination to partake in hazardous practices (Borio and Zhu, 2012). Banks may relax credit standards by extending loans to higher-risk clients in reaction to the relaxation of monetary policy. Moreover, several publications have shown that extended durations of low interest rates can adversely impact bank earnings, leading banks to use riskier investment methods to offset diminished returns. The "search for yield" drives this response mechanism (Rajan, 2005). The influence of monetary policy on bank liabilities may jeopardize bank stability. Decreased interest rates diminish the expenses related to bank financing, prompting banks to augment their leverage (Gertler and Karadi, 2011). Heightened leverage prompts banks to undertake more hazardous judgments about their assets. Nonetheless, the findings from the prior literature pertain to the traditional banking industry. They cannot be entirely implemented in the Islamic banking industry (Zaheer and Arby 2023).

Monetary policy changes, including interest rate fluctuations, have direct or indirect impacts on Islamic banking institutions (Kiaee,

2016). Two major risks could be associated with these impacts, namely, interest rate risk or displaced business risk, and asset-liability mismatch risk (Yungucu and Saiti, 2016).

The Islamic Financial Services Board defines displaced commercial risk as: "…the risk arising from assets managed on behalf of investment account holders that is effectively transferred to the equity of Islamic financial institutions because they forgo all or part of their Mudharib share in that fund, when deemed necessary, due to commercial pressures in order to increase the return that would otherwise be payable to investment account holders" (IFSB, 2005: Standard 76).

According to Toumi and Viviani (2013), Islamic banks are exposed to this risk when the real rate of return on unrestricted investment accounts is lower than the interest rates on prevailing alternative conventional investments with similar risk levels. Depositors may be dissatisfied with the low returns on their investment accounts, leading them to withdraw their funds in search of higher returns elsewhere (Aysan et al., 2015). The considerable risk of deposit withdrawal can endanger the stability of banks and the entire system (Toumi et al., 2019). Islamic banks strive to provide depositors with a competitive return even if they risk sacrificing their profit margin or capital due to commercial pressures. They transfer profits from shareholders to investment account holders and transfer the risk borne by investment account holders to shareholders (Baldwin et al., 2019; Toumi et al., 2019). The use of multiple smoothing techniques, such as adjusting the Mudharib share, maintaining equalization of profits and investment risk reserves, and shifting income, affects the return and risk exposure of the bank's shareholders (Suandi, 2017; Sukmana and Ibrahim, 2017). Thus, the displaced commercial risk affects the performance of banks in terms of rentability and stability (Arshad et al., 2015). In 2001, the closure of Ihlas Finance House in Turkey significantly illustrated the destabilizing effect of displaced commercial risk leading to bank failure (Rouetbi et al., 2023).

The Islamic finance literature shows that Islamic banking institutions face significant commercial pressures to perform better than traditional financial institutions, particularly during economic downturns, due to their reputation for resilience to crises (Ismal, 2012). Commercial pressure on investment deposits arises from the conflicting objectives of Islamic depositors: adhering to Shariah and seeking profits (Rouetbi et al., 2023).

Various studies have highlighted commercial pressures by examining potential relationships between interest rates, Islamic yields, and Islamic deposit levels. Aysan et al. (2015) examined the impact of monetary policy on deposits in Islamic and conventional banks in Turkey from September 2004 to December 2012. The results revealed the insensitivity of religious depositors to interest rate changes. Using monthly data covering the period January 1999-November 2016, Sukmana and Ibrahim (2017) found strong evidence supporting nonlinear responses of Islamic investment rates to conventional long- and short-term rates in Malaysia. Islamic rates rise faster and fall slower in response to changes in conventional deposit rates. However, as maturity increases, this behavior weakens. The study concluded that Islamic banks have not rigidly linked their investment deposit rates to conventional deposit rates. In Malaysia again, Saeed et al. (2021) examined the relationship between the Islamic rate of return and the interest rate in a dual banking system. They analyzed monthly data from January 2009 to April 2018. The results of the ARDL model and the Toda-Yamamoto causality test showed that the deposit and funding rates of Islamic banks in Malaysia are influenced by both conventional rates and the policy rates of Bank Negara Malaysia. According to the authors, Islamic banks are forced to compare their rates with conventional rates due to the arbitrage carried out by profit-motivated customers.

Another important issue regarding the effects of monetary policy is the asset-liability mismatch. Basically, this is due to the fact that the nature of products is different on the asset and liability side of banks. In Islamic banks, the vast majority of assets are long-term and fixed-yield assets; the yields cannot be changed during the term of the contract. If the cost of funds increases, Islamic banks cannot adjust and increase their yields. On the other hand, the balance sheet liability of an Islamic bank is short-term deposits with variable returns. This implies that Islamic banks should adjust their rates of return accordingly to protect their competitiveness in the event of interest rate changes in conventional banks (Yungucu and Saiti, 2016).

Research on the effects of interest-based monetary policy on the stability of Islamic banks remains quite scarce. A study conducted by Syapriatama and Pratiwi (2021) focused on the Indonesian context, examining the impact of monetary policy on the stability of Islamic banks from January 2007 to December 2020. In this research, the 7 Day Repo Rate was used as the monetary policy rate, while the stability of Islamic banks was evaluated using the Z-score metric. The study employed the Autoregressive Distributed Lag (ARDL) model to explore both the long-term and short-term relationships between the variables. The findings revealed that the influence of monetary policy on the stability of Islamic banks is only temporary.

In another relevant study, Zaheer and Arby (2023) analyzed the impact of monetary policy on the financial stability and asset quality of banks in Pakistan using quarterly data from Q2 2007 to Q2 2022. The Z-score served as the indicator for stability in this analysis. Their results indicated that an increase in the policy rate adversely affected the stability of conventional banks, while concurrently having a positive effect on the stability of Islamic banks. Specifically, a 1% increase in monetary tightening was associated with a decrease in the Z-score by 0.10 points for conventional banks, but an increase of 0.10 points for Islamic banks. Additionally, it was noted that the asset quality of both conventional and Islamic banks also suffered, with non-performing loans rising by 0.19 points for every percentage point increase in monetary tightening.

3. DATA, MODEL AND METHODS

3.1. Data

Our study uses a panel of 34 Islamic banks from 11 countries with a dual banking system between 2013 and 2022. Table 1 illustrates the composition of the sample. We have collected the

file from various references, including the audited annual reports of Islamic banks for the variables specific to each of them. We used the interbank market rate to assess monetary policy, which we obtained from the International Monetary Fund data and the archives of central banks. However, when statistics on this rate are not available, we used one of the central bank rates. Real gross domestic product and inflation data were also collected from the World Bank's comprehensive database and the archives of the central banks of the countries concerned. Table 2 gives a definition of the variables and their sources.

3.2. Variables

We use the Z-score as an indicator of Islamic bank stability, consistent with previous studies by Čihák and Hesse (2010), Bourkhis and Nabi (2013), Abdul Karim et al. (2019), Khalil (2021), Ledhem (2022), and Rouetbi et al. (2023). The Z-score is calculated as follows:

$$Z = (RoA\text{-}CAP)/\sigma$$

Where RoA denotes return on assets, CAP denotes the ratio of equity to total assets, and σ is the standard deviation of RoA.

The Z-score captures the resilience of banks, as it is the magnitude (in standard deviations of each bank's ROA) of the loss that would lead to insolvency by depleting the bank's capital. The analysis assesses the adequacy of banks' reserves (including capital and earnings) relative to the level of risk they face, as indicated by the degree of volatility of returns. Higher (lower) Z-scores indicate lower (greater) insolvency risk and greater (less) stability. There is therefore an inverse correlation between the Z-score and the probability of insolvency. As in previous studies, the natural logarithm of the Z-score is taken (Delis et al., 2014; Lepetit and Strobel, 2015; Djatche, 2019).

Table 1: Panel presentation

Country	Number of banks
Bahrain	5
Bangladesh	3
United Arab Emirates	3
Indonesia	2
Jordan	3
Kuwait	3
Malaysia	4
Pakistan	3
Qatar	3
Saudi Arabia	3
Turkey	2

Table 2: Definition of variables

Acronyms	Variables	Source
lnZ	The natural logarithm of the Z-score	Calculated by the author
SIZE	The natural logarithm of total assets	Audited annual reports
LIQ	The ratio of cash and deposits to total assets	
CAP	The share of total equity in total assets.	
EFFIC	Cost-to-income ratio	
MPR	Monetary policy rate	IMF and Central Banks
EG	Annual change in real GDP	World Bank and Central Banks
INFL	Annual change in consumer price index	

Our variable of interest is the monetary policy rate. The interbank market rate was used to assess monetary policy. However, when there is no statistical data on this rate, we opted for one of the Central Bank rates.

Some bank-specific control variables are used in line with previous empirical studies. Specifically, we used the natural logarithm of total assets (SIZE) to assess the size of each bank, which has mixed empirical evidence regarding its relationship with bank stability (Ledhem and Mekidich, 2020). While bank size could be positively related to bank stability due to their "big to fail" status, this correlation could also be negative if economies of scale are not realized. Therefore, the impact of bank size on stability is unclear, and this ambiguity extends to the stability of Islamic banks as well (Ledhem, 2022).

To control for capital, we also included the equity-to-total-assets (CAP) ratio. The association between CAP and bank stability could be positive as more risky capital provides managers with incentives to take less risky positions.

To assess efficiency, we used the cost-to-income ratio (EFFIC). This indicator assesses the ability of banks to manage their costs, including overheads, relative to their revenues. Higher figures indicate lower efficiency, while lower figures imply greater efficiency.

The liquid assets-to-total assets ratio (LIQ) was also considered to assess each bank's liquidity. Having sufficient liquidity reserves is generally considered a prudent measure to enhance financial stability. However, excess liquidity can lead to inefficiencies and decreased profitability (Rajhi and Hassairi, 2013).

In addition to bank-specific control variables, we also included two macroeconomic variables to capture general economic conditions. We used gross domestic product growth (GDP) and inflation (INFL) as indicators of macroeconomic stability, which is consistent with previous studies.

3.3. Model

Our study aims to examine the impact of the monetary policy rate on the stability of Islamic banks. We propose the following model:

$$lnZ_{i,j,t} = \alpha + \beta_1 MPR_{i,t} + \beta_2 X_{i,j,t} + \beta_3 MC_{j,t} + \varepsilon_{jit} \quad (1)$$

The indices i, j, and t refer to the bank, country, and year. The dependent variable lnZ represents bank stability, while MPR represents the monetary policy rate. X denotes the set of bank control variables, and MC is a vector of macroeconomic variables at the country level. α is the constant. Finally, ε represents the error term.

3.4. Method

We use two econometric approaches, namely the random effects estimator and the system GMM estimator, to estimate the baseline model. The selection of the random effects estimator is based

Table 3: Descriptive statistics

Variables	lnZ	MPR	EG	INFL	SIZE	CAP	EFFIC	LIQ
Mean	3.8405	3.3810	3.2293	3.7637	24.062	0.1183	0.5451	0.1129
Median	3.8655	2.2500	4.0276	2.786	24.759	0.1017	0.4705	0.0897
Standard deviation	1.0664	3.3196	3.3111	6.5137	2.5105	0.1300	0.3844	0.1056
Skewness	-0.4963	2.402	-1.0133	7.3782	-0.4270	9.8942	5.9197	4.4388
Kurtosis	3.6818	11.125	4.645	75.586	2.6137	115.81	51.999	35.823
Jarque-Bera	19.941	1225.0	93.715	75440.0	12.081	180392	34940.0	15898.0
Probability	0.0000	0.0000	0.0000	0.0000	0.0023	0.0000	0.0000	0.0000

Table 4: The correlation matrix

Variables	lnZ	MPR	EG	INFL	SIZE	CAP	EFFIC	LIQ
lnZ	1							
MPR	−0.183	1						
EG	−0.015	0.227	1					
INFL	−0.172	0.537	0.274	1				
SIZE	0.019	0.247	0.191	0.204	1			
CAP	0.067	−0.130	−0.001	−0.092	−0.259	1		
EFFIC	−0.223	0.188	0.017	0.103	0.049	0.025	1	
LIQ	−0.127	0.147	0.062	0.137	−0.091	0.480	0.062	1

on the Hausman test, which indicates that the random effects estimator is more appropriate than the fixed effects estimator. We update Eq.1 to a dynamic form that accounts for the persistence of bank stability by integrating the dependent variable lagged by one period in the right-hand side of this equation, and by using the system GMM estimator. The GMM estimation method also addresses potential endogeneity issues in our model. System GMM was chosen because of its ability to generate reliable estimates in the case of unobserved heteroscedasticity, endogeneity, and autocorrelation in panel data. This improves the accuracy and efficiency of analyzing unbalanced panel data, especially when the number of individuals (N) is large and the time period (T) is limited (Arellano and Bond, 1991, Roodman, 2008). The System GMM method estimates two equations simultaneously, considering both their levels and their differences. Specifically, the equation at the levels includes the lagged first differences of the variables of interest, while the equation at the first differences includes the lagged levels of the variables. In addition, we perform diagnostic tests to verify the reliability of the System GMM estimates. The Hansen test evaluates the correlation between the instruments used and the residuals, thus confirming the collective validity of these instruments. The Arellano-Bond test assesses whether there is autocorrelation in the errors of the first-differenced regression, including first- and second-order autocorrelation.

In addition, we assess the robustness of our results using two-step generalized least squares (Two step EGLS). EGLS models address heteroscedasticity and serial correlation issues (Rashid et al., 2017).

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics and Correlation Matrix

Tables 3 and 4 display the descriptive statistics and correlation matrix. The average of the natural logarithm of the Z-score is 3.8. The monetary policy rate is on average 3.5. The study period is marked by moderate growth and inflation. The results of the correlation matrix show a negative correlation between the natural logarithm of the Z-score and the monetary policy rate. Furthermore, the correlations between the explanatory variables are moderate, ruling out the risk of multicollinearity.

Table 5: The results of the estimations of the models with effects random and system GMM

Dependent variable	Random effects model		System GMM model	
	lnZ			
	Coefficient	Prob.	Coefficient	Prob.
lnZ(-1)			0.914752	0.0000***
MPR	−0.416928	0.6770	−0.094014	0.0633*
EG	1.282377	0.2006	−0.009754	0.5271
INFL	−1.499706	0.1347	0.071010	0.1998
SIZE	−0.212623	0.8318	−0.136739	0.5735
CAP	3.226417	0.0014***	1.393911	0.0262**
LIQ	−2.095438	0.0369**	−3.394923	0.0084***
EFFIC	−3.330043	0.0010***	0.131612	0.6534
c	3.552969	0.0004		
R-squared	0.079381		0.395548	
Adjusted R-squared	0.059367		0.376510	
J-statistic			29.86655	
Prob (J-statistic)			0.229325	
AR (1)			0.0002	
AR (2)			0.2493	

***, **, * denote a significant threshold at 1%, 5% and 10%

4.2. Regression Results

The results of the estimations of the models with Random effects and GMM in the system are presented in the Table 5. The random effects model reveals a negative but statistically insignificant impact of the monetary policy rate on the stability of Islamic banks. We also observe the absence of a statistically significant effect for the two variables of the macroeconomic condition. As for the specific characteristics, capitalization, liquidity and efficiency exert a significant impact on the natural logarithm of the Z score indicator of stability. The first characteristic, namely the share of equity in total assets, positively influences the stability of Islamic banks. The more capitalized the bank, the more stable it is. However, liquidity and efficiency have an

impact negative on the Z-score of Islamic banks. Excess liquidity could have negative repercussions on the bank's performance and stability. As a ratio of expenses to revenues, efficiency is inversely related to stability.

The results of the GMM system estimates show a negative and significant impact of the monetary policy rate on the stability of Islamic banks. A restrictive monetary policy, marked by an increase in the interest rate, negatively impacts the resilience of Islamic banks. As with the random effects model, the coefficients of the two macroeconomic variables of the system GMM model are not statistically significant. Macroeconomic conditions do not seem to influence the individual stability of Islamic banks. On the other hand, two specific characteristics have a statistically significant impact. Liquidity has a negative impact on the individual stability of Islamic banks. Due to the lack of development of the money market and Islamic investment products, Shariah-compliant financial institutions are forced to hold excess liquidity to the detriment of their performance and stability. Conversely, capitalization has a positive impact on stability.

Concerning the reliability of the GMM estimates in system, the probability associated with AR (2) shows that 'there is no second-order serial autocorrelation between the residuals. Furthermore, the result of the over-identification test (J statistic) obtained from the Sargan test shows the absence of over-identification, which confirms the validity of the instruments retained.

4.3. Evaluation of the Robustness of the Results

We evaluate the robustness of our results using generalized least squares estimated in two steps (Two step EGLS). The results of this model are given in the Table 6. The estimates of this model in turn reveal a negative impact of the monetary policy rate on the individual stability of Islamic banks. Macroeconomic conditions, both economic growth and inflation, do not seem to exert a significant effect on resilience. Individual Sharia-compliant banks. On the other hand, the four characteristics selected significantly influence ent the stability of Islamic banks. On the one hand, size, measured by the natural logarithm of total assets, and capitalization have a positive impact on the resilience of Islamic banks. On the other hand, liquidity and efficiency, measured by the ratio of expenses to income, have a negative impact on the Z-score, an indicator of individual bank stability.

Table 6: Results of the two-step generalized least squares model (Two step EGLS)

Method	Panel two-stage EGLS		
Dependent variable	lnZ		
	Coefficient	Standard error	Prob.
MPR	−0.056741***	0.020376	0.0057
EG	0.012820	0.011070	0.2478
INFL	−0.006788	0.006186	0.2735
SIZE	0.052053***	0.015631	0.0010
CAP	1.236347**	0.576105	0.0327
LIQ	−1.755903***	0.488739	0.0004
EFFIC	−0.517896***	0.137278	0.0002
c	−0.056741	0.020376	0.0000
R-squared	0.314313		
Adjusted R-squared	0.273045		
F-statistic	17.10352		
Prob (F-statistic)	0.000000		

***, **, * denote significance level at 1%, 5% and 10%

5. CONCLUSION AND RECOMMENDATIONS

The objective of this paper is to understand the existence and nature of the impact of interest rate-based monetary policy on the stability of individual Islamic banks and to provide appropriate policy implications. This examination is undertaken in the context of a panel of banks from several countries with a dual banking system. This work is the first of its kind.

Several studies have investigated the influence of monetary policy on the stability of conventional banks. However, research on the effects of monetary policy on the stability of Islamic banks is very limited.

Islamic banking institutions are directly or indirectly affected by monetary policy changes, including interest rate fluctuations. These impacts can be associated with two important risks: interest rate volatility risk or displaced commercial risk, and asset-liability mismatch risk (Yungucu and Saiti, 2016).

Our research uses data from 34 Islamic banks in 11 countries with dual banking systems, spanning from 2013 to 2022. To estimate the baseline model, we use two economic approaches: random effects estimator and system GMM estimator. In addition, we assess the robustness of our results by employing two-step generalized least squares (Two step EGLS).

The results of system GMM estimations show a negative and significant impact of monetary policy rate on the stability of Islamic banks. A restrictive monetary policy, marked by an increase in the interest rate, negatively impacts the resilience of Islamic banks. Like the random effects model, the coefficients of the two macroeconomic variables of the system GMM model are not statistically significant. Macroeconomic conditions do not seem to influence the individual stability of Islamic banks. On the other hand, two specific characteristics have a statistically significant impact on the natural logarithm of the Z score. Liquidity has a negative impact on the individual stability of Islamic banks. Due to the lack of development of the money market and Islamic investment products, Sharia-compliant financial institutions are forced to hold excess liquidity to the detriment of their performance and stability. Conversely, capitalization has a positive impact on stability.

The two-stage generalized least squares method estimates in turn reveal a negative impact of the monetary policy rate on the individual stability of Islamic banks. Macroeconomic conditions, both economic growth and inflation, do not seem to have a significant effect on the individual resilience of Shariah-compliant banks. On the other hand, the four characteristics selected significantly influence the stability of Islamic banks. On the one hand, size, measured by the natural logarithm of total assets, and capitalization positively impact the resilience of Islamic banks. On the other hand, liquidity and efficiency measured by the ratio of

expenses to income have a negative impact on the Z-score indicator of individual banking stability. The conclusions of the study raise important implications, particularly in terms of monetary policy. The development of the Islamic money market is an important milestone in the strength and development of Islamic banks. In addition, monetary policy makers should consider the influence of interest rate-based monetary policy on the stability of Islamic banks.

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