Bank Performance in Achieving Islamic Bank Stability Conditions: Evidence From Islamic Banks in Indonesia

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ABSTRACT

This study aims to analyze the effect of Islamic bank performance on Islamic bank stability in Indonesia. Methodology using monthly time series data from OJK Islamic Banking Statistics 2015-2022, this study utilizes ECM and ECT tests to examine the long-run impact and short-run response of operational efficiency, liquidity, and bank size on Islamic bank stability. Findings this study found that the performance of Islamic banks in terms of operational efficiency has a negative and significant effect on the stability of Islamic banks both in the short and long term. Furthermore, liquidity has a positive and insignificant effect on the stability of Islamic banks in the long term, but has a positive and significant effect in the short term. Meanwhile, bank size has a positive and significant effect on the stability of Islamic banks in the long term, but for the short term it has a negative and insignificant effect.

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1. INTRODUCTION

The slowdown in the global economic recovery was the result of a more aggressive response to the ongoing war in Ukraine, rising global inflationary pressures and tightening global monetary policy. Uncertainty in global financial markets is also high, resulting in restricted capital flows and further depreciation of exchange rates in various developing countries, including Indonesia. The financial system plays a very important role in the economy. As part of the economic system, the financial system is responsible for allocating funds from surpluses to deficits. If the financial system is unstable and does not function efficiently, fund allocation will not function well, and economic growth may be hindered.

Uncertainty in the global economy remains high, with growing risks of slowing economic growth and rising global inflation, as well as aggressive monetary tightening in various countries. Financial system stability is underpinned by strong intermediation performance, maintaining financial sector resilience, and strengthening financial inclusion [1]. ndonesia's development of financial stability experienced a crisis caused by the impact of the 2008 global crisis. This can be seen from Figure 1 below [2]:
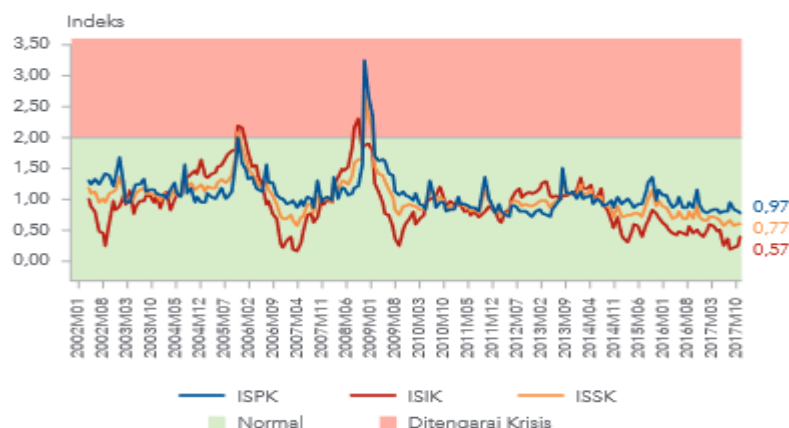
Figure 1: Financial System Stability Index Graph, 2018.
Source: Kajian Stabilitas Keuangan Bank Indonesia, Maret 2018

Financial system resilience throughout Semester I 2022 was maintained in line with the improvement in the national economy. The Financial System Stability Index (FSIS) was maintained in the Normal zone, it can be seen in the graph below:
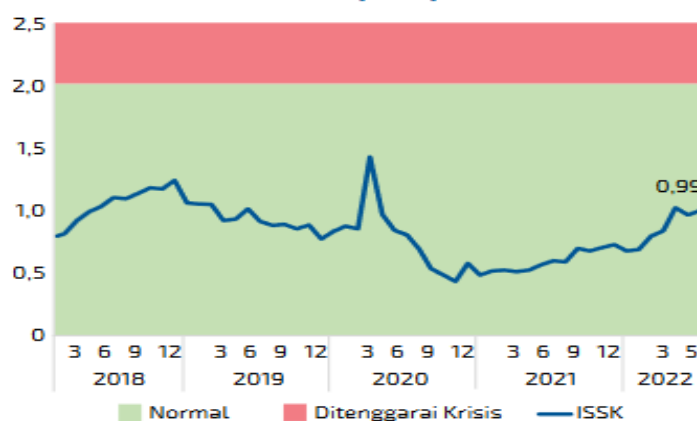

Figure 2: Financial System Stability Index Graph, 2022
Source: Kajian Stabilitas Keuangan Bank Indonesia, September 2022

Banking aims to increase economic growth and ensure stability through its activities. Banking performance is a major factor in financial stability and banking efficiency is a supporting factor in market competition which is a consequence of the level of performance. [2]. Some of the determinants of banking stability are banking efficiency, bad debts, capital ownership ratio, financial crisis and banking concentration. [3]. With good economic growth and increased productivity, there will be liquidity and capital adequacy so that it will create operational efficiency which will reduce operating costs so that financial stability occurs. [4]. Strict banking supervision does not lead to absolute banking stability due to differences in the quality of supervision in each country [3].

The results of the above research can be concluded that bank performance will greatly affect banking stability in Indonesia. Banks continue to compete to produce good performance through effective supervision. However, ineffective supervision can also pose a risk of banking instability. Banking instability can be caused by poor regulation or ineffective supervision although both are related and cannot be studied separately [3]. Banks must maintain their stability as intermediaries in order to increase Indonesia's economic growth in the long term.

The Islamic banking system is believed to provide a solution to build a more stable and secure banking system because it is free from usury, maysir and gharar which have been found in the conventional banking system. The stability of Islamic banking can also be shown by the many international studies that prove that the Islamic banking system has better stability than the conventional banking system [6]–[8].

Research on banking stability has actually been conducted on banks in other countries, such as Nigeria, Tanzania, Turkey, Romania, Pakistan, Zimbabwe and others. However, these studies provide different results so that it is increasingly interesting to investigate further to determine the consistency of findings if applied to

different environmental conditions. Some findings show that operational efficiency has an inconsistent effect on financial system stability, which has a negative effect on banking stability [9]–[16], In contrast to this, operational efficiency has a positive influence on banking stability [17]. Next is the liquidity variable where the higher the number of this variable, the greater the proportion of bank assets invested in the form of credit, thus reducing the level of bank liquidity so that it has a negative impact on bank stability in taking risks. Several studies of liquidity conditions as a factor that significantly affects banking stability [6], [18]. However, there are still differences from these findings where liquidity conditions have a significant negative effect, when liquidity conditions decrease, stability will increase and the risk of default will decrease [19], [20].

Theoretically, the larger the size of the bank, the better its human resources, infrastructure, and risk management capabilities, thus positively impacting the stability of the bank. Large banks benefit from a wider reach of scale than smaller banks and this can affect their business model and performance [21]. By considering this theory, company size is used as an internal variable that is thought to have a positive effect on bank stability [22]. Meanwhile, the size of the bank can be measured by the total assets owned by the bank by using the bank's total assets as a proxy for the size of the bank [6], [18], [19], [23], [24]. This study aims to analyze the effect of Islamic bank performance in terms of operational efficiency performance, liquidity and size of Islamic banks on the stability of Islamic banks in Indonesia.

2. LITERATURE REVIEW
2.1 Islamic Banking Stability
Banking stability cannot be separated from financial intermediation theory and competition theory. Financial intermediation theory is a theory that studies the processes that occur in existing economic sectors. Financial intermediation refers to the process of uniting parties who have excess funds and parties who lack funds.

The competition fragility theory suggests a negative correlation between banking competition and stability. This can be seen based on the fact that too intense competition between banks can negatively affect market power and profit margins. The competition stability theory emphasizes on banking stability due to the increase in interbank competition. This theory suggests a positive correlation between competition and stability. This can be seen from the decline in interest rates due to increased competition by various banks. In other words, this suggests that a lack of competition between banks will result in high interest rates charged by banks [25].

Bank stability denotes an individual bank's distance from bank failure and insolvency [26]. When a bank has financial stability, it conducts its financial intermediation cycle smoothly, building confidence among clients [27]. The key metrics for bank financial stability, according to the Basels Convention, include capital sufficiency, asset performance, sound management, earnings and productivity, liquidity, and market risk tolerance [26].

Financial stability is the ability of the financial system, consisting of market infrastructure, financial intermediaries and financial markets, to withstand financial shocks that could significantly affect the alternative investments State [28]. Financial turmoil has a significant negative impact on economic activity and promotes financial stability as well as systemic risk management [29].

The Z-score is considered a more comprehensive measure of a bank's stability compared to the liquidity ratio and bad debt ratio. This is because leverage (equity versus assets) data are combined with quality (return on assets) and risk (standard deviation of return on assets) to more accurately estimate the likelihood of commercial bank failures With higher levels of productivity and capitalization, the Z-score increases; it decreases with volatile earnings expressed by higher standard deviation in asset return. An increasing value of Z-score indicates a small risk profile for a bank and higher bank stability[6]. Specifically, the Z-score indicates the standard deviation by which a bank's profitabilitas falls below expectations before it becomes depleted of capital and insolvent. Z-score increases with higher productivity and capitalization and decreases with more volatile earnings, reflecting higher standard ROA deviations [27].

2.2 Effect of Operational Efficiency on Islamic Bank Stability
Operational activities will run well if accompanied by factors supporting operational activities. These factors can be in the form of quality natural resources, reliable human resources, and technology that can help run operational activities. These factors will be obtained if the bank is willing to incur costs in order to obtain feedback in the future. One of the ratios that can be done as a measuring tool to test the level of efficiency of banks in carrying out their operational activities.

Competition theory suggests that the presence of high competition will increase a bank's operating costs, resulting in a decrease in a bank's profit [30]. One of the determining factors in determining the level of banking stability in Nigeria can be seen by measuring banking efficiency [4]. This is because if the operational efficiency is smaller, it means that the smaller the amount of budget spent on operating costs and obtaining large operating income, so the bank can be categorized as efficient because it can manage its operating costs and income well.

Conversely, if the operational efficiency is getting bigger, it means that the bigger the amount of budget spent on operating costs and obtaining small operating income, so the bank can be concluded that it has not been able to control its operations properly. Thus, it can be concluded that operational efficiency will negatively affect banking stability.

2.3 Effect of Liquidity on Stability Islamic Bank

Loan to Asset Ratio is a proxy of the liquidity condition of the bank. The higher the number of this variable, the greater the proportion of bank assets invested in the form of credit, thus reducing the level of bank liquidity which in turn has a negative impact on bank stability in taking risks. Several studies using Loan to Asset Ratio as a factor affecting bank stability show that LAR has a significant effect on bank stability. [6], [18]. Loan to Asset Ratio is negatively related to Z-score which is a proxy of financial stability, when Loan to Asset Ratio decreases, stability will increase and the risk of default will decrease. [18].

2.4 Effect of Bank Size on Islamic Bank Stability

Theoretically, the larger the size of the bank, the better its human resources, infrastructure, and risk management capabilities, thus positively impacting the stability of the bank. Large banks benefit from a wider reach of scale than smaller banks and this can affect their business model and performance [21]. By considering this theory, company size is used as an internal variable that is thought to have a positive effect on bank stability [22]. Meanwhile, the size of the bank can be measured by the total assets owned by the bank by using the bank's total assets as a proxy for bank size [6], [18], [19], [23], [24].

3. RESEARCH METHODS

This study uses secondary data, namely time series data from all Islamic Commercial Banks in Indonesia during the period January 2015 to December 2022, totaling 96 data. This data is obtained from the Islamic Banking Statistics of the Financial Services Authority. Based on this data, the Z-score value will be sought for the calculation of the stability value of Islamic banking using the standard deviation of ROA with the help of the Microsoft Excel application, then after the data is complete, it is analyzed by the Eviews 12 application using the ECM (Error Correction Model) and ECT (Error Correction Term) methods. So that the equation made in the study is as follows:

$$\text{Z-Score}_t = C + \beta1(\text{Operational\_Efficiency})_{it} + \beta2(\text{Liquidity})_{it} + \beta3(\text{Bank\_Size})_{it} + \epsilon_{it} \qquad (1).$$

4. RESULT AND DISCUSSION

Table 1. Level Stationary Test Intermediate ADF test results UNTITLED

Series	Prob.	Lag	Max Lag	Obs
Y	0.7145	1	1	94
Operational_Efficiency	0.7985	1	1	94
Liquidity	0.1287	1	1	94
Bank_Size	0.9923	1	1	94

Source: Data Processing, 2023

Stationary test using the ADF (Augmented Dickey-Fuller) method, this ADF test uses intercept and trend types with the significance level used is 5%. Based on the results of stationary testing at the level level, it can be seen in the probability value where each variable used in this study as a whole can be said to be non-stationary because the resulting value is more than 5% so that it will be continued with the diffence stationary test.

Table 2. Stationary Difference Test Intermediate ADF test results D(UNTITLED)

Series	Prob.	Lag	Max Lag	Obs
D(Y)	0.0000	1	1	93
D(Operational_Efficiency)	0.0000	1	1	93
D(Liquidity)	0.0000	1	1	93
D(Bank_Size)	0.0000	1	1	93

Based on the results of stationary testing at the level difference level, it can be seen in the probability value where from each independent variable used in this study as a whole can be said to be stationary because the resulting value is less than 5%, so it can be said to be suitable for ECM and ECT testing.

Table 3. Stasioner ECT Test

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.948948	0.0001
Test critical values:	1% level	-3.500669	
	5% level	-2.892200	
	10% level	-2.583192	

Testing the stationarity of ECT (residuals) at the level level obtained a probability value of 0.0001. This value is smaller than 5%, so reject H0, meaning that the residual value of the regression variable can be said to be stationary at the level level. Since the regression model residuals are stationary at the level level, it can be concluded that the independent variables of this study have a long-term equilibrium relationship

Table 4. Long-Term Error Correction Model (ECM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.097693	5.046487	-0.415674	0.6786
Operational_Efficiency	-0.110712	0.014185	-7.804765	0.0000
Liquidity	0.010538	0.006324	1.666258	0.0991
Bank_Size	1.129705	0.306747	3.682853	0.0004

Based on the tests that have been conducted on the long-term influence test, the operational efficiency and bank size variables used as research have a significant influence on the stability of Islamic banks in Indonesia in the long term because the probability value is less than 5%, while the liquidity variable does not have a significant influence on the stability of Islamic banks in the long term because the resulting value is more than 5%. The long-term influence model equation is as follows:

Y = -2.097693 - 0.110712* Operational_Efficiency + 0.010538* Liquidity + 1.129705* Bank_Size

The results of the long-term influence model equation illustrates that any increase in one unit will increase the positive addition of one unit on the liquidity variable, bank size and will reduce one unit on the operational efficiency variable. The model results have an R square value of 89.4%%, meaning that the amount of influence given by operational efficiency variables, liquidity and bank size to the stability of Islamic banks in Indonesia amounted to 89.4%. While testing the short-term influence can be seen in the following table:

Table 5. Short-Term Error Correction Model (ECM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.031025	0.030942	1.002669	0.3187
D(Operational_Efficiency)	-0.092342	0.017217	-5.363387	0.0000
D(Liquidity)	0.019747	0.007994	2.470129	0.0154
D(Bank_Size)	-2.145796	1.383154	-1.551379	0.1243
ECT(-1)	-0.428747	0.086765	-4.941465	0.0000

Based on the results of the short-term influence model analysis in Table 5, the operational efficiency variable has a significant effect on the stability of Islamic banks in Indonesia, because the resulting probability value < 5%, while the bank size variable has no significant effect on the stability of Islamic banks in Indonesia, because the resulting value > 5%. The resulting model in the short term can be as follows:

$$D(Y) = 0.031025 - 0.092342*D(Operational\_Efficiency) + 0.019747*D(Liquidity) - 2.145796*D(Bank\_Size) - 0.42874*ECT(-1)$$

The results of the short-term influence model equation illustrates that any increase in one unit will increase the positive addition of one unit on the liquidity variable, but in the case of operational efficiency, bank size and ECT if it increases by one unit it will reduce one unit of the resulting value of Islamic bank stability in Indonesia. The model results have an R square value of 35.6%, meaning that the amount of influence given by operational efficiency, liquidity and bank size variables on the stability of Islamic banks in Indonesia is 35.6%. Furthermore, to find out the eligibility requirements of this model can be said to be feasible in the model, it can be seen in the following table 6:

Table 6. Diagnostic Tests

Test		Results	
Normality	Jarque Bera	Prob. 0.055364	Normality
Autokorelasi	*Breusch-Godfrey Serial LM Test*	Prob. Chi-Square: 0.4391	Not Autokorelasi
Heteroskedastisitas	ARCH	Prob. Chi-Square: 0.9613	Not Heteroskedastisity
Multikolinearitas	*Variance Inflation Factor* (VIF*)* *D(Operational_Efficiency)*	1.090715	Not Multikolinearitas
	Variance Inflation Factor (VIF*)* D(Liquidity)	1.047703	Not Multikolinearity
	Variance Inflation Factor (VIF*)* D(Bank_Size)	1.069189	Not Multikolinearity
	Variance Inflation Factor (VIF*)* ECT(-1)	1.09661	Not Multikolinearity

Source: Data Processing, 2023.

4.1 The Effect of Operational Efficiency on Islamic Bank Stability

The level of efficiency of a bank is closely related to the stability of the bank. The more efficient the Islamic bank is, the lower the risk of bank default or bankruptcy. Based on the test results in tables 4 and 5, it can be seen that operational efficiency has a negative and significant influence both in the long term and short term on the stability of Islamic banking in Indonesia, meaning that if the operational efficiency of Islamic banks is getting smaller, it means that the smaller the amount of budget spent on operating costs and obtaining large operating income, so that banks can be categorized as efficient because they can manage their operating costs and income well. Conversely, if the operational efficiency of Islamic banks is getting bigger, it means that the greater the amount of budget spent on operating costs and obtaining small operating income, so that banks can be concluded that they have not been able to control their operations properly. Thus, it can be concluded that operational efficiency will negatively affect the stability of Islamic banking in Indonesia. [9]–[16], [31].

4.2 The Effect of Liquidity on Stability Islamic Bank

Based on the results of the tests that have been carried out, it is found that in the long term it has a positive and insignificant effect, while for the short term it has a positive and significant effect on the stability of Islamic banks in Indonesia, meaning that the higher the liquidity rate, the greater the proportion of Islamic bank assets invested in financing, thereby reducing the level of liquidity of Islamic banks which in turn has a positive impact on the stability of Islamic banks in taking risks. Several studies using Loan to Asset Ratio as a factor affecting the stability of Islamic banking show that LAR has a significant effect on bank stabilit [6], [18]. This result rejects the finding that the Loan to Asset Ratio is negatively related to the Z-score which is a proxy for financial stability, when the Loan to Asset Ratio decreases, stability will increase and the risk of default will decrease [18], [20].

The conclusion obtained is that high risk taking by placing most of the assets in financing results in reduced liquidity owned by the bank to fulfill its obligations. This has an impact on the stability of Islamic banking, where the regression results show that liquidity has a positive effect on the stability of Islamic banking in Indonesia both in the short and long term.

4.3 The Effect of Bank Size on Islamic Bank Stability

The larger the size of the Islamic bank, the better the ability of its Human Resources, infrastructure, and risk management, so that it has a positive impact on the stability of Islamic banks. Based on the test results that have been conducted, it shows that bank size has a positive and significant influence in the long term on the stability of Islamic banks in Indonesia, meaning that the larger the size of the bank can reduce the financial stability of Islamic banks in the long term [32]. However, in the short term, it has a negative and insignificant effect on the stability of Islamic banks in Indonesia. The negative relationship of the effect of bank size on the financial stability of Islamic banks is due to the non-linearity of the relationship, where the data shows that the level of financial stability of Islamic banks decreases when the size of the bank increases, otherwise the level of financial stability increases when the size of the bank decreases. This relationship is based on the assumption that smaller banks (small assets) tend to be stricter in controlling risk, and larger banks tend to have greater operating costs, causing cost inefficiencies. This assumption is supported by data showing that banks with decreasing bank size trends have an increasing trend in the level of bank financial stability. Bank size has a significant negative influence on the financial stability of Islamic banks.

5. CONCLUSIONS

The results showed that both in the short term and long term there is an influence between operational efficiency on the stability of Islamic banking in Indonesia with a negative and significant direction, then for the liquidity of Islamic banks has an influence on Islamic banks in Indonesia with a positive direction and insignificant in the long term and significant in the short term, while for the bank size variable shows that it affects the stability of Islamic banks with a positive direction and insignificant for the long term and negative and significant for the short term. Although the direction of positive and negative relationships in both the short and long term has differences from each variable used as research, further research is expected to expand its research by adding research periods and other independent variables that are thought to affect the stability of Islamic banking in Indonesia both in terms of the performance sector of Islamic banks and from the domestic and international external sectors.

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