

Dynamic Determinants of Risk-Taking in Islamic Banking: Evidence from Indonesia

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ABSTRACT

Research Originality: This research is original in its focus on the long-run structural determinants of risk-taking in Indonesian Islamic banking.

Research Objectives: The study aims to analyze how liquidity, profit-and-loss sharing (PLS), financing growth, financing-to-deposit ratio (FDR), economic growth, and inflation influence risk-taking behavior in Islamic banks.

Research Methods: This study employs ARDL and Error Correction Model (ECM) techniques. The study investigates quarterly data from 2015 to 2024 to assess short-run and long-run relationships. The ECM framework provides insights into the adjustment mechanism toward equilibrium.

Empirical Results: In the short run, liquidity, PLS, and financing growth significantly affect risk-taking. In the long run, liquidity has a significant negative effect, whereas PLS and Z-score exhibit a positive effect. Other variables are not statistically significant. The ECM confirms a strong adjustment mechanism, indicating that approximately 33.5% of short-run deviations are corrected toward long-run equilibrium each quarter.

Implications: Policymakers and practitioners should design risk management strategies that differentiate between short-run operational adjustments and long-run macroeconomic anticipation.

Keywords:

liquidity management; profit and loss sharing; ARDL; error correction model; financing growth

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INTRODUCTION

Islamic banking has grown rapidly worldwide, supported by asset accumulation and increasing customer demand, positioning it as a strategic player in the financial industry (Aslam & Haron, 2021; Banna & Alam, 2021). In Indonesia, the sector contributes significantly to financial inclusion and economic recovery (Fauzi et al., 2023). Financing growth, particularly through profit-loss sharing (PLS) contracts, strengthens the role of Islamic banks, though high financing-to-deposit ratios (FDRs) pose challenges in managing non-performing financing (Widarjono, 2020). To further explain these structures, the theoretical foundations justify the selection of variables and frame the empirical analysis.

Theoretical foundations also guide the selection of variables. Systemic Financial Stability Theory emphasizes liquidity and FDR as indicators of resilience under macroeconomic shocks (Warjiyo & Juhro, 2022; Zigrand, 2014). Contingency Theory justifies the inclusion of GDP growth and inflation, as organizational strategies must adapt to external conditions (Sajko et al., 2021). Risk-Based Decision Making and Prospect Theory explain behavioral tendencies under uncertainty, supporting the use of Z-Score as a dependent variable and highlighting the role of PLS contracts in shaping managerial choices (Hu & Wang, 2023; Louhichi et al., 2022). Islamic Financial Resilience Theory further reinforces the normative foundation for including Sharia-compliant variables, such as PLS and FDR, by emphasizing risk-sharing and the prohibition of interest as distinctive resilience mechanisms (Mutamimah & Saputri, 2023).

Empirical findings remain diverse. Liquidity has been associated with increased exposure in some contexts (Abbas & Ali, 2022), while other studies suggest it reduces vulnerability by strengthening buffers (Smaoui et al., 2020). PLS contracts also demonstrate varying effects: *musharakah* tends to stabilize risk, whereas *mudharabah* may amplify it depending on governance quality (Danlami et al., 2022; Widarjono & Mardhiyah, 2022). Inflation likewise produces contrasting impacts; Indonesian banks often increase risk-taking under inflationary pressure, while banks in MENA countries adopt more cautious strategies (Danlami et al., 2022; Moudud-Ul-Huq et al., 2023). Governance quality further shapes these outcomes, with stronger institutions amplifying stabilizing effects and weaker ones exacerbating asymmetric information (Ashraf, 2021). Another important consideration is risk measurement. While many studies rely on Non-Performing Loans (NPL) or Return on Equity (ROE), these indicators are often criticized for failing to capture systemic stability. Recent research advocates the use of Z-Score as a more comprehensive measure, since it reflects insolvency risk and long-term resilience (Hu & Wang, 2023; Louhichi et al., 2022). By adopting the Z-score, this study contributes methodologically to the literature, offering a more robust framework for analyzing the structural drivers of risk-taking in Indonesian Islamic banking.

Prior studies also highlight differences in resilience between Islamic and conventional banks. Some evidence suggests that Islamic banks are more stable during financial crises due to their reliance on asset-backed financing and risk-sharing principles (Athari et al., 2023; Vuong et al., 2024). Other studies, however, indicate that Islamic banks may be

more vulnerable to macroeconomic shocks because of limited liquidity instruments and stricter regulatory constraints (Fakhrunnas et al., 2021). Methodological differences further complicate conclusions: cross-country panel studies often find that Islamic banks are more resilient, while single-country analyses yield mixed results, depending on macroeconomic shocks and regulatory frameworks (Rahman et al., 2023). These variations suggest that risk-taking structures are highly context-dependent and require country-specific analysis.

Numerous studies have examined risk-taking in Islamic banking; most focus on static relationships, single-period analyses, or cross-country comparisons. Evidence on Indonesia remains limited, particularly in distinguishing short-run and long-run effects under unique regulatory and Sharia frameworks. This study addresses these gaps by applying the Autoregressive Distributed Lag (ARDL) and Error Correction Model (ECM) approaches to capture structural drivers of risk-taking between internal indicators (liquidity, PLS, financing growth, FDR) and macroeconomic factors (GDP growth, inflation). The novelty lies in combining methodological rigor with Sharia-based operational principles, while adopting Z-Score as a more comprehensive measure of risk-taking. Accordingly, the purpose of this study is to provide empirical insights into the structural drivers of risk-taking in Indonesian Islamic banking, thereby contributing to the academic literature and to policy formulation by highlighting strategies for effective risk management.

METHODS

This study employs a quantitative approach to examine the structural drivers of risk-taking in Indonesian Islamic banking. The dependent variable is risk-taking, proxied by the Z-score. In contrast, the independent variables include liquidity, profit-and-loss sharing (PLS), financing growth, financing-to-deposit ratio (FDR), inflation, and economic growth. Quarterly data from 2015 to 2024 were selected because 2015 marks the implementation of key regulatory reforms in Islamic banking, ensuring consistency in reporting standards, while 2024 provides the most recent post-pandemic observations. Bank-level data were obtained from the *Islamic banking statistics* published by the Financial Services Authority (OJK), complemented by macroeconomic indicators from Bank Indonesia and the Central Bureau of Statistics (BPS).

The AutoRegressive Distributed Lag (ARDL) model was chosen as the primary analytical tool because it is suitable for time series data with mixed integration orders (I(0) and I(1)) and allows simultaneous estimation of short-run and long-run effects without requiring pre-testing for cointegration (Ahmed & Delin, 2019; Faudzi & Asmara, 2021). Once cointegration is confirmed through bounds testing, the model is re-specified into an Error Correction Model (ECM) to capture the adjustment mechanism. The ECM framework identifies how short-term deviations are corrected toward long-term equilibrium, with the error correction term (ECT) serving as an indicator of adjustment speed (David et al., 2019).

Robustness was ensured through diagnostic tests for serial correlation, heteroskedasticity, and normality, while parameter stability was examined using CUSUM and CUSUMSQ

tests. These procedures confirm that the estimated relationships are statistically reliable and structurally stable across the sample period. Overall, the ARDL–ECM framework enables the study to capture both the short- and long-run structural drivers of risk-taking. At the same time, diagnostic and stability checks strengthen the credibility of the findings for academic and policy purposes. Table 1 presents the more detailed information about the operational variables.

Table 1. Operational Variables

| No. | Variable | Definition | Symbol | Formula | References |
|-----|-----------------------------------|---|-----------------|--|---|
| 1 | Risk-taking (ZSC) | Inverse of stability, proxied by Z-score | ZSC | $\frac{ROA - (EQ/Total\ Aset)}{\sigma ROA}$ | Danlami et al., (2022) Smaoui et al., (2020) |
| | Return on Assets (ROA) | Profitability ratio | ROA | Profit before tax / Total assets | |
| | Capital Adequacy Ratio (CAR) | Equity ratio | CAR | Equity / Total assets | |
| | Standard deviation of ROA | Risk volatility | σ ROA | $\sum (x_i - mean)^2\{n\}$ | |
| 2 | Liquidity | Ratio of short-term obligations coverage | LIK | Short-term liabilities / Short-term deposits | Jedidia & Salah, (2022) Smaoui et al., (2020) |
| 3 | Profit-Loss Sharing (PLS) | Ratio of PLS financing | PLS | (Mudharabah + Musharakah) / Total financing | Bilgin et al., (2021) Danlami et al., (2022) |
| 4 | Financing Growth (PPE) | % increase in financing | PPE | Financing(t) / Financing(t-1) | Bilgin et al., (2021) |
| 5 | Financing-to-Deposit Ratio (FDR) | Ratio of financing to third-party funds | FDR | Total financing / Total deposits | Darma & Afandi, (2021) Suripto et al. (2023) |
| 6 | Inflation (INF) | % change in CPI | INF | $\frac{IHK_t - IHK_{t-1}}{IHK_{t-1}}$ | Danlami et al., (2022) Lestari & Suprayogi, (2020) Shareef & Prabheesh, (2022) |
| 7 | Economic Growth (PEK) | % change in GDP | PEK | $\frac{Nil\ Ek\ t - Nil\ Ek\ t-1}{Nil\ Ek\ t-1}$ | Danlami et al., (2022) Lestari & Suprayogi, (2020) Moudud-UI-Huq et al., (2023) |
| 8 | Economic Policy Uncertainty (WUI) | Frequency-based index of uncertainty in EIU reports | WUI | (Occurrences of "uncertainty" / Total words) × 1000, normalized to base period | Ahir et al., (2020) Chand et al., (2024) Ashraf, (2021) |

This study employs the Autoregressive Distributed Lag–Error Correction Model (ARDL–ECM) to examine both the short-run dynamics and the long-run equilibrium relationship between risk-taking (Z-Score) and its determinants. This approach is particularly suitable because it can accommodate variables with different orders of integration (I(0) or

I(1)) and provides a unified framework to capture persistent long-run effects as well as short-run adjustments. The first step is to estimate the long-run equilibrium relationship between risk-taking and its explanatory variables. The cointegration equation is specified as follows: (Sandia et al., 2025)

$$Z\text{-Score}_t = \alpha_0 + \alpha_1 \cdot \text{FDR}_t + \alpha_2 \cdot \text{INF}_t + \alpha_3 \cdot \text{LIK}_t + \alpha_4 \cdot \text{PEK}_t + \alpha_5 \cdot \text{PLS}_t + \alpha_6 \cdot \text{PPE}_t + \mu_t$$

Where:

- α_0 = long run constanta
- α_{1-6} = coefisien
- μ_t = residual cointegration as error correction term

Once the long-run relationship is established, the residuals (μ_t) are used to construct the ECT, which is then incorporated into the short-run dynamics. The short-run equation is expressed as: (Sandia et al., 2025)

$$\Delta Z\text{-Score}_t = \alpha_0 + \alpha_1 \Delta \text{FDR}_t + \alpha_2 \Delta \text{INF}_t + \alpha_3 \Delta \text{LIK}_t + \alpha_4 \Delta \text{PEK}_t + \alpha_5 \Delta \text{PLS}_t + \alpha_6 \Delta \text{PPE}_t + \varphi \text{ECT}_{t-1} + \mu_t$$

Where.:

- Δ (Delta) = the change (difference) in a variable between one period and the next.
- α_0 = the constant term in the short-run equation.
- α_{1-6} = coefisien
- φ = the adjustment coefficient
- μ_t = residual cointegration as error correction term

The ARDL–ECM framework is applied sequentially to capture both long-run equilibrium and short-run dynamics, with the long-run equation establishing the relationship between risk-taking and its determinants, and the short-run specification incorporating the error correction mechanism to adjust deviations back toward equilibrium; this dual approach enables clear differentiation between temporary effects and persistent influences, offering a comprehensive view of risk-taking behavior in Islamic banking under economic uncertainty.

RESULTS AND DISCUSSION

Liquidity emerges as the most consistent structural driver of risk-taking behavior in Indonesian Islamic banks, exerting a stabilizing influence by reducing risk exposure and strengthening overall bank resilience. Profit and loss sharing (PLS) also plays a significant role, simultaneously enhancing growth and stability while increasing risk if not properly managed, reflecting its ambivalent nature. Economic growth shows only temporary effects, influencing risk-taking in the short run but losing significance in the long run, while financing growth similarly heightens short-run vulnerabilities without structural impact. In contrast, the financing-to-deposit ratio (FDR) and inflation remain insignificant across estimations, underscoring their limited direct role in shaping the drivers of risk-taking

structure. However, inflation may exert an indirect influence through liquidity. Overall, the findings highlight that risk-taking in Islamic banking is primarily driven by internal factors such as liquidity and PLS, with macroeconomic variables exerting only short-lived or indirect effects.

Table 2 summarizes the descriptive statistics of the variables used. Liquidity shows moderate variation, indicating adequate liquid assets across periods. The Financing to Deposit Ratio reflects a consistently aggressive financing stance with low dispersion. Financing growth displays wider variability, highlighting differences in portfolio expansion capacity. Profit-Loss Sharing confirms the dominance of profit-sharing contracts, though its application shifts over time. At the macro level, inflation fluctuates moderately, while economic growth captures both contractionary and recovery phases. Z-Score, as a proxy for risk-taking, suggests overall strong stability, though risk profiles differ across periods. These descriptive results provide an initial overview of the internal and external conditions shaping risk-taking behavior and serve as the basis for further ARDL–ECM analysis to distinguish short-run dynamics from long-run equilibrium effects.

Table 2. Summary Statistics

| Variabel | Obs | Mean | Std. Dev | Minimum | Maksimum |
|----------|-----|-------|----------|---------|----------|
| LIK (%) | 40 | 25,48 | 5,34 | 16,61 | 38,74 |
| FDR (%) | 40 | 84,27 | 3,63 | 76,33 | 96,52 |
| PPE (%) | 40 | 2,62 | 1,58 | 0,23 | 6,52 |
| PLS (%) | 40 | 44,69 | 6,79 | 32,66 | 53,00 |
| INF (%) | 40 | 3,31 | 1,77 | 1,33 | 7,26 |
| PEK (%) | 40 | 4,90 | 2,03 | -5,32 | 7,08 |
| Z-score | 40 | 39,98 | 6,73 | 26,20 | 50,80 |

Stationarity testing is a crucial preliminary step in time series analysis to ensure that the variables used do not contain unit roots, which could lead to spurious regression results. The Augmented Dickey-Fuller (ADF) test was applied to all variables at the first-differencing level (I(1)), except for financing growth (PPE), which was already stationary at the level (I(0)).

Table 3. Stationarity Test Result

| Variable | Probability | Result |
|----------------------------------|-------------|-------------------------------|
| Inflation (INF) | 0.0000 | p < 0.05 (Stationary) |
| Financing to Deposit Ratio (FDR) | 0.0000 | p < 0.05 (Stationary) |
| Liquidity (LIK) | 0.0000 | p < 0.05 (Stationary) |
| Economic Growth (PEK) | 0.0007 | p < 0.05 (Stationary) |
| Profit-Loss Sharing (PLS) | 0.0228 | p < 0.05 (Stationary) |
| Financing Growth (PPE) | 0.0000 | p < 0.05 (Stationary at I(0)) |
| Risk-Taking (Z-Score) | 0.0003 | p < 0.05 (Stationary) |

The ADF test results show that most variables, namely inflation, Financing to Deposit Ratio, liquidity, economic growth, Profit-Loss Sharing, and risk-taking (Z-Score), are non-stationary at the level but become stationary after first differencing (I(1)), while financing growth is stationary at the level (I(0)). This confirms that the Autoregressive Distributed Lag (ARDL) model is appropriate, as it accommodates variables integrated at both levels and in first differences, provided none are integrated at order 2 (I(2)) (Menegaki, 2019). Consequently, internal factors and macroeconomic indicators can be consistently examined in relation to Z-Score, with stationarity ensuring the avoidance of spurious regression and supporting robust short-run and long-run estimations. Stationarity testing provided the foundation for determining the appropriate lag length in the model. The Akaike Information Criterion (AIC) was employed to select the optimal lag structure, as it identifies the best model based on the lowest information value (Khim & Venus, 2004). Lag selection is critical to capture both short-run dynamics and long-run relationships among the variables. The ARDL(1,2,2,1,3,0,3) specification emerged as the most representative model, producing the lowest AIC value. This structure balances the inclusion of sufficient lags to reflect dynamic adjustments while avoiding over-parameterization.

The cointegration test within the ARDL framework, conducted using the Bounds Testing approach, confirms the existence of a long-run equilibrium relationship among the variables. The calculated F-statistic of 6.427 (sample size 35) exceeds the upper bound critical values at the 10%, 5%, and 1% significance levels, leading to the rejection of the null hypothesis of no cointegration. This finding validates the ARDL model for analyzing both short-run dynamics and long-run relationships (Mohammed, 2024). It further indicates that internal factors, along with external indicators, are jointly associated with risk-taking behavior (Z-Score) in Indonesian Islamic banking. The confirmation of cointegration strengthens the reliability of subsequent ARDL estimations and supports the robustness of the study's empirical results.

The classical assumption tests confirm that the ARDL model satisfies the key statistical requirements. The Jarque-Bera test ($p = 0.445$) indicates that the residuals are normally distributed (Da et al., 2023), while the Breusch-Godfrey test ($p = 0.837$) provides no evidence of autocorrelation, indicating independence across time. The Breusch-Pagan test ($p = 0.901$) suggests homoskedasticity, meaning residual variance is constant. Multicollinearity is not a concern, as the highest VIF value (4.283) is well below the critical threshold of 10. Furthermore, the CUSUM and CUSUMSQ tests confirm structural stability of the ARDL model within critical bounds. Collectively, these results indicate that the model is robust, with unbiased and efficient coefficient estimates, thereby validating its capacity to capture both short-run dynamics and long-run equilibrium in Islamic banks' risk-taking behavior.

To capture immediate effects, the ARDL model was first estimated in its short-run form, in which lagged variables indicate how past financing, liquidity, and macroeconomic conditions influence current risk-taking. In contrast, the ARDL-ECM framework identifies the long-run equilibrium, with coefficients reflecting the persistent impact of these internal and external factors on risk-taking behavior.

The ARDL estimation results in Table 4 highlight both short and long-run effects of internal and macroeconomic variables on risk-taking in Indonesian Islamic banks. Liquidity consistently shows a negative relationship with stability, indicating that higher liquidity reduces risk-taking. Profit-Loss Sharing exerts a strong positive effect, confirming that greater reliance on profit-sharing contracts increases exposure. The Z-Score itself reflects significant dynamics, showing sensitivity of stability to past risk behavior. Economic growth and financing growth display notable short-run impacts, suggesting that lagged macroeconomic conditions and portfolio expansion contribute to fluctuations. By contrast, the Financing-to-Deposit Ratio and inflation are not significant, underscoring the dominant roles of liquidity and profit-loss sharing in shaping Islamic bank stability.

Table 4. ARDL and Long-Run Estimation Results

| Variable | ARDL Coefficient | Probability ARDL | Variable | Long-Run Coefficient | Probability Long Run |
|------------------------------------|------------------|------------------|----------------------------------|----------------------|----------------------|
| Financing to Deposit Ratio (FDR-2) | -0.1857 | 0.2670 | Financing to Deposit Ratio (FDR) | -0.2841 | 0.2175 |
| Inflation (INF-2) | -0.2087 | 0.1751 | Inflation (INF) | -0.3193 | 0.6053 |
| Liquidity (LIK) | -0.2391 | 0.0097 | Liquidity (LIK) | -0.3658 | 0.0097 |
| Economic Growth (PEK-3) | -0.0306 | 0.0018 | Economic Growth (PEK) | -0.0468 | 0.8229 |
| Profit-Loss Sharing (PLS) | 0.5152 | 0.0040 | Profit-Loss Sharing (PLS) | 0.7883 | 0.0040 |
| Financing Growth (PPE-2) | 0.0475 | 0.0462 | Financing Growth (PPE) | 0.0727 | 0.7846 |
| Z-score (-1) | -0.6543 | 0.0214 | Z-score | -0.1501 | 0.0312 |
| Constant | 56.9814 | 0.0072 | Constant | 87.2223 | 0.0072 |

The ECM estimation results in Table 5 confirm short-run dynamics and the speed of adjustment toward long-run equilibrium in the ARDL framework. Liquidity shows a significant negative effect on risk-taking, underscoring its dominant role in short-run mitigation. The error-correction term (-0.3348 , $p = 0.0002$) is negative and highly significant, validating cointegration and indicating that deviations from long-run equilibrium are corrected at about 33 percent per period. Other short-run variables, such as Financing to Deposit Ratio, inflation, economic growth, Profit-Loss Sharing, and financing growth, display expected signs but are statistically insignificant, suggesting weaker immediate effects or absorption through liquidity. Overall, the ECM results reinforce the robustness of the ARDL–ECM framework, with liquidity as the key short-run stabilizer and the error correction term ensuring reliable long-run adjustment.

The comparison of variable significance across ARDL, the long-run form, and the ECM highlights the consistency of each variable's role in influencing risk-taking (as measured by Z-scores). This summary allows us to identify which variables exert dominant effects in the short-run dynamics, in the long-run equilibrium, or through the adjustment mechanism. The results are presented in Table 6.

Table 5. ECM Estimation Results

| Variable | Coefficient | Probability |
|----------|-------------|-------------|
| DFDR | -0.1339 | 0.2657 |
| DINF | 0.4279 | 0.2861 |
| DLIK | -0.1789 | 0.0445 |
| DPEK | -0.1945 | 0.1884 |
| DPLS | 0.4099 | 0.1997 |
| DPPE | -0.0813 | 0.5460 |
| ECT | -0.3348 | 0.0002 |

Table 6. Comparison of Variable Significance in ARDL-ECM

| Variable | Significant in ARDL | Significant in Long-run Form | Significant in ECM | Dominant Role |
|----------|---------------------|------------------------------|--------------------|-------------------------|
| LIK | Yes | Yes | Yes | Short-run & long-run |
| PLS | Yes | Yes | No | Long-run |
| PEK | Yes | No | No | Lagged short-run effect |
| PPE | Yes | No | No | Lagged short-run effect |
| FDR | No | No | No | Not dominant |
| INF | No | No | No | Not dominant |
| ECT | – | – | Yes | Equilibrium correction |

Liquidity emerges as the most consistent and significant determinant of risk-taking behavior in Indonesian Islamic banks. Across ARDL, long-run, and ECM estimations, liquidity shows a negative and statistically significant effect on the Z-Score, confirming its stabilizing role. Higher liquidity reduces risk-taking and strengthens bank stability (Widarjono & Afandi, 2025). This finding is reinforced by Dahir et al. (2018), who argue that liquidity risk reduces banks' risk-taking, and Anis and Hamdi (2022), who show that economic uncertainty increases liquidity risk in Islamic banks. However, Abbas and Ali (2022) find that liquidity funding increases risk-taking in U.S. commercial banks. In Islamic banking, liquidity serves as a safeguard that enhances stability, whereas in conventional banking it can amplify risk, reflecting structural and regulatory differences between the two systems.

Profit-loss sharing (PLS) also emerges as a strong and significant factor. The ARDL and long-run models confirm that greater reliance on profit-sharing contracts increases risk exposure, with consistently high coefficients. At the same time, PLS financing contributes positively to Indonesia's economic growth (Masrizal & Trianto, 2022) and strengthens Islamic bank stability (Widarjono & Mardhiyah, 2022). However, Widarjono et al. (2020) caution that a high proportion of PLS contracts can increase financing risk. Thus, PLS is ambivalent: beneficial for growth and stability, but excessive reliance without proper monitoring can heighten financing risk, making a balanced application crucial for sustainable Islamic banking performance.

Economic growth (PEK) shows significant short-run lagged effects, particularly at the third lag (PEK-3), but loses significance in the long run. This result suggests that growth influences risk-taking only temporarily. Supporting evidence indicates that economic growth enhances resilience in Islamic banking (Solikhin, 2024), while Suprayitno et al. (2024) argue that macroeconomic factors do not exert a major long-run influence on financing risk, explaining the lack of long-run significance. In Islamic banks, growth provides short-term support for stability, but its impact fades over time, leaving internal factors as the main drivers of long-run risk behavior.

Financing growth (PPE) shows significant short-run effects at the second lag, indicating that rapid expansion temporarily increases risk exposure but does not persist structurally in the long run. This study supports Saleem et al. (2021), who highlight the positive role of Islamic banking in sustaining economic growth, and aligns with Widarjono and Afandi (2025), who find that sectoral concentration and higher financing volumes raise default risks, consistent with short-run vulnerabilities. However, these results contrast with those of Razali et al. (2024), who argue that extraordinary financing negatively affects performance in both the short- and long-run. In contrast, the present evidence suggests its impact is cyclical and temporary rather than permanent. In Islamic banks, financing growth can expose them to short-term risks, but these effects fade over time, highlighting the need for prudent monitoring during rapid expansion.

The financing-to-deposit ratio (FDR) is insignificant across all estimations, showing its limited role in risk-taking behavior. Although often seen as a measure of efficiency, evidence indicates it does not directly affect Islamic bank stability (Suprayitno et al., 2024). In contrast, Haryanto et al. (2024) find that higher FDR is associated with greater non-performing financing (NPF), suggesting context-specific risks. Overall, FDR's influence on Islamic bank stability in Indonesia is minimal, with internal management and structural factors proving more decisive. FDR has little long-run impact, making internal governance more critical for managing risk in Islamic banks.

Inflation (INF) shows no significant effects in ARDL or long-run models, indicating a limited direct role in risk-taking. (Solikhin, 2024) also finds that inflation does not strengthen Islamic bank stability. At the same time, Anis and Hamdi (2022) note its negative impact on liquidity risk, and Fakhrunnas (2023) highlights a non-linear link between liquidity risk and stability. Thus, inflation is insignificant in the short term but still relevant indirectly through liquidity. For Islamic banks, inflation has a minimal direct impact on risk, yet its indirect effects via liquidity make careful liquidity management essential.

The Z-Score shows significant short and long-run dynamics, with negative coefficients indicating that past risk behavior affects current stability and drives correction toward equilibrium. This study supports Solikhin (2024), who finds Islamic banks resilient in crises, but contrasts with Purbayanto et al. (2022), who note excessive risk-taking among Indonesian Islamic banks. The Z-Score highlights Islamic banks' resilience, yet also signals that stronger risk management is needed to prevent excessive risk-taking from undermining long-term stability.

CONCLUSION

Internal structural factors, especially liquidity and profit-loss-sharing (PLS) contracts, are the main drivers of risk-taking in Islamic banks, while macroeconomic variables such as inflation and economic growth play a limited role. Liquidity consistently serves as a stabilizing factor, reducing risk in both the short and long run. In contrast, PLS contracts tend to increase long-term risk exposure. Financing growth and economic growth have only short-run lagged effects and do not persist in the long-run equilibrium, while variables such as FDR and inflation remain insignificant. The significant error correction term indicates a stable long-run relationship, highlighting the resilience of Islamic banks in managing risk. Therefore, regulators and bank managers should prioritize strong liquidity management to maintain stability. Enhancing liquidity buffers can reduce short-term shocks and support long-term resilience, while careful monitoring of PLS contracts is necessary to balance their benefits and associated risks.

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