



Strategies For Managing Liquidity Risk Through Asset-Liability Management (ALMA) In Islamic Banking

Fitria Ramadhani^{1*}, Ilda²

¹⁻² Institut Agama Islam Negeri Bone, Indonesia

email: fitriarmdhni01@gmail.com¹

Article Info :

Received:

03-06-2026

Revised:

11-06-2026

Accepted:

16-07-2026

Abstract

This study examines the causal relationships between integrated asset liability management frameworks and liquidity risk resilience within Islamic commercial banks in Indonesia. Utilizing panel data and partial least squares structural equation modeling, the empirical investigation evaluates how structural maturity gap configurations, funding diversification strategies, and third party fund optimizations determine institutional stability under strict regulatory environments. The empirical findings reveal that while funding diversification introduces short term adjustments within the financing to deposit ratio, active interventions by the internal asset liability committee act as a vital stabilizing mechanism. Furthermore, the banking sector exhibits robust compliance performance, with the mean liquidity coverage ratio and net stable funding ratio systematically exceeding international regulatory baselines without undermining core sharia principles. The results confirm that domestic monetary instruments effectively insulate participating institutions from systemic interbank contagion. This research concludes that the long term financial sustainability of Islamic banking institutions depends on the continuous alignment between disciplined corporate governance and macroprudential liquidity mandates.

Keywords : Asset Liability Management, Liquidity Risk, Islamic Banking, Macroprudential Policy, Corporate Governance.



©2022 Authors.. This work is licensed under a Creative Commons Attribution-Non Commercial 4.0 International License.
(<https://creativecommons.org/licenses/by-nc/4.0/>)

INTRODUCTION

Global financial volatility and shifting macroeconomic landscapes present complex challenges for banking institutions, particularly within the Sharia-compliant financial architecture. The modern configuration of Islamic banking operations demands rigorous dual compliance with macroprudential liquidity frameworks and intrinsic non-interest-based transactional ethics. The global regulatory paradigm emphasizes that standardizing bank liquidity profiles cannot rely on homogeneous approaches, considering the systemic idiosyncratic risks inherent in Islamic financial intermediation (Basel Committee on Banking Supervision, 2013). The structural configuration of Islamic banking assets, which are inherently tied to real-asset transactions, generates unique operational dependencies that differ fundamentally from the conventional interest-rate-driven pricing mechanisms (Antonio, 2001). Under global economic uncertainty and institutional transitions, the behavior of executive leadership and corporate financial officers acts as a pivotal factor in adjusting risk tolerances and strategic reorientations within volatile market scenarios (Rahman, Zhu, & Beiyi, 2025; Zimon, Salehi, & Kalateh Arabi, 2025). The broader regulatory requirements, such as the mandate for systematic risk management application, highlight that banks must maintain comprehensive operational safeguards regardless of internal market orientations (Bank Indonesia, 2011). Consequently, the integration of macro-level monetary frameworks and localized banking micro-operations remains a fundamental challenge in preserving corporate solvency and mitigating the adverse effects of exogenous liquidity shocks (Bank Indonesia, 2021).

Extant financial literature extensively evaluates the performance metrics of Asset-Liability Management (ALMA) as a mitigation tool against institutional liquidity pressures. Empirical assessments focus on evaluating how structured asset-liability synchronization directly prevents extreme liquidity deficits within contemporary Islamic financial institutions (Ramadhan, Ramadhan, & Aguspriyani, 2026). Scholars have systematically disassembled the core operational architecture of

ALMA frameworks to map how specific asset allocations balance corporate liability demands (Roikhani, Nurnasrina, & Sunandar, 2023). Strategic control mechanisms are further extended through institutionalized supervisory and oversight models implemented to anchor Sharia-compliant corporate governance within volatile regional jurisdictions (Rusmiati, Nurnasrina, & Sunandar, 2023). General descriptive models reinforce the premise that the holistic governance of a bank's balance sheet underpins its broad financial viability (Shabiha, Fasa, & Sisdianto, 2024). Furthermore, extensive thematic evaluations focusing on liability optimization have highlighted the critical dependencies surrounding third-party mobilization, particularly concerning the strategic deployment of Wadiah and Mudharabah configurations (Sulistiawati, & Ariska, 2024). These interconnected empirical dimensions demonstrate that modern banking survival depends heavily on the optimization of short-term funding structures and long-term financing allocations.

Despite the breadth of these historical evaluations, critical conceptual and empirical contradictions persist within contemporary literature. Most studies isolate asset and liability variables into rigid statistical models that fail to capture the dynamic behavioral adjustments made by financial managers under volatile post-pandemic constraints. While standard macroprudential frameworks assume a linear transmission of liquidity guidelines across institutions (Basel Committee on Banking Supervision, 2013), they consistently understate how shifts in leadership risk tolerance alter asset deployment choices (Rahman, Zhu, & Beiyi, 2025; Zimon, Salehi, & Kalateh Arabi, 2025). Furthermore, literature dealing specifically with Islamic banking tools frequently separates operational oversight from the structural dynamics of maturity mismatch, treating governance and portfolio duration as isolated phenomena (Rusmiati, Nurnasrina, & Sunandar, 2023; Shabiha, Fasa, & Sisdianto, 2024). Conflicting evidence also emerges regarding the net stability effect of deposit mobilization, where high concentrations of flexible instruments simultaneously improve short-term volume but exacerbate long-term funding instability (Sulistiawati, & Ariska, 2024). This fragmented analytical landscape leaves a profound gap regarding the operational integration of strategic governance, asset reallocation, and regulatory adherence within a unified ALMA framework.

Resolving these unresolved theoretical gaps carries significant academic and practical urgency. Without a comprehensive framework integrating leadership behavior, structural balance-sheet constraints, and Sharia-compliant product dynamics, modern Islamic banks remain highly exposed to unexpected structural asset drains. The failure to systematically mitigate maturity mismatch poses a threat to institutional solvency and can compromise the integrity of the broader non-interest-based financial ecosystem. Standardized solutions proposed by regulatory entities are often insufficient when applied directly to specialized financial products (Bank Indonesia, 2011; Basel Committee on Banking Supervision, 2013). As global market shifts impose heavier operational strains on internal corporate funding structures (Zimon, Salehi, & Kalateh Arabi, 2025), failure to adapt internal asset management tools could trigger severe institutional liquidations. Therefore, establishing an empirical foundation that connects governance oversight with functional balance-sheet optimization is crucial to prevent operational breakdowns and preserve systemic stability.

This study positions itself at the intersection of structural balance-sheet optimization and contemporary risk governance within the Islamic banking sector. By moving away from static descriptive modeling, this research develops a comprehensive framework that incorporates executive risk behavior, product constraints, and macroprudential mandates. This inquiry bridges the gap between regulatory guidelines and the institutional realities of Islamic bank balance sheets (Bank Indonesia, 2021; Ramadhan, Ramadhan, & Aguspriyani, 2026). The analysis advances beyond conventional liability studies by examining how specific funding instruments interact with overarching asset control structures (Roikhani, Nurnasrina, & Sunandar, 2023; Sulistiawati, & Ariska, 2024). In doing so, this research contributes to the scientific landscape by offering an integrated perspective on how Sharia-compliant banks can navigate systemic risk without compromising their fundamental ethical principles.

The primary objective of this study is to investigate the strategic role of Asset-Liability Management (ALMA) in mitigating liquidity risk within the contemporary Islamic banking sector. Methodologically, this research introduces an advanced, integrated conceptual framework that synthesizes regulatory mandates, executive behavior parameters, and specific funding structures, moving beyond the isolated variables common in traditional bank literature. Theoretically, this inquiry enriches financial management science by providing a nuanced understanding of maturity mismatch dynamics under distinct ethical contracting constraints. Ultimately, these insights provide researchers

and risk practitioners with a robust foundation for building resilient, long-term asset management configurations capable of withstanding turbulent global economic shifts.

RESEARCH METHODS

This research is an empirical study with a quantitative approach that uses an explanatory design to analyze the causal relationship between the effectiveness of asset and liability management strategies and liquidity risk mitigation in Islamic banking. The population in this study includes all Islamic Commercial Banks (BUS) that are registered and fully operational in Indonesia, based on official data from the national financial authority. Sampling was conducted using purposive sampling, with the criteria being Islamic banks that consistently issue periodic financial reports and fully disclose their maturity gap structure and risk management instruments. Secondary data sources were obtained from panel data of annual reports, quarterly financial statements, and official publications of each bank, as well as compilations of Islamic banking statistics released periodically by the authorities. The operationalization of the independent variables focuses on the effectiveness of implementing the Asset-Liability Management (ALMA) framework, proxied by the maturity gap ratio, diversification of funding sources, and optimization of third-party fund management. Meanwhile, the dependent variables which represent the level of liquidity risk are measured through the Financing to Deposit Ratio (FDR), the adequacy of Islamic monetary policy instruments, and components of the international macroprudential liquidity resilience ratio.

The techniques used to measure and quantify variables in this study employ standard banking financial ratio analysis as well as a matrix of the duration of earning assets relative to short-term liabilities to comprehensively map potential maturity mismatches. Statistical and econometric analyses were conducted using multiple linear regression modeling based on panel data, as well as Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the significance of structural relationships among latent variables constructed within a risk management framework. Prior to estimating the regression model, a series of classical assumption tests were rigorously applied, including a normality test of the residuals, a multicollinearity test to ensure the absence of high linear correlation among independent variables, a heteroscedasticity test to ensure variance consistency, and an autocorrelation test along the time dimension of the panel data. Hypothesis testing and evaluation of the structural model's validity were determined through the coefficient of determination, the significance of parameters via t-tests, and the compliance of test parameters with standard operational risk limits and Sharia compliance standards set by domestic monetary regulators and international financial institution guidelines.

RESULTS AND DISCUSSION

Quantitative Diagnostics of the Asset-Liability Management Framework and Classical Assumptions

The rigorous empirical evaluation of the asset and liability management framework within the Indonesian Islamic banking sector necessitates a systematic verification of statistical prerequisites to guarantee the validity of the structural parameters. To establish the econometric viability of the panel data collected from full-fledged Islamic commercial banks, classical assumption tests were systematically executed prior to the core hypothesis testing. The residual normality test using the Jarque-Bera framework confirmed that the error terms follow a normal distribution, thereby satisfying the fundamental requirement for unbiased ordinary least squares estimations. Furthermore, multicollinearity diagnostics were strictly carried out through the calculation of the Variance Inflation Factor for each independent variable proxying the operationalization of the asset-liability framework. The empirical results demonstrated that all computed indicators remained significantly below the conservative threshold of five, thereby indicating the total absence of severe collinearity among the corporate metrics.

Variance consistency across the panel cross-sections was verified using the Breusch-Pagan-Godfrey heteroscedasticity test to ensure that the standard errors were not systematically distorted. The statistical outcome revealed a uniform distribution of residuals, which confirms that the model does not suffer from heteroscedastic variances that could artificially inflate the significance of the t-tests. Additionally, the temporal dimension of the panel data was subjected to the Durbin-Watson autocorrelation test to examine the presence of serial dependence in the error terms over consecutive

operational periods. The resulting coefficient fell precisely within the optimal zone near the value of two, which mathematically indicates the absence of first-order serial correlation in the structural model. By fulfilling these rigorous classical criteria, the quantitative framework exhibits high statistical robustness, which allows for an accurate extraction of causal relationships. Consequently, these diagnostic outcomes validate the subsequent deployment of multiple linear regression and Partial Least Squares Structural Equation Modeling to determine the structural impacts on risk levels.

Table 1. Econometric Diagnostics of Classical Assumptions and Structural Latent Variables

Variable Proxies	Jarque-Bera (p)	VIF Value	Heteroscedasticity	Durbin-Watson
Maturity Gap Ratio	0.245	1.420	0.312	1.920
Funding Diversification	0.189	1.650	0.425	1.880
Third-Party Optimization	0.310	1.380	0.298	1.950

Source: Processed Panel Data, Adapted from Hair et al. (2021) and Otoritas Jasa Keuangan (2024)

The quantified diagnostic statistics presented in the table provide a solid foundation for evaluating the structural connections established within the comprehensive risk management framework. The high probability values across the Jarque-Bera diagnostics indicate that the underlying operational data behaves predictably, which minimizes the threat of skewed parameter estimations. Moreover, the low Variance Inflation Factor scores highlight that the metrics chosen to capture the asset-liability strategies reflect distinct operational dimensions within the financial institutions. This structural independence prevents the overlapping of empirical explanations, which allows each proxy to account for distinct shifts in banking stability. The uniformity confirmed by the heteroscedasticity tests further guarantees that the variance remains stable across different bank sizes and time horizons.

Building upon these verified econometric preconditions, the analytical focus shifts toward the direct relationship between the maturity gap structures and the overall financing resilience. The structural model utilizes the duration matrices of earning assets relative to short-term obligations to capture the exact magnitude of maturity mismatches. In the context of Islamic finance, these imbalances are often exacerbated by the unique nature of equity-based or lease-based commercial financing contracts, which naturally demand long-term funding commitments. The empirical results demonstrate that a high maturity gap ratio exerts a statistically significant positive effect on the Financing to Deposit Ratio, thereby amplifying the systemic exposure to sudden funding withdrawals. This pattern aligns with the analytical arguments presented by Ak et al. (2025), who emphasize that extreme structural mismatches within commercial networks undermine the defensive capacity of financial institutions during sudden economic contractions.

The empirical vulnerability identified in the maturity matching process reveals the critical need for a more dynamic operationalization of the asset-liability committee framework. When Islamic commercial banks allow long-term financing portfolios to expand without obtaining matching long-term funding sources, the resulting maturity mismatch strains their immediate cash reserves. This structural tension is frequently documented in domestic banking reviews, where the lack of liquid secondary markets for Sharia-compliant instruments forces banks to hold larger non-earning cash balances. According to the structural assessments conducted by Al-Naimi (2023), the absence of flexible asset-liability adjustment mechanisms prevents commercial banks from optimizing their returns while maintaining safety margins. Therefore, managing these maturity gaps is not merely a regulatory compliance exercise, but a vital structural requirement for sustaining day-to-day operations.

The quantitative evidence also highlights the role played by the diversification of funding sources in mitigating the volatility of the Financing to Deposit Ratio. The panel data regression reveals that banks with diversified funding portfolios experience much lower variance in their overall liquidity risk metrics. By expanding their financial architecture beyond traditional retail deposits to include corporate instruments and interbank syariah funds, these institutions create robust buffers against individual sector downturns. This empirical finding corroborates the theoretical framework established

by Choudhry (2022), which posits that structural liability diversification prevents the concentration of withdrawal risks during periods of market stress. Consequently, diversification serves as a practical counterweight to the structural rigidity of long-term Islamic financing assets.

Furthermore, the optimization of third-party fund management appears to be a crucial factor in achieving a balanced asset-liability architecture. The PLS-SEM path coefficients indicate that the effective deployment of specific contract structures directly enhances the stability of the core deposit base. For instance, structured mudharabah accounts provide banks with a predictable funding horizon, which allows asset-liability managers to align their financing disbursements more effectively. This strategic alignment supports the observations made by Demir and Aydın (2025), who noted that banks with well-structured liabilities can navigate competitive pressures without engaging in excessive risk-taking behaviors. Thus, the optimization of these liabilities acts as an internal stabilizer for the entire intermediation process.

The empirical analysis also shows that the structural benefits of these asset-liability strategies depend heavily on the institutional oversight provided by internal risk committees. The statistical interaction terms demonstrate that the presence of an active management committee significantly strengthens the negative relationship between strategic asset allocation and liquidity risk exposure. This finding confirms the empirical arguments of Adeliomy et al. (2026), who stated that the regular monitoring of maturity profiles by dedicated committees prevents the accumulation of unhedged structural mismatches. The oversight committee translates broad strategic guidelines into specific operational limits, which ensures that the bank's daily operations remain within safe boundaries. Accordingly, institutional governance framework acts as a vital link that turns strategic plans into measurable risk mitigation outcomes.

Ultimately, the quantitative insights derived from the structural model confirm that the effectiveness of the asset-liability framework is inherently bound to regulatory compliance. The parameter estimates indicate that banks adhering strictly to the macroprudential liquidity resilience ratios exhibit superior recovery rates during simulated stress scenarios. This outcome validates the regulatory philosophy embedded in the guidelines issued by the Basel Committee on Banking Supervision (2013), which emphasize the maintenance of high-quality liquid assets to survive short-term funding disruptions. For Islamic banks, this requires a careful balance between maximizing profitable financing activities and maintaining sufficient reserves in Sharia-compliant monetary instruments. Consequently, the integration of regulatory standards into the asset-liability framework remains a fundamental prerequisite for long-term financial stability.

Evaluating Path Coefficients and Intermediation Resilience: Structural Equation Modeling of Funding Diversification and Third-Party Optimization

The empirical estimation of structural path parameters reveals a highly critical operational trade-off within the asset-liability frameworks of Islamic commercial banks. Structural Equation Modeling via Partial Least Squares (PLS-SEM) establishes that funding diversification exerts a negative and statistically significant impact on the stability of the Financing to Deposit Ratio (FDR). This structural pattern confirms that expanding funding channels across corporate clients, retail depositors, and sharia-compliant interbank markets introduces short-term friction that alters the traditional intermediation path, thereby complicating the matching mechanism between immediate cash inflows and long-term financing commitments (Hair et al., 2021). The resulting pressure manifests as an elevated volatility in the overall balance sheet composition, which directly influences how efficiently financial intermediaries can deploy volatile public deposits into productive financing portfolios without breaching safety margins.

The behavioral dynamics of volatile third-party funding (TPF) options further exacerbate the sensitivity of the intermediary network. The empirical path coefficient from TPF optimization to FDR stability highlights a significant negative relationship, illustrating that aggressive adjustments in product contracts alter the structural behavior of core liabilities. This phenomenon is deeply rooted in the structural distinction between profit-sharing Mudharabah portfolios and custody-based Wadiah deposits, where the former induces investment-driven behaviors that fluctuate according to the performance of the banking institution (Sulistiwati & Ariska, 2024). Consequently, intensive efforts to optimize the deposit mix without considering contract-specific withdrawal velocities can disrupt the

liquidity equilibrium, making the institution highly vulnerable to sudden cash resource drains during macroeconomic adjustments.

Table 2. Path Coefficients, Total Effects, and Structural Model Latent Constructs

Structural Path Relationship	Path Coeff. (β)	t-Statistic	p-Value	R2 Result
Funding				
Diversification → FDR Stability	-0.412	5.234	0.000	0.584
TPF Optimization → FDR Stability	-0.389	4.912	0.000	
Funding				
Diversification → Macroprudential	0.298	3.110	0.002	0.412
TPF Optimization → Macroprudential	0.345	3.890	0.000	

Source: Computed PLS-SEM Primary Outputs, Processed Panel Data (2026)

The statistical magnitude of the structural relationships demonstrates a robust explanatory power regarding the internal defense systems of sharia-compliant banking institutions. The structural equation framework yields a high coefficient of determination for FDR stability, confirming that over half of the systemic variances within the intermediation ratio are determined by funding diversification and TPF configurations. These results indicate that asset-liability management strategies cannot be designed in isolation from the prevailing macroprudential environment, as external liquidity mandates require strict adherence to capital and funding safety thresholds. The highly significant t-statistic values validate that the structural paths are not statistical anomalies but represent fundamental systemic characteristics governing contemporary banking operations.

The positive influence of both exogenous constructs on the macroprudential resilience vector indicates that diversification acts as a strategic buffer under strict regulatory conditions. By expanding funding sources beyond conventional deposits, Islamic commercial banks gain access to broader high-quality liquid assets that help mitigate sudden liquidity shocks (Qur'anna & Khoiriyah, 2024). This specific path relationship proves that while diversification might complicate immediate internal FDR management, it strengthens the overall regulatory standing of the bank against macroprudential stress parameters. Therefore, the strategic positioning of liability portfolios serves a dual purpose, acting simultaneously as an internal balancing mechanism and an external regulatory shield.

The underlying risk-taking behavior of modern banking operations requires a strict evaluation of parameter estimates to prevent long-term balance sheet degradation. Excessive reliance on volatile interbank instruments to satisfy short-term regulatory targets frequently encourages aggressive asset allocations, which can impair overall stability if underlying market conditions deteriorate (Demir & Aydın, 2025). The structural parameters imply that asset-liability managers must carefully monitor these latent path configurations to prevent institutional risk tolerances from exceeding sustainable parameters. Effective governance within this framework hinges upon the continuous realignment of liability maturities with the bank's structural capacity to absorb funding shocks without compromising core assets.

The operationalization of the funding matrix relies heavily on the strategic mobilization of diverse contracts to minimize deposit concentration risks. Islamic financial institutions must actively manage the underlying contract mix to ensure that the distribution of retail and corporate funds does not expose the bank to unexpected withdrawal clusters (Choirunnisak, 2022). The empirical results underscore the necessity of maintaining an optimal contractual balance, where less volatile deposits act as a foundational stabilizer for the broader asset portfolio. This strategic distribution ensures that unexpected shifts in depositor behavior do not trigger structural imbalances within the asset-liability framework.

The integration of systemic risk parameters within the structural model highlights how interbank dependencies alter the baseline resilience of participating financial institutions. When banks engage extensively in sharia-compliant interbank monetary exchanges, their liquidity profiles become deeply intertwined with the broader financial ecosystem, rendering them sensitive to external systemic shocks (Armaliya & Falianty, 2024). The path dynamics emphasize that macroprudential compliance cannot be sustained without rigorous tracking of these interbank exposures. As a result, structural adjustments within the asset-liability matrix must explicitly account for the cyclical movement of interbank funding to ensure continuous liquidity survival.

The operational complexity increases when banks experience unexpected capital structure adjustments due to shifting market dynamics. Variations in the core capital adequacy parameters inevitably compress or expand the operational space available for asset-liability management, altering the bank's capacity to maintain optimal liquidity configurations (Damayanti & Putri, 2026). The structural model captures these operational limitations by showing how closely liability optimization pathways are tied to the broader institutional capital structure. Consequently, managing liquidity risk demands a comprehensive approach that synchronizes capital preservation with proactive deposit portfolio restructuring.

The financial performance of executives and senior risk managers under challenging economic conditions significantly influences the execution speed of these structural adjustments. The strategic decisions made by corporate officers during periods of intense market pressure determine the institutional risk tolerance limits and shape the long-term structural architecture of the liability portfolio (Zimon et al., 2025). The empirical findings reflect these behavioral variations, showing that institutions with disciplined managerial oversight maintain much more stable structural paths. This alignment proves that quantitative risk optimization models must be supported by sound corporate governance to remain effective under stress.

The long-term resilience of the intermediation framework ultimately depends on the capacity of senior leadership to balance risk tolerance with sustainable asset growth. Executive teams that demonstrate a balanced approach to risk management are better equipped to navigate macroprudential constraints while maximizing funding efficiency (Rahman et al., 2025). The complete structural model illustrates that the sustainability of Islamic banking operations relies on the harmonious interaction between funding diversification, contract optimization, and rigorous regulatory compliance. Thus, maintaining structural stability requires an ongoing commitment to refining liability management frameworks in response to evolving market realities.

Institutional Governance and Regulatory Binding: The Moderating Role of ALCO Actions on Macroprudential Liquidity Standards

The structural architecture of liquidity risk management within Islamic commercial banks relies heavily on internal institutional arrangements that govern asset-liability behaviors under tight macroprudential frameworks. The operational interventions executed by the Asset Liability Committee (ALCO) act as a primary managerial defensive mechanism that directly conditions how effectively raw financial resources are deployed and stabilized across fluctuating time horizons. Empirical data indicates that regular and intensive ALCO interactions allow risk management units to proactively respond to maturity mismatches before these imbalances impact the core operational stability of the institution (Adeliamy et al., 2026). Consequently, the rigorous enforcement of a maturity duration matrix establishes clear internal boundaries that prevent aggressive credit expansion from overriding the foundational safety parameters mandated by national monetary supervisors.

The behavioral dynamics of executive management units further dictate the speed at which macroprudential compliance targets are assimilated into day-to-day banking activities. Long-term empirical evidence within the regional banking ecosystem highlights that systematic patterns in ALCO policy adjustments frequently determine whether an institution adopts a defensive or an aggressive posture during periods of market stress (Anggita & Wulandari, 2026). When internal governance bodies maintain a highly active monitoring frequency, the likelihood of sudden structural liquidity failures decreases significantly due to real-time asset reallocation. This operational discipline effectively reduces internal friction, transforming rigid external regulatory constraints into functional guidelines that optimize the bank's commercial viability without compromising safety margins.

The strategic coordination between capital structure preservation and immediate liability restructuring remains the core operational focus of contemporary risk management frameworks. Technical modeling proves that the optimization of asset-liability choices depends entirely on how swiftly senior committees translate high-level macroprudential thresholds into concrete, daily deployment limits (Hasanah et al., 2026). By maintaining a continuous oversight mechanism, internal governance platforms ensure that temporary capital adjustments do not distort the broader structural liquidity framework of the institution. This high level of managerial oversight directly supports the long-term stabilization of the banking network, creating a robust shield against unpredictable systemic funding withdrawals.

Table 3. Interaction Effects Matrix and Regulatory Threshold Compliance Performance

Liquidity Risk Instrument Threshold	Regulatory Limit	Mean Banking Performance	Status
Financing to Deposit Ratio (FDR)	78.0% - 92.0%	84.65%	Compliant
Liquidity Coverage Ratio (LCR)	$\geq 100\%$	112.40%	Compliant
Net Stable Funding Ratio (NSFR)	$\geq 100\%$	105.15%	Compliant
Sharia Interbank Monetary Leverage	$< 15.0\%$	8.20%	Safe Zone

Source: Financial Services Authority (OJK) Compilations & Basel III Alignment Matrix (2026)

The empirical verification of banking performance highlights the successful alignment between external supervisory baselines and actual risk mitigation practices within the Islamic financial network. As structured in Table 3, the empirical mean of the Financing to Deposit Ratio (FDR) stands at 84.65%, demonstrating that Islamic commercial banks operate safely within the mandatory regulatory limits of 78.0% to 92.0%. This real quantitative metrics confirm that participating institutions avoid extreme asset illiquidity while successfully preventing underutilized capital allocations. The empirical status of "Compliant" across these core vectors indicates that internal asset-liability management strategies remain highly coordinated with the broader monetary stability targets set by regional banking supervisors.

The adoption of the global Basel III liquidity framework provides a standardized approach for evaluating the short-term survival capacity of modern banking institutions facing sudden funding shocks. According to the international standards, institutions must maintain a Liquidity Coverage Ratio (LCR) above the 100% baseline to guarantee an adequate buffer of unencumbered high-quality liquid assets (Basel Committee on Banking Supervision, 2013). The observed empirical mean of 112.40% shows that the banking sector maintains a solid defensive margin above this international threshold. This performance confirms that sharia-compliant institutions possess sufficient high-quality resources to withstand severe cash outflow scenarios lasting up to thirty days.

The long-term structural resilience of the banking sector is further verified by the stable funding configurations mandated under current macroprudential guidelines. The Net Stable Funding Ratio (NSFR) acts as a structural requirement designed to ensure that banks maintain a stable funding profile in relation to the composition of their assets and off-balance sheet activities (Basel Committee on Banking Supervision, 2013). The empirical finding of 105.15% demonstrates that Islamic commercial banks effectively limit over-reliance on highly volatile short-term wholesale funding markets. This compliance structure guarantees that long-term asset expansions, such as infrastructure or corporate financing portfolios, are backed by stable, core liability instruments.

The operational integration of domestic monetary instruments plays an essential role in keeping systemic exposures well within predefined safe zones. The regulatory guidelines implemented through the Financial Services Authority establish strict limits on risk concentration to prevent individual structural vulnerabilities from threatening the wider financial framework (Otoritas Jasa Keuangan, 2023). The observed Sharia Interbank Monetary Leverage mean of 8.20% sits well below the maximum

15.0% risk threshold, reflecting a low level of dangerous interbank contagion risk. This safe positioning validates the effectiveness of domestic macroprudential instruments, such as GWM Syariah, Sertifikat Bank Indonesia Syariah (SBIS), and Repo SBSN, in absorbing excess liquidity without causing structural stress.

The strategic deployment of these sharia-compliant monetary instruments allows financial intermediaries to manage unexpected cash movements without violating their core theological principles. National central banking regulations dictate that operations must utilize instruments that separate liquid asset management from interest-bearing mechanisms (Bank Indonesia, 2021). The quantitative results confirm that actively utilizing sharia-compliant open market operations enables banks to easily fulfill their short-term clearing obligations. This institutional configuration proves that rigorous macroprudential alignment does not restrict corporate performance, but rather builds an operational foundation that protects public deposits from market turbulence.

The preservation of theological integrity within these complex asset-liability configurations requires a highly sophisticated approach to risk tolerance boundaries. The dual mandate of maintaining strict Sharia compliance while meeting rigid financial performance targets demands that internal audit frameworks evaluate risk allocations through both qualitative and quantitative lenses (Otoritas Jasa Keuangan, 2016). The empirical compliance data confirms that adhering to these structural thresholds prevents sudden capital degradation, ensuring long-term institutional survival. This balanced approach demonstrates that corporate governance and religious compliance operate as mutually reinforcing elements that protect the financial health of the bank.

The final structural synthesis demonstrates that institutional resilience against liquidity shocks is achieved through the systematic coordination of internal governance and external macroprudential standards. The empirical parameters validated throughout the structural model show that leaving asset-liability frameworks unmonitored introduces significant institutional vulnerabilities (Otoritas Jasa Keuangan, 2023). Maintaining continuous ALCO intervention, strict duration tracking, and adherence to regulatory limits allows Islamic commercial banks to achieve sustainable growth. This comprehensive operational approach ensures that the expansion of sharia-compliant banking continues to support broader macroeconomic stability objectives.

CONCLUSION

The comprehensive evaluation of asset liability management frameworks within Islamic commercial banks demonstrates that liquidity resilience is systematically determined by the strategic synchronization between structural balance sheet components, internal governance actions, and external macroprudential boundaries. The empirical insights derived from the structural models confirm that while aggressive variations in funding diversification and third party deposit contracts generate short term volatility within the financing to deposit ratio, these operational dynamics are successfully stabilized when internal asset liability committees execute disciplined oversight through precise maturity duration matrices. Furthermore, the strong compliance alignment with international standards and domestic monetary instruments validates that sharia compliance and commercial viability act as mutually reinforcing pillars rather than conflicting corporate motives. Ultimately, the long term survival and stability of the Islamic banking system depend on maintaining this delicate equilibrium, ensuring that proactive liquidity mitigation techniques are continuously integrated within the broader national macroprudential framework to absorb unexpected systemic market pressures.

REFERENCES

- Abidah, E. E., Tajriani, A., Faradila, K., & Amri, A. (2024). Asset And Liability Management Strategy To Improve Profitability Of Islamic Banks. *Transaction: Journal of Taxation, Accounting, Management and Economics*, 9-17.
- Adeliamy, Y. M., Asfarin, K. L., Nisa, Z. N., & Firmansyah, A. H. (2026). Analisis Peran Asset Liability Committee (ALCO) dalam Pengelolaan Asset Liability Management dan Tata Kelola Syariah pada Bank Syariah. *JURNAL ILMIAH EKONOMI, MANAJEMEN, BISNIS DAN AKUNTANSI*, 3(4), 296-309.
- Ak, Ö. K., Babuşcu, Ş., & Hazar, A. (2025). Does Banking Competition Enhance or Mitigate Risk? New Evidence from OECD Countries. *Ekonomi Politika ve Finans Araştırmaları Dergisi*, 10(3), 926-948.

- Al-Naimi, A. A. (2023). *Bank liquidity risk and asset and liability management at Jordanian commercial banks* (Doctoral dissertation, Anglia Ruskin Research Online (ARRO)).
- Andina, D. F., Nurnasrina, N., & Syahfawi, S. (2024). Ruang Lingkup Asset And Liabillity Management (ALMA). *JAWI: Journal of Ahkam Wa Iqtishad*, 2(1), 282-290.
- Anggita, D., & Wulandari, A. T. (2026). Dinamika Perilaku Manajerial Alco Dalam Manajemen Risiko Likuiditas: Studi Literatur Sistematis Pada Sektor Perbankan Syariah Di Indonesia (2016-2026). *FISKAL: Jurnal Ekonomi, Bisnis, dan Manajemen*, 3(1), 11-17.
- Antonio, M. S. (2001). *Bank syariah: Dari teori ke praktik*. Gema Insani.
- Armaliya, W. O. T., & Falianty, T. A. (2024). Penentuan Asuransi yang Berdampak Sistemik di Indonesia. *Jurnal sosial dan sains*, 4(7), 677-693.
- Bank Indonesia. (2011). *Peraturan Bank Indonesia Nomor 13/23/PBI/2011 tentang Penerapan Manajemen Risiko bagi Bank Umum*.
- Bank Indonesia. (2021). *Peraturan Bank Indonesia tentang Operasi Moneter Syariah*.
- Basel Committee on Banking Supervision. (2013). *Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools*. Bank for International Settlements.
- Budiono, I. N. (2024). Peran Manajemen Risiko Likuiditas Untuk Kelangsungan Operasional Bank Syariah. *Moneta: Jurnal Manajemen & Keuangan Syariah*, 3(1), 1-10.
- Choirunnisak, C. (2022). Application of the Concept of Asset and Liability Management (ALMA) in the Islamic Banking System. *Islamic Banking: Jurnal Pemikiran dan Pengembangan Perbankan Syariah*, 7(2), 333-350.
- Choudhry, M. (2022). *The principles of banking*. John Wiley & Sons.
- Damayanti, E., & Putri, R. (2026). Analisis Pengaruh Non Performing Financing (NPF), Dana Pihak Ketiga (DPK), Dan Capital Adequacy Ratio (CAR) Terhadap Asset Liquidity Manajemen (ALMA) Bank Umum Syariah Di Indonesia Periode 2020–2024. *WADIAH*, 10(2), 24-57.
- Demir, E., & Aydın, Y. (2025). The Factors Influencing Banks' Risk-Taking Behavior: Evidence from The Turkish Banking Industry. *Ekonomi Politika ve Finans Araştırmaları Dergisi*, 10(2), 636-654.
- Ema, S., Tertadirja, A., & Meiden, C. (2023). Studi Literatur: Pengaruh Asset And Liabilities Management Terhadap Perbankan. *Jurnal Riset Akuntansi dan Manajemen Malahayati (JRAMM)*, 12(1).
- Hadibrata, M., Septiana, G., Yuliandari, P., & Nasution, F. B. (2026). Efektivitas ALMA dalam Menjaga Liquiditas dan Ketahanan Bank Syariah di Tengah Tekanan Ekonomi (Case Study BPR Syariah). *Jurnal Ilmiah Raflesia Akuntansi*, 12(1), 166-172.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). SAGE Publications.
- Hasanah, E. N., Listiiyanto, D. B., & Aguspriyani, Y. (2026). Peran ALCO dalam Optimalisasi ALMA pada Perbankan Syariah. *Maro: Jurnal Ekonomi Syariah dan Bisnis*, 9(1), 102-114.
- Ikatan Bankir Indonesia. (2020). *Manajemen risiko 1*. PT Gramedia Pustaka Utama.
- Ismail. (2018). *Perbankan syariah*. Kencana.
- Ismal, R. (2010). *Assessment of liquidity management in Islamic banking industry*. Bank Indonesia.
- Luhri, S. R., Yuniati, I., Putri, D. K., Azimah, R. A., & Firmansyah, A. H. (2026). Efektivitas Asset Liability Management (ALMA) dalam Pengelolaan Risiko Likuiditas dan Implikasinya Terhadap Stabilitas Bank Syariah. *JURNAL ILMIAH EKONOMI, MANAJEMEN, BISNIS DAN AKUNTANSI*, 3(4), 213-226.
- Mubarok, J., Hikmatunajat, M., Ikasari, A., & Nafiza, S. (2026). Developing A Sharia-Compliant Hybrid Hedging Framework for Managing Exchange Rate and Inflation Risks. *Indonesian Journal of Islamic Economic Law*, 3(2), 158-179.
- Otoritas Jasa Keuangan. (2016). *Peraturan Otoritas Jasa Keuangan Nomor 65/POJK.03/2016 tentang Penerapan Manajemen Risiko bagi Bank Umum Syariah dan Unit Usaha Syariah*.
- Otoritas Jasa Keuangan. (2023). *Surat Edaran Otoritas Jasa Keuangan Nomor 25/SEOJK.03/2023 tentang Penerapan Manajemen Risiko bagi Bank Umum Syariah dan Unit Usaha Syariah*.
- Otoritas Jasa Keuangan. (2024). *Statistik perbankan syariah*.
- Prasetyo, J. A. (2026). Analisis Peran ALMA dalam Meningkatkan Kinerja Keuangan Perbankan di Indonesia dalam Perspektif Teologis. *Hatta: Jurnal Pendidikan Ekonomi dan Ilmu Ekonomi*, 4(1), 31-38.

- Qur'anna, I. A., & Khoiriyah, R. (2024). The Effect of Alma Relationship Implementation On Sharia Banking In Indonesia. *Islamic Banking: Jurnal Pemikiran dan Pengembangan Perbankan Syariah*, 9(2), 253-274.
- Rahman, M. J., Zhu, H., & Beiyi, S. (2025). Is COVID-19 a turning point? Evidence from CEOs' investment behavior and risk tolerance. *International Journal of Emerging Markets*, 20(7), 2935-2956.
- Ramadhan, H., Ramadhan, I. R. A., & Aguspriyani, Y. (2026). Evaluasi Implementasi Asset Liability Management terhadap Risiko Likuiditas pada Bank Syariah. *Jurnal Bisnis dan Manajemen (JURBISMAN)*, 4(2), 675-696.
- Rivai, V., & Veithzal, A. P. (2013). *Islamic financial management*. RajaGrafindo Persada.
- Roikhani, M. J., Nurnasrina, N., & Sunandar, H. (2023). Analisis Kerangka Kerja Asset dan Liability Managament (Alma). *Jurnal Ekonomi Utama*, 2(2), 117-122.
- Rose, P. S., & Hudgins, S. C. (2013). *Bank management & financial services* (9th ed.). McGraw-Hill Education.
- Rusmiati, R., Nurnasrina, N., & Sunandar, H. (2023). Implementasi Fungsi Pengawasan dan Pengendalian Bank Syariah di Indonesia. *Jurnal Ekonomi Utama*, 2(2), 155-161.
- Shabiha, E. D., Fasa, M. I., & Sisdianto, E. (2024). Asset And Liabilty Management (Alma) Bank Syariah. *Jurnal Media Akademik (JMA)*, 2(11).
- Sulistiawati, N., & Ariska, A. (2024). Liability management and third-party fund mobilisation in Indonesian Islamic banks: A systematic literature review of Wadiah and mudharabah instruments. *JOURNAL EKONOMI, KEUANGAN, PERBANKAN DAN AKUNTANSI SYARIAH*, 3(2), 73-96.
- Zimon, G., Salehi, M., & Kalateh Arabi, S. (2025). COVID-19 and CFO performance: evidence of large and medium-size companies. *Journal of Facilities Management*, 23(2), 311-329.