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THE EFFECT OF REGULATORY QUALITY AND COVID-19 ON LIQUIDITY RISK OF ISLAMIC BANKS IN ASIA AND THE MIDDLE EAST

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ABSTRACT

This study examines how internal bank-specific factors (profitability, asset quality, bank size) and external drivers (economic growth, regulatory quality) affect liquidity risk in Islamic commercial banks across Asia and the Middle East, and tests whether liquidity risk differs by COVID-19 period and by region. Methodology: Using an unbalanced panel of 572 bank-year observations from 67 Islamic commercial banks in Asia and Middle East countries from 2014 to 2024, liquidity risk is proxied by the Financing-to-Deposit Ratio (FDR). Following Chow, Breusch-Pagan LM, and Hausman tests, a Random Effects Model with cluster-robust standard errors is estimated. Findings: All three internal factors are significant: profitability and asset quality are negatively related to liquidity risk, while bank size is positively related. Both external drivers, regulatory quality and economic growth, are insignificant once the regions are combined. Liquidity risk is significantly lower during COVID-19, and Asia banks show significantly lower liquidity risk than Middle East banks. Value: The study offers integrated, cross-country evidence on how internal and external factors jointly shape Islamic bank

liquidity risk, and cautions that pooling structurally different regions can mask offsetting external effects. Paper type: Empirical research paper.

Keywords: liquidity risk; Islamic banks; Financing-to-Deposit Ratio; panel data; regulatory quality.

INTRODUCTION

The larger share of more than 70% of global Islamic banking assets held by Asia and Middle East Islamic banks (IFSB, 2023; Chapra, 2009) is supported by asset-backed financing, risk-sharing, and the prohibition of interest (riba). However, these Shariah principles restrict the types of liquid and marketable instruments available to Islamic banks in comparison to their conventional counterparts, as interbank lending, treasury bills and other conventional money-market instruments are not permitted (IFSB, 2020; Mikou et al., 2024). Instead, Islamic banks heavily rely on instruments such as commodity murabahah, which constitutes around 60% of Islamic banks' financing services around the globe, and reflects and reinforces the underdevelopment of genuine asset-backed Islamic money markets (Muttalib, 2017). This constraint makes the study of liquidity risk in Islamic banking particularly relevant and particularly sensitive to the institutional and regulatory environment in which a bank operates.

Islamic banking refers to a banking system that operates strictly within Shariah law, prohibiting transactions that involve interest (riba), excessive uncertainty (gharar), or gambling (maisir) (Abdelhakeem Khalid et al., 2022). In most of the sample countries, Islamic banks operate alongside conventional banks under a dual banking system, competing for the same depositors and borrowers while being bound by a narrower set of permissible instruments (Rizwan et al., 2022). This dual arrangement has generally been associated with greater financial stability at the bank level, since asset-backed and risk-sharing structures limit excessive leverage, but it also means Islamic banks cannot fall back on conventional short-term liquidity instruments, such as interbank repos or treasury bills, when funding conditions tighten (Cihák & Hesse, 2010). Growth in the sector has been driven by rising demand for Shariah-compliant products and by progressively more supportive regulatory frameworks, particularly in Malaysia, Indonesia, and the Gulf Cooperation Council (GCC) countries, which today serve as the main hubs of global Islamic finance (IFSB, 2020). At the same time, the pace and depth of this regulatory support differ markedly across countries, so that the institutional environment facing an Islamic bank in Kuala Lumpur is not the same as the one facing an Islamic bank in

Manama or Doha, a heterogeneity that is central to the empirical strategy of this paper.

The COVID-19 pandemic added a further layer of complexity. Lockdowns, disrupted supply chains, and business closures produced sharp contractions in economic activity worldwide (IMF, 2020), and banks faced elevated credit risk and liquidity pressure as this played out. Because the pandemic's severity, and the strength of the accompanying fiscal and monetary response, varied considerably by country, its effect on Islamic bank liquidity is unlikely to have been uniform across regions (Bank, 2019 & 2020; El-Chaarani, 2023).

Despite the size of the Islamic banking industry, empirical attention to liquidity risk, as opposed to profitability, efficiency, and capital adequacy, remains limited (Ben Jedidia & Salah, 2022). Recent panel studies of conventional banks in the same broad geography illustrate the point: Kholis et al. (2025) and Masturani Anak Stephen (2025) both treat liquidity ratios as explanatory variables for profitability rather than as the outcome of interest, and neither incorporates institutional-quality variables.

Higher regulatory quality is usually linked with better supervision, more transparency, greater market confidence and more effective banking risk management. Such institutional features are expected to improve the ability of banks to manage liquidity thru the development of financial markets and the encouragement of prudent governance (La Porta et al., 1998). The importance of regulatory quality was even more apparent during the COVID-19 pandemic, where governments and financial regulators adopted various policy measures to ensure the banking system stability and sufficient liquidity to financial institutions (IMF, 2020). However, the different effects of regulation across countries may have resulted in different liquidity management among Islamic banks . The largest share of Islamic banking assets are located in Asia and the Middle East, but the institutional settings and regulatory regimes are different, and thus they provide an interesting setting to examine whether the quality of regulation has an impact on liquidity management. Thus, this study adds regulatory quality, along with bank-specific characteristics and the COVID-19 pandemic, to give a more holistic explanation to liquidity management in Islamic banks of these two regions. In addition, few studies combine bank-specific, macroeconomic, regulatory, and crisis-related determinants of liquidity risk within a single empirical framework, and cross-country comparative work that treats Asia and the Middle East as distinct institutional environments, rather than as a single Islamic banking bloc, is scarcer still (Ulhaqqi et al., 2026). This gap matters

theoretically as well as empirically: whether strong regulatory quality (RQ) works as a disciplining, risk-reducing mechanism, consistent with Institutional Theory (North, 1990; La Porta et al., 1998), or instead enables greater risk-taking through a moral-hazard, market-confidence channel (Etudaiye-Muhtar & Abdul-Baki, 2021), remains an open and empirically contested question in Islamic banking.

In 2023, several Shariah-based banks in Bangladesh experienced acute liquidity strain following a wave of deposit withdrawals, prompting Bangladesh Bank to order five Islamic banks to bring their Advance-to-Deposit Ratio back within regulatory limits (Hasan, 2023). Episodes of this kind illustrate that liquidity risk in Islamic banking is not a purely theoretical concern relegated to a control variable in profitability regressions; it is a live supervisory issue that can crystallise quickly once depositor confidence is shaken, and one for which cross-country evidence on its bank-specific, macroeconomic, and institutional drivers remains comparatively thin.

This paper addresses these gaps using an 11-year panel from 2014 to 2024 of Islamic commercial banks drawn from Asia and Middle East countries with the sample of 572 bank-year observations. Specifically, the study is guided by four objectives. First, it investigates the internal, bank-specific drivers of liquidity risk, namely profitability, asset quality, and bank size. Second, it investigates the external drivers of liquidity risk, namely economic growth and regulatory quality (RQ). Third, it examines whether liquidity risk differs significantly between the COVID-19 period and the non-COVID-19 period. Fourth, it examines whether liquidity risk differs significantly between Islamic banks in Asia and the Middle East. The first two objectives, concerning internal and external drivers, form the primary focus of the study; the third and fourth objectives are tested as complementary dimensions of the same combined panel. Correspondingly, the study asks: (i) to what extent do internal factors explain liquidity risk in Islamic banks across Asia and the Middle East; (ii) to what extent do external factors explain this liquidity risk; (iii) does liquidity risk differ between the COVID-19 and non-COVID-19 periods; and (iv) does liquidity risk differ between Islamic banks in Asia and the Middle East. The combined specification is of direct practical interest to regional and multilateral standard-setters, such as the IFSB and AAOIFI, who must design guidance that applies across, rather than within, individual jurisdictions.

The remainder of the paper is organised as follows. The next section reviews the relevant theory and literature on Islamic bank liquidity risk. This is followed by the data and methodology, the empirical findings and discussion,

and the conclusion, which sets out the study's theoretical and policy implications, limitations, and directions for future research.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Liquidity creation is conventionally understood as the transformation of short-term, liquid deposits into longer-term, illiquid financing (Diamond & Dybvig, 1983). Consistent with the study's first objective, of investigating the internal, bank-specific drivers of liquidity risk, the discussion below first reviews the theory and evidence on profitability, asset quality, and bank size, before turning, in line with the second objective, to the external, macroeconomic and regulatory drivers, economic growth and regulatory quality. The COVID-19 period and the Asia-Middle East region dummy, which correspond to the study's third and fourth, complementary objectives, are then reviewed separately.

Internal (Bank-Specific) Determinants of Liquidity Risk

Financial Intermediation Theory predicts that financially stronger banks are better placed to manage the maturity mismatch inherent in liquidity creation, because internally generated cash flow reduces reliance on external funding during periods of stress (Diamond & Dybvig, 1983). Consistent with this, profitability (Return on Assets, ROA) is one of the most consistently reported negative predictors of liquidity risk in the Islamic banking literature (Ghenimi, 2021; Etudaiye-Muhtar & Abdul-Baki, 2021). Ghenimi (2021) further shows, in a direct comparison of Islamic and conventional banks, that the profitability-liquidity relationship is significantly stronger for Islamic banks, which is consistent with the argument that a narrower Shariah-compliant liquidity toolkit makes internally generated earnings a comparatively more important buffer for Islamic banks than for their conventional counterparts.

Asset quality, proxied by the Non-Performing Financing (NPF) ratio, is theorised to raise liquidity risk by reducing cash inflows from financing activities and increasing uncertainty (Ouali, 2020). However, an alternative, precautionary-contraction mechanism has also been documented: banks facing deteriorating asset quality may respond by curtailing new financing disbursements, mechanically lowering the Financing-to-Deposit Ratio (FDR) even as underlying credit risk rises (Toh, 2022). This precautionary channel is theoretically distinct from the standard credit-risk transmission story, since it implies that a bank's own risk-management response, rather than the deterioration in asset quality itself, is what ultimately shows up in the FDR, and it is this behavioural response that the present study's hypothesis on asset quality is designed to detect.

Bank size, measured as the natural logarithm of total assets, is linked in the literature to the Too-Big-to-Fail (TBTF) hypothesis, under which larger banks are expected to carry lower liquidity risk owing to perceived implicit government backing, economies of scale, and superior access to funding markets (Bellia et al., 2021; Mohanty & Mahakud, 2021). A competing view holds that larger banks, particularly those with sophisticated wholesale funding operations, may in fact carry higher liquidity risk, because their scale allows them to expand financing more aggressively than smaller, more deposit-constrained institutions (Mohanty & Mahakud, 2021). Because Islamic banks in the present sample vary enormously in size, from under US$100 million to over US$260 billion in total assets, bank size is treated here as an empirical question rather than a foregone conclusion in either theoretical direction.

External (Macroeconomic and Regulatory) Determinants of Liquidity Risk

At the macro-institutional level, RQ, measured here by the World Bank's Worldwide Governance Indicators (WGI) Regulatory Quality index, captures the government's capacity to formulate and implement sound policies and regulation (Kaufmann, Kraay, & Mastruzzi, 2010). Institutional Theory holds that stronger RQ disciplines bank behaviour through clearer supervisory frameworks and more effective enforcement, thereby lowering liquidity risk (Kamalu & Ibrahim, 2021; La Porta et al., 1998). An opposing view, grounded in moral hazard and market-confidence theory, suggests that strong institutional environments can instead lower the perceived need for precautionary liquidity buffers, encouraging banks to deploy funds into higher-yielding, less liquid assets (Etudaiye-Muhtar & Abdul-Baki, 2021). Economic growth (GDP growth rate), the second external driver, is similarly ambiguous a priori: Liquidity Preference Theory (Keynes, 1936) predicts that expansionary conditions reduce precautionary liquidity demand, while a deposit-expansion channel, particularly relevant to oil-exporting economies, can instead increase the deposit base faster than financing, lowering measured liquidity risk (Vodová, 2013).

COVID-19 and Regional Heterogeneity

Beyond the internal and external drivers that form the study's primary focus, two further, complementary dimensions are examined. The COVID-19 pandemic is incorporated as a dummy variable capturing the 2020-2023 period, following its treatment as an exogenous systemic shock in comparable Islamic and conventional banking studies (Rizwan et al., 2022; Elnahass et al., 2021). A

region dummy separately captures structural heterogeneity between Asia and the Middle East arising from differences in Islamic money-market depth, sovereign support, and financing culture (IFSB, 2020). This heterogeneity is also visible beyond conventional liquidity-risk research: even within the wider Islamic social-finance literature, regional and institutional context has been shown to shape financial outcomes substantially, for instance in the case of Islamic social finance exclusion and its effect on households' access to sustainable livelihood assets in East Africa (Hamad & Adeyemi, 2021), reinforcing the view that institutional and regional context cannot safely be assumed away in Islamic finance research.

Taken together, this body of theory and evidence points to a broader gap that motivates the present study's combined-sample design. A recent systematic review of 30 empirical studies on bank liquidity risk determinants, published between 2010 and 2024, categorises the drivers identified in the literature into non-systematic factors, such as bank size, capitalisation, profitability, and leverage, and systematic factors, such as macroeconomic conditions, regulatory policy, and external shocks (Ulhaqqi et al., 2026). The same review notes that empirical studies integrating internal, bank-specific characteristics with external, regulatory and macroeconomic drivers within a single model remain relatively scarce, and that comparative, cross-regional emerging-market studies are similarly rare. The present study's combined Asia-Middle East specification is designed to close precisely this gap: it estimates the internal and external drivers identified above, together with the COVID-19 and regional dimensions, within a single, unified panel framework.

Hypothesis Development

H1: Profitability (ROA) has a significant relationship with the liquidity risk of Islamic banks in Asia and Middle East countries.

H2: There is a significant relationship between Asset quality (NPF to total financing) with the liquidity risk of Islamic banks in Asia and Middle East countries.

H3: There is a significant relationship between Bank size (total assets) with the liquidity risk of Islamic banks in Asia and Middle East countries.

H4: There is a considerable relationship between Economic growth (GDP growth rate) with the liquidity risk of Islamic banks in Asia and Middle East countries.

H5: There is a significant connection between Regulatory Quality with the liquidity risk of Islamic banks in Asia and Middle East countries

H6: There is a significant difference in the liquidity risk of Islamic banks between the COVID-19 period and the non-COVID-19 period in Asia and Middle East countries

H7: There is a significant difference in liquidity risk between Islamic banks in Asia and the Middle East.

METHODOLOGY

Data Description and Variables

The sample of this study consists of unbalanced panel which comprises 572 bank-year observations from 67 Islamic commercial banks operating in Asia and Middle East countries between 2014 and 2024.

Liquidity risk, the dependent variable, is proxied by the FDR (total financing over total deposits); higher values indicate greater liquidity risk. Profitability is measured by ROA, asset quality by the Non-Performing Financing (NPF) ratio, and bank size by the natural logarithm of total assets. RQ is the country-level WGI Regulatory Quality index score (ranging from approximately -2.5 to +2.5), and economic growth is the annual percentage change in real GDP. The COVID-19 dummy equals 1 for 2020-2023 and 0 for non-COVID-19 period (otherwise), and the region dummy equals 1 for Asia and 0 for the Middle East.

Table 1: Description of Variables and Proxies

Variable	Proxy	Formula / Measurement	Definition / Interpretation	Previous literature Studies
Liquidity Risk (Dependent Variable)	FDR	Total Financing (Loan)/Total Customer Deposits	Higher FDR indicates greater liquidity risk due to tighter liquidity conditions.	UAE Comparative Study (2016)
Profitability	ROA	Net Profit/Total Assets	Measures management efficiency in generating profit; affects internal liquidity generation.	Alzoubi (2017);
Asset Quality	NPF Ratio	NPF/Total Financing	Higher NPF reflects poorer asset quality, increasing liquidity risk.	Insani (2021);

Bank Size	Natural Logarithm of Total Assets	ln(Total Assets)	It represents the scale and funding capacity of banks; larger banks may manage liquidity better.	Alzoubi (2017);
Regulatory Quality	WGI RQ Index	Annual country-level index score	Measures the effectiveness of regulation in promoting financial stability and sound banking.	World Bank (WGI); Athari & Rahman (2023)
Economy	GDP Growth Rate	Annual % change in real GDP	Reflects macroeconomic conditions influencing deposit growth and liquidity.	Supiyadi (2021); Vodová (2013)
Region	Regional Dummy Variable	1 = Asia, 0 = Middle East	Captures regional heterogeneity in Islamic banking and institutional environments.	El-Chaarani et al. (2023); Rizwan & Ashraf (2020)
COVID-19	Covid1-19 Dummy Variable	1 = 2020-2023 0 = Before 2020 & 2024	Captures the COVID-19 period and the non-COVID-19 period	Rizwan, Ahmad & Ashraf (2022)

Econometric Specification

The static panel regression model is specified as:

$$LiquidityRisk_{it} = \beta_0 + \beta_1\, Profitability_{it} + \beta_2\, Assetquality_{it} + \beta_3\, lnsize_{it} + \beta_4 RegulatoryQuality_{it} + \beta_5\, Economy_{it} + \beta_6 Covid19_t + \beta_7 RegionDummy_i + \epsilon_{it}$$

where i indexes the bank and t the year in the panel; β0 is the model intercept, β_1 to β_8 are the slope coefficients to be estimated, and εit is the composite disturbance term.

Estimation Technique

Prior to estimation, Cook's distance was used to identify and treat outliers, the Fisher-type Phillips-Perron test confirmed stationarity of all series, and the

Variance Inflation Factor (VIF) test showed no evidence of severe multicollinearity (mean VIF = 1.30; maximum 1.70). The Breusch-Pagan/Cook-Weisberg test indicated the presence of heteroskedasticity ($\chi^2 = 5.25$, $p < 0.05$), and the Wooldridge test confirmed first-order serial correlation ($F = 161.55$, $p < 0.01$). Consequently, cluster-robust standard errors, clustered at the bank level, were applied throughout to address both issues.

Model selection followed a sequential specification-testing procedure. The Chow test rejected Pooled OLS in favour of the Fixed Effects Model ($F = 12.18$, $p < 0.01$), and the Breusch-Pagan LM test rejected Pooled OLS in favour of the Random Effects Model (Chibar$^2 = 505.57$, $p < 0.01$). The Hausman test was significant only at the 10% level ($\chi^2 = 11.73$), a comparatively weak signal in favour of fixed effects. Because the model includes a time-invariant region dummy, which is dropped under fixed effects estimation, the Random Effects Model (REM) was retained for the combined sample to preserve estimation of the region coefficient, consistent with the treatment of comparable time-invariant covariates in cross-country panel studies of banking risk (Wooldridge, 2010; Elnahass et al., 2021).

FINDINGS AND DISCUSSION

Model Selection and Regression Results

Table 2 reports the REM regression results with cluster-robust standard errors. The model is jointly significant (Wald $\chi^2 = 128.83$, $p < 0.01$) and explains 44.4% of the variation in liquidity risk ($R^2 = 0.444$), a strong result for a cross-country panel banking study of this kind.

Table 2: Random Effects Regression with Cluster-Robust Standard Errors

Variable	Coefficient	Significance
Profitability	-5.366	***
Asset Quality	-0.835	***
lnSize	2.790	***
Regulatory Quality	-0.044	n.s.
Economy	0.062	n.s.
COVID-19	-2.446	***
Region Dummy	-6.665	***

Constant	79.40	-

*Note: Dependent variable is the Financing-to-Deposit Ratio (FDR). ***significant at 1% level; n.s. = not significant. Standard errors clustered at the bank level.*

The Effect of Internal (Bank-Specific) Determinants

In line with the study's first objective, the following three sub-sections examine the internal, bank-specific drivers of liquidity risk.

Profitability is significantly and negatively related to liquidity risk ($\beta = -5.366$, $p < 0.01$), supporting H1. More profitable banks maintain lower liquidity risk, consistent with Financial Intermediation Theory (Diamond & Dybvig, 1983): banks that generate stronger internal cash flow are less reliant on external funding and can therefore afford more conservative financing to deposit positions (Etudaiye-Muhtar & Abdul-Baki, 2021).

Asset quality is significantly and negatively related to liquidity risk ($\beta = -0.835$, $p < 0.01$), confirming H2, although the direction requires careful interpretation. Rather than poor asset quality raising the liquidity risk, as a naive reading of H2 might suggest, banks experiencing rising NPF appear to curtail new financing disbursements as a precautionary measure, mechanically lowering the liquidity risk even as underlying credit risk increases (Toh, 2022). This is consistent with evidence of enhanced supervisory scrutiny compelling banks to rebuild liquidity buffers once asset quality deteriorates (Kassim & Majid, 2010).

Bank size is significantly and positively related to liquidity risk ($\beta = 2.790$, $p < 0.01$), providing partial support for H3, though not in the direction the TBTF hypothesis would predict. Rather than larger banks holding lower liquidity risk due to implicit government backing, larger Islamic banks in the combined sample exhibit higher liquidity risk, plausibly reflecting a business-model effect in which larger institutions, particularly in the Middle East, engage in more aggressive wholesale financing that expands faster than their deposit base (Mohanty & Mahakud, 2021).

The Effect of External (Macroeconomic and Regulatory) Determinants

In line with the study's second objective, the following two sub-sections examine the external drivers of liquidity risk.

RQ is statistically insignificant in the combined model ($\beta = -0.044$, $p > 0.10$), providing no support for H5 at the pooled level. Given the size of the RQ coefficients typically documented in regional Islamic banking subsamples, a null result of this kind is more plausibly a sign that offsetting regional effects are being averaged away within the combined sample than evidence that RQ is

irrelevant to liquidity risk (see the Limitations discussion below). This is a useful, if secondary, insight in its own right: pooling institutionally heterogeneous regions into a single model can obscure, rather than reveal, the true relationship between institutional quality and bank behaviour.

GDP growth is positive but statistically insignificant in the combined sample ($\beta = 0.062$, $p > 0.10$), providing no support for H4. As with RQ, this non-result is consistent with regionally divergent transmission channels, an expansion-driven financing-demand effect in some markets against a deposit-expansion effect tied to oil-revenue cycles in others, that offset one another once the regions are combined (Vodová, 2013).

COVID-19 and Regional Effects

The following two sub-sections address the study's third and fourth, complementary objectives.

The COVID-19 dummy is significantly and negatively related to liquidity risk ($\beta = -2.446$, $p < 0.01$), supporting H6. On average, Islamic banks in the combined sample exhibited lower liquidity risk during 2020-2023, consistent with reduced financing disbursements amid heightened credit-risk uncertainty, combined with deposit-supportive stimulus and moratorium measures introduced by regulators across the sample countries (Elnahass et al., 2021; IFSB, 2023).

The region dummy is significant and negative ($\beta = -6.665$, $p < 0.01$), confirming H7 where Asia Islamic banks exhibit liquidity risk approximately 6.7 percentage points lower than their Middle Eastern counterparts, consistent with the descriptive means (87.3% versus 93.3%). This is attributable to more conservative financing cultures and deeper, more institutionally developed retail deposit and Islamic money markets in economies such as Malaysia, which has built a comprehensive Islamic liquidity infrastructure including the Bursa Suq Al-Sila platform (IFSB, 2020; Kassim & Majid, 2010).

All three internal, bank-specific determinants, profitability, asset quality and bank size are significant determinants of liquidity risk in the combined sample, confirming that internal bank fundamentals robustly explain Islamic bank liquidity risk even after pooling two structurally different regions. Of the two external drivers, however, neither regulatory quality nor economic growth is significant in the pooled specification, which is a result that answers the second objective negatively for the pooled sample. This is informative in itself as it signals that offsetting region-specific effects can cancel out when institutional and macroeconomic conditions are averaged across structurally different regions.

The two complementary tests for the third and fourth objectives also show that liquidity risk is significantly lower in the COVID-19 period and significantly different between Islamic banks in Asia and the Middle East.

LIMITATION AND FUTURE RESEARCH

There are several limitations to this study. Firstly, other important markets for Islamic banking, including Saudi Arabia, Oman and Jordan, are not included in the sample. Secondly, the COVID-19 dummy does not differentiate between the crisis (2020) phase, the recovery (2021-2022) phase, and the normalisation (2023) phase.

There are a number of future research directions suggested. Future studies could take a Panel Vector Autoregression or a dynamic GMM approach and introduce time-varying measures of institutional quality to see if the impact of regulatory quality on liquidity risk changes in the course of the regulatory development process. A potential next step in the institutional analysis would be exploring the moderating effect of the quality of the Shariah governance. It would be helpful to be able to identify the dynamic adjustment of liquidity ratios during periods of acute crises from data that are available at high frequencies or quarterly frequencies. Geographical coverage may be expanded to include other Islamic banking markets, such as Saudi Arabia, Sudan, Iran, Turkey and Sub-Saharan Africa. Non-linear or interaction effects may exist but will not be apparent from the linear specification; these could be identified by machine-learning methods (gradient boosting, random forest regression, and neural network-based panel models). Last but not least, future studies on the relationship between liquidity risk and systemic risk in Islamic banking would be interesting. Overall, the results show that the internal bank conditions and external macro-institutional conditions have a combined effect on liquidity risk management in Islamic banking.

CONCLUSION

The study was applied to a panel of 572 bank-year observations of Islamic commercial banks in Asia and the Middle East across 2014-2024 and a Random Effects specification with cluster-robust standard errors. To address the first objective, the three internal factors were all found to be significant factors affecting the liquidity risk, with profitability and asset quality having negative relationship with the liquidity risk, while bank size had positive relationship with the liquidity risk. In response to the second objective, none of the two external drivers (regulatory quality or economic growth) was significant when the two

regions were merged. The two complementary tests also indicated that there was a significant reduction in liquidity risk during the COVID-19 period, and a significant structural difference in liquidity risk between Asia and the Middle East.

Theoretically, the study continues Financial Intermediation Theory to the Islamic banking environment and establishes a link between the Islamic banking environment and the profitability as a buffer for liquidity management; even if in the Islamic banking environment, the liquidity-management toolset is constrained by Shariah compliance factors. It also confirms that the NPF-liquidity risk relationship works via a precautionary financing-contraction channel instead of the mechanical positive association that is commonly believed in the literature and suggests that the size-liquidity risk relationship in the pooled sample is more likely a structural cross-regional artefact than an implicit-guarantee effect within each region separately, thereby extending the TBTF debate to Islamic banking. Moreover, the null coefficients on the two external drivers are a methodological note against the broader cross-country Islamic banking literature: a statistically insignificant pooled coefficient is not necessarily an indication that the factor under consideration is not important; instead, it could be a sign of opposite effects in the individual countries, and researchers conducting statistical analysis on combined models should be equally cautious in interpreting any null findings.

For regulatory and supervisory authorities, the sharp liquidity risk differences between regions suggest that a uniform, one-size-fits-all liquidity standard may not necessarily be easily applied to the regions; this argument is advanced by IFSB and AAOIFI for regional calibration of the liquidity standard, rather than a one-size-fits-all approach (IFSB, 2020). The consistent negative correlation between profitability and liquidity risk reinforces the advantage of diversified and fee-based income streams as a liquidity-buffering strategy for Islamic bank management, while the asset quality result highlights the importance of having early-warning credit-monitoring systems that enable adjustments to financing disbursements as asset quality signals weaken rather than waiting for liquidity stress to emerge (Basel Committee on Banking Supervision, 2013).

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REFERENCES

Abdelhakeem Khalid, A., Haron, H., Ibrahim, N., Zakaria, N., & Salleh, S. (2022). The adverse impact of COVID-19 on Islamic banks in Malaysia. *Global Business and Management Research: An International Journal*, 14(3S).

Basel Committee on Banking Supervision. (2013). *Basel III: The liquidity coverage ratio and liquidity risk monitoring tools*. Bank for International Settlements.

Bellia, M., et al. (2021). Limiting too-big-to-fail: Market reactions to policy announcements and actions. *Journal of Banking Regulation*, 23(4), 368-389.

Ben Jedidia, K., & Salah, I. B. (2022). Asymmetric causal linkages between liquidity and profitability for MENA Islamic banks. *Journal of Islamic Monetary Economics and Finance*, 8(4), 501-516.

Chapra, M. U. (2009). The global financial crisis: Can Islamic finance help? *International Institute of Islamic Thought*.

Cihák, M., & Hesse, H. (2010). Islamic banks and financial stability: An empirical analysis. *Journal of Financial Services Research*, 38(2-3), 95-113.

Diamond, D. W., & Dybvig, P. H. (1983). Bank runs, deposit insurance, and liquidity. *Journal of Political Economy*, 91(3), 401-419.

El-Chaarani, H. (2023). The impact of COVID-19 on the performance of Islamic banks in the MENA region. *ISRA International Journal of Islamic Finance*, 15(1), 109-129.

Elnahass, M., Trinh, V. Q., & Li, T. (2021). Global banking stability in the shadow of Covid-19 outbreak. *Journal of International Financial Markets, Institutions and Money*, 72, 101322.

Etudaiye-Muhtar, O. F., & Abdul-Baki, Z. (2021). Market structure, institutional quality and bank capital ratios: Evidence from developing countries. *European Journal of Management and Business Economics*, 30(1), 92-107.

Ghenimi, A., Chaibi, H., & Omri, M. A. B. (2021). Liquidity risk determinants: Islamic vs conventional banks. *International Journal of Law and Management*, 63.

Hamad, A. U., & Adeyemi, A. A. (2021). Effect of Islamic social finance exclusion on sustainable livelihood assets acquisition and persistent poverty in Zanzibar. *AZKA International Journal of Zakat & Social Finance (AZJAF)*, 2(2), 19-39.

Hasan (2023). BB asks 5 Shariah banks to resolve liquidity crisis. The Daily Star.

IFSB. (2020). Islamic Financial Services Industry Stability Report 2020. Islamic Financial Services Board.

IFSB. (2023). Islamic Financial Services Industry Stability Report 2023. Islamic Financial Services Board.

IMF. (2020). Global financial stability report: Markets in the time of COVID-19. International Monetary Fund.

Kamalu, K., & Ibrahim, W. H. W. (2021). Islamic banking development and financial inclusion in OIC member countries: The moderating role of institutions. *Journal of Islamic Monetary Economics and Finance*, 7.

Kassim, S. H., & Abd. Majid, M. S. (2010). Impact of financial shocks on Islamic banks. *International Journal of Islamic and Middle Eastern Finance and Management*, 3(4), 291-305.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). The worldwide governance indicators: Methodology and analytical issues (World Bank Policy Research Working Paper No. 5430). World Bank.

Keynes, J. M. (1936). The general theory of employment, interest and money. Macmillan.

Kholis, M. S. M., et al. (2025). The effect of liquidity risk on the financial performance of commercial banks listed on the Indonesian Stock Exchange. *International Journal of Accounting and Management Research*, 6(2), 35-43.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and finance. *Journal of Political Economy*, 106(6), 1113-1155.

Masturani Anak Stephen, T. M. F., et al. (2025). The impact of liquidity risk and macroeconomic factors on the financial performance of commercial banks in Malaysia. *UNIMAS Review of Accounting and Finance*.

Mikou, S., Lahrichi, F., et al. (2024). Liquidity risk management in Islamic banks: Review of the literature and future research perspectives. *European Journal of Studies in Management and Business*, 29, 56-73.

Mohanty, S., & Mahakud, J. (2021). Causal nexus between liquidity creation and bank capital ratio: Evidence from India. *Margin: The Journal of Applied Economic Research*, 15(2), 205-237.

Muttalib. (2017). Liquidity management by Islamic banks: An issue or a contrivance for risk-free returns. *Journal of Islamic Business and Management (JIBM)*, 7(1).

North, D. C. (1990). *Institutions, institutional change and economic performance*. Cambridge University Press.

Ouali, E. (2020). Liquidity risk determinants of Islamic banks. *International Journal of Business and Technology Studies and Research*.

Rizwan, M. S., et al. (2022). Systemic risk, Islamic banks, and the COVID-19 pandemic: An empirical investigation. *Emerging Markets Review*, 51.

Toh, M. Y. Z. (2022). Bank capital and risk adjustment responses to economic uncertainty: Evidence from emerging Southeast Asian economies. *Research in International Business and Finance*, 60.

Ulhaqqi, M. F. Y., et al. (2026). Determinants of liquidity risk in the banking system: A systematic literature review. *Jurnal Aplikasi Bisnis dan Manajemen*, 12(2).

Vodová, P. (2013). Determinants of commercial bank liquidity in Hungary. *e-Finanse: Financial Internet Quarterly*, 9(3).

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (2nd ed.). MIT Press.

World Bank. (2019/2020). *Global financial development report* 2019/2020: Bank regulation and supervision a decade after the global financial crisis. World Bank.