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Liquidity Risk Management in Islamic Banks: Review of the literature and future research perspectives

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Authors' short biographies

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Introduction

Liquidity risk management (LRM) is a critical aspect of banking operations and a compulsory prerequisite to the sustainability and long-term performance of banks especially in times of unstable economic climates.

In this regard, Islamic banks (IB) face unique challenges due to their adherence to Shariah principles. In fact, these banks are particularly limited in their ability to access conventional liquidity management tools such as interest rate based instruments or borrowing from central banks which creates a distinctive liquidity risk profile that necessitates tailored approaches to liquidity risk management.

This research explores the distinctive characteristics of liquidity risk faced by Islamic banks as well as the typical challenges and constraints faced by these institutions; and examines the strategies employed by these institutions to effectively manage and mitigate such risks.

The Literature Review

Liquidity Risk Concepts

- Bank liquidity is the ability of the bank to fund the expansion of its assets and meet its liabilities as scheduled without incurring losses (Basel Committee 2008). It constitutes a radar for market health and its volatility is the early signal of banking crisis (Waeibrorheem & Suriani 2016).

- The two components of liquidity risks are funding liquidity risk and market liquidity risk (Willem, 2010).

- Central bank, interbank and money market are sources of liquidity for banks; they constitute a reserve from which they can draw (Archer & Rifaat 2018).

- Liquidity risk (LR) concerns both Islamic and conventional banks as it affects their longevity and competitiveness.

The Literature Review

Sources of Liquidity Risk

- Although many practices like depending greatly on large corporate deposit (Abdel Megeid 2017), high short-term spread between deposits and loan ratios, high off-balance sheet exposure, and relatively lower investment in risk-free government assets all aggravate it (Zheng 2006 & Ayub 2007); liquidity risk stems mainly from a duration mismatch between the deposit products that are liquid and short term based and the loan products that are less liquid and long-term based assets (Akhizidis & Khandelwal 2008).

- If depositors withdraw their money at undesirable times, or if they do so massively at first signs of trouble, especially if these banks have illiquid loans, banks can face a critical liquidity situation, which can lead to real economic damage and financial crisis (Diamond & Rajan 2001).

- Liquidity risk management is consequently a key tool in protecting banks from collapse and ensuring the stability of the financial system (Majid, 2003).

The Literature Review

Islamic Banking Idiosyncrasies

IB's service offer is incomplete and risky mainly for the following reasons:

- A lack of guarantees for depositors (Lotfi & Elaatchi 2022);
- The large maturity gap between the long term assets (Murabaha) and short term liabilities (clients' deposits) (Akkizidis & Khandelwal, 2008);
- Insufficient Shariah compliant instruments (Majid, 2003);
- Small number of participants in comparison to conventional banks;
- Limited access to Shariah compliant financial markets (Hesse, & al.,2008);
- The limited role of central banks to compensate for the deficits of IB.

All of the above cited elements lead IB to hold additional liquidity ratios up to 40% higher than conventional banks to cover the risks incurred (Khan & Bhatti, 2008 & Pappas & al., 2017).

The Literature Review

Liquidity Risk Management Instruments

Conventional Banks

- Customer deposits
- Shares
- Bonds
- Bills of Exchange and Commercial Papers

Islamic Banks

- Equity based (Sukuk, Mousharakah…)
- Lease based (Ijarah)
- Sales based (Mourabahah, Salam, Istisna'…)

(Hassan and al., 2012)

The Literature Review

Innovative Islamic LRM Instruments

Islamic Securitization

- Islamic securitization consists of issuing securities of equal amount against the ownership of tangible assets in accordance with Shariah rules. Various forms exist such as Musharakah, Salam, Ijarah. This Shariah compatible practice is highly beneficial to the Islamic institutions in their liquidity risk management and to the community through the promotion of wealth generating economic activities.

(Lotfi and Elaatchi, 2022)

The case of the Maldives

- The central bank of Maldives, Maldives Monetary Authority (MMA) issued its First Islamic Treasury Bill, customized for the Maldives, presenting a unique structure consisting of Mudharabah, Murabahah, and Wakalah bi al Istithmar certificates. These certificates were designed to address specific needs of the government, such as oil purchases, generator set acquisitions, or housing development projects.

(*Muneeza, 2019)*

The IILM's HQLA: Sukuk

- With respect to Basel III's Alternative Liquidity Approaches, the International Islamic Liquidity Management Corporation has issued short-term Sukuk for maturities of 3 and 6 months. The underlying assets are at least 51% tangible assets and 49% receivables. All the IILM assets are sovereign, sovereign linked or supranational assets from various countries.

(Archer and Abdel Karim, 2018)

The Literature Review

Regulatory Environment

The Islamic finance model is well specified at the “bank-to-client” level, but is lacking in the “central bank-to-bank” and “bank-to-bank” interactions.

A Central Bank (CB) is a risk-free institution. It does not engage in commercial profit-making activities. Thus, when an IB places money with a CB, it may not receive any compensation. Hence the absence of suitable Shariah compatible tools for CB to interact in a profitable manner with IB, the way they serve as lenders of last resort for conventional banks through interest based loans.

(Yandiev, 2015) proposes a concrete Shariah compatible model for setting up an Islamic interbank loan market and managing IB liquidity. In the proposed model, the CB creates an SPV as an intermediary responsible for managing liquidity between CB and IB in Shariah compliant manner. The paper also proposes the issuance of Sukuk with daily payable coupons; that can then be traded in the secondary market between IB creating an Islamic interbank loan market.

The Literature Review

Unsystematic Liquidity Risk

- Sukmana & Suryaningtyas (2017) used panel data regression to analyze LR in Indonesian Islamic and conventional banks. Results indicated CAR's positive impact and ROA's negative effect on LR in IB.
- Shamas & al. (2018) explores LR variables in Gulf region Islamic and conventional banks. Financial ratios like ROE, net interest margin, and CAR were found to have positive impacts on IB's LR, while ROA and NPL displayed negative impacts.
- Lassoued & al. (2018) compared LRM between Islamic and conventional banks in Sri Lanka, finding that CAR's impact was minimal and not significant, and that IB showed an adverse impact of ROA on LR, while conventional banks exhibited a positive relationship.
- Waemustafa & Sukri (2016) show that liquidity ratio is positively significant with ROA.

The Literature Review

Systematic Liquidity Risk

- Waemustafa & Sukri (2016) studied systematic determinants of LR in Islamic and conventional banks from 2000 to 2010.
- Results show that GDP is positive but not significant to liquidity and output gaps show negative significance to LR in both conventional and IB. Whereas money supply shows positive significance to LR in IB but is not significant in conventional banks.
- Inflation is positively significant to liquidity risk in both.

➢ Islamic and conventional banks' macroeconomic variables have a similar correlation to the liquidity risk. This could be explained by the fact that both Islamic and conventional banks are operating side by side and competing for the same customers as conventional banks are also offering Islamic banking products through their subsidiaries. However, money supply shows the largest correlation to liquidity.

The Literature Review

Liquidity Risk Management 1/2

Islamic banks should use the following practices to manage their liquidity risk:

- Line up investment opportunities before advertising for new investment deposits to ensure profitable fund utilization (Syed, 2004);
- Diversify the Investment Modes by utilizing products with conditionally predictable cash flows such as Murabahah and Salam, and products linked to equity participation such as Musharakah or Mudharabah (Syed, 2004);
- Maintain prudent reserves to prevent high LR due to deposit outflows and default-induced shortages (Syed, 2004);
- Utilize reciprocal inter-bank mutual loan agreements (Mudharabah) for short-term liquidity needs (Syed, 2004);
- Use instruments like Institutional Ijarah Sukuk to hold liquid assets earning income, minimizing LR and costs (Syed, 2004).

The Literature Review

Liquidity Risk Management 2/2

- Ensure adequate CAR to absorb losses and prevent failure (Syed, 2004);
- Establish policies and processes for managing risk like effective oversight and implementing monitoring systems supported by supervisory review and rational assessments;
- Consider Islamic derivative instruments for hedging risks arising from activities (Mohd & al., 2009);
- Use assets intended for purchase as collateral to mitigate risk in case of default (Siddiqui, 2008);
- Implement a complete ecosystem with regulations adapted to the particularities of IB (Goodhart, 2008);
- Develop Islamic financial markets for trading Islamic financial instruments to create proactive competition (Hassan & al., 2012);
- Invest in the development of innovative Islamic LRM instruments with comprehensive consideration of the unique legal framework of the countries (Muneeza, 2019) and issuances that meet HQLA criteria (Archer and Abdel Karim, 2018).

The Study

This is not an empirical research but rather a literature review paper. The main study consists of the exploration of the available most cited articles on the subject and provides a summary of key studies and researches conducted in the field of liquidity risk management in Islamic banking.



Research Questions

- What idiosyncrasies distinguish Islamic banks from conventional banks in Liquidity Risk Management ?
- Which Shariah compliant instruments can be employed in the management of liquidity risk ?
- What are the most efficient strategies for Liquidity Risk Management in Islamic banks ? and what is the role played by Central banks and financial markets with that regard ?
- Is there a place for innovation in the management of liquidity risk in Islamic banks ?

Methodology

Literature Search

- The review of the literature for this study focuses on most cited articles available on Google scholar published between the years 2000 and 2022. A keyword search for articles containing combinations of the terms “Liquidity risk in Islamic banks” and “ AI and Liquidity risk management in Islamic Banks” produced 7 times more results for the first research than it did for the latter.
- Most of the over 70 000 articles found with the key search “Liquidity risk in Islamic banks” result in papers about specific countries. A first overview of these articles classes the articles into two main categories: articles with empirical comparative studies of financial indicators (ROE, ROA, CAR, and bank size…) and their impact on liquidity risk in both Islamic and conventional banks and articles focusing solely on the Islamic banks market, Islamic instruments, inter-banks interactions and relationship to Central banks.
- No article was found at this stage about the use of AI in the management of liquidity risk management in Islamic banks.

Methodology

Methodology used in reviewed empirical studies

- Most of the articles reviewed tackle the subject by the means of empirical studies through comparative research between conventional and Islamic banks in specific countries. They collect balanced panel data from the sampled banks' annual reports and published financial statements. Many use descriptive, correlation and panel data regression analysis.

- They use comprehensive models that incorporate several variables that impact the liquidity of Islamic banks.

Results

- The general conclusion that emerges from this research is that the problem of the lack of Shariah compliant liquidity risk management instruments at the disposal of Islamic banks and Central banks and the absence of a fully-fledged Islamic Interbank Loan market actually exists in a cross-country landscape.

- This literature review also strongly confirms the importance of liquidity risk management for the short and long term prosperity of Islamic banks.

Discussion

- Many studies have investigated the liquidity risk in Islamic banks by applying their models on a small sample over a short period of time, and, in most cases, on one country only. Some of these studies were descriptive while others used a simple model with limited variables.

- The divergence in results can be due to the difference in economies and sizes of banks sampled or the size of the samples selected for data collection. In fact, in given researches, variables might prove insignificant not because they don't actually affect liquidity risk, but rather because the data used is insufficient to show such conclusion.

Implications

- LRM is a compulsory pillar on which relies every financial institution. Neglecting it could lead to financial disaster and financial crisis.

- An efficient LRM, however, can ensure both the short and long term profitability and longevity of Islamic banks. The enrichment of the Islamic banks' offer can also attract more customers on the long run.

- Increasing the Islamic banks’ size and scope of operations should help these financial institutions reach a critical size to make them more resilient in times of high market volatility.

- All the possibilities for innovation in the implementation of Islamic financial instruments extend promising horizons for Islamic banks with regards to improving their entire structures and making them more competitive in the banking sector, encouraging a more wealth-creating global financial system.

Suggestions for Further Research

- For the future researchers, this paper suggests that the study should try to apply a more comprehensive model that includes more specific variables other than variables used in the literature on a larger cross country sample to improve the reliability of the model and better understand the liquidity risk in Islamic banks on an international dimension.

- The present review of existing literature also reveals a scarcity of research on the Islamic interbank market and liquidity management.

- Much of the existing literature did not inspect the role of management techniques, marketing strategies and AI role in managing liquidity risk in Islamic banks.

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