


“The mitigation of liquidity risk in Islamic banking operations”

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THE MITIGATION OF LIQUIDITY RISK IN ISLAMIC BANKING OPERATIONS

Abstract

The purpose of this paper is to discuss the issues and challenges of liquidity risk management in Islamic banks. At the same time, the authors are going to identify the sources of liquidity risk in Islamic banks and the common instruments used to mitigate liquidity mismatches in both sides of their balance sheets. The study is a qualitative study that uses secondary sources of data to describe and analyze risk mitigation in the Islamic banking context. Data were collected from libraries by referring to books, journals from both online and offline sources. The research objectives were addressed by critically analysing various issues from both the Islamic principles and contemporary applications. The authors found that Islamic liquidity management is an important building block for stable and efficient banking. Even though there are several attempts, for example, i) organized tawarruq (commodity murabahah), ii) salam sukuk and iii) short-term ijarah sukuk, to find solutions to the incessant problems of liquidity faced by majority of Islamic banks, there are still several underlying problems such as i) in terms of deficiency in infrastructure especially in countries where Islamic finance is still at an early stage, ii) lack of hedging instruments and iii) Shariah restrictions on some instruments. Regulatory bodies should come up with more innovative practices of Islamic liquidity management to solve unresolved theoretical issues and also meeting market requirements for liquidity

Keywords

liquidity risk, Islamic banking, risk management, risk mitigation, liquidity management

JEL Classification G21, G32

INTRODUCTION

The recent global financial crisis that seriously affected the banking system is triggering new approaches to manage the risks in both conventional and Islamic banks. There was collapse of banks, such as Northern Rock and Lehman Brothers. The main reasons of collapse can be sought as the inefficiency of risk management practices. Especially, the liquidity risk, among others, was considered as the worst form of risk that caused the crumble despite the fact that such banks declared profits and relatively possessed high capitalization. Some other banks that survived were forced to merge or required bail-outs (Archer & Karim, 2013). The main lesson from this is that when risks are not mitigated properly, it may not only lead to bank run, but also affect the whole financial system.

Therefore, the liquidity profile is a primary concern to any form of business, but since banks are more leveraged entities compared to other businesses, the liquidity is much more essential. Indeed, following the changes in funding dynamics of banks, liquidity management is now becoming a more complex phenomenon that requires more robust practices (Comptroller of the Currency, 2012). The Basel III

framework on liquidity management underscores the importance of liquidity by developing the Liquidity Coverage Ratio (LCR) that will ensure more resilience of banks. LCR is aimed to promote the short term resilience of banks' liquidity risk by ensuring banks possess "adequate stock of unencumbered high-quality liquid assets (HQLA) that can be converted easily and immediately in private markets into cash to meet their liquidity needs for a 30 calendar days liquidity stress scenario" (BCBS, 2013, p. 1). This framework is considered a global standard adopted by many countries including the European Union (Harzi, 2011). Chouinard and Paulin (2014) reported that there are improvements made in the international banking system through the implementation of Basel III and this will cause improvement in the global financial stability at macroeconomic levels.

Majority of Islamic banks were found to scale the capital adequacy levels, but with the Basel III liquidity coverage ratio, Islamic banks need to hold more liquid assets for wholesale funding. The impact is still less than on the conventional banks. However, this framework is beneficial to Islamic banks in gaining global competitiveness and improving its transparency and capital adequacy levels (Harzi, 2011). Liquidity problems of Islamic banks are not due to liquidity coverage but due to lack of instruments. Archer and Karim (2013) pointed out that the limitations are due to Shariah restrictions. This is why there are still few instruments in Islamic banking.

It is imperative to acknowledge the International Islamic Liquidity Management (IILM) Corporation for launching its short-term Sukuk program to facilitate cross-border liquidity management among Islamic banks in 2010. This is one of the innovative steps taken in the Islamic financial industry. There are other several instruments that were developed both at institutional and regulatory levels, but unfortunately, as explored by Al-Salem (2009), the innovation is still low to cater for the banking needs. On the other hand, there is an increased need for more innovative products in the Islamic banking (Al-Salem, 2009) and ideally it should be asymmetric to the increase in the volume assets and complexities in the Islamic financial industry. The survival of Islamic finance will depend largely on the liquidity position of banks not only to instill confidence in the hearts of customers, but also to utilize the untapped opportunities. Recently, the Chairman of IILM Corporation reported that over \$9.5 trillion dollars of Muslim wealth is mobilized outside Islamic finance industry. Also, Islamic banks and Islamic financial institutions are losing over \$180 billion every year (Amlôt, 2016). This justifies the need for more innovative practices that will improve IILM practices at all banking levels as a key component of the Basel III requirements.

This paper provides a conceptual framework on liquidity management and the major challenges of liquidity management from the context of Islamic banking. The paper is divided into 7 sections. After this introduction, the section 1 will explain the background on the liquidity, the liquidity risks, the liquidity management processes and will identify sources of liquidity risk. The following section explains the research methodology employed. The section 3 will discuss the available instruments in liquidity management of Islamic banks. The challenges and way forward are presented in sections 4 and 5, respectively. Finally, last section concludes the study.

1. LITERATURE REVIEW

1.1. Liquidity and liquidity risk

In finance, the liquidity is defined as an asset which is said to be liquid when it possesses either of the two basic features: nearness to cash or easy conversion of asset to cash. However, there is also a wide range of assets from liquid to solid depending on its nearness to liquid, which determines the liquidity of that

item or asset. In technical terms, liquidity is defined as "financial institution's capacity to readily meet its cash and collateral obligations at a reasonable cost" (Comptroller of the Currency, 2012, p. 6). This definition of liquidity is based on the objective of liquidity because the goal of holding liquid or near liquid assets is to meet the obligations of the bank. Hence, it refers to the ease of convertibility into cash or cash equivalent, which arises from the difficulty in selling asset without incurring large losses.

More so, the task of liquidity with regards to banks is of two aspects. The bank needs access to liquid on its liability side, which is known as funding liquidity and, secondly, access to liquidity through monetizing assets known as market or asset liquidity (Archer & Karim, 2013). These two tasks are interrelated and banks need to consider them concurrently. A bank may have enough assets that could be transformed before maturity to be sold without bearing loss, which, in this case, makes no problem. Another scenario is when banks have assets that will mature in shorter period. In this case, the bank will not need to keep liquid assets (Arif & Anees, 2012). This means that banks will have to monitor their asset liability to avoid mismatch that may lead to liquidity problems.

Generally, liquidity risk is when “there are timing differences between cash inflows from the businesses and cash outflows for business needs and maturing debt obligations” (Merrill Lynch, 2000 in Jameson, 2001). For example, when depositors’ withdrawal is more than the deposits. Another example is where there is an offset balance of the cheque clearing process (Dusuki, 2012). Liquidity risk however refers to “the risk that an institution’s financial condition or overall safety and soundness is adversely affected by an inability (or perceived inability) to meet its obligations” (Comptroller of the Currency, 2012, p. 6). Liquidity risk has severe effects on the banks’ performance in terms of its earnings and capitalization (Arif & Anees, 2012). The process of avoiding this kind of risk is termed as liquidity management.

1.2. Liquidity management

Gallinger and Healey (1991, p. 3) define liquidity management as “the allocation of liquid resources over time for payment of obligations due to various investments that management undertakes to maximize shareholder wealth”. In practice, the process of liquidity management is more than allocation of resources for payment of obligations due to its relationship to other sectors of the bank. The goal should not only be to cater for immediate liquidity needs, but also the ability of a bank to make contingent provision for unforeseen liquidity needs. This will also necessitate the bank to

dwell into investments that will serve these kinds of needs (Archer & Karim, 2013).

Therefore, every bank needs to have a balanced procedure in liquidity management that will involve identification, measurement and control against liquidity exposure. The Comptroller of the Currency (2012, p. 23) identifies the key components of a sound liquidity risk management process. The key components of liquidity risk management process:

- corporate governance and accountability;
- policies, procedures, and limits;
- risk measurement, monitoring, and reporting systems;
- intraday liquidity management;
- funding diversification;
- maintenance of a cushion of highly liquid assets;
- comprehensive contingency funding plans;
- internal controls.

The process of a sound liquidity management is complex and has to be taken seriously. Vulnerable practices will certainly have effects on the overall performance of banks. Some of the indicators that a bank is in liquidity crisis involve rising or high funding costs (Comptroller of the Currency, 2012) and difficulty in meeting depositors’ demands (Arif & Anees, 2012). These problems will need to be dealt with whenever they begin to manifest before they cause a spillover effect to the bank particularly and other banks in general.

Liquidity management practices in Islamic banks are similar to their conventional counterparts. In a study by Shafique, Hussain, and Hassan (2012), it was found that risk management practices in Islamic banks are similar to the conventional practices in Pakistan. This, according to Shafique et al. (2012), may be due the fact that Islamic banking business is new in Pakistan. This does not seem to be correct. Islamic banks are also faced with almost all the forms of risks that conventional banks face.

In another study in the context of Bahrain, Hussain, and Al-Ajmi (2012) reveals that there was a significant difference between the risk levels of Islamic banks with conventional banks in terms of liquidity, operational, settlement country

and residual risks. The reason for the differences in this case was due to differences in the products, which lead to risks peculiar to Islamic banks. This result seems to be consistent with Tafri et al. (2011) even though their study considers more parameters such as value at risk (VaR), stress testing, credit risk mitigation methods and operational risk management tools.

Another study by Hassan (2009) on risk management practices in Brunei Darussalam found that liquidity risk in Islamic banks is very high, but the author doubts the validity of results due to the fact that, according to the author, Islamic banks have excess liquidity. This may not raise any alarm since liquidity problems may not only be due to low liquid assets, but also due to excess liquidity. However, this calls for additional efforts for improved products and practices to meet market requirements.

1.3. Sources of liquidity risk

There are several factors that expose banks to liquidity risk. Some of these factors are due to difficulties in obtaining cash at a reasonable cost from borrowing. This is also known as funding or financing liquidity risk. Another reason is due to sale of assets also known as trading or asset liquidity risk (Ali, 2013).

In addition, banks generally take advantage of the wholesale and market-based funding sources and if control measures are not taken, it may increase a bank's risk exposure. The bank needs to improve its risk management practices in line with its reliance on wholesale and market-based funding (Comptroller of the Currency, 2012). These kinds of sources involve extensive commitment based on funding sources and riskier to the banks' liquidity profile as they may find it very difficult to liquidate such kinds of loans during liquidity pressure (Arif & Anees, 2012). The sources of liquidity could also be categorized into internal and external factors. The internal sources of liquidity risks as explained by Rifki (2010) are high off-balance sheet exposures, asset and liability maturity gap due to over expansion of assets to exceed its liability and heavy reliance of banks on short-term corporate deposits which causes concentration on such deposits. In fact, banks lack interest in long deposit

placements and there is low allocation from governments in liquidity instruments.

The external sources, on the other hand include economic shocks internally or externally, low economic performances and other non-economic factors such as political and social factors. The high sensitivity of the markets and depositors is another source causing depositors' sudden withdrawal before maturity or loss of trust in the banking sector. Also, the governments' need for liquidity for public projects also results in liquidity risks in the banks.

Additionally, there are three other sources of liquidity risks with respect to Islamic banks such as i) contractual forms available to Islamic banks, ii) Shariah restriction on sale of debt and iii) financial infrastructure deficiency (Ahmed, 2005; Ali, 2013; Iqbal & Molyneux, 2005). We are going to elaborate these three sources in the following sections.

1.3.1. Contractual forms available to Islamic banks

The nature of the contract makes the banks to face liquidity risk either directly or indirectly through other types of risks like credit risk and market risk. There are three categories of contractual forms: sharing contracts, trade-based contracts and service-based contracts.

Profit-sharing contracts in Islamic finance such as musharakah and mudharabah are less affected by asset-liability mismatches especially if the investors can only withdraw at maturity. As such, liquidity risk and liquidity insurance of depositors are as well barred. The depositor will be exposed to business risk. But when there are extreme needs for early maturity where, for instance, the customer needs to terminate the contract then still the risk profile should be lower since losses in these kinds of contracts are shared for the case of musharakah. However, since banks portfolio allocation with regards to partnership contracts is low, this may not be an issue in Islamic banks.

Murabahah is a debt mode of financing that does not allow for secondary trading except at its face value. This is a source of liquidity mismatch to Islamic banks. This happens when the average maturities are shorter than the average maturity

of murabahah contracts. Another reason is when the depositors are sensitive to market returns. This is known as primary risk which is due to the inability to resell the property. For instance, the customer may refuse to buy the property. A secondary risk may emanate also if the customer could not settle the amount due at the end of the tenure. This is a credit risk but it also leads to liquidity risk in a bank. Other secondary risks in relation to murabahah include operation and litigation risks. Banks generally take measures to overcome these kinds of risks using various ways. This may include releasing funds in instalments, and also making the customer to promise that he will purchase the items when they are procured.

The liquidity risks in salam and istisna modes of financing are very similar. In salam and istisna financing, there is restriction to secondary market trade. The bank is not allowed to sell the property to a third party before maturity to avoid selling what one does not own. In istisna, the risk is lesser, since the bank is allowed to make payments in instalments and also charge for delay in delivery.

However, the liquidity risk involved in ijarah contract is lower than the risk in murabahah. The asset is repriced when it is going to be resold not like in the case of murabahah. The risk will depend on the market risk.

1.3.2. Shariah restriction of sale of debt

Sale of debt can take three forms. Selling debt to the debtor and secondly delay in counter value for delay in another counter value. The third form is the sale of debt to a third party. These first two forms are agreeable to the scholars with some reservations from some scholars on the third form. In practice, however, bay al-dayn is widely used in Malaysia for liquidity management solutions, with much unresolved Shariah issues. What is the legal status of debt? Is it money or a commodity? In the Malaysian practice it is considered a commodity and hence it is traded at higher and lower prices. The debt is created on the basis of bay al-inah, which is another issue of Shariah concern. This cannot be possible if debt is considered as money (Dusuki, 2012). It is basically a consensus among all scholars, except Malaysia, that debt could only be traded at its face value and this is one of the

main sources of high liquidity of Islamic banks in countries other than Malaysia (Ali, 2013; Diaw, 2015; Iqbal & Molyneux, 2005; Khan & Ahmed, 2001). The instruments available in Malaysia like murabahah, wakala and salam sukuk are debt obligation instruments and are not allowed in most financial centers (Al-Amine, 2013). This is the main factor that limits the availability of sufficient instruments in the market.

1.3.3. Financial infrastructure deficiency

The Islamic interbank money market is still very limited especially in countries with few Islamic banks. In Nigeria, for instance, there is only one full-fledged Islamic bank in the country. The bank experiences problems of high liquidity since its inception in 2012 not like the conventional banks (Nkwatoh & Mallum, 2014). Bello and Abubakar (2014) explain that the problem was due to the absence of an Islamic interbank transaction infrastructure. The Central Bank of Nigeria (CBN) introduced three financial instruments for liquidity management of Islamic banks (CBN, 2012) which Olayemi, Hasan, Ibrahim, and Buang (2015) describe as inadequate and inappropriate to cater for liquidity solutions. The government as the lender of last resort will also need to create a platform that will be applicable to Islamic banks. Al-Amine (2013) asserts that in many countries there is no infrastructure for Islamic banks and as such Islamic banks are necessitated to operate just like conventional banks. In some other countries, there is the issue of buy-and-hold culture that hinders the operation of a secondary market and also a limited number of market participants (Al-Amine, 2013). The infrastructure in majority of the countries is quite weak and only few could be considered strong. Malaysia as a dual banking system with quite a number of Islamic banks has successfully developed a vibrant infrastructure that has solved the majority of its liquidity problems.

2. RESEARCH METHOD

The study is a qualitative study that uses secondary sources of data to describe and analyze risk mitigation in the Islamic banking context. Data was collected from libraries by referring to books,

journals from both online and offline sources. The research objectives were addressed by critically analyzing various issues from both the Islamic principles and contemporary applications.

3. INSTRUMENTS FOR LIQUIDITY RISK MANAGEMENT IN ISLAMIC BANKS

The common sources of liquidity for banks that could be utilized by both Islamic and conventional banks as identified by Nikolaou (2009) include the depositor, the market through selling its assets or securitization. Other sources are the interbank money market or even directly through the central bank. The Islamic money market provides the avenue for liquidity management where banks could either inject excess funds or acquire funds to meet deficits. It perhaps serves as the platform for interbank market liquidity operations, a platform for trading money market instruments and a platform for cheque clearance system. Additionally, it eases the trading of secondary market instruments, since banks may need to liquidate financial assets before maturity (Dusuki, 2012; Obiyatullah, 2008). In this section, the various instruments in the money market are presented to show how Islamic banks perform the function of liquidity management.

Obiyatullah (2008) notes that even though the Islamic money market instruments were structured to comply with the Shariah through the use of Shariah based contracts, they are merely a replication of the conventional instruments. Treasury bills were replaced with Islamic treasury bills, negotiable instruments of deposits were replaced with Islamic negotiable instruments of deposits, and so on.

Currently, the case may be different, since many instruments are now present in the market that seem not be a replication of any instruments. The most common instruments used for liquidity management are hereby discussed. These are organized tawarruq (commodity murabahah), salam sukuk, short term ijarah sukuk, musharakah certificates and Islamic repo.

3.1. Organized tawarruq (commodity murabahah)

Commodity murabahah is the most common instrument for Islamic liquidity management. It is based on the principle of tawarruq, which is a tripartite Shariah contract to facilitate the mobilization of funds among parties with guaranteed returns based on a sale contract.

However, there are Shariah issues surrounding the permissibility of tawarruq, but still Bank Negara Malaysia, Accounting and Auditing Organization of Islamic Financial Institutions, Dallah Al-Barakah Bank and Kuwait Finance House have all deemed tawarruq as a valid contract, even though there are differences in their opinions regarding how, why and when it is permissible (Laldin, Khir, & Parid, 2012). This is why volumes of transactions take place every day using commodity murabahah. The global commodity markets are used as platforms for trading commodities such as the London Metal Exchange and the Bursa Suq al-Sila'. Customers will purchase commodities on spot and full payments will be made, then immediately the commodities are then sold to a third party on deferred basis based on murabahah (cost-plus) normally from one week to six months.

The process is typically done in order to absorb or inject funds depending on the needs of financial institutions (Dusuki, 2010). There are basically two types of commodity murabahah, the mainstream and the reversed commodity murabahah.

The mainstream tawarruq is used for facilitating placements from clients who have excess fund. It assures a fixed return, since the implanted structure is that of murabahah, i.e., a cost-plus sale where return is fixed. The process of the mainstream tawarruq is in two stages as illustrated in Figures 1 and 2.

At the first stage:

1. The client here already having a certain amount in his account with the bank will appoint the bank as his wakil to buy a commodity at RM X million on his behalf.
2. The bank then orders the commodity through an agent (agent 1).

Source: Rahim Kamil (2013).

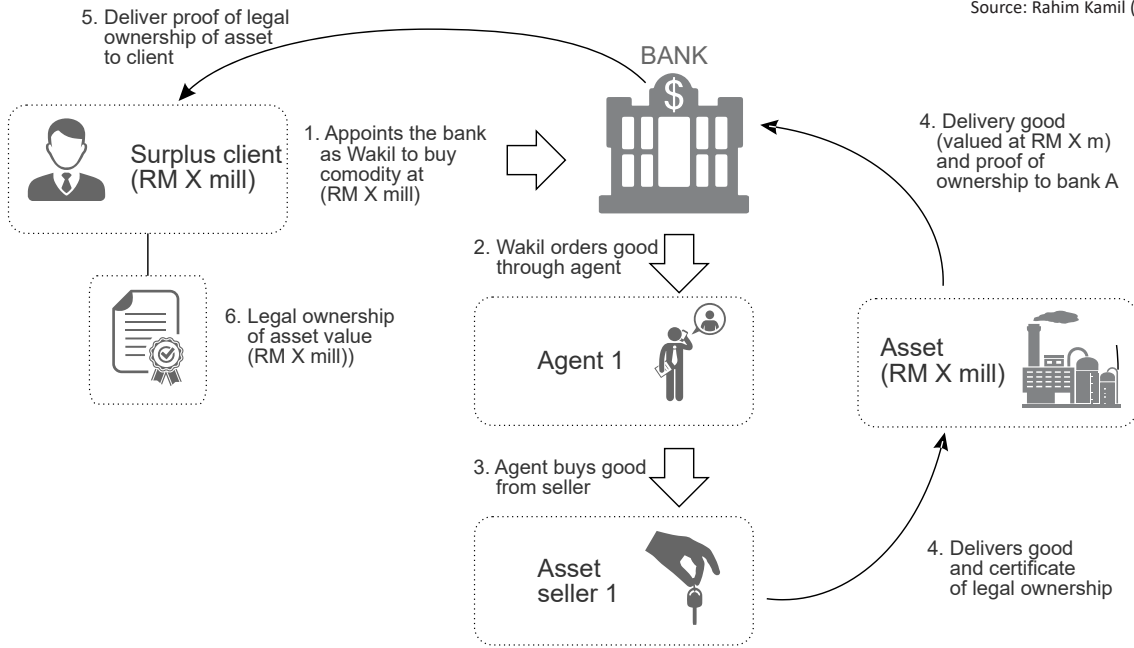


Figure 1. The transactional flow of the first stage of the mainstream tawarruq

3. The agent then buys the goods from the seller
 4. The seller will then deliver the commodity and certificate of legal ownership at RM X million.
 5. The bank having possesses the legal title of the commodity will hand it to the client.
 6. The client now owns the title of the commodity
- Next is the monetization process, since the objective is to get a return in the transaction not the commodity he or she purchased. This process is as shown in Figure 2:

Source: Rahim Kamil (2013).

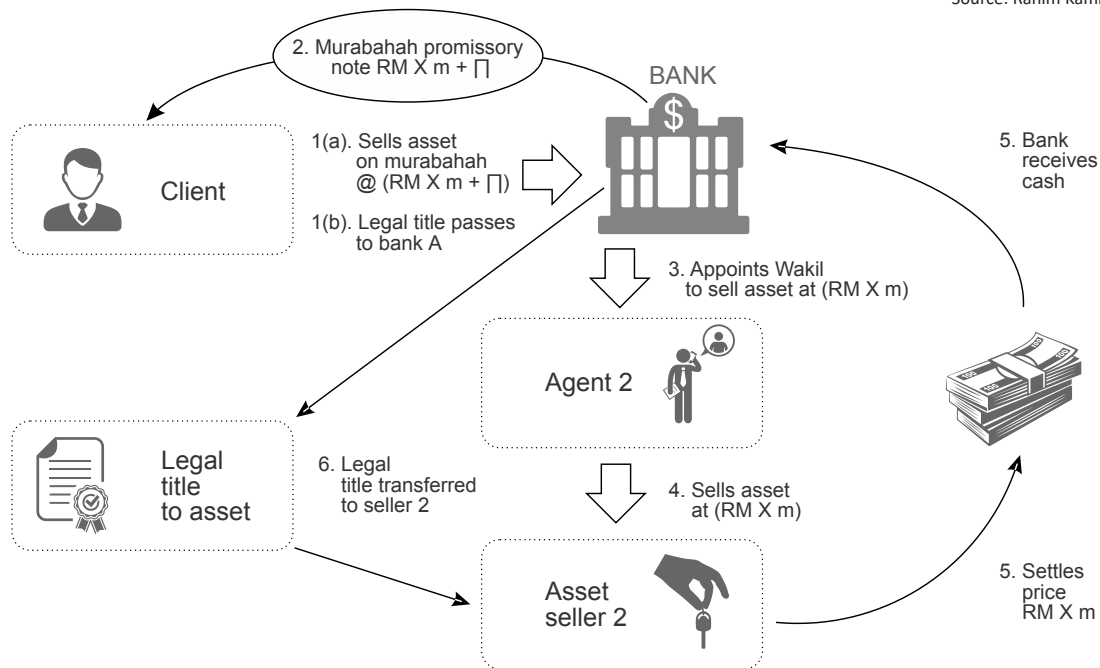


Figure 2. The second stage of mainstream tawarruq

Source: Rahim Kamil (2013).

**REVERSE MURABAHAH:
CLIENT IS IN DEFICIT**

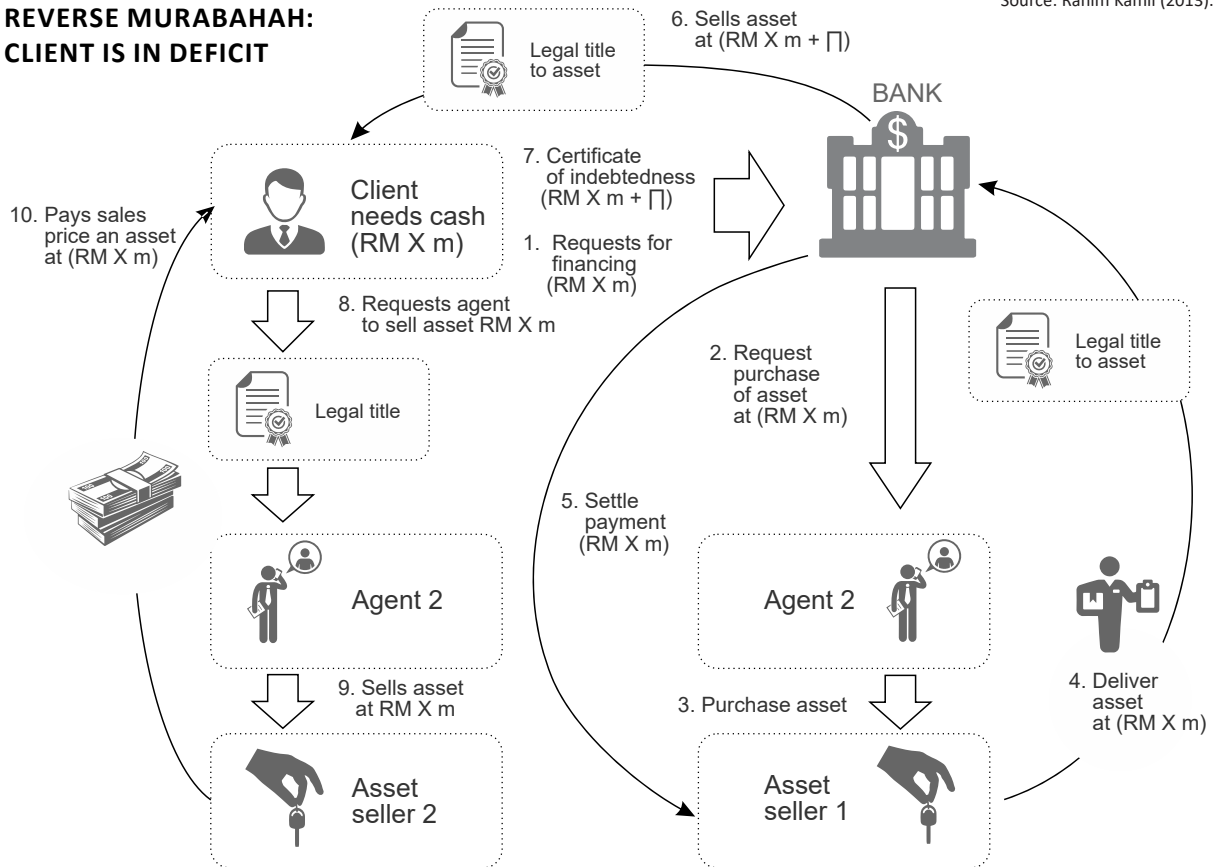


Figure 3. The transactional flow of reversed tawarruq

1. Now in this stage, the client will sell the commodity on murabahah basis at a cost + profit (RM X million + Π) and passes the legal title to the bank.
2. The client will then receive a promissory note of RM X million + Π.
3. The bank appoints a wakil to sell the commodity as RM X million through its agent (agent 2).
4. The agent sells it at RM X million to another seller (seller 2).
5. The seller settles the price to the bank.
6. The legal title is then given to the seller.

The various steps involved are as follows:

1. the client who needs fund will approach the bank for financing (RM X million);
2. the banks will then request the purchase of an asset through its agent at the same amount the client requested (RM X million);
3. the agent will then purchase the asset from a supplier;
4. the supplier will then deliver the asset at RM X million to the bank. The bank receives the legal title of the commodity;
5. the bank then settles the payment to the supplier;
6. the bank then sells the asset to the client at a cost + profit (RM X million + Π) and the legal title will then be handed over to the client;

On the other hand, the transactional flow of reversed tawarruq is shown in Figure 3. The figure shows a case where a client needs money and the bank as the financier.

7. the customer then signs the certificate of indebtedness to pay later (RMX million + Π);
8. the client through the bank meets another agent to sell the asset on his behalf;
9. the second agent then sells the asset as RM X million and hands over the legal title to him;
10. the supplier then settles the payment to the client who will use the money for his own need.

All these processes are done in a same day and electronically so that all forms of risk and uncertainties (gharar) are avoided as much as possible.

3.2. Short-term Sukuk al-Salam

Salam Sukuk has been one of the successful instruments especially in Bahrain where it started since 2001. In many instances, the Sukuk was oversubscribed, which is why the securities are issued on pro rata basis. The Bank of Bahrain has issued the 177th Sukuk Salam in January 2016, which was oversubscribed by 154% (Central Bank of Bahrain, 2016). The commodity commonly used for this is aluminum because of its relatively stable price. The Central Bank of Bahrain will sell the aluminum to the bank. The bank pays on spot, while the CBB delivers at a later period. The bank will then arrange with the CBB as its agent to sell the commodity on behalf of the bank during the period of delivery (Al-Amine, 2013). One of the major limitations of this instrument is that it does not allow for secondary trading. This is because it is not allowed in the Shariah to sell a property before taking its possession.

3.3. IILM short-term Sukuk program

Short-term Sukuk program was introduced by the IILM in 2013 that adopts the Asset Backed Commercial Paper (ABCP) model. ABCP was used in USA and the Western European countries but not found in new emerging markets practicing Islamic banking (Archer & Karim, 2013). This is quite a commendable innovation in Islamic finance.

The short-term Sukuk is based on wakalah contract involving two special purpose vehicles (SPV)

one for issuing Sukuk and the other for holding assets. The major condition is that the asset must be Shariah compliant and the asset must have a minimum rating of A by S&P. Archer & Karim (2013) describe the basic features of the IILM short-term Sukuk as follows:

- an asset obligor sells an asset to a local SPV;
- the SPV securitizes the assets and sell the resultant Sukuk to an asset-holding SPV set up by the IILM. IILM has mandated that the asset can only be of sovereign, sovereign-linked and supranational entities;
- these underlying assets are thus securitized and purchased by the IILM asset-holding SPV in the form of Sukuk;
- the IILM in turn issues short-term Sukuk, which give holders the rights to the cash flows from the underlying assets;
- the underlying assets, which are held to maturity and not intended for trading, have different tenors that are mutually agreed between the IILM and the asset obligors.

4. THE CHALLENGES OF ISLAMIC LIQUIDITY MANAGEMENT

Although liquidity management is not the only function of the money market, perhaps it is the most important function especially due to the fact that Islamic banks hold majorly illiquid assets while their liabilities are relatively liquid (Dusuki, 2012). This is the major source of asset-liability mismatch in the balance sheets of Islamic banks. But this does not mean that conventional banks are not faced with liquidity risk, rather Islamic banks are faced with more factors that make them face higher liquidity risk. Research has shown that the liquidity risk of Islamic banks has been growing since 2004, which is due to the contractual form of instruments, Shariah restriction on certain contracts and financial infrastructure deficiency as explained earlier (Ali, 2013). This source of liquidity mismatch is a challenge to liquidity

problems faced by Islamic banks. Abdul Majid (2003) noted that there was a small number of participants in comparison to conventional banks and the slow development of Islamic financial instruments are major problems facing liquidity management in Islamic banks at the early periods. Other problems include the absence of Islamically acceptable interbank money market, the absence of liquid Islamic secondary market, no lender of last resort and different Shariah interpretations, which resulted in the lack of global acceptance.

In some countries, Islamic windows even use conventional financial instruments in liquidity solutions due to the absence of Islamic liquidity solutions (Ali, 2013) and this is also one of the peculiar problems in Nigerian Islamic banks (Nkwatoh & Mallum, 2014). Islamic windows sometimes are less liquid compared to the fully-fledged Islamic banks as they have to source for Shariah compliant options and in any case this alone is another serious Shariah issue where conventional banks use non-Shariah compliant instruments in liquidity management of their Islamic subsidiaries.

Globally, there are many instruments innovated to cater for liquidity risk, but the main concern is that they lack global acceptability and this limits their tradability, adoptability and flexibility.

5. THE WAY FORWARD

The problems of liquidity in Islamic banks have been in existence since inception. The efforts to counter these problems so far are considered commendable. These include provision of innovative instruments, a sound money market infrastructure and also provision of legal frameworks to ensure optimal practices. Malaysia is considered a champion in developing an organized system for Islamic liquidity management platform, which closed most of the economic and market gaps of liquidity. Part of the initiatives includes the establishment of the first Islamic Inter-bank Money Market (IIMM) platform that gives Islamic banks the chance to match the liquidity requirements effectively. More interestingly, a number of instruments were introduced to the market, which include Mudarabah Interbank Investment (MII), Wadiah Acceptance, Government Investment Issue (GII), Bank Negara

Monetary Notes-i (BNMN-i), Sell and Buy Back Agreement (SBBA), Cagamas Mudharabah Bonds (SMC), When Issue (WI), Islamic Accepted Bills (IAB), Islamic Negotiable Instruments (INI), Islamic Private Debt Securities, Ar Rahn Agreement-i (RA-i), Sukuk BNM Ijarah (SBNMI) (Abdullah, 2010). These instruments are mostly geared towards creating short-term and long-term instruments that were in line with Shariah principles. Even though some of these instruments are Shariah compatible, there are vast controversies surrounding the underlying contracts of the instruments. Some of the controversies include the excessive usage of bay al-inah (sell-buyback) and bay al-dayn (sale of debt) contracts, which are deemed forbidden in many jurisdictions (Dusuki, 2007). Further, tawarruq contract which is one of the most widely used contracts in the form of Commodity Murabaha, has a lot of unresolved theoretical issues among scholars. The contention is even more than theoretical issues because there are issues on how the instruments are being applied. For instance, in the practice of tawarruq, most of the commodities do not exchange hands at all and in some cases there are even no commodities involved so at the end it is merely flows of cash between banks and brokers.

However, there is still the need for more innovative instruments that meet Shariah requirements and market needs. The instruments that are highly controversial should be replaced with more Shariah compliant instruments. This is what will allow for more acceptability and marketability of the products. For example, instruments based on bay al-inah and bai al-dayn should be discouraged if not banned, since they are only allowed in Malaysia. As long as some instruments are only accepted in one region of the world, this poses a great challenge to the marketability of the instruments and reduces the confidence of clients towards the Shariah compliance, which perhaps poses a compliance risk to the system. Dusuki (2007) suggests that Islamic banks should as much as possible do away with all activities that are not in compliance with the Shariah or rather have prohibited elements as they are unfair and unjust.

In addition, the initiatives of IILM are still limited due to challenges related to the Shariah in coming up with structures that are generally accepted globally. There are also technical problems in financ-

ing high quality sovereign asset pool (Önal, 2013). Infrastructure institutions, particularly IILM, should not only concentrate on finding liquidity solutions to member countries but also take up liquidity challenges of Islamic banks at global level (Al-Amine, 2013). These include putting efforts to standardize global practices of Islamic liquidity management through collaborating with other sister institutions to build innovative practices through focused researches.

Another important step that needs to be taken is to make amendments to existing legal frameworks of countries practicing Islamic banks. Many problems of liquidity management in countries are due to lack of legal frameworks that will support the in-

roduction of Islamic liquidity management instruments. Some jurisdictions do not allow the use of sovereign assets in their instruments. According to Ali (2013), this is more common in countries where Islamic banking is very new or only few Islamic banks are available. These kinds of impediments need to be addressed to accommodate money market operations.

Furthermore, another great challenge that needs to be addressed is complying with Basel III in coming up with high quality liquid assets (HQLA). Al-Amine (2013) considers this difficult for Islamic banks, since they cannot take interest and also limited stock of Sukuk that will meet the Basel III ratio for liquidity.

CONCLUSION

This paper presented a general introductory and integrated overview of how liquidity risk management forms one of the important building blocks for a stable and efficient banking in the context of Islamic banking. As explained in the beginning of the paper, liquidity risk is a great concern to any business entity and more important to banks. Therefore, Islamic banks like other banks will need to strengthen liquidity management practices to ensure the stability of the industry and get protection from bank run.

To sum up, the paper highlighted the sources of asset-liability mismatch with special reference to Islamic banks and the common instruments of Islamic liquidity management. A number of challenges identified in literatures were also presented. It was noted that much effort has been exerted in overcoming such challenges although there are still issues that needed to be addressed especially in infant Islamic finance jurisdictions. Innovative instruments are still needed to overcome two great challenges in liquidity management of Islamic banks. The unresolved theoretical issues surrounding instruments of liquidity such as prohibition of debt of sale according to majority of Shariah opinions must be seriously addressed. Also, there is the need for coming up with high quality liquid assets that will be in line with global standards such as the Basel III requirement on liquidity instruments.

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