Strengthening and improving the liquidity management in Islamic banking

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Abstract

Purpose – The purpose of this paper is to analyze and evaluate the present liquidity management in the Indonesian Islamic banking industry. It also proposes an integrated and comprehensive program of liquidity risk management which captures and assimilates the whole aspects of the issue and brings the industry into a better way of managing liquidity risk based on sharia principles.

Design/methodology/approach – The paper first examines the organizational structure of Islamic banks and Islamic windows in managing liquidity. Second, it investigates the characteristics of the depositors, their investment behaviors and expectations followed by the banks efforts and policies to manage the liquidity. Then, it identifies the potential liquidity problems and Islamic liquid instruments. Finally, it proposes an integrated and comprehensive program for managing liquidity.

Findings – The paper suggests institutional deepening; restructuring the liquidity management on the liability and asset sides; and revitalizing the usage of the Islamic liquid instruments, in the integrated program.

Originality/value – This is believed to be the first paper to propose a liquidity management improvement program in the Indonesian Islamic banking industry.

Keywords Liquidity, Indonesia, Banking, Islam

Paper type Viewpoint

Background

As financial institution, banks should manage the demand and supply of liquidity in an appropriate manner in order to safely run their business, maintain good relations with the stakeholders and avoid liquidity problem. The liquidity problems commonly happen because of failures in the management of funds or unfavorable economic conditions which lead to unpredictable liquidity withdrawals by the depositors. Indeed, maintaining a robust liquidity management is very challenging and difficult in a current competitive and open economic system with strong external influences and sensitive market players. The global financial crisis 2007-2008, for example, occurred because of the failures in derivatives markets which impacted the ability of banks to provide liquidity to the third parties (Siddiqi, 2008).

Practically, the banks regularly find the liquidity imbalances between asset and liability side that needs to be equalized because, by nature, banks issue liquid liabilities but invest in illiquid assets (Zhu, 2001, p. 1). Hence, the ability of the bank to assess and manage the demand and supply of liquidity is very imperative to maintain the continuity of banking operations. If a bank fails to balance the gap, liquidity problems might occur followed by some unwillingness exposures such as high interest rate risk, high bank reserves or capital requirement, and lower bank's reputation.

The same case applies to Islamic banks. They have to manage the liquidity under the same conditions with their counter part. Especially, with their unique operations and values, Islamic banks have to accurately identify the characteristics of depositors, their investment behaviors and expectations to successfully manage the liquidity. Nevertheless, they still have to comply with the sharia principles. As such, Islamic banks manage liquidity by using sharia approaches on the liability and asset sides

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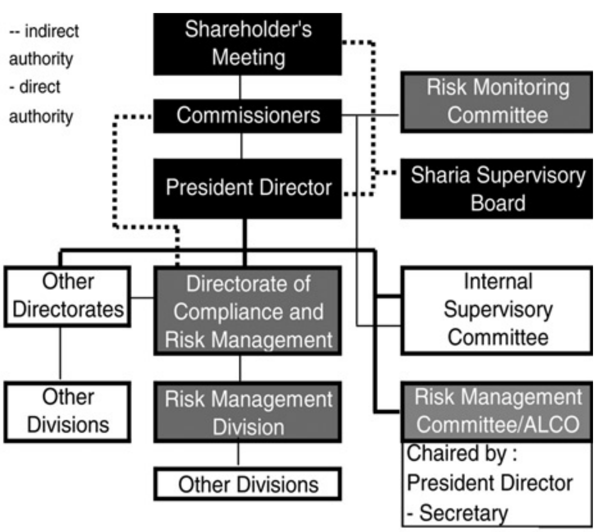
besides preparing Islamic liquid instruments to fulfill the regular and irregular demand for liquidity.

Taking the Indonesian Islamic banking case, the paper starts with exploring the organizational structures of Islamic banks with respect to managing liquidity risk. The second part discusses the liability side which represents the liquidity behaviors of depositors and the potential of short-term liquidity withdrawals. Then, the third part elaborates the asset side of the banks in order to compile the banks current liquidity management practices and to assess the liquidity problems and the availability of Islamic liquid instruments. At the end, this paper proposes an integrated and comprehensive liquidity management program which captures the whole aspects of the issue and to bring the industry into a better way of managing liquidity.

Organizational structures of Islamic banks and Islamic windows

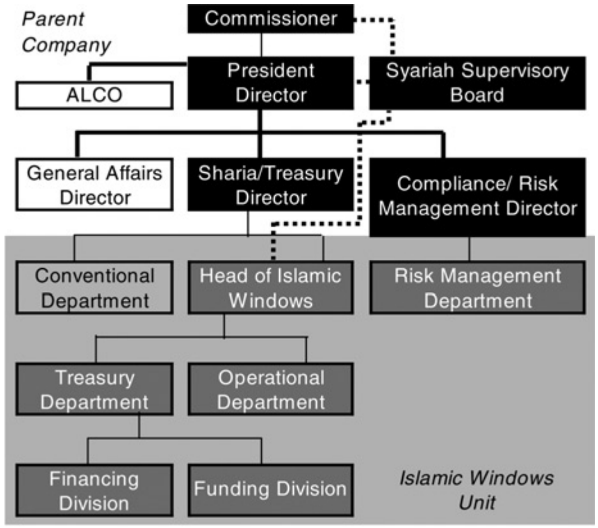
The general organizational structure of the Islamic banks (BUS) includes three bodies which conduct risk management activities. The first is risk-monitoring committee, set up by the Board of Commissioners. The second is the Directorate of Compliance and Risk Management, which has special risk management division/department running the general operation of risk management within the entire organization. Finally, there is Asset Liability Committee (ALCO) a risk management committee chaired by the President Director that functions as the central command of liquidity risk policies for all directorates and is supported by the internal supervisor committee. However, the focus of this structure is merely on the internal side of the liquidity management as drafted in Figure 1.

In UUS, the organizational structure has some dissimilarity. The President Director of the parent company has the highest level of responsibility, commanding a specific Director who deals with UUS operations. The UUS itself is chaired by the head of the UUS who guides operational activities such as the treasury department and the operational department where Islamic funding and financing takes place. Liquidity management is conducted within the activities of these two departments (see Figure 2).



Sources: Compilation of various BUS' structures

Figure 1.
Liquidity risk management in BUS



Sources: Compilation of various UUS' structures

Figure 2.
Liquidity risk management in UUS

Lastly, the management of liquidity is centralized in a risk management department in the parent company supported by ALCO. Therefore, liquidity management is not managed and tackled by a special internal department/team in the UUS considering that its operation has different characteristics and values with the holding company.

Strengthening the organizational structures of the Islamic banks and Islamic windows

The application of liquidity management in both Islamic banks and UUS above raises the issues of:

- lack of cooperation/coordination with the external parties (banking regulators, entrepreneurs, depositors and public);
- an only implicit control of liquidity problems within departments under the responsibility of the head of Islamic windows;
- centralization of the liquidity management; and
- a blended of risk management function in the structure of parent company of the Islamic windows.

Referring to the current business environment, the operations of Islamic banks (BUS and UUS) are more challenging and complicated than before. As such, in order to strengthen the function of the present structures of BUS and UUS, some actions are proposed:

(1) Establishing a direct interconnection between the three bodies in BUS. The existing structure of BUS interconnects each body in the structure through the authority of the body while a direct link between the three bodies has not been established yet. For example, the communication among risk management

committee, risk monitoring committee, directorate of compliance and risk management occurs depending on the communication between President Director and Board of Commissioners. In order to establish a robust liquidity risk management, the independent direct link and interconnection among the three bodies should be made possible.

(2) Figures 1 and 2 should realize the importance of banking regulators (government, central bank), inter-bank cooperation and public to support liquidity management in the structures of BUS and UUS. The inter-communication and coordination between all bodies responsible for managing liquidity in the banks and the regulators, the other Islamic banks and the public do not particularly and strongly exist. In BUS, the structure relies on the actions of Board of Commissioners (chairing risk monitoring committee) and President Director (chairing risk management committee and directorate of sharia compliance and risk management) *per se* to manage liquidity. The external parties are not actively engaged in the formulation of liquidity management decision in the Islamic banking organization. In UUS, its interaction with the external parties goes through the President Director who manages both the conventional and sharia operations of the bank and the head of UUS without specific support from the particular Islamic risk management departments.

(3) The present BUS and UUS structures do not facilitate a flow of feedbacks from the bottom line of the structure (operational level) into the upper line (decision making level). Rather, the flow of feedbacks go only through the Directorate of compliance and risk management (BUS) or Treasury department (UUS) without any possibility to cooperate with the other bodies such as risk management committee, risk monitoring committee, President Director, Board of Commissioner in BUS or risk management department, head of UUS, President Director in UUS.

(4) In UUS, it is strongly recommended to have a specific risk management department handling liquidity risk problems considering that UUS has special characteristics in dealing with liquidity risk issues. Hence, the tasks of Board of Directors and Sharia Supervisory Board to manage liquidity would be completed and supported by such a specific department.

(5) Further, ALCO in the parent company should have a special sub committee capturing risk management in UUS (Arani, 2006, p. 25). Under the authority of the Board of Directors (particularly Director of Risk Management) and the Board of Commissioner, ALCO might collaborate with the risk management department to have a direct access into the operations of UUS and involve in its liquidity risk management process.

The process of liquidity management

The process of managing liquidity in Islamic banking is explained by understanding the liquidity behaviors of depositors and the efforts of Islamic banks to manage liquidity. The former deals with examining the:

- characteristics of depositors;
- investment behaviors of depositors; and
- the investment expectations of depositors.

Then, the outputs of this part underlie the understanding about the characteristics of the funds and the depositor liquidity behaviors (terms and conditions of the deposits). These are the main outputs of the analyses of depositors and drawn comprehensively in Figure 3 in the following.

Following the analyses of the depositors, the next part continues with the investigation on the way Islamic banks manage liquidity risk and is written in the grey box of Figure 3. This part explains the liquidity management practices and the policies carried out by Islamic banks to balance the asset and liability sides and avoid any liquidity mismatch. The tasks indeed become easier if the funds are well-managed; the depositors are very cooperative and communicative with the banks; and well-understandable liquidity behaviors. In reality, some depositors are found very sensitive with the interest rate return (profit oriented) and locate the funds in the short-term deposit tenor which do not support the financing activities.

Finally, although the Islamic banks have tried to set up a robust liquidity management and tag along liquidity behavior of depositors, in some extents the potential liquidity problems may still exist, as drawn by the first ellipse in Figure 3. As such, in order to work out the regular and irregular demand for liquidity, Islamic banks have prepared the Islamic liquid instruments to control and maintain the overall balance of the liquidity, as drawn by the second ellipse.

Liquidity management in the depositors side

Characteristics of the depositors, investment behaviors and expectations

To give an idea about the characteristics of the depositors, their investment behaviors and expectations, this section explains them through:

- general characteristics of depositors;
- segmentation of depositors;
- considerations/expectations of depositors when depositing money; and
- ending of the depositor relation with Islamic banks.

The survey on Islamic banking depositors (more than 1,000 respondents involved) in Java Island by the central bank and universities in 2000 gave the initial conditions of the depositors perceptions about Islamic banks. First of all, the survey in West Java province conducted by Bogor Institute of Agriculture and Bank Indonesia has got the general perceptions of the public about Islamic banking (Ratnawati *et al.*, 2000). They perceived Islamic banks as:

- the banks with the profit and loss sharing (PLS) concept (56-64 per cent of the total respondents);

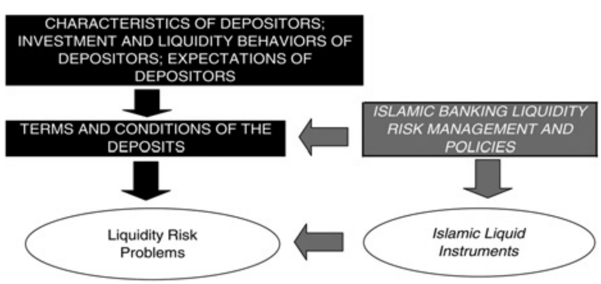


Figure 3.
The process of liquidity management

- the banks operated under Islamic values (58-63 per cent of the total respondents); and
- a less known banking institution (less than 7 percent of the total respondents) see Figures 4 and 5.

However, the survey in East Java province conducted by Brawijaya University and Bank Indonesia informed that people there positioned Islamic banks indifferently with the conventional banks and dominantly preferred the latter (67.4 percent of the total respondents) to the former (Triyowono *et al.*, 2000). Finally, the survey in Central Java and Jogjakarta provinces conducted by Diponegoro University and Bank Indonesia revealed that most of the people there have had deposits in Islamic banks and used the banks because of the condemnation of RIBA (64.8 percent of the total respondents) (Diponegoro University, 2000).

However, the recent empirical survey on liquidity risk management in Java and Sumatera islands involving 409 individual respondents and 17 (all) Islamic banks and Islamic windows done by Ismal (2009a) has found the particular characteristics of depositors. First of all, the understanding of depositors is very high with respect to deposit instruments (77.7 percent of the total respondents) but remains low in terms of their understanding about financing instruments (58.8 percent of the total respondents) and a low involvement in using financing instruments (27.7 percent of the total respondents).

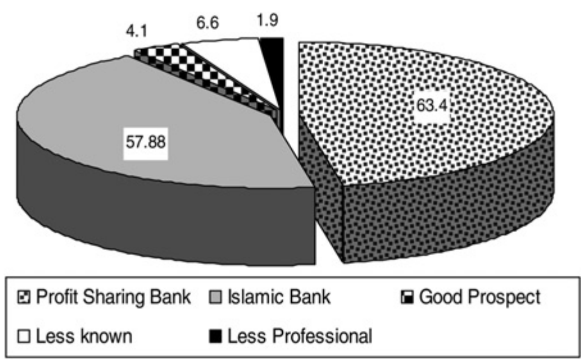


Figure 4.
Perceptions of conventional depositors about Islamic Banks (percent)

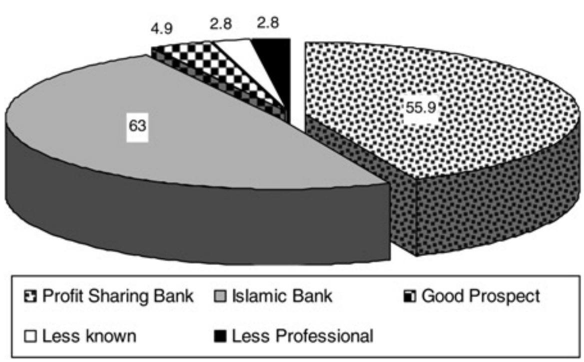


Figure 5.
Perceptions of Islamic Banks' depositors about Islamic Banks (percent)

Further elaboration on depositors finds that they do not monitor their Islamic banks intensively (56.1 percent of the total respondents) and prefer taking the funds out of the banks if the economy is unstable (67 percent of the total respondents) (see Table I).
Another empirical survey on Islamic banking depositor involving 615 individual depositors, three Islamic banks and seven Islamic windows arranged by Mars (2008) has identified the awareness of the public in Jakarta and Surabaya (the two most populated cities). People in Jakarta were more aware with the existence of Islamic banks (73.6 percent of the total respondents) than the Islamic windows while people in Surabaya were vice versa with the awareness of Islamic windows reached (36.7 percent).

All of the historical surveys on the general perceptions/characteristics of people above leave one important message: the active interaction of depositors with Islamic banks is still on the liability side. The roles and contributions of depositors to provide funds for Islamic financing are not optimal yet because:

- the short-term profit motives mostly underpin their investment activities;
- some of the depositors use Islamic banks for the transaction purposes only; and
- there is asymmetric information and lack of awareness in the depositors about the financing activities (asset side) of Islamic banks.

Further inspection comes with the segmentation of depositors which clarifies and strengthens the previous messages. As plotted in Table II in the following, the dominant segments of depositors are those who look for profit (from profit driven segment and half from sharia driven segment). The others who are not profit oriented and transaction driven are less dominant that the former (Ismal, 2009a, p. 4). In addition, most of the depositors allocated 44.6 percent of their total monthly income for saving in the Islamic banks and they were productive employees with the range of ages between 35 and 40 years (48.8 percent of the total respondents) (Mars, 2008).

Another empirical survey of Bank Indonesia and Mark Plus in 2008 connecting 642 individual depositors in Java Island delivered information about the segmentation of Islamic banking depositors. They categorized the respondents and found the segment

Table I. Characteristics of depositors, investment behaviors and expectation

General behaviors/characteristics	*Consideration/expectation when depositing funds*
High understanding about Islamic deposit contracts	IB's revenue sharing
Low understanding about Islamic financing contracts	IB's operational income
Low involvement in the Islamic financing schemes	SBI rate
No intensive monitoring on IB performance	IB's cost of operation
Holding cash if economy is unstable	Prior position of deposit
Segments	*Ending the relation with Islamic bank*
Sharia driven	IB is found not sharia complaint
Profit driven	Economic condition causes them to leave IB
Transaction driven	IB ever delays any withdrawal request
	IB ever needs emergency liquidity from Bank Indonesia
	IB does not have proper facilities/networks

	F	M	R	%
Sharia driven: non-profit				
Opening time deposit to support Islamic Project (ummah)	338	1st	5	82.84
Not do anything when interest rate goes up	333	A	2	81.62
Closing account if BUS/UUS is not sharia compliance	290	A	2	71.08
Opening saving deposit to develop Ummah projects	232	1st	4	56.86
Sharia driven: profit motivated				
Opening time deposit for a higher return	259	1st	5	63.48
Relocating tenor of time deposit for a better return	247	P	3	60.54
Adding more fund relies on return paid the last one to two months	226	1st	4	55.39
Switching deposits to other BUS/UUS for a better return	194	LP	3	47.55
Adding more fund if bank offers higher return sharing ratio	168	5th	4	41.18
Asking for higher revenue sharing if interest goes up	107	N	2	26.23
Opening saving deposit due to routine payment of return	110	4th	4	26.96
Profit driven				
Adding more fund is considering SBI rate	101	5th	4	24.75
Closing account if return sharing is less than expected	92	N	2	22.55
Closing account if return sharing is less than interest	44	D	2	10.78
Liquidate time deposit and switch it into conventional one	26	NP	3	6.37
Switching deposits to conventional if interest rate goes up	21	D	2	5.15
Transaction driven				
Liquidate time deposit for regular transaction	349	TMP	3	85.54
Having double bank's account	308	Y	1	75.49
Opening saving deposit with instant withdrawals	224	2th	4	54.90
Opening saving deposit which can be withdrawn on daily basis	176	2th	4	43.14

Notes: F = frequency (1st + 2nd rank/priority/consideration; agree; yes; the most preferable + preferable); M = modus (dominant rank, preferences, consideration, yes/no or agree/disagree/neutral); R = range (difference between the highest and lowest rank/categories).

Table II. Segmentation of depositors of Islamic banks

of volatile depositors capturing 74.5 percent of the total respondents. The volatile segment is the segment of people who:

- indifferently position Islamic banks and conventional banks;
- are still loyal with the conventional banks; and
- depend on the public trend of using banks.

The next information is regarding the top three considerations of depositors when depositing money in Islamic banks (Ismal, 2009b, pp. 10-20). Those are:

- how much revenue sharing paid by Islamic banks;
- how much operational income of Islamic banks; and
- Central Bank Rate (SBI rate).

Another survey found the emotional reason (a sharia compliant bank) as the main reason of depositors to become depositors of the banks (48.9 percent of the total respondents) (Mars, 2008). Therefore, keep improving the performance of the asset side (financing returns) under sharia corridor is another important message for the

Islamic banks to maintain the loyalty and fulfill the investment expectations of the depositors.

The final one is information regarding in what case the depositors will end their interaction with Islamic banks. From Ismal (2009a, p. 13), depositors will do it if they find the improper performances/operations of the Islamic banks. For examples,

- non-sharia compliant Islamic bank;
- the poor liquidity management of the banks such as delaying any liquidity withdrawal;
- requiring emergency liquidity from the central bank; and
- lack of having standard banking facilities.

The first reason of sharia compliance is no doubt as this is the ultimate reason of the depositors to deal with the Islamic banks as identified in empirical surveys Mars (2008) and Bank Indonesia – Mark Plus (2008).

In conclusion, this part suggests two main key factors to be taken into account and concerned by Islamic banks in order to successfully manage the liquidity:

- The depositors of Islamic banks call for a professional funds management. Despite religious (emotional) reason to be the depositors of Islamic banks, they expect the banks to produce continuous profits and pay competitive return sharing.
- However, the efforts of Islamic banks to achieve the expectations of depositors should be done in the corridor of sharia (sharia compliance). Indeed this is the ultimate depositors' requirement otherwise they will leave the banks.
- Moreover, Islamic banks are expected to have a proper liquidity management and provide standard banking facilities and networks.

Characteristics of the funds and liquidity behaviors

The study about the characteristics of depositors, segmentations, investment behaviors and expectations brings the information regarding the characteristics of the funds. Statistical computation of the breakdown of the liability side of Islamic banking industry within the period of December 2000 – March 2009 generates the information as in Figure 6.

Mudarabah time deposits lead the total deposits of Islamic banks by 54.64 percent followed by *Mudarabah* saving deposits 31.77 percent and Wadiah demand deposits 13.59 percent. Therefore, the total amount of liquid deposits (both Wadiah demand deposit and *Mudarabah* saving deposit) is 45.36 percent, almost the same amount as

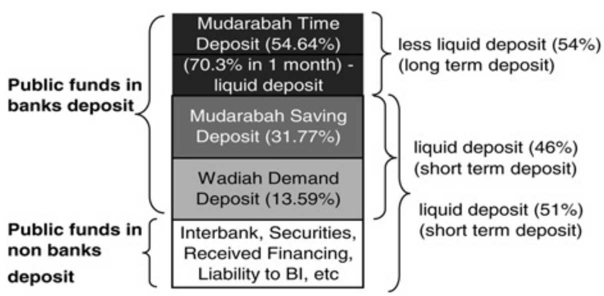


Figure 6.
Breakdown of the liability side based on type of fund

less the liquid deposits (*Mudarabah* time deposit). Meaning, only around half of total deposits which can potentially be used for the long term financing.

Further, the main characteristics of the funds can be summarized as:

(1) The ratio of liquid and less liquid deposit is almost 50/50 including more than 70 percent of the less liquid deposit is a one-month Automatic Rolled Over (ARO) time deposits.

(2) Total short-term demand for liquidity is 33 percent of the total deposits.

(3) The individual depositors own 97.4 percent of the total accounts (but in a small nominal value) and most of them (94 percent) are placed in *Mudarabah* time deposits.

(4) Corporate depositors own 2.6 percent of the total accounts (but in a high nominal value) and most of them (90.9 percent) are places in demand and saving deposits.

(5) Wadiah demand deposit is very sensitive during the unpleasant economic conditions.

The first and the second characteristics highlight the potential of short-term liquidity withdrawals that have to be promptly managed by Islamic banks. Precisely, based on the prior findings and conclusions of the characteristics of depositors, segmentations, investment behaviors and expectations, such potential liquidity problems may happen if Islamic banks fail to fulfill and realize the expectations of depositors.

The rest of them remind the importance of convincing and persuading depositors to appropriately locate the tenor of placement of the funds. The individual depositors can be offered a longer tenor of *Mudarabah* time deposit which offers a more promising return. Even, for the potential individual depositors, Islamic banks may offer a special time deposit contract (*Mudarabah muqayadah* or *Musharakah* time deposit) which concentrates financing to the certain project(s) under bilateral agreement. In this case, these potential depositors entail actively in the preference and decision of the project(s) being financed. Hence, their portion of revenue sharing might be bigger than the one in the non-special time deposit but they have to be ready for a loss sharing as well (Chapra, 2009, p. 14).

In reality, based on Ismal (2009a), only ten Islamic banks out of the total 17 Islamic banks are conscious with this idea reflected in an insignificant share of *Mudarabah muqayadah* of their total time deposits. Referring to the previous conclusions regarding depositors' characteristics, investment behaviors and expectations which address that one of the depositors' main purposes of depositing money in Islamic banks is how much revenue sharing paid by Islamic banks, offering two kinds of *Mudarabah* contracts might come as one of the best solutions to redirect the tenor of the funds' placement and optimally utilize the funds.

Meanwhile for the corporate depositors, their transaction purpose of depositing money in Islamic banking can still be maintained by improving the banks' facilities (ATM machines, withdrawal schemes, online banking services, mobile phone banking services, etc.). However, this should also be guided into the investment purposes because the funds available in corporation are higher than the individual's. To do this, Islamic banks should:

- do business approaches with some potential corporations to negotiate longer placement and higher nominal values of the funds. Offering them negotiable return sharing ratio or prospective projects to be financed are some examples of such business approaches;

- approach the government that is one of the prominent corporate depositors to support the development of the industry by investing more funds in a long term tenor; and
- keep improving the sound performance which has been achieved for years. This will hopefully bring more trust from the corporate depositors to investment more funds for the investment purposes and they are not very sensitive with the short-term unfavorable economic conditions any more.

Efforts of Islamic banks to manage liquidity

Following the discussion on the depositors' side, this section extends the study of the depositors to the Islamic banking side. Ismal (2009a) addresses some Islamic banking efforts to manage liquidity on the liability and asset sides as well as balancing liquidity on both sides. For examples, on the liability side, Islamic banks try to prevent liquidity outflow from the depositors by:

- negotiating the revenue sharing ratio (14 Islamic banks); and
- sacrificing the profit to keep continuing the payment of positive return sharing (ten Islamic banks).

On the asset side, all of Islamic banks (17 banks) prudentially give financing to prevent losses or default and optimally gain profits (returns). To balance both asset and liability, 14 Islamic banks try to match tenor and total amount of the funds on liability and asset sides.

Bank Indonesia – Mark Plus (2008) survey quoted the other efforts of Islamic banks to manage the liquidity on the liability side for instances:

- excellent banking services;
- a variety of the return on deposits; and
- expanding the banking network.

On the asset side, they try to:

- comply with sharia principles;
- offer a variety of financing schemes; and
- set up a mutual business agreement with the entrepreneurs.

Further, Ismal (2009c) finds that Islamic banks have prepared internal liquidity reserves to serve the regular demand of liquidity. Moreover they have organized three tiers groups of liquid instruments to provide liquidity to mitigate the predictable and unpredictable irregular demand for liquidity from the depositors. At the end, Islamic banks also study the pattern of the liquidity withdrawals and build cooperative communications with big depositors as to manage their routine demand for liquidity.

Liquidity problems and Islamic liquid instruments

It is realized that the potential of liquidity problems (for example unanticipated liquidity withdrawal) might still be possible to occur even after Islamic banks apply robust policies and strategies to manage the liquidity. The empirical survey of Mars (2008) quoted the non-sharia compliant banks as the main reason for depositors to leave the bank (liquidity withdrawals). Further, Ismal (2009a) raises the top three potential causes of the liquidity problems. The first one is the rational depositors who are very sensitive with the movement of interest rate. The second one is the large portion of one-month time deposits which may imbalance the asset-liability equilibrium and the limitation of Islamic banks to arrange the optimal financing allocations. The last one is the macroeconomic factor particularly the increasing trend of interest rate which could tempt the rational depositors above to switch their deposits from Islamic banks to the conventional banks.

These realities imply the importance of the continuous and comprehensive efforts to educate the depositors to know the consequence of investment and interaction with Islamic banks. In addition, maintaining the sharia principles practices and the stability of the economic condition are also required in order to prevent any potential liquidity withdrawal.

In anticipating the liquidity problems, Islamic banks have used some liquid instruments. The most frequently used instruments are:

- borrowing from Islamic money market;
- borrowing from the parent company (for UUS); and
- repurchasing Sharia SBI (SBIS) to Bank Indonesia.

The application of those instruments has helped the bank to mitigate unanticipated liquidity withdrawal.

However, relying on the money market, parent company or central bank is not always appropriate. In the case of economic turbulence such as in the Asian economic crisis 1997-1998 or global financial crisis 2007-2008, the money market was very rigid, many big (parent) companies were in liquidity shortages and it was not easy to repurchase the central bank securities. As such, Islamic banks would perform better to manage liquidity if the structure of liquidity on the liability and asset sides are reconstructed as discussed in the next section afterwards.

An integrated and comprehensive liquidity management program

After identifying and analyzing the depositors' side (characteristics, behaviors, etc.) and examining the efforts of Islamic banks to manage liquidity, the paper recognizes that the current Islamic banking liquidity risk management does not lie on the right track. It should be strengthened and improved to be more compliant with the sharia principles and reach the ideal Islamic banking operations.

This final section proposes an integrated and comprehensive program to manage liquidity and summarized in Table III. The program comprises of three important sub-programs:

(1) Institutional deepening.

(2) Restructuring the liquidity management on the liability and asset sides.

(3) Revitalizing the usage of the Islamic liquid instruments.

Institutional deepening

This first subprogram proposes a continuous socialization of Islamic banking principles and operations to the public to deepening their understanding toward Islamic banking institution. It is realized through the cooperation among Islamic banks, stakeholders and regulators to expand the public understanding particularly

(1) Institutional Deepening	
(a) A continuous socialization of Islamic banking principles and operations to the public	
(b) A cooperation with the stakeholders and government to expand the public understanding towards Islamic banks	
(c) An intensive education on Islamic banking principles to the existing depositors/entrepreneurs	
(2) Restructuring the liquidity management on the liability and asset sides	
I. Restructuring the liability side	*II. Restructuring the asset side*
(a) Developing more varieties of the deposit products	(a) More financing to the equity based financing
(b) Redirecting the tenor of placement into the longer term	(b) Intensifying a joint (syndicated) and gradual financing
(c) Fostering the Mudarabah muqayadah deposit contract	(c) Investing the funds in the SBSN
(d) Attracting the investment funds from government/big depositors	(d) Strictly matching tenor of the funds and financing
III. Improvement on the policy to balance the asset and liability	
(a) Implementing the profit and loss sharing concept instead of revenue sharing concept	
(b) Paying deposit return purely based on the performance of the real business and not influenced by the interest rate	
(c) Calculating and analyzing the patterns of liquidity withdrawal should count on the impacts of unstable economic conditions	
(3) Revitalizing the usage of the Islamic liquid instruments	
(a) Minimizing any barrier (segmentation) which occurs among BUS/UUS in Islamic money market	
(b) Diversifying the placement of the funds into various tenors of SBI sharia	
(c) Utilizing SBSN (purchase or repurchasing) and domestic/foreign sukuk market to optimise liquidity management	

Table III.
An integrated and Comprehensive program of liquidity management

the understanding of entrepreneurs, suppliers, depositors, academicians, and uneducated Islamic scholars. Sharia requires the engagement of all related parties in the process of liquidity management.

Lastly, the intensive and continuous education on Islamic banking principles to the current and potential depositors and entrepreneurs should be applied taking into account the outputs of the previous surveys which say that the depositors know about Islamic banks but still position the banks for the transaction purposes only instead of the investment one. Many of the individual depositors also expect for continuous return payment of the deposits but still place their funds in the short-term tenor of time deposits.

The expected results of applying this first subprogram are:

- The level of understanding, awareness and knowledge of the public in general and depositors/entrepreneurs in particular will be improving and moving toward the ideal contribution to the development of Islamic banking.
- Considering that they are an integral part of the Islamic banking operations (passive or active partners) such improvement will hopefully relieve the existing problems of rational depositors, transaction motive depositors, concentration of the funds in the short-term tenor *Mudarabah* time deposit, and sensitivity of depositors against interest rate return.
- The good cooperation and communication with the public (depositors, stakeholders, etc.) will benefit the Islamic banks to manage the funds more

appropriately such as managing the time of liquidity withdrawals; planning, organizing, and monitoring financing to the business sectors; estimating an optimal and accurate return on investment; and setting a real PLS ratio independently and unaffectedly by the interest rate return.

Restructuring the management of liquidity on the asset and liability sides

In line and integrated with the implementation of the first subprogram, the second subprogram comes to restructure the management of liquidity on the liability and asset sides. First of all is restructuring the liquidity management on the liability side. This paper suggests the Islamic banks to develop more varieties of deposit products. One of the ignorance of the depositors to be fully in touch with the banks is because of the limited Islamic banking products. They ask for the products which suit their needs and expectations. For examples, Islamic banks should offer the special purpose deposit, bassacurance (bank and insurance) deposits, children deposit, and pilgrimage deposit.

The next action is redirecting the tenor of placement of the funds into the longer term one. Supported by the improvement on the bank business partners in the first subprogram and the varieties of the incentives/advantages to be offered in the deposit contracts, this task should be possible to be accomplished. The banks just have to show the professionalism in managing the well-arranged funds under the principles of sharia as requested by the depositors/public. The other action is to foster the employment of the special investment time deposits (*Mudarabah muqayadah*, *Musharakah*, *Ijarah* deposit) as initiated before. Finally, it is realized that Islamic banks have not shown an optimal attempt to attract more funds from the potential depositors such as government or retail depositors.

The second one is restructuring the liquidity management on the asset side. Assuming that the restructuring on the liability side works as expected, this second restructuring will be possible to intensify and expand the bank financing into the equity-based financing. Moreover, the Islamic banks may go beyond the existing contracts to try the new financing contracts such as *Musharakah* mutanaqisah, Waqf, Forward *ijarah*, *Wakalah* contracts as the potential and promising financing contracts based on sharia principles.

Besides bilateral contracts between banks and entrepreneurs, Islamic banks might complement them with the intensive applications of the:

- syndicated financing of a group of Islamic banks (or Islamic banks and the government) to finance the prospective projects; and
- gradual payment of the financing funds to entrepreneurs.

The data base of business information in Bank Indonesia (launched in 2007) would ease these ideas. Indeed, these applications support the intensification of equity-based financing which could generate more profit and show the real function of Islamic banks to develop the domestic economy.

The next action is to utilize the government sukuk (SBSN). Since the approval of Sukuk Act on June 17th, 2008, SBSN has formally and legally come into the market and Islamic banks may employ it to participate in the long-term project financing. SBSN is a secure and profitable Islamic liquid instrument. By participating in SBSN, Islamic banks not only spread the alternative of investment but also develop the sukuk market. Finally, restructuring the liquidity management on the liability and asset sides should make Islamic banks easy to match the tenors and maturity dates of deposits on the liability side and funds allocations on the asset side.

The last action in the second subprogram is the improvement of bank policies to balance the asset and liability sides. Assuming that the first subprogram and the previous actions of the second subprogram go well and are under control, the Islamic banks in Indonesia may start applying the PLS concept on both liability and asset sides. In fact, the banks have so far only applied PLS on the asset side but not on the liability side.

Indeed, the application of PLS on the asset and liability sides will synchronize the management of liquidity. It brings many benefits for instances:

- the return on investment shared with depositors is the actual and net results of bank financing;
- the loss sharing with depositors eases the liquidity risk management on the liability side and lessens the capital adequacy requirement as well; and
- the depositors become more aware and engaged in every financing activity.

When the implementation of PLS runs very well, the Islamic banks can go to the next action which is paying the deposit return purely based on the performance of real business and free from the influence of interest rate. Islamic banks are capable to do it since the liquidity on the liability side has been well-organized to support the real projects on the asset side. Finally, the successfulness in managing the liquidity on the asset and liability sides helps the banks to accurately estimate the patterns of liquidity withdrawals.

The expected progresses of applying the second subprogram are:

- The problem of short-term deposit concentration is solved because depositors are provided with various deposit schemes with the different prospect of returns.
- The Islamic banks can precisely match the long-term demand for liquidity of the projects on the asset side and the long-term tenor of deposit for investment. The long-term investment deposits should be growing since the banks attract more funds from retail investors as well as government institutions. This point and the previous one enable the Islamic banks to manage the liquidity better, enlarge the market share of Islamic banking, and contribute more to the development of the Indonesian economy.
- The professionalism of the Islamic banks to manage the funds and generate high and competitive profit comes into the public. In this level of achievement, the operations of Islamic banks have reached the ideal ones due to: the domination of equity (investment) based financing; the application of PLS concept on the liability and asset sides; and the high involvement of depositors and entrepreneurs in the successfulness of the business project(s). These conditions allow the banks to lower (minimize) the risk of business losses/defaults as well.
- The credibility and independency of Islamic banks become obvious because the determination of PLS is free from the impacts of interest rate. This will also lead Islamic banks to create the Islamic benchmark rate instead of just using SBI or LIBOR.
- The overall actions in this second subprogram will hopefully ease the Islamic banks to manage the regular (routine) demand for liquidity.

Revitalizing the usage of the Islamic liquid instruments

In order to mitigate the irregular (non-routine) demand for liquidity, the last subprogram which is revitalizing the usage of the Islamic liquid Instrument is being proposed. The first action refers to the facts that Islamic banks prefer borrowing funds from the Islamic money market (PUAS). In this case, Islamic banks need to minimize any restriction which limits the access to PUAS. Moral suasion from the banking regulator to BUS/UUS to be more cooperative and help each other under the spirit of sharia (Qur'an, 26:176-183) can be the first alternative. The establishment of a joint financing in the second subprogram has double benefits to build the cooperation among BUS/UUS in this third subprogram. Finally, the command/recommendation from the association of Indonesian Islamic banking (ASBISINDO) to BUS/UUS to assist each other is another option.

The second action is diversifying the placement of funds into various tenors of SBIS. Based on Bank Indonesia Regulation number 10/11/PBI/2008 article 4, the tenor of SBIS is available from one month into 12 months. The robust portfolio allocation of funds in the various tenors of SBIS will enable Islamic banks to match any unanticipated demand for liquidity because repurchasing SBIS to BI is one of the easiest ways to gain instant liquidity.

The last but not the least is utilizing the government sukuk (SBSN). Islamic banks have an option to employ SBSN not only to locate the funds as suggested before but also to obtain immediate liquidity to fulfill irregular demand for liquidity by repurchasing SBSN. As mentioned previously, from the larger perspective, the attachment in SBSN will also support the real sector (government projects), develop sukuk market and expand the market share of Islamic banking industry. Hence, under this recommended subprogram Islamic banks are strongly advised to utilize SBSN and to develop sukuk market.

The expected advancement of applying the third subprogram are:

- Islamic banks have various portfolio tenors which are ready to be used to fulfill any irregular demand for liquidity from the depositors;
- Islamic banks receive regular and positive return from SBIS or SBSN rather than leaving the reserve money unutilized;
- Islamic banks still participate in the economic development through participation in SBSN. Sharia requires that all economic/financial activities of Islamic banks should engage with the development of real sector; and
- creating a more liquid Islamic money market after building a sound cooperation among BUS/UUS. This action strengthens the BUS/UUS network that has been established.

In conclusion, the final purpose of proposing the integrated and comprehensive program to manage liquidity risk is to lead the Indonesian Islamic banking industry to a better way of managing liquidity risk. In particular, the industry will have:

- a better approach to treat the depositors, the entrepreneurs and the public in their banking operations;
- a better structure of liquidity on the liability and asset sides which links, integrates, and supports each other in order to produce the optimal returns under the passage of sharia; and
- a better way of managing regular and irregular demand for liquidity.

Closing remarks

Some empirical surveys provide the comprehensive analysis of the liquidity management in the case of Indonesian Islamic banking industry. After identifying the characteristics of the depositors, segmentation, investment, expectations, and liquidity behaviors; analyzing the efforts of Islamic banks to manage liquidity; elaborating the potential sources of liquidity problems; and assessing the Islamic liquid instruments to mitigate liquidity problems, the paper proposes an integrated and comprehensive program to manage liquidity. The program appoints the institutional deepening; restructuring the liquidity management on the asset and liability sides; and revitalizing the usage of Islamic liquid instruments. The final purpose of the program is to lead the Indonesian Islamic banking industry into a better way of managing liquidity risk.

Glossary of Arabic words

Mudarabah: A form of partnership where one party provides funds while the other provides expertise and management. Any profits accrued are shared between the two parties on a pre-agreed basis, while loss is borne by the provider(s) of the capital.

Murabahah: It is a contract of sale in which the seller declares his cost and the profit.

Musharakah: It is a mutual consent business contract to share profits and losses in the joint business. Islamic bank and enterprise provides funds together. Any profit will be distributed among partners in pre-agreed ratios and loss will be borne by every partner in proportion to respective capital contributions.

Ijarah: Sale of a definite usufruct of any asset in exchange of definite reward. It refers to a contract of land leased at a fixed rent payable in cash and also to a mode of financing adopted by Islamic banks.

Wakalah: A contract of agency in which one person appoints someone else to perform a certain task on his behalf, usually against a certain fee.

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