The Impact of liquidity risk on the performance of Islamic banks: Evidence from the GCC region

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Date of submission: 04/09/2019 **Acceptance date: 06/12/2019** **Publication date: 31/12/2019**

Abstract:

Liquidity risk is considered as one of the serious concerns and challenges of the modern era banks. A bank having a good asset quality, strong earnings and sufficient capital may fail if it is not maintaining adequate liquidity. Towards this end, the research is aimed at establishing the relationship between liquidity risk and financial performance of Islamic banks. The study adopted correlation research design where data was retrieved from the balance sheets, income statements and notes of five Islamic banks in the GCC Region during the period 2012 - 2016. Multiple regressions were applied to assess the impact of liquidity risk on banks' performance. The findings of the study illustrate the positive relationship between liquidity risk and financial performance of Islamic banks.

Key words: Islamic banking – Performance -liquidity Risk.

الملخص:

تعتبر مخاطر السيولة من بين القضايا والتحديات الحديثة للبنوك، حيث يمكن أن يمتلك المصرف أصول ذات جودة ورأس مال كبير وحقق أرباح مرتفعة، ولكن ليست لديه السيولة الكافية. وعلى هذا الأساس نسعى من خلال هذا البحث إلى دراسة العلاقة بين مخاطر السيولة والأداء المالي للمصارف الإسلامية، حيث تم الاعتماد على القوائم المالية للمصارف الإسلامية محل الدراسة في جمع البيانات، ولقد تمت الدراسة على خمسة بنوك إسلامية في منطقة مجلس التعاون الخليجي خلال الفترة 2012-2016، حيث تم الاعتماد على طريقة الارتباط المتعدد لتقييم أثر مخاطر السيولة على الأداء المالي للمصارف الإسلامية. ولقد بينت النتائج أن هناك علاقة إيجابية بين مخاطر السيولة والأداء المالي للمصارف الإسلامية محل الدراسة خلال الفترة 2012- 2016

الكلمات المفتاحية: البنوك الاسلامية، الأداء، مخاطر السيولة

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I- Introduction:

Liquidity risk as applied on Islamic banks can be of two types: the lack of liquidity in the market and the lack of access to funding.

In the first type, illiquid assets make it difficult for the financial institution to meet its liabilities and financial obligations. However, in the second type, the institution is unable to borrow or raise funds at a reasonable cost, when needed. Liquidity risk is one of the most critical risks facing Islamic banks for the following reasons:

- Limited availability of a Sharia-compatible money market and intra-bank market;
- Shallow secondary markets;
- Certain characteristics of some Islamic instruments give rise to liquidity risks to Islamic banks.

This study attempts to examine the effect of liquidity risk on the performance of Islamic banks by using the panel data related to Islamic banks in the GCC region during the period 2012 – 2016.

The purpose of the research is to discuss the most important proposed tools to analyze as well as to identify the impact and the risks of liquidity on the performance of Islamic banks in the GCC region over the period 2012-2016 and providing the suitable recommendations.

Liquidity risks arise from the difficulty of selling an asset quickly without incurring large losses. A banking liquidity risk includes both the risk of being unable to fund portfolio of assets at appropriate maturities and notes on the other hand, the risk of being unable to liquidate a position in a timely manner at reasonable prices

The maturity transformation role of banks generates funding liquidity risk (Diamond & Philip H. Dybvig, 1983). As bank's liabilities usually have shorter maturities than those of bank's assets thus, banks may have to repeatedly refinance their assets. This refinancing risk enlarges the mismatch between assets' and liabilities' average maturities. In the run up to the global financial crisis, many banks were engaged in funding strategies that heavily relied on short-term funding (Brunnermeier & Martin Oehmke, 2013) which significantly increase their exposure to funding liquidity risk. Nevertheless, this risk can be mitigated if banks hold a sufficiently large buffer of highly liquid and good quality assets, which they can easily use when it by unforeseen funding shocks.

Liquidity is a financial institution capacity to readily meet its cash and collateral obligations at a reasonable cost. When it comes to managing their liquidity, conventional credit institutions have at their disposal well-developed interbank markets that can be tapped for short-term funding, as well as a plethora of instruments.

Islamic financial institutions (IFIs) face great difficulties in managing their liquidity. The dearth of financial instruments at the disposal of IFIs makes less efficient liquidity management, as more than necessary cash is held, thereby reducing their profitability.

The purpose of the research is to answer the following questions:

What is the nature of the relationship between liquidity risk and the financial performance of Islamic banks?

So, the purposes of this paper are:

- To assess the liquidity risk in selected Islamic banks in GCC region from 2012 to 2016;

- To discuss instruments and tools which are proposed for liquidity management in Islamic banks;
- To measure the relationship between liquidity risk and financial performance of Islamic banks.

I .1. Literature review:

In the banking industry, liquidity risk has an opposite effect on profitability. Some studies- (Molyneux & Thornton, J, 1992) and (Barth, Remolona, & Wooldridge, 2007) - supported the positive effect of risk on the profitability while some studies- (Bourke, 1989) believed in its negative effect. Liquidity risk is usually measured as liquidity ratio which is practically calculated in two different forms:

In the first type, liquidity is adjusted by size which includes the ratio of cash asset to total asset ie the ratio of cash asset to deposit (savings) (Barth, Remolona, & Wooldridge, 2007).

The second type however includes the adjusted loan by the size which includes the ratio of total asset and/or the ratio of net loan to total asset (Chen, Lesmond, & Wei, 2007).

Listed below some previous studies those have been dealt with by other researchers related to our subject;

Table(1) : Literature Review list:

No	Title	Main Findings
01	The Management of Liquidity Risk in Islamic Banks: the case of Indonesia (Rifki, 2010)	• Islamic banking needs to develop its liquidity risk management environment as a practice of modern banking standards to ensure safe operations and maintaining business operations. Taking into account the characteristics. • The *Shariah* has provided a variety of methods and approaches for Islamic banking in managing liquidity risk, considering barriers and challenges to be faced. • In practice, he also found that in reducing liquidity risk, Islamic banking needs to develop an organizational approach and liquidity instruments from the perspective of the Islamic financial market and a regulatory framework in meeting ordinary and extraordinary liquidity needs.
02	Liquidity Risk Management And Financial Performance In Malaysia: Empirical Evidence From Islamic Banks (Ariffin, 2012)	• The financial crisis has little impact on the extent of liquidity risk in the Islamic banks. • The relationship between liquidity risk and financial performance is not always predicted by the conventional financial theory of "high risk-high return". • Liquidity risk may lower ROA and ROE. • Liquidity management is difficult in Islamic banks due to the lack or limitation of practical instruments and the small number of participants on the money market because most of the conventional liquidity tools are not according to *Shari'ah* Islamic banks sustains higher liquidity ratios compared to conventional banks. • The level of liquidity risk reporting is still at minimum**.**

03	How Islamic Banks of Malaysia Managing Liquidity? An Emphasis on Confronting Economic Cycles (Sulaiman, Mohamad, & Samsudin, 2013)	• Macroeconomic control variables clearly influence the behavior of Islamic banking in managing liquidity. • Islamic banking needs to determine the purpose and goals of the loan application to be consistent with the "bank's financing policy" so as not to cause any problem in the future. • Islamic banking should ensure adequate, stable and a competitive rate of return promised from time to time for the supply of bank deposits. • Unstable deposits will affect the activities of Islamic financing of a bank. • Gap period of short-term deposits and long-term funding should also be reduced through appropriate measures.
04	Liquidity Risk Management in Islamic Banks: A Survey (Sabri, 2013)	• Islamic banks are obliged to have in place effective techniques, procedures and highly industrialized liquidity risk-management practices via appointment of sufficiently qualified BOD, senior management and other personnel. • Efficient accessibility to adequate financial instruments is also significant for Islamic banks to meet their liquidity needs in a timely manner. • Innovative approaches are essential in terms of the engineering of new financial instruments and the development of comprehensive regulations and policies.

I .2. Sources of liquidity risk in Islamic Banking:

We can resume the main sources of liquidity risk in Islamic Banking in those points (Rifki, 2010):

i. Limited *Shariah*-compliant interbank money market instruments. *Shariah* prohibition on interest-based loan and the absence of an adequate and active interbank market restricted the Islamic banking options in managing liquidity efficiently. In addition, shallow secondary market also contributed to the problem.

ii. Islamic financial instruments listed on the secondary market are also very limited and *Shariah* has set certain preconditions for transactions involving financial obligation except for claims involving real assets. Therefore, there is a need for institutions and authorities to develop asset-based securities to be traded such as *Sukuk*. Although these instruments are available, yet market participants were inadequate and limited compared to the conventional system.

iii. Although the conventional liquidity management instruments such as the interbank market, secondary market for debt instruments and the lender of last resort that is the central bank have been long established but all instruments are based on interest rate (usury) that is strictly prohibited by Islam. At the same time, conventional banking is having an access to extensive short-term loans from overnight to twelve months or a year through a complete, advanced and efficient interbank market. This access is important for banks in meeting its institutional needs for short-term cash flow.

iv. Among the unique features of Islamic banking instruments, we note that it is a major contributor in increasing the risk of liquidity for Islamic banking. For instance, liquidity can contribute to the problem of cancellation risk in *murabahah*

instruments or the inability to trade contracts and also bay *'salam* contract that can only be traded at per value.

v. Existance of disharmony between the central bank and Islamic banking due to central banks' refusal to provide funds on the basis of other than interests. Due to this, Islamic banking does not have final resort loan lending resources to meet the liquidity needs since they cannot make loans based on interests. So, Islamic banking has to provide self-insurance due to their inability to diversify bank operational risks. *Abdul Rahman* (1999) states Islamic banks have to perform retail banking operations (demand deposits) and imposing its own reserve requirement of around 100%. (Rifki, 2010)

i. ***vi.*** Because of the limited number of Islamic financial instruments, Islamic banks do not enjoy the choice of funds similar to that found in conventional banks which can be adapted to the period of loan and deposit's maturity through money and capital market instruments. The absence of an adequate market for Islamic financial instruments is a quite complicated problem in the process of matching maturity period. As a result, Islamic banks were not seemed to be able of providing adequate returns to the depositors who generally expect a comparable rate of return with those offered by conventional banking.

II -Empirical Study:

II.1. Methodology research

The data of analysis have been taken from the annual reports of Islamic banks in the GCC region. The data have been collected for a set of 5 banks for the period 2012-2016. The selection of these banks was determined by availability of data. The nature of this latter is panel data- a combination of time series and cross sectional data.

The model includes a dependent variable is ROA, which reflects the financial performance of Islamic banks and three independent variables which reflect liquidity risk(LR) measured by current assets/ current liabilities, equity multiplayer (ETA) measured by equity/ total assets and the size of the bank measured by the logarithm of total assets.

All what is mentioned above can be illustrated more on the table below:

Table(2) : Variables of the Study

Type of the variable	The name of the variable	Symbol	Measurement
The dependent variable	Performance	ROA	Net profit/total assets
Independent variables	Liquidity Risk	LR	Current assets /current liabilities
	ETA	ETA	Equity/total assets
	The size of the bank (variable control)	SZE	Logarithm of total assets

II.2. Measurement Model:

To measure the impact of corporate governance variables in the performance of Islamic banks a correlation analysis method will be used according to the following equation:

$$ROA_{it} = \alpha 0 + \beta_1 LR_{it} + \beta_2 ETA_{it} + \beta_3 SZE_{it} + \varepsilon_{it} \qquad (1)$$

ROA_{it}: the dependent variable that shows the financial performance of Islamic banks;
β_1-β_3: coefficients of independent variables;
LR_{it}:liquidity risk;

ETA_{it}: Equity multiplayer;
SZE_{it}: the size of the Islamic bank;
ε_{it}: random error.

II .3. The Sample Study:

The sample provides components from five Islamic banks which have been selected on the basic of availability of data shown below (see Table 3).

Table:(3) *The Sample study*

No.	Name of bank	Period
1	Emirates Islamic Bank	2012-2016
2	Kuwait Finance House	
3	Al-Rajhi Bank	
4	Qatar Islamic Bank	
5	Kuwait International Bank	

The evolution of the average variables of Islamic banks during the study over the period of 2012-2016 is summarized on the table below (see Table 4, 5).

Table (4)*: Evolution of the Variables of the Study during the Period of 2012-2016*

year	country	ROA	LR	ETA	SZE
2012	EMA	0,51	5,63	11,35	17,04
2013	EMA	0,18	4,14	8,93	17,3
2014	EMA	-2,08	6,94	11,53	16,88
2015	EMA	0,21	6,98	7,03	17,43
2016	EMA	0,35	10,47	10,45	17,49
2012	RJH	3,96	8,88	16,83	18,95
2013	RJH	3,66	13,11	16,4	19,03
2014	RJH	3,34	11,34	14,86	19,21
2015	RJH	2,94	13,98	13,63	19,4
2016	RJH	2,65	12,74	13,72	19,44
2012	QTR	4,59	8,68	22,92	17,48
2013	QTR	3,39	10,93	17,44	17,76
2014	QTR	2,97	8,12	19,21	17,88
2015	QTR	1,53	18,73	17,83	18,1
2016	QTR	1,71	15,78	17,67	18,16
2012	KUW	0,63	30,45	13,86	16,23
2013	KUW	0,57	20,23	12,76	16,34
2014	KUW	0,3	34,66	11,56	16,41
2015	KUW	0,92	36,11	11,14	16,5
2016	KUW	1,02	43,36	12,79	16,59
2012	BHR	-2,17	45,27	10,69	13,74
2013	BHR	-4,3	56,12	15,4	13,72
2014	BHR	-1,96	48,98	12,07	13,64
2015	BHR	-4,33	50,37	8,37	13,63
2016	BHR	0,67	47,98	8,58	13,72

The source :The financial sources of the banks.

Table(5): *Evolution of the Average Variables of the Study during the Period of 2012-2016*

	ROA	LR	ETA	SZE
2012	0.8	4	7	5.12
2013	0.6	6	9	6.64
2014	0.7	8	10	7.28
2015	0.6	8	10	8.59
2016	0.6	8	10	8.59

II .3. Statistical Data:

Table five (05) shows the most important statistical data of the variables used in the study where it is noticeable that the average of dependent variables return on total assets (ROA) is estimated at about 85%, the average of Liquidity risk variable (LR) is about 22.79, the average of equity multiplayer (ETA) is about 13.48, and the average of total assets (SZE) about 16.88.

Table (6) :*Statistical Data for the Variables of the Study*

Variable	Lowest value	Greatest value	Average	Standard deviation
ROA	-4.330000	4.590000	0.850400	2.399548
LR	4.140000	56.12000	22.79920	17.09869
ETA	7.030000	22.92000	13.48080	3.816341
SZE	13.63000	19.44000	16.88280	1.886711

II .4. Estimation of Parameters:

Table six (06) shows the results of estimating correlation function between the return on total assets which reflects the financial performance of Islamic banks, the liquidity risk variables, the panel least squares and the method used.

Table(7): *Estimation of Parameters*

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/03/17 Time: 21:11
Sample: 2012 2016
Periods included: 5
Cross-sections included: 5
Total panel (balanced) observations: 25

Table (7): Estimation of Parameters

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-17.08784	5.035772	-3.393291	0.0027
LR	0.005174	0.029104	0.177763	0.0606
ETA	0.187876	0.079463	2.364325	0.0278
SZE	0.905512	0.280423	3.229095	0.0040

R-squared	0.835983	Mean dependent var	0.850400
Adjusted R-squared	0.798266	S.D. dependent var	2.399548
S.E. of regression	1.318079	Akaike info criterion	3.535875
Sum squared resid	36.48399	Schwarz criterion	3.730895

Log likelihood	-40.19844	Hannan-Quinn criter.	3.589965
F-statistic	19.51342	Durbin-Watson stat	2.034926
Prob(F-statistic)	0.000003		

III- Results of the Study:

Table seven (07) shows the estimated coefficients of the model, the value of the t-statistic, the standard deviation and the probability of error, the results show that the value of the determination coefficient (R2) is estimated at 0.83, meaning that there is a strong relationship between the ROA and the variables of liquidity risk

The results show that the coefficient Durbin-Watson has reached statistical value of 2.03, it is then clear that there is no problem of autocorrelation between independent variables.

Through coefficients of independent variables, we remark that there is a positive relationship between financial performance (ROA) and all of: liquidity risk (LR), equity multiplayer (ETA) and the size of banks (SZE).

IV-Conclusion:

We can consider liquidity management as one of the most important issue in banking in general and Islamic banking in particular because of the latter difficulty in liquidity management in the light of the surrounding circumstances and in the light of the lack of compatible tools with the principles of Islamic law.

On this basis, we can say that the Islamic banks urgently need to find alternative ways and Islamic instruments to manage liquidity.

Through this paper, we may recommend the followings:

- Harmonization between financing and investment operations as well as deposits in terms of deadlines and volume. This requires analysis of gaps and extended the maturity of assets and liabilities;
- Diversification of alignment between the principle of liquidity in the bank and the profitability of financing and investment operations in order to achieve a good profit to depositors and shareholders;
- The need to develop the necessary provisions and reserves for risks that are expected to face banks;
- Diversification of funding sources and greater reliance on long-term investment deposits;
- The development of new tools to manage liquidity in the money market and the capital market;
- Permanent communication and coordination between those in charge of setting policies and liquidity among others that have available information affecting the liquidity position;
- Conduct periodic tests on the situation of liquidity;
- Providing alternative contingency plans to be able to cope with the liquidity crisis that has faced the Islamic bank;
- The provision of an internal control system to verify the adequacy of liquidity policy and a good execution.

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