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Liquidity Factors Affecting the Financial Performance of Indonesian Islamic Banking

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ABSTRACT--- *Liquidity is a very important thing for banks to be managed properly because it will affect the continuity and sustainability of the banking business. In the case of Indonesia, the problem of banking liquidity is still a serious concern for the government, because it is based on banking failure data in Indonesia in maintaining banking liquidity conditions in 1997 which ultimately led to an economic crisis. This study aims to identify liquidity factors that contribute significantly to the performance of Islamic banking in Indonesia. The variables used in this study are CAR, CR, LR and FDR as a proxy of liquidity and ROA and ROE as a proxy of the financial performance of Islamic banking in Indonesia. The data used in this study are secondary data from reports on Islamic banking publications in Indonesia for the period of January 2008 to December 2016 which are monthly. Data is processed and analyzed with Augmented Dickey Fuller (ADF) Stationery Test as a method used to test stationary data and then test hypotheses using Vector Autoregression (VAR). The results obtained show that based on the results of the Impulse Response Function, the shock that occurs in the variables of liquidity CR, LR, FDR and CAR will have a higher impact on ROE financial performance than ROA and the impact will take around 45 months. Then based on the results of Variance Decomposition it can be seen that the CR and LR variables have the largest contribution to ROA with a contribution of 4.71%, while the CAR and LR variables are the variables that have the largest contribution to ROE with a contribution of 20.21%. These results indicate that the liquidity factors that have a major influence on the financial performance of Islamic banks in Indonesia are CAR, CR and LR, so as to maintain the financial performance of Islamic banks in Indonesia, it is necessary to control the CAR, CR and LR liquidity variables in good condition.*

Keywords--- *Liquidity, Financial Performance, Islamic Bank.*

I. INTRODUCTION

The growth of the Islamic banking industry in Indonesia began in 1991 with the establishment of Bank Muamalat Indonesia (BMI). The establishment of the Islamic financial industry is fueled by the opinion that bank interest is equal to the riba which is confirmed by the dissolution of the Fatwa of the Indonesian Council of Ulama on the bank interest of the bank which was the result of the workshop of scholars on bank and banking interest in Cisarua, Bogor on 19-22 August 1990 (Anshori, 2008). In addition, sociologically Indonesia is also the country with the largest Muslim majority in the world, so an Islamic bank is required to respond and facilitate the business and economic activities undertaken by Muslim communities in Indonesia.

Liquidity is a very important thing for the bank to manage well as it will affect the bank's luck as well as business sustainability and continuity. It is also reflected in the Bank Indonesia regulation that determines liquidity

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as one of the eight risks that must be managed by banks. The concept of liquidity in the business world is defined as the ability to sell assets in the shortest time with minimal losses. But, the understanding of liquidity in the banking world is more complex compared to the business world in general (Alshatti, 2015). In terms of assets, liquidity is the ability to convert all assets into cash, whereas in terms of liabilities, liquidity is the ability of the bank to meet the fund's needs through increased portfolio of liabilities.

For the case in Indonesia, banking liquidity issues are still a serious concern for the government, as it is based on data, the failures in banking management in Indonesia affecting large-scale liquidity occurred in 1997 which had a chain link to the macro economy which eventually led to a crisis economy. At the time the economic crisis occurred in 1997, conventional banking had to raise interest rates and interest rates up to 70%. Consequently, conventional banks are experiencing negative spread and liquidity difficulties to pay deposits while loans are being disbursed very little because entrepreneurs are not willing to pay credit interest rates and even if the loans can be disbursed then the potential of non-performing loans (NPLs) is huge.

In liquidity theory, banking needs to continue to do and offset its liquidity, (Zhu, 2001). If the liquidity balance is not maintained, then the banking financial performance will be disturbed and will cause much risk for the bank, (Ismal, 2010). The influence of liquidity management on the financial performance of conventional banking and Islamic banking has been examined by several studies conducted in some countries, both developed countries that examine conventional banking as well as in developing countries that study Islamic banking. From the research results of Deep and Schaefer (2004), Wiyono (2012), Bolek and Wilinski (2012), Lartey et al. (2013), Ajanthan (2013), Zygmunt (2013), Abraham (2015), Priya and Nimalathasan (2013) can be seen that there is a significant effect of liquidity with banking financial performance. Therefore, liquidity management becomes an important part of the bank in keeping their financial performance in good condition.

In determining what financial performance variables need to know the effects of liquidity management, Wilcox (1984), Reger et al. (1992), Simpson and Kohers (2002), Lindblom and Von Koch (2002), Castelli, Dwyer Jr. and Hasan (2006) said the ROA and ROE variables are the most popular and meaningful financial variables for banks to measure whether banking financial performance or not. Likewise, the liquidity variables directly affect ROA and ROE. From various studies conducted by Molyneux and Thornton (1992), Kunt et al. (2003), Wagner (2004), Kosmidou et al. (2005), Defri (2012), Purbaningsih (2012), Arifin (2012) Paul et al. (2013), Muharrom and Kurnia (2013), Ibe (2013), Ferrouhi (2014), Sandy (2015), Alshatti (2015) and Khan et al. (2015) found that CAR, LR, CR and FDR are the variables that can represent the liquidity performance of a bank. They say that the relationship between the liquidity and ROA and ROE variables is negative. Based on the above observations, there are several research questions as follows: (1) whether there is any influence between the liquidity variables on the performance of Islamic banking in Indonesia, and (2) how the liquidity variables influence the performance of Islamic banking in Indonesia.

II. LITERATURE REVIEW

Most of the empirical studies on the relationship between bank performance and bank liquidity were conducted in Europe amongst his studies were about the determinants of the performance of eighteen European banks between 1986 and 1989. The findings show that the ratio of liquid assets to total assets is related negative with Return on

Asset (ROA), (Molyneux & Thornton, 1992). Similarly, studies conducted in the UK on the commercial banking industry during the period 1995-2002 which examine the effects of bank characteristics, macroeconomic conditions and financial market structures on the margin of bank interest and ROA. The results show that the ratio of liquid assets to customers and short-term financing is positively related to ROA and negatively associated with Net Interest Margin (NIM) (Kosmidou et al., 2005).

The study of internal and external determinants of profits in twelve countries in Europe, North America and Australian banks is also carried out with the results of the study showing that the liquidity ratio measured by liquid assets against total assets is positively correlated with ROA (Bourke, 1989). Among other things, the banking liquidity risk study uses data sets in 12 developed countries (Australia, Canada, France, Germany, Italy, Japan, Luxembourg, Netherlands, Switzerland, Taiwan, England and the United States) during the period of 1994-2006. The results show that liquidity risk is an endogenous determinant of bank performance measured by ROA, ROE and net interest margin, and negative liquidity risk associated with ROA and ROE and positively related to NIM (Chen et al., 2009).

Ajanthan in 2013 has been studying commercial institutions in Sri Lanka. The findings revealed that there was a significant relationship between liquidity and profit in commercial enterprises listed on the stock market in Sri Lanka for five years from 2008 to 2012. Other research also showed that there was a significant influence between the liquidity ratio on profits to business organizations in Poland (Zygmunt, 2013).

The study of the relationship between the liquidity risk and Islamic bank financial performance in Malaysia during the period of 2006-2008 found that, in times of crisis, liquidity risks and ROA and ROE tend to behave in the opposite way and liquidity risks can lower ROA and ROE (Ariffin, 2012). Other studies analyze banks from OECD countries, developing countries and countries in transitional economies. The study examines the factors determining the level of banking benefits in 80 countries. The results show that liquidity risk measured by the ratio of credit to total assets has a negative correlation with ROA and is positively correlated with NIM (Kunt et al., 2003).

In Indonesia there are also many studies on liquidity and relationships with banking and Islamic banking performance, among which is a study aimed to determine the effect of capital and liquidity risk on profits on Rural Banks in Indonesia. The independent variable in this study was CAR and Loan Deposit Ratio (LDR), while the dependent variable was ROA. The results show that capital risk (CAR) and liquidity (LDR) have a significant effect on ROA on Indonesian rural banks (Purnamawati, 2014).

Another study is about the effect of CAR, LR, operational efficiency on the ROA of banking institutions listed on the Indonesia Stock Exchange (IDX). The results show that CAR has a positive and insignificant effect on ROA on banking institutions in BEI while LR has a positive and insignificant effect on ROA (Defri, 2012).

III. LIQUIDITY MANAGEMENT

Liquidity management is part of the conventional or Islamic financial risk management framework. In fact, most of the bank failures are caused by the failure to manage the liquidity elements. Each conventional or Islamic bank is required to constantly control and manage liquidity / liquidity positions effectively and with care (Islam & Chowdhury, 2007). Among the operational constraints faced by Islamic banking are weaknesses in operating

liquidity effectively. Among these weaknesses have been studied by Arifin (2000) such as; (i) the absence of immediate investment opportunities on the funds it receives, (ii) The difficulty in liquidating the current investment fund, at the time of withdrawal of funds in a critical situation. As a result, Islamic banks have detained their liquidity elements in larger numbers than conventional banking. Generally, Islamic banks have two forms of barriers when compared to conventional banks, namely: lack of access to short-term funding (Sulaiman, 2013) as well as lack of access to money markets so that Islamic banks can only maintain liquidity in cash. To address the problem, there are several options that can be done by Islamic banks that are emergency: to push usury, use social security funds, make gold or metal investment worth in cash with futures contracts and keep funds in conventional banks without accepting usury in the balance of the services it receives (Bidabad & Allahyarifad, 2008).

With the provision of Law No.21 Year 2008 on Islamic Banking on 16 July 2008, the development of the Islamic banking industry in Indonesia is growing rapidly in line with the provision of adequate legal grounds (Hasan, 2011). The development of Islamic banking is quite impressive, with average growth in net assets at 45.48% per annum over the last five years (2011-2015). This development is expected to enable the Islamic banking industry to provide a more positive role in supporting Indonesia's economic development.

The growing number of Islamic banking office services in Indonesia is very fast (Table 1). It grew more than 22.79% from 2011-2017 for the total number of Islamic Commercial Banks (BUS), Islamic Business Unit and Islamic Citizens Financing (SRB) offices. For BUS, the growth was 11 in 2011 to 13 in 2017, or reaching 18.18% growth. For Islamic Business Unit (UUS), growth reached -14.28% and SRB reached 7.74% in the same year. The growth in office services is enough to prove that the attractiveness of Islamic Banking in Indonesia is quite good. This growth is expected to continue as Islamic banking assets have not reached 5% as the target set by Bank Indonesia (BI) in 2008 (Hasan, 2011).

Table 1: Network of Islamic Banking Offices

Indicators		*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Islamic Commercial Banks								
-	Number of Banks	11	11	11	12	12	13	13
-	Number of Offices	1.401	1.745	1.998	2.151	1990	1869	1825
Islamic Bank Units								
-	Number of Banks	24	24	23	22	22	21	21
-	Number of Offices	336	517	590	320	311	332	344
Islamic Rural Bank								
-	Number of Banks	155	158	163	163	163	166	167
-	Number of Offices	364	401	402	439	449	453	441
Total		2.101	2.663	2.990	2.910	2.750	2.654	2.580

Source: Islamic Banking Statistics, Financial Services Authority (OJK) of the Republic of Indonesia.

The existence of Bank Islam in Indonesia since 1991 has proven that the Islamic banking system is quite competitive against the various Indonesian economic threats which are less likely to be stable since its inception (Syafrida & Zulmaita, 2011). The strength of Islamic banks was tested especially at the time of the 1998 financial crisis which saw most of the conventional public banks dissolved. The strength of Islamic banks is evidenced by

the growing Islamic banking in Indonesia, where the function of Islamic banking intermediation continues to increase with the average Financing to Deposit Ratio (FDR) above 100%. Then, the accelerated financing acceleration (PYD) by Islamic Banking continued to grow significantly where until December 2017 has reached Rp. 285,185 trillion. This amount is not too far from the growth of Third Party Fund (DPK) which reaches Rp. 334,719 trillion. The achievement succeeded in increasing the assets of the Islamic banking industry to Rp. 424,181 trillion in December 2017, placing Islamic Banking shares on total national banking assets to 4.59%. Islamic banking financial performance in Indonesia can be summarized in Table 2.

Table 2: Development of Assets, Profit, Financing and Third-party Funds Islamic Banking 2011-2017 in Billion Rupiah

Indicators	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*	*2017*
Assets	145.467	195.018	242.276	272.343	296.262	356.504	424.181
Growth		34,06	24,23	12,41	8,78	20,33	18,98
Profit	289	3.423	4.364	2.049	1.210	1.420	1.691
Growth		1.083,96	27,49	(53,04)	(40,93)	17,35	19,08
Financing	102.655	147.505	184.122	199.330	203.894	249.051	286.850
Growth		43,69	24,82	8,26	2,29	22,14	15,17
Third-party funds	115.415	147.512	183.534	217.858	231.175	279.335	334.719
Growth		27,81	24,42	18,70	6,11	20,83	19,82

Source: Data processed, Islamic Banking Statistics, Financial Services Authority (OJK) of the Republic of Indonesia.

Table 2 shows that Islamic banking continues to grow well in terms of assets, turnover and third-party fund raising. Throughout 2011 to 2017, Islamic banking assets grew from Rp145.467 trillion to Rp424.181 trillion. This figure shows positive growth every year that even reaches 34% more in 2011 and 24.23% in 2013. For the next year the growth ranges from 8% to 20% per annum, and the average growth for seven years has passed (2011 - 2017) reached 19.79%.

Growth in Islamic banking assets demonstrates that government policy stimulus and related agencies are relatively capable of raising the awareness of Indonesian Muslim communities to be actively involved in the Islamic banking industry. In addition to the development of assets, Islamic banking during 2011 to 2017, it has also recorded a gain in gains marked by the positive gains in the current year despite the negative growth. In terms of profit growth, it has grown positively in 2011, 2012, 2013, 2016 and 2017 and experienced negative growth in 2014 and 2015. However, the nominal value is still very significant for a banking industry, which is above Rp. 8 trillion over the past three years. This implies that in the economy, the efforts in the industry are still very profitable so it opens up opportunities for industry players from within or outside the country to equally contribute to the rapid growth of the Islamic banking industry in Indonesia (Andriansyah, 2009).

The development of third-party funds in Islamic banking also saw significant improvements. From Rp115, 415 trillion in 2011, third-party funds increased to Rp334.719 trillion in 2017. Each year, DPK growth is positive. The development of assets, profitability, and third party funds in Islamic banking as described above is also supported by the ability of Islamic banking to maintain the stability of financing. From these data, it can be seen that the

financing given by Islamic banking aggregatively by Rp102,655 trillion in 2011 increased to Rp424.181 trillion in 2017.

IV. METHODOLOGY

The design of this research is sincere in understanding the influence of liquidity management on the financial performance of Islamic banking in Indonesia. The data used in this study is a secondary data obtained monthly from January 2008 to December 2016. Data is derived from the statistics report on Islamic banking reported by the Financial Services Authority (OJK) Indonesia which has been issued to the public. The sample of this study is Islamic banks from the category of Islamic Commercial Bank (BUS) and Islamic Bank Unit (UUS). The number of samples was 34 institutions (13 BUS and 21 UUS). This research uses quantitative, descriptive and econometric approaches to answer the study on the liquidity management and financial performance of the Islamic banking industry in Indonesia from 2008 to 2016. Generally, the data were analyzed using Vector Auto Regressions (VAR).

1) Analysis Model

This study uses the Vector Auto Regressive (VAR) model. The VAR equation in this study was developed and adapted based on the theory and research above.

$$\begin{bmatrix} CARt \\ CRt \\ LRt \\ FDRt \end{bmatrix} = \begin{bmatrix} \alpha_{11}(L) & \alpha_{12}(L) & \alpha_{13}(L) & \alpha_{14}(L) & \alpha_{15}(L) & \alpha_{16}(L) \\ \alpha_{21}(L) & \alpha_{22}(L) & \alpha_{23}(L) & \alpha_{24}(L) & \alpha_{25}(L) & \alpha_{26}(L) \\ \alpha_{31}(L) & \alpha_{32}(L) & \alpha_{33}(L) & \alpha_{34}(L) & \alpha_{35}(L) & \alpha_{36}(L) \\ \alpha_{41}(L) & \alpha_{42}(L) & \alpha_{43}(L) & \alpha_{44}(L) & \alpha_{45}(L) & \alpha_{46}(L) \\ \alpha_{51}(L) & \alpha_{52}(L) & \alpha_{53}(L) & \alpha_{54}(L) & \alpha_{55}(L) & \alpha_{56}(L) \end{bmatrix} \begin{bmatrix} CARt \\ CRt \\ LRt \\ FDRt \end{bmatrix} + \begin{bmatrix} \varepsilon_1 t \\ \varepsilon_2 t \\ \varepsilon_3 t \\ \varepsilon_4 t \end{bmatrix}$$

Based on the equations outlined above, the VAR equation model is as follows:

1. $CAR_t = \beta_{10} + \alpha_{11}(L)CR_t + \alpha_{12}(L)LR_t + \alpha_{13}(L)FDR_t + \alpha_{14}(L)ROA_t + \alpha_{15}(L)ROE_t + \alpha_{16}(L)CAR_t + \varepsilon_{1t}$
2. $CR_t = \beta_{20} + \alpha_{21}(L)CR_t + \alpha_{22}(L)LR_t + \alpha_{23}(L)FDR_t + \alpha_{24}(L)ROA_t + \alpha_{25}(L)ROE_t + \alpha_{26}(L)CAR_t + \varepsilon_{2t}$
3. $LR_t = \beta_{30} + \alpha_{31}(L)CR_t + \alpha_{32}(L)LR_t + \alpha_{33}(L)FDR_t + \alpha_{34}(L)ROA_t + \alpha_{35}(L)ROE_t + \alpha_{36}(L)CAR_t + \varepsilon_{3t}$
4. $FDR_t = \beta_{40} + \alpha_{41}(L)CR_t + \alpha_{42}(L)LR_t + \alpha_{43}(L)FDR_t + \alpha_{44}(L)ROA_t + \alpha_{45}(L)ROE_t + \alpha_{46}(L)CAR_t + \varepsilon_{4t}$
5. $ROA_t = \beta_{50} + \alpha_{51}(L)CR_t + \alpha_{52}(L)LR_t + \alpha_{53}(L)FDR_t + \alpha_{54}(L)ROA_t + \alpha_{55}(L)ROE_t + \alpha_{56}(L)CAR_t + \varepsilon_{5t}$
6. $ROE_t = \beta_{60} + \alpha_{61}(L)CR_t + \alpha_{62}(L)LR_t + \alpha_{63}(L)FDR_t + \alpha_{64}(L)ROA_t + \alpha_{65}(L)ROE_t + \alpha_{66}(L)CAR_t + \varepsilon_{6t}$

From the above equation, we can see the VAR equations expressed with lag values from the six research variables: CAR, CR, LR, FDR, ROA and ROE values. If the perpetrators of banking are rational, they will take into account all the information that has taken place in the preceding period and used it in the formulation of expectations. The VAR equation is also a common system that is less dependent on economic theory. The variables that interact in the VAR system can be selected as long as the relationship between the variables is still relevant to economic theory or can be logically explained. The VAR equation system, during the study, does not require

specific specimens of surgery, does not differentiate endogenous exogenous variables, then the treatment of the variables must be equated.

2) Impulse Response Function

The shock that occurs in one of the variables in the VAR equation system not only affects the direct variables, but also transmitted to other endogenous variables through the dynamic structure of the VAR equation system. The IRF also detects the effects of the standard deviation of surprises on one of the innovations in the present value and the future value of the endogenous variables. The variable surge i-directly affects the i-th variable and is transmitted to all endogenous variables via the VAR dynamic structure

3) Variance Decomposition

Decomposition variance is a method for viewing system dynamics. The decomposition of variances describing endogenous variants turns into component shocks for endogenous variables in the VAR (autoregression vector). VARs are typically used to predict from interconnected data and to analyze random sound effects on variable systems. The variance parsing solves the variance of predicted error variables of each variable into components that can affect the endogenous variables.

4) Variable Definition

a. Capital Adequacy Ratio: A ratio used to measure capital adequacy from the total assets owned. The capital adequacy ratio is obtained through the Capital / Total Asset formula.

b. Funding to Deposit Ratio (Financing to Deposit Ratio): The ratio of the amount of third-party funds to affordable financing. Financing Rate to Deposit Ratio is obtained through the Formula Total Third Party Fund / Total Financing.

c. Cash Ratio (Cash Ratio): The ratio of current assets to current liabilities is much greater. The Cash Ratio value is obtained through the Current Assets / Current Liabilities formula.

d. Liquid Ratio (Liquid Ratio): The ratio of liquids ratio to total assets. The Liquid Ratio value is obtained through the Liquid Asset Formula / Total Assets.

e. Return on Assets (Return On Assets): is a ratio of return on investment compared to Assets owned. The Return on Assets value is obtained through the Net Revenue / Total Asset formula.

f. Return on Equity (Return On Equity): is a ratio of return on investment compared to paid-in capital. The Return on Return on Equity is obtained through the Owner's Net Revenue / Equity formula.

V. RESULTS OF THE STUDY

1) Statistical Analysis

To determine the factors contributing to the liquidity management and financial performance of Islamic banking in Indonesia, the Vector Auto Regressive (VAR) approach was used to test the first Root Test Unit then proceed with optimal lagging and final levels, contributing factors to the liquidity management and Islamic banking financial performance in Indonesia is determined by Impulse Response Function and Variance Decomposition. The results of the analysis of the above series can be described in the steps below.

2) Unit Root Test

The Root Test unit is useful for viewing data stations or not. The analytical tool used to perform the test is Augmented Dickey Fuller (ADF) exam. Table 3 shows the results of the Root Unit Test for the variables contained in this research model at the first difference level.

Table 3: Unit Root Test Result

Variables	ADF Statistics	P-Value	Order of Integration
ROA	10.11331	0,0000	1(0)
CAR	11,37116	0,0000	1(0)
FDR	11.77825	0,0000	1(0)
CR	9,663259	0,0000	1(0)
LR	11.10803	0,0000	1(0)
ROE	6.258490	0,0000	1(0)

The Root Test Unit results in Table 3 show that data on each variable does not move at this first difference can be seen from the value of ADF (P-Value) smaller than 0.05.

3) Determination of Optimum Lag

Optimal determination lag is useful to determine how many lag criteria will be used in subsequent VAR exams such as Impulse Response Function and Variance Decomposition. To determine the optimum lag criteria can be known from the criteria demonstrated by many tests including LR, FPE, AIC, SC, and HQ.

Table 4: Optimal Lag Test Criteria Result

VAR Lag Order Selection Criteria
Endogenous variables: ROE ROA LR FDR CR CAR
Exogenous variables: C
Date: 02/28/18 Time: 13:36
Sample: 1 108
Included observations: 100

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-603.8135	NA	0.007979	12.19627	12.35258	12.25953
1	-353.8074	465.0113	0.000111*	7.916149*	9.010320*	8.358980*
2	-328.7597	43.58301	0.000139	8.135195	10.16723	8.957595
3	-286.8173	67.94670*	0.000126	8.016347	10.98624	9.218316
4	-272.8583	20.93850	0.000202	8.457167	12.36492	10.03871
5	-245.4058	37.88455	0.000255	8.628115	13.47373	10.58922
6	-227.0153	23.17196	0.000399	8.980306	14.76378	11.32098
7	-193.4681	38.24377	0.000481	9.029363	15.75070	11.74961
8	-168.9686	24.98957	0.000735	9.259371	16.91857	12.35919

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

The optimum lag test criteria in Table 4 shows that the optimum lag in this model is in lag 1. This can be seen from the indications produced by FPE, AIC, SC, and HQ (sign *).

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VI. RESEARCH RESULTS

1) Impulse Response Function (IRF)

IRF works to see how other variables respond in terms of impulses, also called the term innovation or error (e), on the variable. In this study will be seen how the response has experienced financial performance variables (ROA and ROE) in terms of liquidity shock surprises (CAR, LR, CR and FDR).

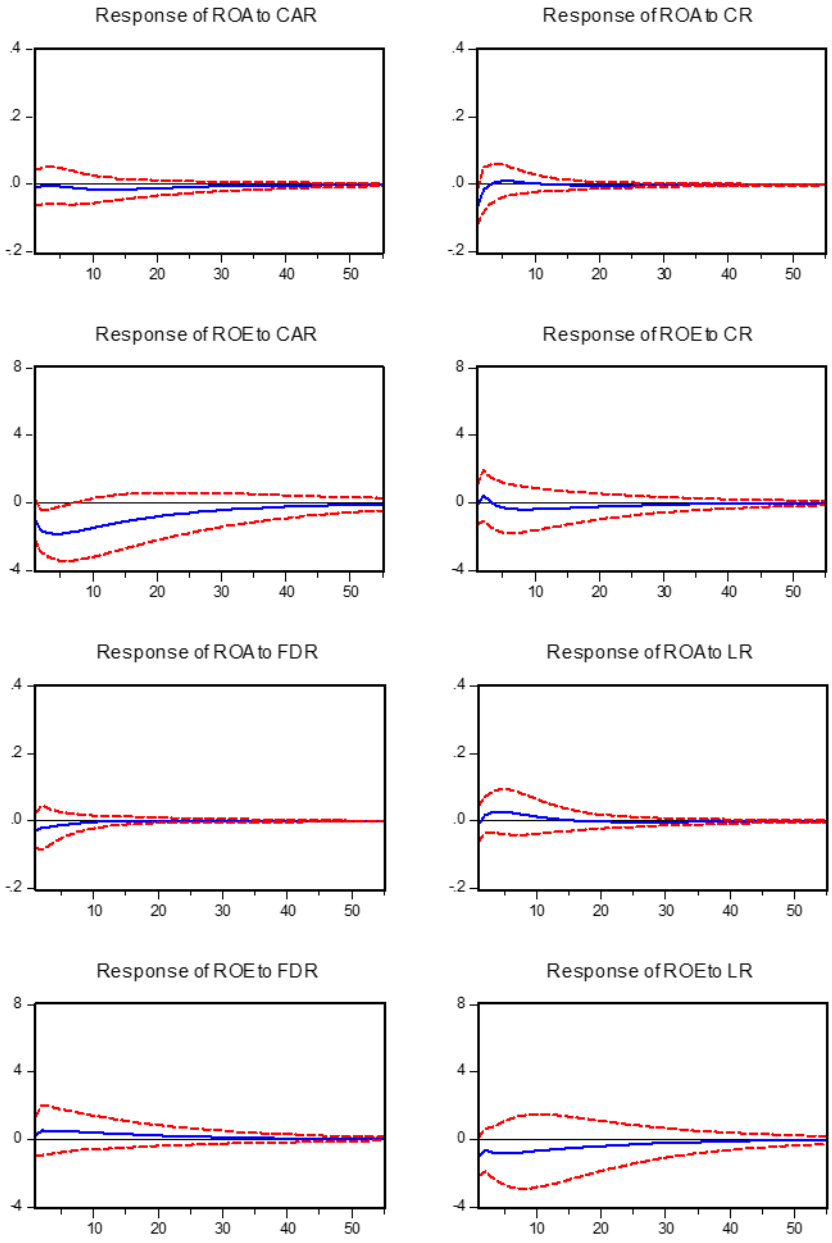

Figure 1: Impulse Response Function (IRF)

From the result of Impulse Response Function can be seen that the shock that happened to the liquidity variable on financial performance of Islamic banking in Indonesia can be summarized in the following table.

Table 5: Conclusion Decision of Impulse Response Function

Impact	*Variables Shocks*							
	CAR		*LR*		*CR*		*FDR*	
	Respond	*Time*	*Respond*	*Time*	*Respond*	*Time*	*Respond*	*Time*
ROA	Modest	45	Modest	40	Modest	30	Modest	25
ROE	High	55	Modest	55	High	55	High	50

Based on Table 5, it can be explained that among the largest financial performance variables affected by the shock that occurs in the liquidity variables of Islamic banking are the ROE financial performance variables. The impact that ROE receives against the shocks that occur in the liquidity variables of Islamic banking is longer than the ROA receives. Thus, it can be concluded that ROE is heavier if there is a shock to the liquidity variables of Islamic banking as compared to the ROA.

2) Variances Decomposition

Variances Decomposition can be used to see how big the contribution of the variable shock to other variables. Here is the conclusion of Variances Decomposition results in this study.

Table 6: Variance Decomposition Results

Variable	*ROA*	*ROE*
CAR	1,66%	16,52%
FDR	0,95%	1,28%
LR	2,32%	3,69%
CR	2.39%	0.88%

Based on Table 6, it is found that the most dominant liquidity variables contributing to the changes that occurred in the financial performance of the ROA variable were CR. The smallest variable that contributes ROA is FDR, while the ROE variable is CR. Table 6 also shows that CR and LR are more dominant contributing to ROA changes than CAR and FDR. For ROE, CAR and LR variables are more dominant contributing to changes than CR and FDR. Likewise, CAR, FDR, LR and CR are more likely to contribute to a change in ROE than ROA. From this analysis, it can be concluded that ROE is more sensitive than ROA if there are changes in the liquidity variables of Islamic banking in Indonesia. Similarly, ROA and ROE are more sensitive to changes occurring in liquidity components than existing capital components. Therefore, Islamic banks in Indonesia respond to changes that occur on the asset side, in particular, liquidity when compared to changes in liabilities, in particular capital.

From the results of this study, it is found that the liquidity factor will affect the level of banking capital. This shows that Islamic banking in Indonesia needs to maintain its liquidity levels in a position that does not affect the level of capital that is owned. If liquidity balances are not maintained, it will affect the erosion of Islamic banking capital in Indonesia. Finally, with a small capital ratio, Islamic banking in Indonesia has the potential to experience liquidity and operational risks. Likewise, if the liquidity management is well implemented, it will have a greater impact on Islamic bank capital in Indonesia. This suggests that liquidity management can have a positive and negative impact on financial performance, particularly the capital for Islamic banks in Indonesia. Therefore,

Islamic banks in Indonesia must make liquidity management a priority in order to maintain a good level of capital and good financial performance, particularly CR, LR and CAR ratio management. Other efforts that can be seen from the results of this study are; in good liquidity management, Islamic banks in Indonesia can use capital variables or variable management in liabilities as instruments to offset liquidity as opposed to the variables available on the assets side.

VII. CONCLUSION

The purpose of this study is to answer the problem of the study, namely what are the liquidity factors that affect the financial performance of Islamic banking in Indonesia. Results based on Impulse Response Function's results indicate that the shock in the CAR, CR, LR and FDR liquidity variables has a higher impact on ROE's financial performance than ROA, which takes about 45 months. In addition, based on the results of the Decomposition Variance, it was found that the CR and LR variables were the largest contributor to the ROA of 4.71%. Meanwhile, CAR and LR variables are the largest contributor to ROE by 20.21%. The overall results of this study indicate that liquidity factors that have a significant influence on the financial performance of the Islamic banking industry in Indonesia are CAR, CR and LR. It is a requirement for banking institutions to control those variables properly so that the financial performance of the Islamic banking industry in Indonesia can be enhanced.

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