TECHNIUM
SOCIAL SCIENCES JOURNAL

Vol. 27, 2022

A new decade for social changes

www.techniumscience.com

ISSN 2668-7798

9 772668 779000

The effect of asset quality, profit and loss sharing on Sharia Banking Liquidity in Indonesia

Anggraeni¹, Yulis Maulida Berniz²

Universitas Peradaban

anggre.angge01@gmail.com, esha816@yahoo.com

Abstract. This study aims to determine the effect of asset quality variables (Non-Performing Financing), Profit and Loss Sharing (profit-loss sharing investment and profit-sharing investment account), capital adequacy ratio, bank size and return on assets on Islamic banking liquidity in Indonesia. The analysis was conducted using a sample of 7 Islamic commercial banks from the period March 2015 to December 2019. This study uses 2 multiple regression models of panel data with the results showing that Non-Performing Financing, profit-loss sharing investment, bank size, affect the liquidity of Islamic banks. , then for-profit sharing investment account, capital adequacy ratio, return on assets, does not affect the liquidity of Islamic banks.

Keywords. Liquidity, Non Performing Financing, Profit and Loss Sharing, Capital Adequacy Ratio, Bank Size, Return On Assets

Introduction

In Indonesia, there are two systems of banking. It is not only conventional banking system but there is also Islamic banking system. The Act Number 21 Year 2008 states that Islamic banks are banks that carry out their business activities based on sharia principles. Sharia principles are the principles used in banking activities based on the Islamic guidelines. The provisions of sharia principles are designed based on the provisions that are issued by an institution having right in determining fatwa (a legal opinion based on the Islamic point of view). The Islamic bank that was firstly established in Indonesia was Bank Muamalat Indonesia. The Islamic banking sector in Indonesia grew significantly since the Government of Indonesia through Bank Indonesia issued various policies, especially the change of the Act Number 7/1992 to be the Act Number 10/1998 on banking. The Act states that Islamic banking practices are recognized as one of the component of national banking practices. In addition, the rapid growth of the Islamic banking was influenced by the license issued by Bank Indonesia allowing conventional banks to build a sharia business unit. Thenceforth, Islamic banks have operated in various regions.

Sharia bank business activities cannot be separated from bank liquidity. Liquidity is important for Islamic banks since with the liquidity, banks can fulfill the immediate needs. In addition, banks can fulfill customers who will carry out financing and meet the possibility of withdrawing deposits by depositors. Liquidity refers to the amount of capital available for

investments as well as expenses. On the other hand, for banks, liquidity represents the ability to meet the demand of due date credit and debt. Meanwhile, liquidity risk is the lack of liquidity required by banks to fulfill their obligations. For banks, the lack of liquidity is seen as one of the failure factors. The liquidity environment quite important in terms of mitigating the expected and unexpected balance sheet movements as well as providing resources for the development of the bank. Bank liquidity is a determining factor whether a bank is healthy or not in paying its debts, especially short-term debts. When there is a little problem happened in an unhealthy bank, depositors will tend to withdraw their fund and this situation makes the bank getting worse. Bank management must be improved to be better so that it will increase the trust of the public especially customers saving their money in the bank.

In 2019, the liquidity of Islamic banks in Indonesia was in a shortage. The lack of liquidity occurs since there are many foreign funds entering the stock market. Meanwhile, at this moment, the stock market index will be increasing. The movement of funds from banks to the capital market makes the banks short of funds or cash. In addition, liquidity occurs due to the value of non-performing financing (NPF) moves up and down¹. When the NPF moves up, the liquidity will decrease as well as be in liquidity risk condition, and vice versa. NPF is a proxy use to see the asset quality of Islamic banks. The higher the NPF, the lower the asset quality of the bank will be and vice versa.

Table 1. The NPF value of Sharia Banks from 2015 to 2109.

Tahun	NPF
2015	4,84 %
2016	4,42 %
2017	4,76 %
2018 (December)	3,26 %
2019 (January)	3,39 %
2019 (February)	3,44 %
2019(March)	3,44 %
2019 (April)	3,58 %
2019 (May)	3,49 %
2019(June)	3,36 %
2019 (July)	3,36 %
2019 (August)	3,44 %
2019 (September)	3,32 %
2019 (October)	3,49 %
2019 (November)	3,47 %
2019 (December)	3,23 %

Source: Otoritas Jasa Keuangan

The table above explains the value of non-performing financing (NPF) at Islamic commercial banks. It can be seen that from 2015 to December 2019 the NPF value turns down. In 2015 the NPF value was almost reaching the maximum level of NPF value allowed by Bank Indonesia (5%). When the NPF is getting smaller, the healthy level of a bank is getting better due to the lack of financing that cannot be repaid, where this condition is an unfavorable sign in a bank. This can also affect the liquidity of the bank. In the other way around, the quality of financing is poor when the NPF value of a bank is high or increasing. Again, the asset quality is significantly influencing a bank's liquidity. Unlike conventional banks, Islamic banks have

different business model as their bank activities can be distinguished by profit and loss sharing (PLS) in terms of assets (*musyarakah and mudharabah*) and liabilities (investment deposit accounts). Although the profit-sharing system may affect the liquidity of sharia banks, the interest banking system of conventional banks is riskier and more fluctuating. To provide benefits to customers, Islamic banks apply profit sharing system while conventional banks rely on interest system. At the beginning of 2016, the principle of profit sharing had not any significant developments. This happens since the Islamic banking's financing is merely focusing on *murabahah* financing. On the other hand, financing based on the principle of profit sharing such as *musharaka* and *mudharabah* is difficult to be implemented due to the transparency requirement. Additionally, profit-sharing financing has a big risk. Meanwhile, the risk of *murabahah* financing is low and still dominating the Islamic bank financing in 2019 compared to *musyarakah* and *mudharabah* financing. In implementing a profit and loss sharing system, Islamic banks have more liquidity risk since in financing long-term profit and loss sharing, they often use short-term deposits. The intermediation function of profit and loss sharing may lead to limitations in terms of liquidity and a shortage of funding sources. This must be noticed by Islamic banks to strengthen their liquidity management so that they can avoid the liquidity risk.

Moreover, another problem faced by Islamic banks is limited capital. The only sharia bank owning a capital up to Rp9 trillion is Bank Syariah Mandiri. Then, some other sharia banks such as Bank Muamalat Indonesia, Bank Mega Syariah, BRI Syariah, BNI Syariah, BCA Syariah, Bank Panin Syariah, Bank BTPN Syariah, Bank Aceh Syariah, Bank NTB Syariah have a capital of Rp1 trillion to Rp5 trillion. Meanwhile, Bank Syariah Bukopin, bank jabar Banten Syariah, Bank Victoria Syariah, and Bank Net Indonesia Syariah have only a capital under Rp1 trillion. That is the picture of the total capital of Islamic commercial banks in Indonesia. The value of liquidity of a bank will be influenced by the composition of the capital owned by the bank. When the bank has too high liquidity, the cash will only settle. There are three state-owned Islamic banks which will be merged in 2021. The only state-owned Islamic banks that will be merged are those holding the status of Islamic commercial banks such as BRI Syariah, Mandiri Syariah Bank, and BNI Syariah Bank. This is good news for the world of Islamic banking since through the merger of the three banks, it is expected that the liquidity will be stronger as well as the capital. Thus, it can increase the competitiveness of the banks after mergering. The post-merger bank financing capability is getting bigger and stronger so that it will give a positive impact on the national economy.

Furthermore, a bank size can also affect the liquidity of Islamic banks because the bigger size of a bank, the better capacity to build a large market share and generate higher profits will be. However, large banks will also face higher liquidity risk. Islamic banks emerge to be the competitors of conventional banks where Islamic banks have different system from the conventional banks in terms of carrying out of their business activities. Yet, actually, Islamic banks still share the same similarity to the conventional banks as they are looking for profit too. Profitability can be measured by the ratio of return on assets. Thus, the assessment of the effectiveness of bank management in generating profits can use the ratio of return on assets (ROA). Likewise, ROA can also affect the liquidity of a bank. When a bank is able to generate profits, the bank can provide sufficient liquidity like in providing financing for the community.

Regarding to the problems, the liquidity management of Islamic banks must be improved so that banks will not have high liquidity risk. The liquidity of Islamic banks must be sufficient unless it will interfere the needs of banking activities. Likewise, liquidity should not be too loose or large which may decrease the efficiency of a bank and affect the profits to be obtained

by the bank. Liquidity management of Islamic banks is more difficult than conventional banks since most of the instruments used in liquidity management are interest-based in which interest is something forbidden in Islamic law.

Review of literature

1. The Definition of Islamic Bank

Islamic banks are established intentionally to promote and develop the use of sharia principles and its culture in the monetary business, banking, and other related organizations. The fundamental standards of Islamic banks are:

- a. Not allowed to use usury for all types of transactions.
- b. Directing business and exchange activities depending on sharia-compliant legitimate benefits.
- c. Give zakat.

2. Bank Liquidity

Liquidity is mostly defined as the ownership of sufficient sources of assets to address any problems, needs, or a company's capacity to meet its obligations either regular or sudden situation. Overall, liquidity capacity is to carry out daily transactions, meet the demand of needs, meet customer interests, and provide the ability to take profits.

3. Bank Liquidity Risk

Liquidity risk is a danger. Thus, it represents the inability of banks to meet the growing commitments from sources of income from the sources of income subsidies or cash flow funding resources that can be utilized without disrupting major financial activities and conditions.

4. Asset Quality

Asset quality is the total absolute assets owned by a bank in the hope of gaining income as expected. One of the asset quality calculations used by SEBI/No.7/10/DPNP dated March 13 2005 about Ratings and Rating Agencies recognized by Bank Indonesia is NPF. This proportion shows the nature of the source of credit. If the collectability is unacceptable, doubtful, and non-performing of all general financing, the bank faces problematic credit or financing.

5. Profit and Loss Sharing

In order to pay and receive premiums in completing financing activities, Islamic banks use a profit and loss sharing investment method. This method is used in order to meet the needs of capital (equity financing). In addition, they use a buying and selling method for fee-based investment in order to meet the needs of financing (debt financing). The type of equity financing consists of two types of agreements namely musyarakah (shared revenue sharing) and mudharabah (profit sharing trustees). Then, the buying and selling strategy is used to do debt financing quickly (cash) or intensely. The parties conducting financial transactions are obliged to share the risks and benefits together. Financial intermediaries specifically for Islamic banks are participatory intermediaries based on profit and loss sharing (PLS) on both sides of assets and liabilities. It consists of musharaka and mudharabah financing that use funds from an "investment deposit account". On the liability side, the PLS principle is applied through a profit-sharing investment account (PSIA) which is specifically intended for Islamic banks. Unlike the conventional bank deposits, the contractual relationship between Islamic banks and the investment account holders (IAHs) e.g. PSIA holders, called mudharabah, is based on the PLS concept. Here, profit and loss sharing means sharing profits and losses which may arise from financial/business activities being shared. The characteristic of the proportion of profit sharing

is that there is no definite return such as interest, yet the distribution of profits and losses is carried out depending on the actual efficiency of the goods.

6. Capital Adequacy Ratio (CAR)

CAR is a bank's capacity to meet its capital requirements and maintain its capital adequacy. The bank has a management capacity to identify, measure, direct, and control emerging risks that can affect the size of capital. The calculation of CAR depends on the rule that every business carrying risks must be equipped with a capital size at a certain level of speculative number of investors.

7. Bank Size

Bank size is an action used to group company/bank sizes based on two different ways namely using total assets and financial exchange rates. Company size is divided into three classes: large, medium, and small companies.

8. Return on Asset (ROA)

Return on assets is the act of comparing profits after tax to the total assets owned by a bank. Return on assets shows a company's capacity to take the advantage of each activity that needs to be done more after costs. When the ROA is large, the company is already effective in using its assets.

Formulation of research hypothesis

1. The effect of Non-Performing Financing (NPF) on the liquidity (LIQ) of Islamic banks.

Non-performing financing is a default (financing) that does not result in repayment. The size of the NPF will affect productivity since it can reduce profits during the valid period of a year. The value of a large NPF will affect the implementation of bank intermediary that is actually not ideal due to the decrease of banks' freedom in obtaining payments. Additionally, the liquidity of Islamic banks will decrease when a bank has insufficient assets. The lower the NPF due to the absence of financing default, the better the level of banks' welfare will be. Financing default at a bank is a bad sign, and it affects the health of bank liquidity, and vice versa. Increasing NPF may give a negative impact on a bank. Banks will get losses when the number of non-performing financing increases. Thus, the liquidity of Islamic banks ought to be reduced. A high non-performing financing ratio refers to the number of bad loans. If banks continue to lose out due to bad loans, they will eventually be having liquidity risk. NPF has a significantly positive effect on the liquidity risk of Islamic banking in Indonesia. Regarding to the explanation, the following hypothesis can be formulated:

H1: NPF affects the liquidity of Islamic banks.

2. The effect of profit and loss sharing on the liquidity (LIQ) of Islamic banks.

Profit and loss sharing are measured by using two proxies:

a. The effect of profit loss sharing investment (PLSinv) on the liquidity (LIQ) of Islamic banks.

The emergence of liquidity risk occurs due to the delay or the absence of repayment during or at the end of the contract. Investments based on PLS cause a significant market, liquidity, and other risks as they lead to volatility in income and capital. Liquidity risk arises in both mudharabah and musharakah financial products. For example, in restricted mudharabah investment accounts, it requires a healthy payment capacity since the lender has the right to withdraw his funds anytime. Another example can be seen from musyarakah financing in which the bank must be able to provide commitment funds and pay partnership fees/benefits to customers. The investment ratio based on PLS to total assets has an effect on the liquidity of

Islamic banks. Hence, mudharabah and musyarakah financing have a positive effect on liquidity. Based on this description, it can be drawn a hypothesis as follows:

H2a: PLSinv has an effect on the liquidity of Islamic banks.

b. The effect of profit sharing investment account (PSIA) on the liquidity (LIQ) of Islamic banks.

In point of view of maturity transformation, PLS intermediation is more exposed to liquidity risk. This happens due to the frequent use of short-term deposits to enable long-term musyarakah and mudharabah financing by Islamic banks. Profit-sharing investment accounts (both limited and unlimited PSIA) have an inversely proportional effect on liquidity. The accounts constitute becomes a liquidity constraint of Islamic banks. Since PSIA deposits financed projects over a long period of time, the differential mismatch decreases the liquidity of Islamic banks and it causes a worse exposure to the liquidity risk. Liquidity risk emerges if the bank is unable to meet the liquidity demands of its depositors. Thus, high use of deposits increases the bank's exposures to liquidity risk. Compared to conventional banks, Islamic banks face a greater risk of withdrawal of deposits as they may pay less returns to their PSIA depositors. Liquidity arises in mudharabah financial products such as mudharabah muqayyah in restricted mudharabah investment accounts. It is required a healthy payment capacity since the lender has the right to withdraw his/her funds anytime. Referring to this explanation, a hypothesis is formulated as follows:

H2b: PSIA has an effect on the liquidity of Islamic banks.

3. The effect of Capital Adequacy Ratio (CAR) on liquidity (LIQ) of Islamic banks.

CAR is a ratio used to see the adequacy claimed by a bank to help resources potentially having or generating risks. A large CAR indicated that the bank has a lot of capital so that it can be used to pay on time and has lower risks. Based on the exploration, it shows that CAR has a favorable result against the liquidity risk of Islamic banking in Indonesia. The higher the value of the CAR, the higher the liquidity risk of a bank will be. Too high liquidity owned by Islamic banks causes the cash to stay settle. CAR has a significant effect on liquidity risk with a 99% of certainty level. Correspondingly, other studies confirmed that CAR was also having a positive effect on the liquidity of Islamic banks. Referring the description, the following hypothesis is formulated:

H3: CAR affects the liquidity of Islamic banks.

4. The effect of Bank Size on the liquidity (LIQ) of Islamic banks.

The natural logarithm (Ln) of total assets can be used to see the size of a bank as well as its needs by looking at its assets. In addition, balance sheet can show the situation of the bank's use of its assets. The greater the assets owned by the bank, the higher the bank's liquid assets will be. Thus, assets totally affect the bank's liquidity. Liquidity risk is significantly and positively affected by the size of the bank. The bigger the size of the bank, the better ability to build a large market share and generate higher profits the bank does. Likewise, the largest the Islamic bank, the higher the liquidity risk the bank has. In this case, bank liquidity is significantly affected by the size of the bank with a significance level of 5%. Truly, the total assets owned by a bank can be used to predict the bank's size precisely. Thus, if a bank has lot of assets, the bank is certainly having a good capacity. Subsequently, a bank with lots of assets will earn greater profitability. Thus, the profitability can be used to pay off debts owned by the bank. A bank with a large size is more preferred by public/customers since the bank can provide wider range of financial services. Therefore, a hypothesis can be formulated as follows:

H4: The bank size affects on the liquidity of Islamic banks.

5. The effect of Return on Assets (ROA) on the liquidity (LIQ) of Islamic banks

ROA affects bank liquidity. When a bank is able to earn profits, it means that the bank is able to provide sufficient liquidity. For example, a bank provides financing for society/public. A high profitability indicates that the bank's profits are high. Thus, the bank has a potency for generating abundant cash and cash equivalents which can be used by the bank as a source of liquidity. ROA has a significantly positive relationship with liquidity risk. This happens because each of transaction in Islamic banks must be backed up by assets rather than money. Thus, the higher the return on asset, the better the liquidity position of Islamic banks have. ROA in Islamic banks has a positive and significant effect due to the great performance on the elements of assets and returns. Likewise, this confirms that banks will be in good condition in terms of their profitability and liquidity risk. Moreover, based on the level of assets, bank management can distribute the assets into two different categories namely high-liquid assets with low returns and illiquid assets with high returns. When a bank shifts its portfolio to more profitable assets for the sake of increasing its income, the bank faces greater liquidity risk. Regarding to the explanation, the following hypothesis is formulated:

H5: ROA affects the liquidity of Islamic banks.

Research method

This study was categorized as a quantitative research. The population used in this study was 14 Indonesian Islamic commercial banks registered in Financial Services Authority or *Otoritas Jasa Keuangan (OJK)*. The observation was conducted within the period of March 2015 until December 2019. This study used purposive sampling where a sample was selected based on particular criteria. Subsequently, there were 7 Islamic commercial banks meeting the criteria. In terms of data sources, this study employed secondary data in the form of quarterly reports of Islamic commercial banks issued by the Financial Services Authority and the websites of each Islamic commercial bank published from March 2015 to December 2019. Additionally, other data were collected from journal articles and books. Furthermore, the data collection techniques used in this study were literature study and documentation data.

No.	Variable Name	Variable Operational Definition
1.	Liquidity (Y)	Liquidity is proxied by comparing cash to total assets. $LIQ = \frac{\text{Cash}}{\text{Total Asset}}$
2.	Asset Quality (X1)	Asset quality is proxied by the ratio of Non-Performing Financing (NPF). NPF is a comparison between the total of Non-Performing Financing and the total of financing provided to debtors. $NPF = \frac{\text{Problematic Financing}}{\text{Total Financing}} \times 100$
3.	Profit and loss sharing (PLS)(X2)	Measured by using two proxies namely Profit Loss Sharing Investment and Profit Sharing Investment Account.
4.	Profit Loss Sharing Investement (PLSinv) (X2a)	Profit loss sharing investment is proxied by comparing PLS investment to total assets. PLS in this asset consists of musyarakah and mudharabah financing. $PLSinv = \frac{\text{Profit Loss Sharing nvestment}}{\text{Total Asset}}$

5.	Profit Sharing Investment Account (PSIA)	Profit sharing investment account is proxied by comparing profit sharing investment account to total deposits. On the liability side, the PLS principle is applied through profit sharing investment accounts (PSIA). The contractual relationship between Islamic banks and investment account holders (IAH), i.e. PSIA holders, called mudharabah, is based on the PLS concept. $PSIA = \frac{\text{Profit Sharing Investment Account}}{\text{Total Deposit}}$
6.	Capital Adequacy Ratio(CAR)(X3)	CAR is measured through capital tier 1 plus capital tier 2 against Risk-Weight Assets (RWA). $CAR = \frac{\text{Capital Tier 1} + \text{Capital Tier 2}}{\text{RWA}}$
7.	Bank size (Size) (X4)	Bank size is measured by using the logarithm of total assets. $\text{Size} = \text{Log total asset}$
8.	Return on Asset(ROA) (X5)	The variable of return on assets is measured by comparing profit after tax to total assets. $ROA = \frac{\text{Profit after Tax}}{\text{Total Asset}}$

Data Analysis

To explain the relationship between dependent variable and independent variable, panel data regression model was used in this study. The model is presented as follows:

Model 1:

$$LIQ_{it} = \beta_0 + \beta_1 NPF_{it} + \beta_2 PLS_{it} + \beta_3 CAR_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + e_{it} \dots \dots \dots (1)$$

Model 2:

$$LIQ_{it} = \beta_0 + \beta_1 NPF_{it} + \beta_2 PSIA_{it} + \beta_3 CAR_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + e_{it} \dots \dots \dots (2)$$

Data were analyzed through descriptive analysis and panel data regression analysis using Eviews 9 program. To select the panel data regression estimation technique, two tests were used namely the significance test of the fixed effect model and the Hausman test. In addition, the classical assumption test of this study relied on the normality test by looking at the probability value of the jargue Bera test $\alpha > 0.1$, the heteroscedasticity test using the Glejser test, the multicollinearity test by looking at the correlation coefficient less than 0.8 and the autocorrelation test using the Durbin-Watson test (DW test) in which the value lies between -2 to +2. Other tests used to test the hypothesis are the T test, F test, and the coefficient of determination (R²). The test was carried out with a confidence level of 90% or a significance of 0.1.

Descriptive Analysis

The aim of this study was to determine the effect of asset quality (NPF), profit and loss sharing, capital adequacy ratio, size, and return on assets on Islamic banking liquidity in Indonesia. The result of the descriptive analysis is presented as follows:

Table 2. Descriptive Statistics

	LIQ	NPF	PLSINV	PSIA	CAR	SIZE	ROA
Mean	0.008521	2.790143	0.341498	1.280924	0.189891	30.62504	0.002389
Maximum	0.023799	7.110000	0.742687	1.975321	0.437830	32.35212	0.012068
Minimum	0.000558	0.040000	0.126977	0.001424	0.065307	28.74367	-0.112275
Std. Dev.	0.006014	1.636171	0.157229	0.313434	0.074339	1.039578	0.010136
Observations	140	140	140	140	140	140	140

Source: Data were processed by the authors, Eviews (2021)

Based on the table 2 above, there were 140 data gained from observations. The data were taken from the Financial Services Authority and the website of each Islamic commercial bank. The liq variable shows that the standard deviation is smaller than the mean value and this shows a low data variation (homogeneous). The maximum value of the liq variable was obtained from Bank Syariah Mandiri in 2015 quarter II (June) while the minimum value of the liq variable was obtained from Bank BCA Syariah in 2018 quarter IV (December). In the same way, the NPF variable shows that the standard deviation is smaller than the mean value which indicates a low data variation (homogeneous). The maximum value of the NPF variable was obtained from Bank Muamalat Indonesia in 2015 quarter IV (December) while the minimum value of the NPF variable was obtained from Bank BCA Syariah in 2017 quarter IV (December). Then, the PLSinv variable shows that the standard deviation is smaller than the mean value indicating a low data variation (homogeneous). The maximum value of the PLSinv variable was obtained from Bank Panin Dubai Syariah in the third quarter of 2019 (September) while the minimum value of the PLSinv variable was obtained from BNI Syariah in the first quarter of 2011 (March). Next, the PSIA variable shows that the standard deviation is smaller than the mean value which means a low data variation (homogeneous). The maximum value of the PSIA variable was obtained from BNI Syariah in the second quarter of 2019 (June) while the minimum value of the PSIA variable was obtained from Bank Muamalat Indonesia in the first quarter of 2019 (March). Similarly, the CAR variable shows that the standard deviation is smaller than the mean value signaling low data variation (homogeneous). The maximum value of the CAR variable was obtained from BCA Syariah in the third quarter of 2019 (September) while the minimum value of the CAR variable was obtained from Bank Syariah Mandiri in the first quarter of 2015 (March). Likewise, size variable indicates the same condition as the standard deviation is smaller than the mean value and it shows a low data variation (homogeneous). The maximum value of the size variable was obtained from Bank Syariah Mandiri in the fourth quarter of 2019 (December) while the minimum value of the size variable was obtained from Bank BCA Syariah in the first quarter of 2015 (March). Meanwhile, the ROA variable shows different condition as the standard deviation is greater than the mean value indicating a high data variation (heterogeneous). In this case, the maximum value of the ROA variable was obtained from BNI Syariah in the fourth quarter of 2019 while the minimum value of the ROA variable was obtained from Bank Panin Dubai Syariah in the fourth quarter of 2017 (December).

Panel Data Regression Analysis

Model 1: The effect of non-performing financing, profit loss sharing investment, capital adequacy ration, size, and return on assets on liquidity.

Based on the results of the selection of panel data regression estimation techniques and the classical assumption test, fixed effect regression was selected to be this first model of this study in which GLS Weight and cross-section SUR were used to be its approach. Meanwhile, to deal with the classical assumption test, data transformation in the form of natural logarithm was employed. The following are the results of the panel data regression analysis model 1.

Table 3. The Results of the Panel Data Regression Analysis Model 1.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	70.57578	9.153021	7.710654	0.0000
LNNPF	0.118953	0.026546	4.480921	0.0000
LNPLSINV	0.386934	0.094408	4.098555	0.0001
LNCAR	0.073038	0.050114	1.457448	0.1474
LNSIZE	-21.98119	2.659436	-8.265356	0.0000
LNROA	0.464765	0.894310	0.519691	0.6042

Source: Data were processed by the authors, Eviews (2021)

Based on the table 3 above, the regression equation for model 1 is presented as follows.

$$\text{LNLIQ} = 70,57578 + 0,118953 * \text{LNNPF} + 0,386934 * \text{LNPLSINV} + 0,073038 * \text{LNCAR} - 21,98119 * \text{LNSIZE} + 0,464765 * \text{LNROA}$$

The equation above shows that non-performing financing (NPF), profit loss sharing investment (PLSinv), capital adequacy ratio (CAR), and return on assets (ROA) will increase the value of liquidity while size will decrease the value of liquidity. The NPF, PLSinv, and size variables have a significant effect on liquidity while CAR and ROA have no effect on liquidity. The value of R2 in model 1 shows that the influence of the NPF, PLSinv, size, and ROA variables on liquidity is 0,956968 (95,70%) while the rest (4.30%) is explained by other independent variables outside of the model.

Model 2: The effect of non-performing financing, profit sharing investment account, capital adequacy ration, size, and return on assets on liquidity.

Based on the results of the selection of panel data regression estimation techniques and the classical assumption test, fixed effect regression was also selected to be this second model of this study in which GLS Weight and cross-section SUR were used to be its approach. Meanwhile, to deal with the classical assumption test, data transformation in the form of natural logarithm was employed. The following are the results of the panel data regression analysis model 2:

Table 4. The Results of the Panel Data Regression Analysis Model 2.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	56.57179	7.390903	7.654246	0.0000
LNNPF	0.110019	0.026559	4.142466	0.0001
LNPSIA	0.026440	0.020235	1.306651	0.1937
LNCAR	0.035191	0.051932	0.677626	0.4992
LNSIZE	-18.03868	2.150601	-8.387740	0.0000
LNROA	0.932267	0.879415	1.060099	0.2911

Source: Data were processed by the authors, Eviews (2021)

Based on the table 4 above, the regression equation for model 2 is presented as follows.

$$\text{LNLIQ} = 56,57179 + 0,110019 * \text{LNNPF} + 0,026440 * \text{LNPSIA} + 0,035191 * \text{LNCAR} - 18,035191 * \text{LNSIZE} + 0,932267 * \text{LNROA}$$

The equation above shows that non-performing financing (NPF), profit sharing investment account (PSIA), capital adequacy ratio (CAR), and return on assets (ROA) will increase the value of liquidity while size will decrease the value of liquidity. The NPF and size variables have significant effect on liquidity while PSIA, CAR, and ROA have no effect on liquidity. The value of R2 in model 2 shows that the effect of the NPF, PSIA, CAR, size, and ROA variables

on liquidity is 0,966142 (96,61%) while the rest (3.39%) is explained by other dependent variables outside of the model.

Discussions

Based on the result of the previous panel data regression analysis, it shows that both models of the asset quality variable (NPF) affect liquidity with a positive relationship. The result of this study supports a previous study conducted by Effendi and Disman (2017) confirming that NPF variable affects the liquidity of Islamic banks. This happens when the NPF value and liquidity value go together to increase. An increasing NPF indicates low asset quality. Although Islamic banks have low asset quality, their liquidity will keep increasing as long as they have high income. The income owned by the Islamic banks does not only come from financing but also from other financial products such as sharia savings, sharia deposits, sharia pawning, and sharia giro. With other incomes excluding the financing income, the banks have sufficient liquidity. Thus, when there is sufficient liquidity, Islamic banks will be kept away from liquidity risk. Profit and loss sharing variables are measured through 2 proxies. The first is that profit loss sharing investment affects the liquidity of Islamic banks positively. This result is in accordance with a study conducted by Abdullah and Khan (2012) stating that investment ratio was based on PLS of total assets in which it affects the liquidity of Islamic banks. In other words, when customer demand for financing increases, Islamic banks provide profit-sharing financing for people who need it. In this case, the banks' profits will increase based on the financing carried out. Thus, these profits can be used to pay the banks' due date debts and this makes the banks to be kept away from liquidity risk. Meanwhile, the second proxy is that profit sharing investment account does not affect the liquidity of Islamic banks. Correspondingly, this result supports the previous study conducted by Ali (2013). The study confirmed that through profit and loss sharing, there would be no risk arising from the liability side. This happened since there was no regular/routine return obliged to depositors under normal circumstances. Furthermore, the capital adequacy ratio variable in both models has no effect on the liquidity of Islamic banks. This happens since the average of the capital adequacy ratio value of Islamic commercial banks in the period of March 2015 to December 2019 is above 8%. Thus, the banks were able to maintain capital ability as well as cover any losses. Therefore, they would have sufficient liquidity. In terms of size variable, within the two models it affects the liquidity of Islamic banks negatively. This result corresponds to research conducted by Jaiz (2020) claiming that bank size affects the liquidity of Islamic banks. In this case, the asset structure affects the amount of profit generated by the banks. If the large number of assets is coming from current financing in the form of account receivables, the income will increase. Yet, if a large income comes from non-current financing, the liquidity will decrease. Similarly, ROA has no effect on liquidity. This happens since within the period of observation Islamic commercial banks may not use too many liquid assets to fulfill their obligations. Therefore, ROA does not affect the liquidity of Islamic banks.

Conclusion

1. Asset quality measured through non-performing financing has a positive effect on the liquidity of Islamic commercial banks in Indonesia.
2. Profit and loss sharing is measured using two proxies: profit loss sharing investment and profit sharing investment account. The first proxy result shows that profit loss sharing investment has a positive effect on the liquidity of Islamic commercial banks in Indonesia.

Meanwhile, the second proxy result confirms that profit sharing investment account has no effect on the liquidity of Islamic commercial banks in Indonesia.

3. Capital adequacy ratio does not have a positive effect on the liquidity of Islamic commercial banks in Indonesia.
4. Bank size measured by size has a negative effect on the liquidity of Islamic commercial banks in Indonesia.
5. Return on asset has no effect on the liquidity of Islamic commercial banks in Indonesia.

References

- [1] Abdullah, Asim., & Khan, A.Q. (2012). Liquidity Risk Management: A Comparative Study Between Domestic and Foreign Banks in Pakistan. *Journal of Managerial Sciences*.
- [2] Abdul-Rahman, A., Said, N. L. H. M., & Sulaiman, A. A. (2016). Financing Structure and Liquidity Risk: Lesson From Malaysian Experience. *Journal of Central Banking Theory and Practice*, 6(2), 125-148.
- [3] Afkar, T. (2017). Pengaruh Profitabilitas Terhadap Likuiditas Bank Umum Syariah di Indonesia. In *Seminar Nasional Hasil Penelitian Universitas Kanjuruhan Malang* (Vol. 1, No. 1, pp. 629-638).
- [4] Akhtar, M. F., Ali, K., & Sadaqat, S. (2011). Liquidity Risk Management: A Comparative Study Between Conventional and Islamic Banks of Pakistan. *Interdisciplinary journal of research in business*, 1(1), 35-44
- [5] Al-Harbi, A. (2017). Determinates of Islamic Banks Liquidity. *Journal of Islamic Accounting and Business Research*.
- [6] Ali, S. S. (2013). State of liquidity management in Islamic financial institutions. *Islamic Economic Studies*, 21(1).
- [7] Almunawwaroh, M., & Marlina, R. (2018). Pengaruh CAR, NPF dan FDR Terhadap Profitabilitas Bank Syariah di Indonesia. *Amwaluna: Jurnal Ekonomi Dan Keuangan Syariah*, 2(1), 1-17.
- [8] Alzoubi, T. (2017). Determinants of Liquidity Risk in Islamic Banks. *Banks & bank systems*, (12, № 3), 142-148.
- [9] Bani, F., & Yaya, R. (2016). Risiko Likuiditas pada Perbankan Konvensional dan Syariah di Indonesia. *Jurnal Riset Akuntansi & Bisnis* Vol. 16 No. 1, 1-26 ISSN 1693, 7597.
- [10] Bank Indonesia. (2007). Surat Edaran Bank Indonesia No. 9/24/DPbS Sistem Penilai Tingkat Kesehatan Bank Umum Berdasarkan Prinsip Syariah. Jakarta: Author.
- [11] Bisnis.com. (2016, 14 Juli). Pembiayaan Syariah: Kinerja Stagnan, Prinsip Bagi Hasil Belum Menonjol. (online). <https://finansial.bisnis.com/read/20160714/90/565925/pembiayaan-syariah-kinerja-stagnan-prinsip-bagi-hasil-belum-menonjol>.
- [12] Bisnis.com. (2019, 15 September). Akad Murabahah Dominasi Pembiayaan Bank Syariah. (online). <https://finansial.bisnis.com/read/20190915/90/1148536/akad-murabahah-dominasi-pembiayaan-bank-syariah>.
- [13] CNN Indonesia. (2019, 04 Juli). Likuiditas Ketat Hantui Bank Syariah. (online). <https://www.cnnindonesia.com/ekonomi/20190704143116-78-409091/likuiditas-ketat-hantui-bank-syariah>.
- [14] Effendi, K. A., & Disman, D. (2017). Liquidity risk: Comparison between Islamic and Conventional Banking.

- [15] Febianto, I. (2012). Adapting Risk Management for Profit and Loss Sharing Financing of Islamic Banks.
- [16] Fitrianiingsih, F., & Siregar, S. (2020, February). Studi Literatur Manajemen dan Risiko Likuiditas pada Bank Syariah. In Seminar Nasional Teknologi Komputer & Sains (SAINTEKS) (Vol. 1, pp.495-498)
- [17] Gautama, B. P., Annisa, R., & Waspada, I. (2018). Pengaruh Kecukupan Modal dan Risiko Kredit Terhadap Likuiditas pada Bank Umum Syariah yang Terdaftar di bank Indonesia. *JPAK: Jurnal Pendidikan Akuntansi dan Keuangan*, 6(2), 77-86.
- [18] Gujarati, D. N. 2013. *Dasar-Dasar Ekonometrika*, Edisi Kelima. Mangunsong, R. C., penerjemah. Jakarta: Salemba Empat.
- [19] Hamza, Hichem., & Saadaoui, Zied. (2013). Investment Deposits, Risk-Taking and Capital Decisions in Islamic Banks. *Studies in Economics and Finance*.
- [20] Ichwan, M. C., & HR, M. N. (2016). Faktor-Faktor yang Berpengaruh Terhadap Likuiditas Bank Syariah. *Jurnal Ekonomi Syariah Teori dan Terapan*, 3(2), 144.
- [21] Ido, G. A. (2016). Analisis Bank Size, LDR, CAR, NPL di Sektor Perbankan yang Terdaftar di Bursa Efek Indonesia. *Artikel Ilmiah, STIE Perbanas Surabaya*, 21
- [22] İncekara, A., & Çetinkaya, H. (2019). Liquidity Risk Management: A Comparative Analysis Of Panel Data Between Islamic and Conventional Banking in Turkey. *Procedia Computer Science*, 158, 955-963.
- [23] Iqbal, Anjum. (2012). Liquidity Risk Management: A Comparative Study Between Conventional and Islamic Banks of Pakistan. *Global Journal of Management and Business Research*.
- [24] Jaiz, D. M. (2020). Pengaruh Capital Adequacy Ratio, Solvabilitas, dan Ukuran Perusahaan terhadap Risiko Likuiditas pada Bank Umum Syariah di Indonesia. *Jurnal Ilmiah Wahana Akuntansi*, 15(2), 107-124.
- [25] Jedidia, K. B. (2020). Profit-and Loss-Sharing Impact on Islamic Bank Liquidity in GCC Countries. *Journal of Islamic Accounting and Business Research*.
- [26] Jedidia, K.B., & Hamza, Hichem. (2014). Profits and Losses Sharing Paradigm in Islamic banks: Constraints or Solutions for Liquidity Management?. *Journal of Islamic Economics, Banking and Finance*.
- [27] Monisa, Cut Dini., & Fadhlia, Wida. (2018). Pengaruh Kinerja Bank, Solvabilitas, Likuiditas dan Non Performing Financing Terhadap Risiko Likuiditas pada Bank Umum Syariah di Indonesia. *Jurnal Ilmiah Mahasiswa Ekonomi Akuntansi (JIMEKA)*.
- [28] Nugroho, L., & Anisa, N. (2018). Pengaruh Manajemen Bank Induk, Kualitas Aset, dan Efisiensi Terhadap Stabilitas Bank Syariah di Indonesia (periode tahun 2013-2017). *Inovbiz: Jurnal Inovasi Bisnis*, 6(2), 114-122.
- [29] Otoritas Jasa Keuangan. (2019a). Laporan Publikasi Bank Umum Syariah. Jakarta: Author
- [30] Otoritas Jasa Keuangan.(2019b). Statistik Perbankan Syariah-Desember 2019. Jakarta: Author
- [31] Pertiwi, S. A., & Prijanto, T. (2020). Analisis Risiko Likuiditas Perbankan Syariah di Indonesia. *JABE (Jurnal Akuntansi, Bisnis dan Ekonomi)*, 7(01), 47-64.
- [32] Retnowati, C. (2016). Pengaruh Pembiayaan Syariah pada Bank Muamalat dan Bank BRI Syariah Terhadap Likuiditas. *Jurnal Ilmu dan Riset Akuntansi (JIRA)*, 5(9).
- [33] Rianto, L., & Salim, S. (2020). Pengaruh ROA, LDR, NIM, dan NPL terhadap Capital Adequacy Ratio (CAR). *Jurnal Paradigma Akuntansi*, 2(3), 1114-1122.
- [34] Santoso, Singgih. (2012). *Latihan Statistik SPSS Parametrik*. Elex Media Komputindo.

- [35] Sholikha, A. F. (2018). Pengaruh Tingkat Suku Bunga, Tingkat Bagi Hasil, Likuiditas, Inflasi, Ukuran Bank, dan Pertumbuhan Produk Domestik Bruto Terhadap Deposito Mudharabah Bank Umum Syariah di Indonesia. *Jurnal Ekonomi Islam| Islamic Economics Journal*, 6(1).
- [36] Sindonews. (2020, 13 Oktober). Tiga Bank Syariah Dimerger, Likuiditas Makin Kuat. (online). <https://ekbis.sindonews.com/read/194626/178/tiga-bank-syariah-dimerger-likuiditas-makin-kuat-1602569410>.
- [37] Sudarmaji, E. (2017). Gauging Liquidity Analysis in Indonesian Islamic Banking: Profit Loss Sharing Risk.
- [38] Susila, J. (2016). Fiduciary Dalam Produk-Produk Perbankan Syariah. *Al-Ahkam Jurnal Ilmu Syari'ah dan Hukum*, 2(2).
- [39] Wild, J.J., Subramayam, K.R., dan Halsey, R.F.. (2010). Analisis Laporan Keuangan. Edisi 10. Salemba Empat:Jakarta
- [40] Zainul Arifin, M.B.A. (2012). Dasar-dasar Manajemen Bank Syariah. Pusata Alvabet.