DO LIQUIDITY AND CAPITAL ADEQUACY RATIO MATTER FOR ISLAMIC BANKS PERFORMANCE IN INDONESIA? AN ANALYSIS USING FINANCING RISK AS MEDIATOR

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ABSTRACT – This study is driven by the inconsistent findings of previous research on assessing the determinants of banks' performance. In addition, financing risk has been indicated as a significant variable in mediating the related research but failed to incorporate in previous research. Therefore, this study aims to assess the role of liquidity and Capital Adequacy Ratio (CAR) on Islamic bank's performance in Indonesia using financing risk as a mediator. Data were collected from 14 samples operating in Indonesia in the period 2013-2019. They were then analyzed using Partial Least Squares – Structural Equation Modelling (PLS-SEM) with Warp PLS 7.0 as a tool of analysis. The results show that variable liquidity (FDR) significantly influences Bank Performance mediated by Financing Risk (NPF). Meanwhile, variable CAR shows no significant influence on Bank Performance even when it was mediated by the Financing Risk variable (NPF). This finding implies that providing short-term financing is more profitable for an Islamic bank than a longer one. This finding is in line with the Commercial Loan Theory, which states that it is better to provide loans in the short term to minimize the possibility of defaults that will impact the bank's performance.
Keywords: Islamic Banking, Commercial Loan Theory, Liquidity, Non-Performing Financing.

ABSTRAK – Apakah Likuiditas dan Rasio Kecukupan Modal mempengaruhi Kinerja Bank Syariah di Indonesia? Suatu Analisis menggunakan Risiko Pembiayaan sebagai Mediator. Penelitian ini didorong oleh tidak konsistennya temuan penelitian sebelumnya dalam menilai determinan kinerja bank. Selain itu, risiko pembiayaan telah terindikasi sebagai variabel yang signifikan dalam memediasi pengaruh beberapa variabel penilaian kinerja bank syariah, tetapi tidak diakomodir dalam penelitian-penelitian sebelumnya. Oleh karena itu, penelitian ini bertujuan untuk menilai peran variabel likuiditas dan CAR terhadap kinerja bank syariah di Indonesia dengan menggunakan risiko pembiayaan sebagai mediator. Data penelitian dikumpulkan dari 14 bank syariah yang beroperasi di Indonesia. Analisis data dilakukan dengan menggunakan PLS-SEM dengan WarpPLS 7.0. Hasil penelitian menunjukkan bahwa likuiditas berpengaruh terhadap kinerja bank bank syariah dengan dimediasi oleh risiko pembiayaan (NPF). Sedangkan variabel CAR tidak menunjukkan pengaruh yang signifikan terhadap kinerja bank syariah walaupun dimediasi oleh NPF. Penelitian mempunyai implikasi bahwa memberikan pembiayaan jangka pendek lebih menguntung bagi bank syariah dari pada pembiayaan jangka panjang. Hal ini sejalan dengan Commercial Loan Theory yang menyebutkan bahwa memberikan pinjaman dalam jangka pendek lebih menguntungkan karena dapat meminimalisir terjadinya wanprestasi yang berdampak pada peningkatan kinerja bank.
Kata Kunci: Bank Syariah, Teori Commercial Loan, Likuiditas, Risiko Kredit

INTRODUCTION

Liquidity management is the ability of a company to meet its financial obligations, which must be fulfilled immediately. According to Modigliani (1944), liquidity is the ability of a bank to meet the needs of funds (cash flow). The functions of liquidity are: carrying out business transactions, overcoming urgent funding needs, satisfying customer demand for loans, and providing flexibility in seizing investment opportunities. It has four objectives: to maintain the bank's liquidity position so that it is always in the position determined by the monetary authority; to manage liquid assets so that they always meet all cash flow needs, including unexpected needs, such as sudden withdrawals of several demand deposits or time deposits that have not yet matured; to minimize idle funds (idle funds), and to maintain the liquidity position and cash flow projection so that it is always in a safe position. Furthermore, liquidity management is part of a larger financial industry risk management framework related to all financial institutions, both conventional and Sharia. Failure in risk management has dire consequences, including bank collapse and, in turn, instability in the financial system. In many cases, most bank failures were caused by difficulties managing their liquidity problems (Iqbal, 2012).

In the banking industry, liquidity played an essential role in boosting banks' performance. Previous studies revealed a significant correlation between the two variables. Ruziqa and School (2013), for instance, showed that liquidity had a significant effect on a performance component, i.e., return on assets (ROA). In addition, Akinwumi et al. (2017) exposed that liquidity has a significant effect on improving the financial performance of banks in Nigeria. Moreover, Wood and Skinner (2018) disclosed that liquidity and other bank-specific factors, such as capital adequacy and bad credit, have a significant positive effect on bank performance through variable return on assets (ROA) in Barbados. Research targeting an Islamic bank conducted by Djelassi & Boukhatem (2020) also affirmed the influence of liquidity on the bank's performance.

However, previous research found inconsistent findings concerning liquidity as the variable in enhancing the banking's performance. Zaineldeen (2018), for instance, examined the relationship between liquidity and profitability in the Palestinian banking sector that contribute to the development of its financial

sector. He tested the relationship between liquidity and bank performance through the profitability factor from 2010-2016. The result showed a negative relationship between the tested variables. In addition, Akter and Mahmud (2014) explored the relationship between liquidity (represented by current ratio) and profitability (represented by return on assets) in the banking industry in Bangladesh. They concluded no significant relationship between liquidity and profitability in banks of different sectors in Bangladesh. Moreover, Mohanty and Krishnankutty (2018) studied the performance factors responsible for driving the return on assets (ROA) of 46 banks in India using a data panel from 1999-2015. They found that the loan to deposit ratio (liquidity) negatively affects return on assets (performance).

In addition to liquidity, capital ratio is also used commonly in measuring banks' performance. The ratio is usually measured using Capital Adequacy Ratio (CAR). CAR is the ratio of a bank's capital in relation to its risk-weighted assets and current liabilities. It is decided by central banks and bank regulators to prevent commercial banks from taking excess leverage and becoming insolvent in the process. CAR is critical to ensure that banks have enough cushion to absorb a reasonable amount of losses before becoming insolvent. CAR is used by regulators to determine capital adequacy for banks and to run stress tests. Since the 1998 crisis, CAR has become the primary reference in determining bank performance. Starting from 2010, the minimum capital for commercial banks (including the regional development bank - BPD) in Indonesia to be IDR100 billion with a minimum CAR of 8%. CAR shows how far the decline in bank assets can still be covered by the available bank' equity (Taswan, 2010; Mailinda, Ibrahim, & Zainul, 2018; Muarif, Ibrahim, & Amri, 2021). The higher the CAR, the more capital the bank has to cover the decline in assets. With the inability to provide such a minimum percentage, the bank will potentially face the credit risk or Islamic banking known as financing risk.

Credit risk is a risk that promises cash flows from loan income and other securities owned by financial institutions that may not be fully repaid. Credit risk dominates in the composition of the capital adequacy ratio, where 70% of capital is allocated for financing risk and 30% for market risk and operational risk. Thus, credit risk is the leading cause of bank failure and the most visible risk to bank managers (Garr, 2013). This study tries to connect the application of liquidity and capital adequacy ratio (CAR) to bank performance through other variables, which are considered to be the basis for overcoming the gap in liquidity effect on bank performance. The variable proposed to mediate or

mediate between the variable liquidity and bank performance is the financing risk, a term similar to credit risk in the conventional banking system.

LITERATURE REVIEW

Liquidity Management Theories

Liquidity management theories are a set of theories relating to the banking management system, particularly funds and its sources of funds, to maintain a liquidity position and meet all liquidity needs in the bank's daily operations. According to Slovin and Suskha (1983) and Modigliani (2008), several theories of liquidity management are known in the banking world. The following sections will discuss such theories:

Commercial loan theory

This theory assumes that banks are only allowed to provide loans with short-term commercial papers that can be disbursed themselves (self-liquidating). This theory is also known as the productive theory of credit, often called the real bills doctrine introduced in the 18th century. This theory was quite dominant until the 1920s. In principle, this theory focuses on the asset side of the bank's balance sheet in meeting the bank's liquidity needs. According to this theory, bank liquidity can be guaranteed if the bank's productive assets consisting of short-term credit are disbursed in business activities running normally. Moreover, if the bank concerned will provide more extended credit, the data source should be taken from bank capital and long-term sources of funds.

Shiftability Theory

This theory assumes that a bank's liquidity depends on its ability to transfer its assets to other people at predictable prices. In the 1920s, banks developed liquidity theory to react to the many weaknesses in the commercial loan theory, namely the doctrine of asset shiftability. According to this theory, banks can immediately meet their liquidity needs by providing shiftable loans or call loans, which must be paid with one or several days' notice with securities as collateral. Therefore, if a bank needs liquidity at any one time, this need can be met by invoicing the borrower or debtor.

Anticipated Income Theory

It is also called the theory of expected income. According to this theory, it is correct for a bank to provide long-term loans and non-commercial loans. In the 1930s and 1940s, banks developed a new theory called the anticipated income theory. This theory states that banks should be able to provide long-term credit where repayment, namely principal loan installments plus interest, can be expected and scheduled for future payments according to a predetermined time period.

Liability Management Theory

This theory sees the structure of bank assets as having a prominent role in providing liquidity for banks. This theory also goes beyond the one-dimensional approach and states that banks can also use their assets for liquidity purposes.

Financing Risk

Financing risk appears when a financial institution is expecting a payment that has been contractually agreed between the institution and the counterparty and the obligors are unable – or in other words defaults – to fulfill their obligations. Financing risk also initiated when there is a change or underestimation in the rating of the counterparty. Islamic financial products are exposed to financing risk because of the emphasis on lending in the *Murabaha*, leasing in the *Ijarah*, promising to deliver or to buy in *Istisna* and *Salam*, and investing in business performance in the *Musharakah* and *Mudarabah* contracts. Financial problems related to either the individual counterparties (i.e., health problems) or to more general economic situations (i.e., market recession) may be some of the reasons for the obligors to default (Akkizidis et al., 2008).

Capital Adequacy Ratio

According to Bank Indonesia, each bank provides a minimum capital of 8% of risk-weighted assets proxied by CAR (Capital Adequacy Ratio). With this capital, it will also affect the amount of credit extended. In addition, the amount of non-performing loans or NPF (Non-Performing Financing) affects lending. NPF reflects financing risk; the higher the NPF level, the greater the bank's risk. The level of return on assets (ROA) can also affect lending (Shehu, 2016).

Islamic Banking Performance

Performance is an important thing that must be achieved by every company anywhere because performance is a reflection of the company's ability to manage and allocate its resources. In Indonesia, the financial performance measurement of Islamic banks is regulated by Bank Indonesia through its Regulation No. 9/1/PBI/2007. Bank' performance is essential for all stakeholders as they share different interests. It is a clue for them to measure how well the banks' management has performed in ensuring the company has been running well.

The profit or financial performance became one of the many indicators of performance. Most profit-oriented organizations used the reasonable goal approach—particularly financial performance—to measure the companies' performance. Within this context, the accounting-based assessments and market-based measures were considered appropriate. Profitability is the accounting-based measurement most often used, while stock market returns are broadly accepted as the market-based measurement (Glunk and Wilderom in Ibrahim, 2015).

Bank's performance is usually measured through many determinants: capital, asset quality, management, profitability, liquidity, and sensitivity to market risk. In addition, it is also influenced by other factors, such as the condition of the banking industry and the national economy. In Indonesia, measurement of performance is regulated in PBI number 13/1/PBI/2011 article 2 that stated that banks operating in Indonesia are required to assess their performances using a method called RGEC (risk-profile, Good Corporate Governance, Earning, and Rentability). The method replaced the old so-called CAMELS method (Capital, Asset, Management, Earning, and Sensitivity).

Hypothesis Development

The variable performance in this study is assessed through Return on Assets (ROA). Return on assets (ROA) indicates how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea of how efficient a company's management is at using its assets to generate earnings (Idowu et al., 2002). Return on Assets (ROA) is a type of return on investment (ROI) metric that measures the profitability of a business concerning its total assets. This ratio indicates how well a company performs by comparing the

profit (net income) it generates to the capital invested in assets. The higher the return, the more productive and efficient management is in utilizing economic resources.

The liquidity variable is measured by the Financing to Deposit Ratio (FDR). The FDR is used to assess a bank's liquidity by comparing a bank's total loans to its total deposits for the same period. The FDR is expressed as a percentage. If the ratio is too high, the bank may not have enough liquidity to cover unforeseen fund requirements. Conversely, if the ratio is too low, the bank may not be earning as much as it could be. Numerous studies have found the significant positive impact of liquidity on variables of bank performances. Njuguna and Tabhita (2015), for instance, found that company liquidity is the primary determinant of company financial performance (profitability). Similar results have been found by Musiega, Olwney, Mukanzi, and Mutna, 2017; and Suyanto (2021).

Several studies have found that the capital adequacy ratio (CAR) has a significant but negative effect on bank performance. A study by Ismaulina and Zulfadhli (2017), for instance, found that CAR has a negative but significant effect on a bank's performance variable, the ROA. A similar finding was also revealed by Hersugondo, Anjani, and Pamungkas (2021) and Juwita, Raga, Prasetyo, and Rimawan (2018).

There is limited empirical research that examines the factors that influence financing risk. Bank risk is closely related to economic conditions and business turnover. When economic conditions experience a downturn/sluggishness, problem loans will also increase in number. When the economy is booming (booming economics), it will increase the volume of cash held by businesses or households. Consequently, it will increase people's purchasing power so that repaying loans increases, reducing financing risk. Thus, Financing Risk can mediate the effect of liquidity on bank performance.

The liquidity ratio aims to assess its financial capacity to meet its short-term obligations and financial payment commitments. The higher the liquidity ratio, the better it is for investors. Companies with a high liquidity ratio will attract investors and impact share prices, which tend to rise due to high credit and liquidity risk; therefore, management efficiency affects the bank's performance (Petria et al., 2015).
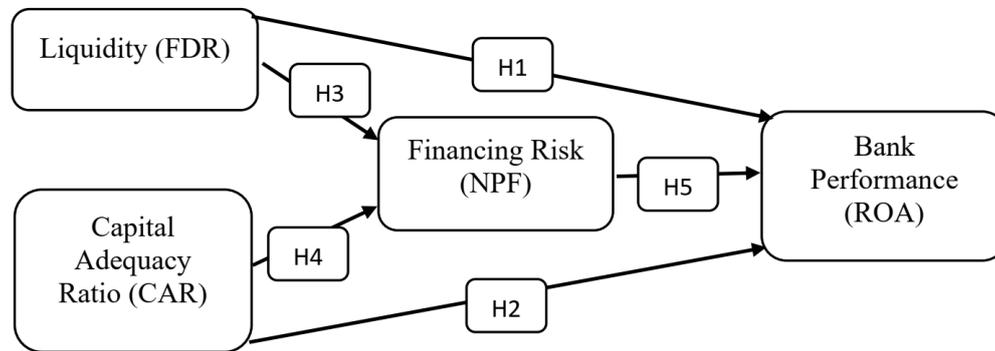
Figure 1. Conceptual Framework

Based on the aforementioned explanation, the following hypotheses are proposed:

H1: Liquidity (FDR) has a significant effect on Bank Performance (ROA)
H2: Capital Adequacy (CAR) has a significant impact on Bank Performance (ROA)
H3: Liquidity (FDR) has a significant effect on Bank performance (ROA) mediated by Financing Risk (NPF)
H4: Capital Adequacy (CAR) has a significant effect on Bank Performance (ROA) mediated by Financing Risk (NPF)
H5: Financing Risk (NPF) has a significant effect on Bank Performance (ROA)

RESEARCH METHOD

The object of this research is Islamic banking companies operating in Indonesia for the period 2013 to 2019. The type of data in this documentary is data in financial reports of Islamic banks in Indonesia for 2013-2019. The data source is secondary data, namely data obtained from other parties; in this case, the data source is the Indonesia Financial Services Authority *(Otoritas Jasa Keuangan – OJK)*. The object of this study is all Islamic banks operating in Indonesia for the 2013-2019 period.

Data is analyzed using Partial Least Squares (PLS) - Structural Equation Modeling (SEM) with the WarpPLS 7.0 application. PLS-SEM has several advantages: SEM-PLS works efficiently with small sample sizes and complex models; and the assumption of data distribution in SEM-PLS is relatively loose

compared to other methods such as CB (Covariance-based)-SEM (Sholihin and Ratmono, 2013). Regression Equations are as follow:

$$ROA = \gamma + \beta_1 FDR + \beta_2 CAR + \beta_3 NPF + \varepsilon_1 \ldots\ldots\ldots\ldots(1)$$

$$NPF = \gamma + \beta_1 FDR + \beta_2 CAR + \varepsilon_2 \ldots\ldots\ldots\ldots\ldots\ldots\ldots(2)$$

RESULT AND DISCUSSION

Research Model Evaluation Analysis

The evaluation analysis of the research model described earlier includes two stages: evaluation of the measurement model and evaluation of the structural model. Model evaluation analysis is using the PLS-SEM method with the application of Warp PLS version 7.0. The algorithm method used in this study for the outer model uses PLS mode A because all constructs in this study use reflective indicators. The inner model uses linear because it is assumed that all relationships between constructs in the model are linear for the resampling method using Stable. Selecting Stable based on the resampling method results in the stability of the estimated path coefficient or produces a smaller P-value than other methods (Sholihin and Ratmono, 2013).

Structural Model Evaluation

The evaluation of the structural model (inner model) aims to predict the relationship between variables by seeing how much variance can be explained and knowing the significant P-value (Latan and Ghozali, 2016). Thus, the structural model's evaluation can answer hypothesis testing in this study, namely hypotheses 1, 2, and 5. As for hypothesis 3 and 4 (the effect of mediation) will be tested through mediation testing in the following analysis. Before evaluating the relationship between constructs, it evaluates the goodness of fit of this research model, which can be seen in the output in Table 1.

Based on Table 1, it can be seen that this research model has a good fit, where the P-value for APC <0.05, ARS and AAR <0.1, with an APC value = 0.196, ARS value = 0.103 and AARS value = 0.70. Likewise, the resulting AVIF and AFVIF values are <3.3, which means no multicollinearity problem exists between indicators and exogenous variables. The resulting GoF is 0.321> 0.1, which means that the model's fit is very good. For SPR and RSCR, it produces

a value equal to 1 while SSR has a value of 0.8> 0.7 which means there is no causality problem in the model (Latan and Ghozali, 2016).

Table 1. The goodness of Fit Model Structural

Criteria	Parameter
Average path coefficient (APC)	0.196/ P<0.03
Average R-squared (ARS)	0.103/ P<0.1
Average adjusted R-squared (AARS)	0.070/ P<0.1
Average block VIF (AVIF)	1.035
Average full collinearity VIF (AFVIF)	1.040
Tenenhaus GoF (GoF)	0.321
Sympson's paradox ratio (SPR)	1.000
R-squared contribution ratio (RSCR)	1
Statistical suppression ratio (SSR)	0,8

Source: Data Processed (2020)

Testing hypotheses 3 and 4 requires a mediation testing method. In this study, the mediation test used the Variance Accounted For (VAF) method. According to Hair et al. (2013), the procedure for testing mediation using the VAF method is as follows:

1. Testing the direct effect of exogenous variables on endogenous without including the mediating variable.
2. If the direct effect above is significant, then test the indirect effect of exogenous variables on endogenous by including the mediating variable.
3. If the indirect effect above is significant, then calculate the value of the VAF and determine the mediation effect with the following criteria:

   a. VAF> 80% means that there is full mediation.
   b. 20% <VAF <80% means that there is partial mediation
   c. VAF <20% means no mediating effect in the model.

The VAF is calculated by dividing the indirect effect by the total effect (direct effect plus indirect effect). Based on Table 2, it can be seen that FDR has a significant direct effect with a p-value <0.006 on ROA, and thus Hypothesis 1 is accepted. Meanwhile, CAR does not significantly directly affect ROA with a p-value of 0.133, so Hypothesis 2 is rejected.

Table 2. The direct effect of the FDR, CAR variables on ROA

Description Path	Path Coefficient	P-value
FDR--> ROA	0.292	0.006
CAR--> ROA	0.181	0.133

Source: Data Processed (2020)

Based on this fact, it can be concluded that NPF can mediate only the FDR variable in indirectly affecting ROA. Thus, from these results, NPF does not mediate the indirect effect of CAR on ROA, so thus it rejects Hypothesis 4. The next step is to calculate the VAF value, which can be presented in Table 3.

Table 3. Calculation of VAF for the effect of FDR on ROA through NPF mediation.

Description	Path Coefficient
Indirect effect	0.035
Direct effect	0.029
Total effect	0.252
VAF (indirect effect/total effect)	0.316

Source: Data Processed (2020)

Based on Table 3, it is obtained that the VAF value is 0.316 or 31.6%. This value can fulfill the requirements of VAF, namely 20% <VAF <80%, which means that there is partial mediation, thus showing NPF as a partial mediator of the indirect effect of FDR on ROA.
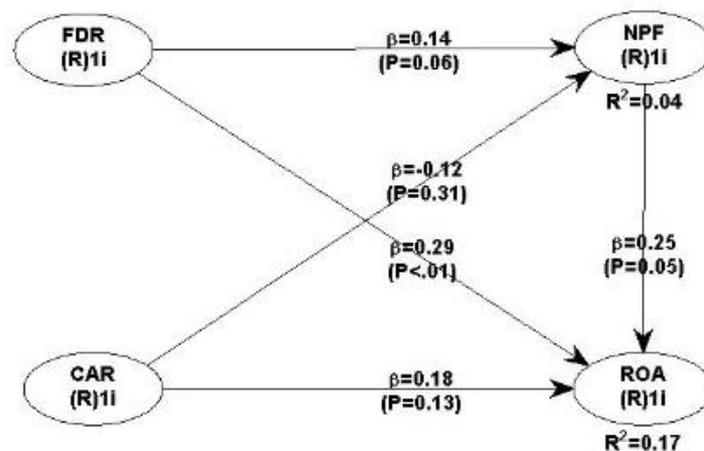

Figure 2. Research Model Based on Results

These results support or accept hypothesis 3, which states that the effect of Liquidity (FDR) on Bank Performance (ROA) is mediated by Financing Risk (NPF). These findings indicate that an increase in bank performance is influenced by liquidity. However, to be more successful and improve bank performance, it is necessary to decide on financing a project to minimize financing risk. In addition, Figure 2 shows that NPF has a coefficient value of 0.25 and a p-value of 0.05 on ROA, which means that financing risk has a significant direct effect on bank performance. Thus, it proposed to accept Hypothesis 5.

Discussion

Based on the research results, the effect of liquidity on bank performance with a coefficient of 0.29 and a P-value of $P < 0.1$, it can be concluded that this hypothesis is accepted. Furthermore, the indirect effect through financing risk on bank performance shows a coefficient value of 0.14 and a p-value of 0.006, which means that credit risk can partially mediate the relationship between liquidity effect on bank performance. This fact is in line with research conducted by Amelia (2015) that found that there was a positive relationship between liquidity and performance. It implies that the company needs to focus on positive liquidity management with company performance. Based on the findings, the relationship between the effect of liquidity on performance and is in line with Commercial loan theory and shiftability theory. The doctrine of anticipated income that banks can carry out the intermediation function are banks that can collect deposits and then distribute them in a balanced form of credit. This finding also shows the role of liquidity, which means that liquidity is increasing, the source of funds owned by the bank is more productive so that the bank's profit can increase.

Furthermore, the effect of capital adequacy on bank performance with a coefficient value of 0.18 and a P-value of 0.13, this hypothesis is rejected. Likewise, as a mediator for the effect of the relationship between capital adequacy and bank performance, financing risk cannot mediate with a coefficient value of -0.12 and a p-value of 0.31, so it can be concluded that capital adequacy cannot be mediated by financing risk. At times of high liquidity caused by high financing, while the funds raised are small, it can cause capital adequacy to decrease. Bank management is responsible for ensuring that

bank capital is always sufficient to support operations and plan bank capital requirements to support business development. (Anshika, 2016).

Henceforth, financing risk as a mediator in this study succeeds in showing that liquidity can be partially mediated on bank performance. Financing risk on bank performance shows a coefficient value of 0.25 and a p-value of 0.05, which means that financing risk significantly affects bank performance. These results support previous studies, such as studies of Wahyudi et al. (2020), Safitri and Kadarningsih (2020), and Safitri and Taolin (2020).

CONCLUSION

This study aims to tests the effect of liquidity and capital adequacy on bank performance empirically through financing risk. Liquidity management theory deals with managing bank funds and sources of funds to maintain a liquidity position and meet all liquidity needs in the bank's daily operations. The study was conducted on Islamic banking companies listed on the IDX, with up to 14 Islamic banking companies, with a time frame of 2013-2019. The results reveal that liquidity has a significant effect on bank performance. The findings have also proven that financing risk is able to mediate the indirect effect of liquidity on bank performance. Ben et al. (2017) explained that liquidity has a positive direction on bank performance. Next, in their research, Elamer et al. (2019) also explained that the quality of a bank can be seen from its operational governance and how liquidity plays a role in it. This means that the Commercial Loan theory proves that bank liquidity, according to this theory, will be guaranteed if the bank's productive assets consisting of short-term credit are disbursed in business activities that are running normally. However, on the other hand, capital adequacy does not significantly affect bank performance and financing risk, which does not mediate the effect of capital adequacy on bank performance. In line with this, it can be explained that capital is the main thing, so lending is one thing that becomes the benchmark for improving bank performance. Similarly, Chen (2017) states that the Capital Adequacy Ratio or CAR of a bank will be influenced by two main factors: the amount of capital owned by the bank and the amount of Risk-Weighted Assets (RWA) managed by the bank.

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