The Effect of Liquidity on the Performance of Foreign Banks in Indonesia

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Abstract

This study aims to examine the effect of liquidity on bank performance. In this study, a quantitative method approach was used to achieve the objectives and answer research questions and test the hypotheses that had been developed. This study also uses dynamic panel data analysis based on the panel data model framework.The type of data used is secondary data, namely data/information on foreign banks listed on the IDX for the 2010-2016 period, sourced from the IDX, BI, and OJK. Meanwhile, the data collected is liquidity and bank performance. The unit of analysis is limited to foreign banks registered with the Financial Services Authority (OJK). The population in this study are foreign banks listed in the Financial Services Authority (OJK) for the 2010-2016 period, as many as 10 banks (cross-section), where the periodization of financial statements is determined for 7 years, namely 2010-2016 (time series), including for meet the data analysis requirements and to represent the population taken. Foreign bank performance is measured by ROA (Return on Assets), ROE (Return on Equity), CAR (Capital Adequacy Ratio), NPL (Non-Performing Loan). The results showed that there was no significant effect of Liquidity on ROA; there is a significant effect of Liquidity on ROE; there is no significant effect of liquidity on CAR; there is a significant effect of liquidity on NPL. So liquidity only has a significant effect on ROE and NPL.

I. Introduction

The foreign bank group in Indonesia experienced pressure throughout 2015 because a larger portion of credit was disbursed to the corporate segment than the retail segment. Corporations were less expansive throughout the year due to the economic slowdown and weakening commodity prices. The bank group's net profit slumped for the first time since 2012 and continued to record positive growth. Based on Indonesian banking statistics from the Financial Services Authority (OJK) for eleven months of 2015, the net profit of the foreign bank group in Indonesia fell 30.16% compared to the same period in 2014.

The business model of the foreign bank branch group in principle consists of two major parts, namely investment banking business and conventional banking business. Investment banking businesses such as JP Morgan Chase Bank. Meanwhile, conventional banking businesses such as Citibank NA, Bank of Tokyo Mitsubishi UFJ Ltd, etc. Bank of Tokyo Mitsubishi UFJ Ltd recorded the highest profit growth of 262.39% to Rp 395 billion as of February 2017 and the biggest loss was recorded by JP Morgan Chase Bank with a net loss of Rp 2.7 billion. When viewed from the intermediation function, Bank of Tokyo Mitsubishi UFJ Ltd became the largest credit lender at Rp 90.98 trillion, followed by HSBC at Rp 46.5 trillion, and Citibank NA at Rp 38.14 trillion. Based on February 2017 monthly financial report data, in total, foreign banks recorded a net profit of Rp 1.51

trillion, an increase of 1.95% from the same period in 2016. However, net interest income decreased by 0.32% to Rp 2.96 trillion.

Judging from their capital structure, foreign banks generally have a strong capital structure, which is far above the national banking average of around 22.91% as of December 2016, only Standard Chartered Bank has a minimal CAR compared to other foreign banks. While the NPL level of several foreign banks during 2007-2008 experienced a sharp increase, this was the effect of the housing credit crisis in America. The low value of the company is allegedly caused by the company's financial performance which in the last five years is still low. This is indicated by the low financial performance as measured by one of the financial ratios, namely Return On Assets (ROA). There are foreign banks whose performance tends to decline and even suffer losses. However, in general, the company's financial performance tends to be stable. Foreign banks tend to be conservative in carrying out performance improvement strategies.

The above conditions are thought to be related to the liquidity aspect. A commercial bank is one of the financial institutions that have a vital role in the economy of a country, especially for countries whose economies are still very dependent on the presence of banks as a source of financing for their economic activities. In the macroeconomic setting, the bank is a transmission belt that transmits monetary policy, while in the microeconomic setting, the bank is a source of financing for business and individual needs (Koch & Mac Donald, 2000). So that the role of banks in fulfilling liquidity for business people and individuals is very vital while making banks very vulnerable to liquidity risk.

According to Diamond & Dybvig (1983) and the results of research by Rauch, et al.(2008), said that one of the main reasons why banks are very vulnerable to liquidity risk is because of their role in transforming maturity and providing guarantees to meet the liquidity needs of their depositors. This results in bank liquidity being suddenly depleted and liquidity difficulties in one bank can spread to other banks causing systemic risk as described above and there are only a few studies devoted to analyzing one of the main factors that make banks a safe and secure institution. The most reliable thing when an economic shock occurs is that there are sufficient liquid assets that can be used at any time. Based on this background, it is interesting to study the effect of liquidity on the performance of foreign banks in Indonesia.

II. Review of Literature

2.1 Liquidity

Liquidity can be defined as the ability of a financial institution to meet all of its obligations related to requests for funds (Yeager & Seitz, 1989; Gitman, 2009). This opinion is also in line with the definition of liquidity put forward by Sauer (2007); Williamson (2008); Bank for International Settlements (2008); and Moore (2009), namely the ability of banks to fund asset enhancements and meet maturing obligations without incurring intolerable losses. For this reason, banks need to keep liquid assets to fulfill their customers' obligations or tend to be precautionary. If the bank does not have the sources of funds to meet the demands of its customers, the bank must borrow from the interbank money market or the central bank.

In the current economic development, manufacturing companies are required to be able to compete in the industrial world. Manufacturing companies need to invest to increase the company's business capital. To invest, various kinds of information about the issuer are needed, both company performance information in the form of financial statements or other relevant information. The economic development of a country can be

measured in many ways, one of which is by knowing the level of world capital market development. (Angelia and Toni, 2020). The manufacturing industry plays a very important and strategic role in contributing Gross Domestic Product (GDP) to the national economy and labor absorption. This study is aimed atanalyzing factors influencing labor absorption of the manufacturing industry. (Pramusinto and Daerobi, 2020). We can measure liquidity, namely the ratio of current assets divided by current liabilities. A current asset ratio of 100% or more is owned by a company that has healthy liquidity. A liquid company means that the company has large funds to pay all of its obligations. The more liquid the company is, the more internal funds it will have to meet its operational needs (Afiezan et al, 2020).

Meanwhile, according to Farag, Harland, and Nixon (2013), the source of bank liquidity consists of cash or assets that can be converted into cash in a short period at a reasonable cost. A slightly different opinion is expressed by Myers and Rajan (1998) where liquidity is described as the ease of converting assets into other assets through trading. So that liquidity can also be interpreted as the ease of converting assets into money that is used in the trading process.

Based on this definition, the liquidity used in this study is following the definition put forward by the Bank for International Settlement (BIS), namely as the ability of banks to fund increased assets and fulfill their obligations without causing losses. Because the definition put forward by BIS has become a reference for world banking and is also very comprehensive and includes various definitions that have been put forward by previous researchers. In this study, liquidity is measured by the dimension of the loan to third-party funds ratio (loan to deposit ratio).

2.2 Foreign Bank Performance

According to Owolabi, Obiakor, & Okwu (2011) and Vodova (2011), bank performance is associated with profitability as measured by the amount of revenue generated by a company that exceeds the relevant costs and is associated with efforts to generate that income. Meanwhile, Lartey, Antwi, & Boadi (2013) define profitability as a bank's ability to generate income far greater than the required costs.

Several proxies can be used by previous researchers such as Anbar & Alper (2011) who measure profitability using return on assets (ROA) and return on equity (ROE) factors as a function of determinant factors of bank-specific variables and macroeconomics. Saleem & Rehman (2011) in their research use ROA, ROE and return on investment (ROI) as proxies profitability, where liquidity has a significant impact on ROA but not significant on ROE and ROI. Alshatti (2015), also uses proxy the same, namely ROE and ROA as proxy profitability, where his research finds that there is an effect of liquidity on bank profitability as indicated by bank ROE and ROA.

Hahn and Powers (2010:68-69) examine banking performance with return on assets (ROA) because ROA is a measure of the performance of the primary banking industry (FDIC, 1995). ROA is one form of ROI, where the use of this measure is consistent with the suggestion of Porter (1980, 1985) where ROI is an appropriate measure of performance. Based on previous research, ROA is defined as net income divided by total assets (Lenz, 1980; Robinson and Pearce, 1988; Bernstein, 1993). On the other hand, Al-Tamimi and Jabnoun (2010:185) measure bank performance with ROA and ROE measures.

Based on the description of the concept above, the performance of foreign banks in this study is measured by the following dimensions:

a. ROA (Return on Asset)
b. ROE (Return on Equity)
c. CAR (Capital Adequacy Ratio)
d. NPL (Non-Performing Loan)

2.4 Research Hypothesis

Based on the description above, the following hypotheses are formulated:
H1: Liquidity affects ROA (Return on Asset)
H2: Liquidity affects ROE ROE (Return on Equity)
H3: Liquidity affects CAR (Capital Adequacy Ratio)
H2: Liquidity affects NP (Non-Performing Loan)

III. Research Method

In this study, a quantitative method approach was used to achieve the objectives and to answer research questions, and test the developed hypotheses. This study also uses dynamic panel data analysis based on the panel data model framework. The type of data used is secondary data, namely data/information on foreign banks listed on the IDX for the 2010-2016 period, sourced from the IDX, BI, and OJK. Meanwhile, the data collected is liquidity and bank performance.

The unit of analysis is limited to foreign banks that are public on the IDX. The population in this study are foreign banks listed on the IDX for the 2010-2016 period, as many as 10 banks (cross-section), where the periodization of financial statements is determined for 7 years, namely 2010-2016 (time series). So that the data obtained is a combination of cross-section and time-series data which is referred to as panel data. The panel data structure is expected to provide more information. The periodization of the data is determined for 7 years (2010-2016), among others, to meet the requirements of data analysis and to represent the population taken. The analysis design that will be used in this study is regression for panel data. Panel data regression is a regression analysis that combines data time series with cross-sections, where the unit cross-section same is measured at different times.

IV. Results and Discussion

In this section, the results of hypothesis testing regarding the effect of Liquidity on Foreign Bank Performance will be described. Foreign Bank performance is measured by ROA, ROE, CAR, and NPL.

Table 1. Recapitulation of Liquidity Testing on Foreign Bank Performance

Dependent Variable l	CoefRegression	Prob	R2	Model Estimation	Conclusion
ROA	0.004275	0.2640	0.0128	*Random Effect*	Nonsignificant
ROE	0.069857	0.0061	0.4111	*fixed Effect*	Significant
CAR	0.046211	0.2937	0.0116	*Random Effect*	Nonsignificant
NPL	0.003761	0.0036	0.0842	*Random Effect*	significant

4.1 Liquidity to ROA

a) Common Model (*Pool)Effect* or *Fixed Effect*

   The test is carried out by Chow-Test with the hypothesis:

Ho: the model uses the Common effect Model

H_1: the model uses the fixed effect model

Table 2. Chow test results

F Count	Prob	Model
4.584872	0.0001	Ho is rejected; Fixed Effect

   The results of the calculation of Prob < (0.05) so that the above hypothesis can be concluded that H1 is accepted, so the model used in this study is the Fixed Effect Model.

   The next process for selecting the best model for the panel model still needs to be continued with the Hausman test to find out whether the model from the panel data follows the fixed effect model or the random effect model.

b) Model Fixed Effect or Random Effect

   Testing is done by Hausman test with Hypothesis:

Ho: model uses Random Effect Model

H_1: model uses fixed effects model

Table 3. Hausman test results

Statistic test χ2	Prob	Model
2.477277	0.1155	Ho accepted Random Effect

   Based on the table above, it is known that the p-value > (0.05) so that Ho is accepted, it can be concluded that the data is more appropriate to use the random effect model.

c) Model Common Effect of Random Effect

   Testing is done by Hausman test with Hypothesis:

Ho: model using Common Effect Model

H_1: model using Random effect model.

Table 4. Lagrange Multiplier (LM) test results in Lagrange multiplier (LM)

Statistics Lagrange multiplier (LM)	Prob	Conclusion
100.9361	0.0000	Ho rejected Random Effect

   Based on the table above, it is known that the p-value <α (0.05) so that Ho is rejected, it can be concluded that the data is more appropriate to use the random effect model.

Table 5. Estimation Results in Random Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.006546	0.788070	3.815074	0.0002
LDR	0.004275	0.003805	1.123563	0.2640

Effects Specification			S.D.	Rho
Cross-section random			1.619270	0.2707
Idiosyncratic random			2.657650	0.7293

Weighted Statistics				
R-squared	0.012775	Mean dependent var		1.680306
Adjusted R-squared	0.002491	S.D. dependent var		2.679216
S.E. of regression	2.679142	Sum squared resid		689.0691
F-statistic	1.242221	Durbin-Watson stat		0.922992
Prob(F-statistic)	0.267826			

The results of the Econometric Model testing are as follows:

$$\textbf{ROA}_{it} = 3.006546 + 0.004275\textbf{LDR}_{it} + \textbf{e}_{6it}$$

The regression equation above is in line with the hypothesis that an increase in Liquidity will increase ROA (Performance).

Table 6. Liquidity Partial Testing of ROA

Hypothesis	βij	t-Statistic		Prob	Information
LDR	0.004275	1.123563		0.2640	Nonsignificant

The test results show that there is no influence of liquidity on ROA with Rvalues2 obtained from the model of 1.28%.

4.2 Liquidity to ROE
a) Model Common (Pool) Effect or Fixed Effect

The test is carried out by Chow-Test with the hypothesis:

Ho: the model uses the Common effect Model

H_1: the model uses the fixed effect model

Table 7. Chow test results

F count	Prob	Model
6.243245	0.000	Ho is rejected; Fixed Effect

The results of the calculation of Prob < (0.05) so that the above hypothesis can be concluded that H1 is accepted, so the model used in this study is the Fixed Effect Model.

The next process for selecting the best model for the panel model still needs to be continued with the Hausman test to find out whether the model from the panel data follows the fixed effect model or the random effect model.

b) Models Fixed Effect or Random Effect
    The test is carried out using the Hausman test with the hypothesis:
Ho: the model uses the Random Effect Model
H1: the model uses the fixed effect model

Table 8. Hausman test results

Statistic test χ2	Prob	Model
9.910583	0.0016	Ho is rejected fixed Effect

    Based on the table above, it is known that the p-value $<\alpha$ (0.05) so that Ho is rejected, it can be concluded that the data is more appropriate to use the fixed effect model.

Table 9. Estimation Results Fixed Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.092840	3.649022	1.121627	0.2651
LDR	0.069857	0.024836	2.812769	0.0061
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.411148	Mean dependent var		13.78009
Adjusted R-squared	0.343464	S.D. dependent var		14.73243
S.E. of regression	11.93723	Akaike info criterion		7.902632
Sum squared resid	12397.28	Schwarz criterion		8.192781
Log likelihood	-376.2290	Hannan-Quinn criter.		8.019992
F-statistic	6.074507	Durbin-Watson stat		1.142417
Prob(F-statistic)	0.000001			

The results of the Econometric Model testing are as follows:
$$\text{ROE}_{it}=4.092840+ 0.069857\textbf{LDR}_{it}+ e_{5it}$$

    The regression equation above is in line with the hypothesis that an increase in liquidity will increase ROE (Performance).

Table 10. Partial Testing of the Liquidity Hypothesis on ROE

Hypothesis	βij	t-Statistic	Prob	Information
LDR	0.069857	2.812769	0.0061	significant

    The test results show that there is an influence of liquidity on ROE with Rvalues2 obtained from the model of 41.11%.

4.3 Liquidity to CAR
a) Model Common (Pool) Effect or Fixed Effect
    The test is carried out by Chow-Test with the hypothesis:
Ho: the model uses the Common effect Model
H1: the model uses the fixed effect model

Table 11. Chow test results

F count	Prob	Model
5.143935	0.000	Ho is rejected; Fixed Effect

The results of the calculation of Prob < (0.05) so that the above hypothesis can be concluded that H1 is accepted, so the model used in this study is the Fixed Effect Model.

The next process for selecting the best model for the panel model still needs to be continued with the Hausman test to find out whether the model from the panel data follows the fixed effect model or the random effect model

b) Models Fixed Effect or Random Effect
The test is carried out using the Hausman test with the hypothesis:
Ho: the model uses the Random Effect Model
H1: the model uses the fixed effect model

Table 12. Hausman test results

Statistic Test $\chi 2$	Prob	Model
0.051740	0.8201	Ho is accepted by Random Effect

Based on the table above, it is known that p-value >α (0.05) so Ho is accepted, it can be concluded that the data is more appropriate to use the random-effects model.

c) Model Common Effect of Random Effect
The test is carried out using the Hausman test with the hypothesis:
Ho: the model uses the Common Effect Model
H1: the model uses the Random effect model

Table 13. Lagrange Multiplier (LM) test results in Lagrange multiplier (LM)

Statistics Lagrange multiplier (LM)	Prob	Model
45.68517	0.0000	Ho rejected Random Effect

Based on the table above, it is known that the p-value <α (0.05) so that Ho is rejected, it can be concluded that the data is more appropriate to use the random effect model.

Table 14. Estimation Results in Random Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	41.54097	9.342791	4.446312	0.0000
LDR	0.046211	0.043767	1.055841	0.2937

Effects Specification

			S.D.	Rho
Cross-section random			20.17521	0.3262
Idiosyncratic random			28.99502	0.6738

Weighted Statistics			
R-squared	0.011603	Mean dependent var	20.03384
Adjusted R-squared	0.001307	S.D. dependent var	28.86464
S.E. of regression	28.83838	Sum squared resid	79838.61
F-statistic	1.126943	Durbin-Watson stat	0.905614
Prob(F-statistic)	0.291092		

The results of the Econometric Model testing are as follows:

$$\text{CAR}_{it} = 41.54097 + 0.046211\text{LDR}_{it} + e_{7it}$$

The regression equation above is in line with the hypothesis that an increase in Liquidity will increase CAR (Performance).

Table 15. Liquidity Partial Test of CAR

Hypothesis	β_{ij}	t-Statistic	Prob	Information
LDR	0.046211	1.055841	0.2937	Nonsignificant

The test results showed that simultaneous no effect on the liquidity of the CAR with Rvalues2 obtained from the model of 1.16%.

4.4 Liquidity Against NPL

a) Common Model (Pool) Effect or Fixed Effect

The test is carried out by Chow-Test with the hypothesis:

Ho: the model uses the Common effect Model

H1: the model uses the fixed effect model

Table 16. Chow test results

F count	Prob	Model
3.057752	0.0032	Ho is rejected; Fixed Effect

The results of the calculation of Prob < (0.05) so that the above hypothesis can be concluded that H1 is accepted, so the model used in this study is the Fixed Effect Model.

The next process for selecting the best model for the panel model still needs to be continued with the Hausman test to find out whether the model from the panel data follows the fixed effect model or the random effect model.

b) M Model Fixed Effect or Random Effect

Testing is done by Hausman test with Hypothesis:

Ho: model uses Random Effect Model

H1: model uses fixed effects model

Table 17. Hausman test results

Statistics test $\chi 2$	Prob	Model
1.728870	0.1886	Ho accepted Random Effect

Based on the table above, it is known that the p-value > (0.05) so that Ho is accepted, it can be concluded that the data is more appropriate to use the random effect model.

c) Model *Common Effect* of *Random Effect*

The test is carried out using the Hausman test with the hypothesis:

Ho: the model uses the Common Effect Model

H1: the model uses the Random effect model

Table 18. Lagrange Multiplier (LM) test results)

Statistics Lagrange multiplier (LM)	Prob	Model
18.59214	0.0000	Ho rejected Random Effect

Based on the table above, it is known that the p-value $<\alpha$ (0.05) so that Ho is rejected, it can be concluded that the data is more appropriate to use the random effect model.

Table 19. Estimation Results in Random Effect.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.327011	0.249853	1.308816	0.1937
LDR	0.003761	0.001262	2.980419	0.0036
Effects Specification				
			S.D.	Rho
Cross-section random			0.459719	0.1791
Idiosyncratic random			0.984089	0.8209
Weighted Statistics				
R-squared	0.084168	Mean dependent var		0.481483
Adjusted R-squared	0.074628	S.D. dependent var		1.027012
S.E. of regression	0.987442	Sum squared resid		93.60397
F-statistic	8.822684	Durbin-Watson stat		1.160624
Prob(F-statistic)	0.003758			

The results of the Econometric Model testing are as follows:

$$\textbf{NPL}_{it}= 0.327011+ 0.003761\textbf{LDR}_{it}+ \textbf{e}_{8it}$$

The regression equation above is in line with the hypothesis that an increase in liquidity will increase NPL (Performance).

Table 20. Liquidity Partial Testing of NPL

Hypothesis	β_{ij}	t-Statistic	Prob	Information
LDR	0.003761	2.980419	0.0036	significant

The test results show that there is an influence on the liquidity of the NPL with Rvalues2 obtained from the model for 8:42%.

So the results of hypothesis testing indicate that: there is no significant effect of Liquidity on ROA; there is a significant effect of Liquidity on ROE; there is no significant effect of liquidity on CAR; there is a significant effect of liquidity on NPL. So liquidity only has a significant effect on ROE and NPL.

The results of this study are in line with Alshatti (2015) that liquidity affects ROE; Bourke (1989); Olagunju, David, & Samuel (2012); and Marozva (2015) found a positive relationship between liquidity and profitability; and Salim & Bilal (2016) regarding liquidity and its impact on bank financial performance (ROE). The test results in this study contradict the findings of Saleem & Rehman (2011) who use ROA, ROE, and return on investment (ROI) as a proxy of profitability, where liquidity gives a significant impact to ROA but not significant to ROE and ROI..

V. Conclusion

a. Liquidity has no significant effect on ROA.
b. Liquidity has a significant effect on ROE.
c. Liquidity has no significant effect on CAR.
d. Liquidity has a significant effect on NPL

Suggestions
The results of this study are expected to be a recommendation for foreign bank management to improve banking performance, especially ROE and NPL through increasing liquidity. This finding was obtained from the analysis unit of foreign banks that went public on the IDX so that further research is expected to be carried out on national conventional commercial banks.

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