Determinants of Banking Performance for Commercial Banks on Indonesia Stock Exchange

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Abstract: This study examines the determinants of Indonesian banking performance caused by global uncertainty such as geopolitical conflicts and post-pandemic conditions. The study adopted quantitative approach and used samples by 34 commercial banks listed on Indonesia Exchange Stock period 2017 to 2023. Panel data regression used as analytical method. This study used bank size, bank capital, liquidity, credit risk, and inflation rate as independent variables. Furthermore, bank performance was measured by return on asset. The findings of this study were bank size and inflation rate positively impact on return on asset while the other variables have no relationship on bank performance. This study could be used as reference for future research and for banking management decision-making.

Keyword: Bank-specific Factors, Bank Performance, Inflation Rate, Panel Data Regression.

INTRODUCTION

Financial Services Authority of Indonesia (Otoritas Jasa Keuangan) explained that overall world gross domestic product (GDP) will slow down in 2024. Central Bank of Indonesia (Bank Indonesia) mentioned the global economy in 2024 will reach 3,0 percent. The divergence of the global economy will surge in many nations especially US, Europe, and China. Middle-east conflicts had increased fuel price and affected global activity widely, such as increasing inflation continuously. Declining global economy apparently did not affect the Indonesian growth which according to Central Bureau of Statistics (Badan Pusat Statistik), the economy of Indonesia in 2023 had grown 5,04 percent. Moreover, Central Bank of Indonesia stated the economic growth of Indonesia strongly supported by household consumptions and corporate investments. Central Bank of Indonesia also assumed the growth will attain 4,7 to 5,5 percent in 2024 and strongly reach 4,8 to 5,6 percent in 2025. Furthermore, National Strategic Projects such as government insentive applied to some regions affected positively to private companies. In addition, inflation rate noted as 2,75 percent (yoy) in Februari 2024 that could be scraped off, particulary staff and staple, by the coming of the season. By Central Bank of Indonesia data, in December 2023 the liquidity ratio showed relatively high in 28,73 percent. The liquidity seemed to be stable as supports

from Macroprudent Liquidity Policy which forced credit distributions or funds in priority sectors to increase sustainable economic growth. In Februari 2024, banking credit grew 11,28 percent (yoy). Credit growth was caused by availability of banking liquidity. Capital adequacy ratio in November 2023 noted in 27,86 percent with low risks, which consist of gross non-performing loan (2,19 percent) and net non-performing loan (0,75 percent). With many uncertain global conditions, Financial Service Authority of Indonesia still stated return on asset of banking sector had increased 1,82d percent to 2,07 percent in 2023 (yoy).

As Ali et al., (2022) study in India found the determinants impacted banking performance noted as bank-specific and macroeconomic factors. Moreover, the banking performance was measured by return on asset. Bank-specific factors included bank size, bank capital, liquidity, and credit risk, while macroeconomic factor used inflation rate. The results showed bank capital positively impacted return on asset, on the other hand liquidity, credit risk, and inflation rate inversely affected return on asset. Based on those backgrounds, this study aims to ensure the empirical results in Indonesia by elaborating the determinants of Indonesian banking performance included bank-specific and macroeconomic factors.
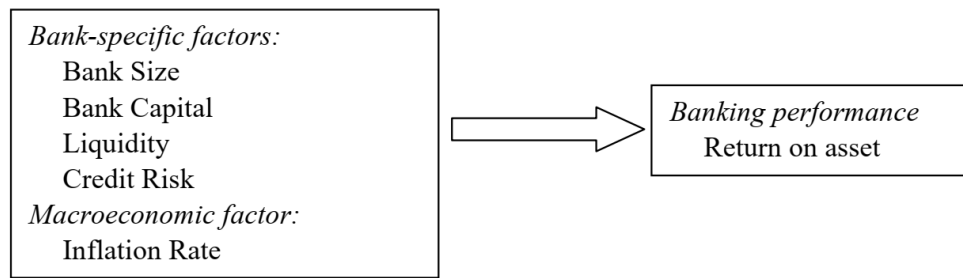
METHOD

The research used quantitative approach. This study applied hypothetical testing to analyze the effect of bank size, bank capital, liquidity, credit risk, and inflation rate on banking performance. Panel data was applied using secondary data and the sampling appointed by purposive sampling to determine unit observed consisting of 34 commercial banks listed on Indonesia Exchange Stock period 2017 to 2023. The commercial banks have to supply the data needed for the research and the banks that do not have the necessity data will be dropped from the sampling. This study used Eviews 12.0 to analyze the panel data regression.

Table 1 shows variables used in this study and the formula to calculate the measurements. The measurement of the variables in this study used financial ratio collected by the financial reports. Banking performance analogous financial performance was measured by return on asset. The formula of return on asset can be written as net income divided by total assets (Menicucci & Paolucci, 2016; Nthenge & Ringera, 2017). Bank size was quantified as logarithm of total assets. Bank capital, the same as capital adequacy ratio, was measured by ratio total capital and risk-weighted assets. The capital of the bank includes the core capital (Tier 1) dan the supplementary capital (Tier 2). Liquidity was proportion between total loans and total assets. Credit risk was calculated by nonperforming loans divided by total loans. Nonperforming loan means gross nonperforming loan which measured by collectability classification loans as substandard, doubtful, and loss. Inflation rate was the annual consumer price in percentage.

Table 1. Variables and Measurements

Variable	Measurement	Source
Dependent Variable		
ROA	ROA = net income / total assets	Siddique et al., (2022)
Independent Variables		
Bank size (BZ)	BZ = logarithm (total assets)	Ali et al., (2022)
Bank capital (CAP)	CAP = total equity / risk weighted assets (total equity = tier 1 + tier 2)	Kablay & Gumbo, (2021)
Liquidity (LIQ)	LIQ = total loans / total deposits	Al-muharrami & Murthy, (2017)
Credit risk (CR)	CR = nonperforming loans / total loans	Siddique et al., (2022)
Inflation rate (INF)	INF = annual consumer price (%)	Salike & Ao, (2018)

The conseptual framework of this study can be written as following Figure 1.

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│ Bank-specific factors:          │
│     Bank Size                   │
│     Bank Capital                │                    ┌──────────────────────────┐
│     Liquidity                   │  ═════════════▷    │ Banking performance      │
│     Credit Risk                 │                    │     Return on asset      │
│ Macroeconomic factor:           │                    └──────────────────────────┘
│     Inflation Rate              │
└─────────────────────────────────┘
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RESULTS AND DISCUSSION

The model of the data was chosen by the results of Chow test, Hausman test, and Lagrange Multiplier test. The testing is to determine the best model used to interpret the results of the research. The testing model of this study shown as Table 2.

Table 2. Testing Model

The Model	Probability	Decision	Conclusion
Chow Test			
ROA	0,0000	H0 rejected	FEM
Hausman Test			
ROA	0,3804	H0 accepted	REM
Lagrange Multiplier Test			
ROA	0,0000	H0 rejected	REM

Source: Data processed with Eviews 12.0

Based on Table 2, the result of Chow test had probability less than 5 percent so that the model chosen was fixed effect model (FEM). Nevertheless, Hausman test showed that the result of the model chosen was random effect model (REM) because the probability value of 0,3804 is more than the significant level of 5 percent so Lagrange Multiplier test had to be done to ensure the model chosen. Moreover, based on Lagrange Multiplier test, the model was chosen which was random effect model (REM) as the probability value is less than significant level. Panel data regression was accomplished to identify and analyze the determinants of the banking performance (return on asset) formed by bank size, bank capital, liquidity, credit risk, and inflation rate. The equation formula could be shown as below.

$$ROA_{it} = \alpha + \beta_1\, BZ_{it} + \beta_2\, CAP_{it} + \beta_3\, LIQ_{it} + \beta_4\, CR_{it} + \beta_5\, INF_t + e_{it}$$

Where:
    ROA notes as return on asset
    BZ notes as bank size
    CAP notes as bank capital
    LIQ notes as liquidity
    CR notes as credit risk
    INF notes as inflation rate
    α is the constant
    β is the coefficient
    e is error

Descriptive Statistics

Table 3 shows descriptive statistics results. Based on Table 3, average value of return on asset is 0,0052 and it has standard deviation 0,0222. The maximum value of return on asset is 0,0414 while it has the minimum value of -0,1806. Bank size has average value 13,6757 and standard deviation 0,7897. The maximum value of bank size is 15,29 and the minimum value has 11,82. Bank capital has average value 0,3046 and standard deviation 0,2128. The maximum value of bank capital is 1,6992 while the minimum value is 0,1078.

Liquidity has average value 0,5931 and standard deviation 0,1200. The maximum value of liquidity is 0,8695 and the minimum value is 0,1035. Credit risk has average value 0,0275 and standard deviation 0,0216. Credit risk has maximum value of 0,1575 while it has minimum value of 0,0000.

Table 3. Descriptive Statistics

Variabel	N	Min.	Max.	Mean	Std. Dev
Return on Asset	238	-0,1806	0,0414	0,0052	0,0222
Bank Size	238	11,8226	15,2934	13,6757	0,7897
Bank Capital	238	0,1078	1,6992	0,3046	0,2128
Liquidity	238	0,1035	0,8695	0,5931	0,1200
Credit Risk	238	0,0000	0,1575	0,0275	0,0216
Inflation Rate	238	1,6000	4,2000	2,9014	0,8780

Source: Data processed with Eviews 12.0

Panel Data Regression Analysis

Table 4 shows the panel data regression analysis. The result shows goodness of fit of the research is value of 0,1242 which means independent variables including bank size, bank capital, liquidity, credit risk, and inflation rate can explain the variation of the dependent variable (return on asset) as 12,42 percent and 87,58 percent variation is explained by other variables not included in this study. F-value probability has a value of 0,0000 and less than a significant level value of 5 percent. The F-value result means independent variables has a significant relationship to dependent variable simultaneously.

Partial test result shows that the study has a value of constant of -0,1919. The result presents that bank size positively affects return on asset with coefficient value of 0,0131. Moreover, inflation rate also has a positive relationship with return on asset and has a coefficient value of 0,0029. However, there are no significant relationship between independent variables, which consist of bank capital, liquidity, and credit risk, and return on asset. Based on Table 4, the equation regression can be written as below.

$$ROA_{it} = -0,1919 + 0,0131BZ_{it} + 0,0072CAP_{it} + 0,0153LIQ_{it} - 0,0459CR_{it} + 0,0029INF_t$$

Table 4. Regression Result

Independent Variables	Dependent Variable: Return On Asset		
	Coefficient	Probability	Conclusion
Constant	-0,1919	-	-
Bank Size	0,0131	0,0000	H0 rejected
Bank Capital	0,0072	0,3611	H0 accepted
Liquidity	0,0153	0,2804	H0 accepted
Credit Risk	-0,0459	0,4990	H0 accepted
Inflation Rate	0,0029	0,0300	H0 rejected
Adj. R2	0,1242		
F-prob	0,0000		H0 rejected

Source: Data processed with Eviews 12.0

Discussion

The result above can be seen that bank size has a positive impact on return on asset. It means the higher asset the bank has, the more return on asset the bank will achieve. The result is similar to the studies of Menicucci & Paolucci, (2016), Chen et al., (2018), Rahman et al., (2015), dan Al-Jafari & Alchami, (2014) which said bank size positively impacted on return on asset. Banks with higher assets have an opportunity to achieve more profit. Moreover, the banks will have a chance to expand their business and lower the risks. The banks can increase their loans so that they will gain more interest income. In addition, the banks can enlarge their product diversifications such as credit card, e-money, mobile banking, and etc that include fee-based income. The product diversification will extend the market scope which can not be done by banks with lower assets.

The study explains that bank capital has no relationship with return on asset which means the amount of equity will not affect the bank income. The result is relevant to the studies done by Sufian, (2012) dan Kirimi et al., (2022). Furthermore, liquidity and credit risk also have no effect on return on asset. The result may be caused by the difficulties of business escalations in the uncertainty conditions such as post-pandemic, global conflict, and transition period so that the bank equity settles and not used properly. On the other hand, Abdullah et al., (2014) investigates that debitors who can pay the debts or credits on due date will increase bank incomes although it has been noted as arrears.

This research shows that inflation rate positively affects return on asset that means the higher consumer price index will increase the bank revenue. However, banks should prepare strategies to face inflation in the future. The strategy can be implemented by giving higher interest rate for the certain customers. Banks also can develop credit cards when the inflation rate is higher than usual and manage fee-based incomes so banks will have passive income increasing their profits. In addition, banks should be responsive as the price fluctuation caused by many uncertain global conditions with make interest rate adjustments. Finally, with good strategy implemented based on the inflation rate, banks will receive more revenue that will increase their profit.

CONCLUSION

The study elaborates the determinants of Indonesian banking performance included bank-specific and macroeconomic factors. The study used quantitative method and investigated hypothetical testing to analyze the effect of bank size, bank capital, liquidity, credit risk, and inflation rate on banking performance. Panel data was applied using secondary data and the sampling appointed by purposive sampling to determine unit observed consisting of 34 commercial banks listed on Indonesia Exchange Stock period 2017 to 2023. This study used Eviews 12.0 to analyze the panel data regression. The research found that bank size and inflation rate have a positive relationship on return on asset while bank capital, liquidity, and credit risk have no significant impact on return on asset. The findings can be used as references for future research and can help the banking management in decision-making.

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