The Role Of Corporate Social Responsibility_Banks and Bank Systems

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“The role of corporate social responsibility as a moderating factor in influencing bank performance in Indonesia”

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THE ROLE OF CORPORATE SOCIAL RESPONSIBILITY AS A MODERATING FACTOR IN INFLUENCING BANK PERFORMANCE IN INDONESIA

Abstract

An important factor in increasing public trust in banks is to show bank performance, so it is necessary to know the factors that influence bank performance. Therefore, it is important to attract the attention of bank management. This study aims to determine the factors influencing bank performance by using social responsibility as a moderating variable. This study involved 20 banks in Indonesia and used a quantitative approach. Secondary data sources were used for data collection and analyzed using a regression equation model. The results show that non-performing loans and bank size have no effect on bank performance. Meanwhile, loan-to-deposit ratio and corporate social responsibility have a positive effect at the 1% significance level. The results of testing the moderation effect obtained t-statistic values of –0.365 and –4.269. These results show that social responsibility has a negative effect, does not moderate the relationship between non-performing loans and bank performance, but has a negative effect, moderating the relationship between the loan-to-deposit ratio and bank performance. These findings have policy implications for bank performance through the implementation of corporate social responsibility policies.

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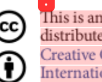

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INTRODUCTION

The development of digital technology has spurred the development of increasingly complex and diverse business activities. This condition spurs companies in Indonesia to increase their competitiveness by diversifying business expansion, including the banking industry. Along with these conditions, new problems emerge, namely, environmental pollution, workplace conflicts, and human rights issues as obstacles that must be overcome (Huang et al., 2022). Environmental pollution occurs in almost every city or area affected by industrial development. As a result of this situation, corporate social responsibility (CSR) has recently received serious attention from social observers, academics, the general public, business people and stakeholders at the national and international levels.

Corporate social responsibility is inseparable from corporate ethical standards that generate profits from society and reinvest them into society. Corporate social responsibility can be used by managers to improve a company's image and reputation as well as public trust in the company. As also stated by Barnea and Rubin (2010) and Petrenko

et al. (2016), managers can use CSR to create a strong corporate image and enhance their reputation, although this can incur agency costs (Masulis & Reza, 2015). Thus, CSR plays an important role in influencing and strengthening company performance improvement. Thus, CSR plays an important and strategic role in determining, influencing and strengthening the improvement of company performance.

The unstable world economic conditions have an impact on the national economy. As the main supporting structure for a country's economic activities, the banking sector is the most affected, because many companies reduce their operational activities, and this impacts the demand for bank credit. This condition causes business competition to become increasingly fierce, companies must improve their reputation to remain competitive, and company reputation is based on social responsibility initiatives (Nyuur et al., 2019). According to Ansu-Mensah et al. (2021), a business's reputation is founded on the corporate social responsibility program that the firm has put in place. The companies are more susceptible to reputation risks than others and are also more susceptible to negative stakeholder reactions (Mahmood & Bashir, 2020). Due to this, businesses frequently invest millions of dollars in CSR initiatives to enhance their reputation (Vuong et al., 2022). As a result, as stated by Li et al. (2022), the concept of CSR has undergone significant changes and companies are now more vulnerable to social and environmental problems because they must maintain their good reputation in society.

Banking in Indonesia was no exception during the COVID-19 pandemic, many banks experienced difficulties in carrying out their operations, so maintaining reputation was an important part of maintaining public trust. Through the corporate social responsibility program, banks operating in Indonesia maintain their reputation. After the COVID-19 pandemic, banking in Indonesia began to get a breath of fresh air because many companies started operating normally, this opened up opportunities for the banking industry to improve its performance. According to Singh and Misra (2021), social responsibility initiatives have a favorable effect on corporate operations, particularly profit growth. It is consistent with earlier research that stated one of the strategies for sustainable business development should be to incorporate social responsibility (Li et al., 2022). By implementing this strategy, public confidence in banking will increase, and this will have a positive impact on bank operational activities, demand for banking credit will also increase, thereby influencing the improvement of bank performance.

1. LITERATURE REVIEW

Corporate social responsibility is a concept in corporate management that includes social and environmental problems in business operations and stakeholder relations. In other words, CSR is a way for companies to balance economic interests (profit oriented) with environmental and social interests. This action simultaneously fulfills the expectations of shareholders and related stakeholders. The concept of CSR that is implemented properly and correctly can bring many competitive advantages. These advantages include increased access to capital, increased sales which ultimately increase profits, savings in company operational costs, increased productivity and quality, increased positive brand image, good decision making and risk management processes. The disclosed reporting on sustainable development (SR) is the core of CSR initiative information, and the independent assurance of the report is a symbol of legitimacy and acknowledgment by society (Sukhonos & Makarenko, 2017).

As one of the primary internal stakeholders of a bank, bank employees are directly involved in CSR activities and impact this success, therefore it is impossible to separate bank performance from bank employees. According to Vuong et al. (2022), a company will get several advantages from a policy when it is committed to executing it for employees and addressing their demands. When employees feel happy by working at a bank, and the policies implemented meet the needs of employees, then employees will actively support the banking business so that mutual social exchange occurs, this is also specifically conveyed by Vuong (2022). This condition will have an impact on improving their work performance individually, and the overall impact will improve bank performance. Large banks will have greater opportunities in carrying

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out this policy, because large banks have sufficient and sufficient influence to support the implementation of corporate social responsibility programs.

Loan-to-deposit ratio and non-performing loans can be indicators of the performance of bank employees in carrying out bank policies related to lending policies to customers and maintaining the quality of loans provided. Since the 2008 global economic crisis caused by the real estate bubble, coupled with the sub-prime mortgage case in the USA to the 2019 COVID-19 pandemic in China, which has devastated the world and national economy, the effects are still being felt today. These conditions had an impact on declining business activities, which resulted in a direct decrease in demand for bank loans and an increase in non-performing loans. All of this will have an impact on decreasing bank performance, which can erode and reduce public trust in banks. For this reason, banks as institutions that collect and distribute public funds must maintain their reputation to gain the trust of the public. Related to this problem, the corporate social responsibility program is part of a strategic program that can enhance its reputation. To what extent this program is effective in improving bank performance, it is necessary to build a model for placing corporate social responsibility as a moderating variable that serves to strengthen its influence on bank performance.

The financial intermediation theory serves as the foundation for this study, the function of banks as intermediary institutions for people who have funds and people who need funds to carry out business activities (Allen & Santomero, 1997). Banks function as institutions that extend credit to the public and play an important role in encouraging the movement of investment so that people's economic activities grow and develop. The high cost of monitoring, liquidity, and price risk due to information asymmetry between fund owners and companies encourages the need for financial intermediaries that can bridge the needs of both parties. As an intermediary institution, carrying out mediation is not an easy thing, because it requires large funds so that the intermediary function can run effectively. Therefore, banks as financial mediation institutions will be limited in channeling the funds needed by companies if they only rely on funds collected from the public, so that banks require additional funds as capital from their owners.

The principle of economies of scale is another foundation for this research. In microeconomics, economies of scale relate to the cost benefits of firm growth (Stigler, 1958). Banks with a large scale of business will work at lower costs, because there is an emphasis on the average cost as the amount of credit extended to the community increases. Therefore, the expansion of bank operational activities through credit expansion is a way to gain a low-cost advantage to create a competitive advantage. Credit expansion will increase the loan to deposit ratio which has an impact on increasing bank revenues, on the other hand, it can have an impact on increasing non-performing loans (NPL) if credit expansion is carried out on a large scale and is out of control. The two sides of this knife have become a serious problem since the economic crisis hit almost all countries in the world because of the problems that have occurred since 2008 until now. For this reason, a precise strategy is needed, which involves stakeholders so that a bank can maintain its reputation as a financial intermediary institution that still earns the trust of the community, this strategy is a corporate social responsibility strategy.

The corporate social responsibility approach, according to Zaitsev and Dror (2017), promotes businesses to have a good influence on the environment and stakeholders, such as customers, workers, investors, communities, and others. Specifically in the context of developing countries, bank managers can also effectively integrate corporate social responsibility into business functions to achieve superior social and financial performance, as stated by Rinawiyanti et al. (2022). Ebert and Griffin (2003), in their book Business Essentials, state that corporate social responsibility is a company's effort to maintain a balance of its commitments to both groups and individuals within the company's environment, such as consumers, other companies, employees, and investors. The form of implementation of corporate social responsibility in banks can be in the form of allocating funds in the form of partnership and community development programs. With this activity program, corporate social responsibility can have an impact on bank performance, as the results of studies by Rachman and Saudi (2021). Meanwhile, according to Barko et al. (2021), banks that participate in CSR are likely to receive greater remuneration than banks that do not participate.

According to Gangi et al. (2018), corporate social responsibility can increase bank competitiveness in various ways. This will improve a bank's reputation. On the other hand, from a relational perspective, a bank's legitimacy is built on its strong reputation among stakeholders and its financial success. Reputation may be seen as the crucial link between a bank's participation in CSR and its social and financial credibility. This study investigates actual data that shows how corporate social responsibility affects bank performance. Therefore, this study builds a corporate social responsibility model that is placed as a moderating variable to determine this role. In this model, CSR as a moderating variable will interact with LDR and NPL. This model will also place bank size as a control variable to determine whether bank size plays a role in improving bank performance.

Loan-to-deposit ratio (LDR) reflects a bank's ability to channel funds to be lent to the public. This is often used as an assessment of the bank's liquidity aspects. Therefore, banks must be able to manage the distribution of loaned funds effectively and efficiently so that the bank is able to generate income without disrupting its liquidity. The results of previous research related to LDR and CSR were carried out by Gangi et al. (2018), with the finding that LDR and CSR were positively correlated with ROA. However, Sianturi and Rahadian (2020) and Putri et al. (2022) found a negative relationship, while Muhtadin et al. (2022) did not find a relationship between LDR and CSR.

While issuing loans to customers, bank management must be careful, because this will result in the risk of customers not complying with the interest payment schedule and loan principal installments, and this condition will lead to non-performing loans (NPL). Joseph et al. (2012) described NPL as a non-performing loan that is detrimental to bank assets. Thus, the NPL will have an impact on reducing the bank's operating income, which comes from loan interest income. This is part of the credit risk faced by banks, as stated by Liu (2016) who states that NPL is an indicator of the current level of bank risk and can affect a decrease in bank income. The increase in NPLs that occur in the banking industry will be detrimental to the banking industry, especially if it occurs continuously (Michael et al., 2006). This is supported by research results from Karim et al. (2010) who found that NPLs inhibit economic growth and stability.

Bank size is a scale that describes a bank's wealth, which is determined by the amount of bank assets. Several previous researchers also used total assets as a proxy for bank size and used the natural logarithm of total assets as a measure of bank size (Khan, 2022). Banks with a large scale and with guaranteed assets have greater access and opportunities to enter various sources of external financing. Large banks tend to have better economies of scale making it easier to channel credit, because they have the cheapest sources of capital from the deposits they collect. Large-scale banks also gain more trust from the public, so that they are more accessible to depositors as the main capital base available to banks (Khan, 2022). Therefore, the chance to improve a bank's income and performance is greater the larger the bank's scale. Several previous studies conducted by Lee and Isa (2017), Ahamed (2017), Al-Homaidi et al. (2018), Yao et al. (2018), and Karadžić and Đalović (2021) produced empirical data that shows bank size has a large influence on profitability. Meanwhile, Al-Harbi (2019) has a different conclusion, namely that bank size has no impact on the profitability of banks operating within Islamic Cooperative Organizations.

Profitability is often used as a basis for assessing firm performance, this indicator reflects management's success in managing a company. There are several profitability indicators, but this study uses the rate of return generated from assets used for bank operations and is known as return on assets (ROA) as a measure of bank performance. Several researchers use ROA as a measure of bank performance, including Al-Homaidi et al. (2018), Nurhayati et al. (2021), Faozi et al. (2022), and Khan (2022). Several previous studies related to ROA conducted by Bangun (2019) and Lachuer and Jabeur (2022) found that CSR had an impact on increasing ROA, and this research is supported by Putri et al. (2022). In another study, Bangun (2019) revealed that bank size has no impact on ROA. However, S. My and H. My (2022) found that bank size has a positive impact on ROA, and this finding is not in line with Bangun (2019).

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2. AIMS AND HYPOTHESES

This study aims to develop a practical model that is useful for identifying factors that influence bank performance by using corporate social responsibility as a moderating variable that plays a role in influencing bank performance in Indonesia.

To test the influence of non-performing loans, loan-to-deposit ratio, bank size, and corporate social responsibility on bank performance, and to determine the role of corporate social responsibility in improving bank performance, the following hypotheses are formulated:

H_1: *Non-performing loans reduce bank performance.*

H_2: *Loan-to-deposit ratio improves bank performance.*

H_3: *Corporate social responsibility significantly predicts bank performance achievement.*

H_4: *Bank size has a positive effect on bank performance.*

H_5: *The interaction between non-performing loans and corporate social responsibility increases bank performance.*

H_6: *The interaction between the loan-to-deposit ratio and corporate social responsibility increases bank performance.*

3. METHODOLOGY

This study was done between 2017 and 2021 at conventional commercial banks that were listed on the Indonesia Stock Exchange. The data used are secondary data according to the research variables. Data collection was done using documentary studies through IDX Statistics and the Indonesian Capital Market Directory (ICMD) with a purposive sampling method. There are 20 banks for the 2017–2021 period that meet the required criteria according to the requirements of analysis, resulting in 90 observations.

By using variables from the latest literature which have also been used by previous researchers, including Gangi et al. (2018), Sianturi and Rahadian (2020), Nurhayati et al. (2021), Putri et al. (2022), Muhtadin et al. (2022), S. My and H. My (2022), and Khan (2022), return on assets is used as a proxy for bank performance and as the dependent variable, non-performing loans and loan-to-deposit ratio, corporate social responsibility (CSR) and bank size are used as explanatory variables. This study also places corporative social responsibility (CSR) as a moderating variable which functions to strengthen explanatory variables in influencing bank performance, so that corporate social responsibility (CSR) is a variable that plays a dual role.

Regarding corporate social responsibility in this study, it was measured using the Global Reporting Initiatives (GRI) guidelines version 3.1 (G3) and version 4.0 (G4). Disclosure index calculation aims to measure the level of corporate CSR disclosure. Many aspects in GRI G3.1 and GRI G4.0 are different, so after the CSR disclosure score on each aspect is known, then it is divided by the total aspects in GRI G3.1 and GRI G4.0. The CSR index calculation formula is as follows:

$$CSRI_j = \frac{Total\ CSR_{aj}}{aj}, \tag{1}$$

where $CSRI_j$ = Corporate CSR Disclosure Index. CSR_{aj} = Score aspects of corporate *CSR* disclosure. aj = Number of aspects of GRI disclosure.

The description of the research variables is shown in Table 1.

Table 1. Description of variables

Variables	Symbol	Definition
Dependent Variable		
Bank Performance	BP	Profit after tax, to total assets
Independent Variables		
Non-performing Loan	NPL	(Non-performing loan, to total loans) · 100%
Loan to Deposit Ratio	LDR	Total loans, to total deposit
Control Variable		
Bank Size	BS	Natural logarithm of total assets
Moderating Variable		
Corporate Social Responsibility	CSR	Total CSR_{aj}/aj

To analyze the relationship between loan-to-deposit ratio, non-performing loans, corporate social

responsibility, bank size, and bank performance, the Estimation Ordinary Least Square (OLS) was also used by previous researchers.

$$BP_{i,t} = \beta_0 + \beta_i LDR_t + \theta i NPL_{i,t} + \\ +\varsigma_1 CSR_t + \varsigma_2 BS_t + \varepsilon_{i,t}, \\ \varepsilon_{i,t} = \eta_i + \gamma_t + v_{i,t}, \\ i = 1 \ldots N, t = 1 \ldots T. \quad (2)$$

This model is a multiple linear regression model, and the equation is formulated as follows.

$$BP_{i,t} = \beta_0 + \beta_1 LDR + \beta_2 NPL + \\ +\beta_3 CSR + \beta_4 BS + \beta_5 LDR \cdot CSR + \\ +\beta_6 NPL \cdot CSR + \varepsilon, \quad (3)$$

where β_0 is a constant, while β_1, β_2, β_3, β_4, β_5 and β_6 are regression coefficients. $BP_{i,t}$ is a bank's performance for bank *i* at time *t*, which is the dependent variable and is proxied by return on assets (ROA). While *LDR* is the loan-to-deposit ratio, *NPL* is a non-performing loan, *CSR* is corporate social responsibility, BS is the size of a bank (natural logarithm of total assets) as a controlling variable for bank wealth, which is a control variable. Furthermore, *LDR* · *CSR* is the interaction of *LDR* and *CSR*, and *NPL* · *CSR* is the interaction between *NPL* and *CSR*.

4. RESULTS

The results of the data analysis are sequentially explained by starting with descriptive statistical explanations as in Table 2.

The mean value of the proxy for bank performance is 1.89% with a standard deviation of 1.04%, which indicates that the differences in bank performance between banks in the Indonesian banking industry are not much different. The average NPL is 2.37%, with a minimum NPL of 0.00% and a maximum of 5.65%; there is one bank whose NPL is greater than 5%, namely a bank with the initial MAYA, and this occurred in 2017 at 5.65% and in 2018 at 5.54%. The average LDR is 86.94%, in the last three years there have been two very aggressive banks in lending with an LDR of more than 110%, namely banks with the initials BTPN and SDRA. The mean CSR is 0.59 and the mean bank size is 77.35% with a standard deviation of 0.20% and 97.31%, respectively.

To ascertain if the regression model is practical to use in estimation, a model test is carried out as in Table 3 and Table 4.

Table 3. Determination coefficient

Source: Author's compilation of regression analysis results.

Model	R	R-Square	Adjusted R-Square	Std. error of the Estimate
1	0.565	0.319	0.270	0.8938

Note: Dependent variable: Bank performance (ROA); Predictors: (Constant): NPL, LDR, CSR, Bank Size, *LDR · CSR*, *NPL · CSR*.

Adjusted R-Square value is 0.270, or 27.00%, indicating that the model's accuracy in making predictions is 27.00%, and that the remaining 73% is due to factors outside the model.

Table 4. ANOVA

Source: Author's compilation of regression analysis results.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	31.011	6	5.169	6.474	0.000***
Residual	66.259	83	0.798	–	–
Total	97.270	89	–	–	–

Note: *** Significance less than 1%.

Table 2. Summary statistical description

Source: Author's compilation according to the bank reporting data.

Variables	N	Minimum	Maximum	Mean	Std. deviation
Bank Performance – ROA	90	0.02	4.31	1.8942	1.0454
NPL	90	0.00	5.65	2.3741	1.0569
LDR	90	12.35	163.00	86.9407	23.1053
CSR	90	0.16	0.87	0.5873	0.2031
Bank Size	90	29.43	415.40	77.3513	97.3130
NPL · CSR	9	0.00	4.47	1.4457	0.9515
LDR · CSR	90	3.94	114.14	52.0697	23.7016
Valid N (listwise)	90	–			

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Table 5. Regression coefficient, t-value, and t significance

Source: Author's compilation of regression analysis results.

Model	Unstandardized	Coefficients	t value	Sig-t
	B	Std. error		
(Constant)	–3.474	1.391	–2.497	0.015
NPL	–0.372	0.361	–1.030	0.306
LDR	0.071	0.017	4.191	0.000***
CSR	11.927	2.634	4.528	0.000***
SIZE	5.000E–005	0.001	0.048	0.962
NPL · CSR	–0.195	0.533	–0.365	0.716
LDR · CSR	–0.128	0.030	–4.269	0.000***

Note: * Significance level at 10%, ** significance level at 5%, and *** significance level at 1%.

Table 6. Expected and actual hypotheses

Variables	Bank performance	
	Expected results	Actual results
NPL	–	–
LDR	+	+
CSR	+	+
SIZE	+	+
NPL · CSR	+	-
LDR · CSR	+	-

As can be seen in Table 4, F = 6.474 has a significance level of F (Sig-F) = 0.000, which is less than 1%. As a result, the regression equation satisfies the goodness of fit conditions specified by the OLS, making it possible to employ the regression equation for estimate.

Table 5 shows the results of the regression analysis, which shows the regression coefficient, t-value, and t significance (sig-t).

Table 5 shows empirical evidence that NPL and bank size have no effect on bank performance, while LDR and CSR have a significant positive effect. Thus, hypothesis 1 and hypothesis 4 are rejected, while hypothesis 2 and hypothesis 3 are accepted.

The results of testing the interaction of *NPL* and *CSR* (*NPL* · *CSR*) have no effect on bank performance, while the interaction of *LDR* and *CSR* (*LDR* · *CSR*) has a negative effect on bank performance. Thus, hypothesis 5 and hypothesis 6 are rejected. Hypothetical decisions are presented in Table 6.

5. DISCUSSION

Table 5 and Table 6 show that a low NPL has an impact on improving bank performance, but hypothesis 1 (H_1) is rejected, because sig-t 0 0.306 > 0.05. Non-performing loan has no impact on bank performance, although there are indications of a negative effect. This condition indicates that the NPL volatility is low, this is also evidenced by the standard deviation value, which is lower than the mean. These empirical findings support the research results of Sianturi and Rahadian (2020) and Muhtadin et al. (2022). Different findings were conveyed from Putri et al.'s study (2022), which found a negative effect.

A high loan to deposit ratio influences the improvement of bank performance, and hypothesis 2 (H_2) is accepted, because the sig-t value is 0.000 < 0.01. This condition resulted in an increase in bank interest income as the main source of bank income. The results of this study are in line with Gangi et al. (2018), but not in accordance with the studies by Sianturi and Rahadian (2020) and Putri et al. (2022) who found a negative effect, and the studies by Faozi et al. (2022) and Taswan et al. (2023) who did not find this effect.

Corporate social responsibility has an impact on increasing bank performance with of sig-t = 0.000 so that hypothesis 3 (H_3) is accepted. CSR activities carried out by a company received a positive response from the community, causing public trust in banks to increase, as a result, community business activities through banking increased,

and this increase affected the bank's income and performance. The results of this study support the studies of Gao and Zhang (2015), Gangi et al. (2018), and Putri et al. (2022). This result supports the claim made by Barko et al. (2021) that banks that engage in CSR can earn more money than those that do not. This has support from Kieu et al. (2022) who also stated that mandatory CSR increases company efficiency, while Hang and Nghi (2022) state that CSR provides a positive perception of benefit businesses. However, in the study by S. My and H. My (2022), different findings were put forward which revealed a negative effect.

Bank size, although the regression results show a positive direction, statistically has no significant effect on bank performance, because sig-t is 0.962. Thus, the scale of a bank's business does not determine bank performance even though in theory of economies of scale, large-scale banks are more likely to earn greater interest income. This condition reflects that large-scale banks are unable to take advantage of these opportunities, this is due to unfavorable business conditions resulting from the global economic crisis and the COVID-19 pandemic. The results of this study are supported by Taswan et al. (2023), but differ from the study by Bangun (2019), which found a negative effect, and the study by S. My and H. My (2022), which found a positive effect.

The results of the interaction moderation test between NPL and CSR ($NPL \cdot CSR$) are not significant for bank performance, with a significance level of 0.716 > 0.05. Thus, corporate social responsibility does not strengthen the relationship between NPL and bank performance and therefore does not play a moderating role in this relationship. Meanwhile, the results of the interaction moderation test between LDR and CSR ($LDR \cdot CSR$) are significantly negative at the level of less than 1%. Thus, corporate social responsibility plays a significant role in moderating the relationship between LDR and bank performance but plays a role in reducing bank performance.

CONCLUSION

This study uses data from conventional commercial banks to determine the influence of non-performing loans, loan-to-deposit ratio, bank size, corporate social responsibility, and the role of corporate social responsibility in strengthening this influence on bank performance in Indonesia. The research results show empirical evidence that bank performance is positively influenced by the loan-to-deposit ratio and corporate social responsibility, while non-performing loans and bank size have no effect. Furthermore, from the Sobel test results, this study finds empirical evidence that corporate social responsibility plays a moderating role in reducing the influence of the loan-to-deposit ratio on bank performance. Meanwhile, for non-performing loans, corporate social responsibility (CSR) has not been proven to play a moderating role. The results of this study raise policy implications for managers to pay attention to loan-to-deposit ratios and corporate social responsibility as factors that play an important role in determining bank performance.

Although this study has revealed the influence of non-performing loans, loan-to-deposit ratio, bank size, corporate social responsibility, and the role of corporate social responsibility in moderating this influence on bank performance in Indonesia, it still has several limitations that must be corrected in further research. The limitation of this study is that the sample size of 20 banks that meet the requirements for a 5-year period is too small. Second, the adjusted R-square value of 27.00% is in the low category, because only 27% of the explanatory variables can explain the response variable. Therefore, it is recommended for further research to increase the sample and research period and consider macro variables such as interest rates, inflation, and economic growth to be included in the model to obtain different results and conclusions.

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CONFLICT OF INTEREST

The authors have no conflict of interest, whether religious, social, political, economic or cultural, which have an impact on the research results.

AUTHOR CONTRIBUTIONS

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