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Influence of Green Loans, Corporate Social Responsibility and Non-Performing Loans on Bank Profitability in Indonesia

Aqib Burhannudin Rizqullah[1], Wisnu Wibowo[2]

Abstract:

Increasing environmental degradation and climate change caused by inefficient economic activities pose a significant risk to global conditions. This phenomenon has led various countries towards sustainable economies focusing on financial benefits and environmental, social, and governance (ESG). This study analyzes the influence of green loans, corporate social responsibility, and non-performing loans on bank profitability in Indonesia (a case study of first movers in sustainable banking). The study uses panel data from 6 banks in Indonesia covering the period 2017-2022 and estimates using the First Difference Generalized Method of Moments (FDGMM). The results show that green loans positively and significantly impact bank profitability in Indonesia. Corporate Social Responsibility shows no significant impact on bank profitability in Indonesia. Non-performing loans have a negative and significant impact on bank profitability in Indonesia.

Keywords: *Green Loan, Corporate Social Responsibility, Non-Performing Loan, Bank Profitability*

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1. Introduction

The global economy has gradually shifted towards green, environmentally friendly, and sustainable development since the 1990s. Starting from Agenda 21 at the 1992 Earth Summit, the Kyoto Protocol in 1997 as a complement to the United Nations Framework Convention on climate change, and then the Paris Agreement in 2015, various actions towards sustainability have been taken. The increasing environmental degradation and climate change challenges caused by inefficient economic activities pose a significant risk to global conditions. This phenomenon has led various countries towards sustainable economies focusing on financial benefits and environmental,

[1]*Faculty of Economics and Business, Universitas Airlangga, Indonesia. aqib.burhannudin.rizqullah-2021@feb.unair.ac.id*
[2]*Faculty of Economics and Business, Universitas Airlangga, Indonesia. wisnuwibowo@feb.unair.ac.id*

social, and governance (ESG). This situation emphasizes the importance of a country adopting a green economy (Lian et al., 2022).

Bappenas (Badan Perencanaan Pembangunan Nasional) has developed the Indonesia Green Economy Index, which consists of a collection of 15 multidimensional indicators covering the interconnection between the three main pillars of sustainability: environmental, social, and economic. The score of the Indonesia Green Economy Index has shown an increasing trend, reaching 59.17 in 2020, indicating that Indonesia is moving towards a green economy and is expected to help Indonesia achieve its target of Net Zero Emissions (NZE) by 2060 or earlier (Bappenas, 2022).

In the era of sustainable development, the banking sector plays a crucial role in the transition to a green economy because the allocation of funds from banks can significantly impact the capacity and potential of the industry. Banks and financial markets are funding sources for environmentally friendly investments and are critical to the success of environmentally friendly economic policies. The banking sector can also support a country's adaptation to climate change and enhance its financial resilience against climate risks. This role can be realized by allocating bank funding to climate-sensitive sectors through green loans, green bonds, green sukuk, blended finance, or other instruments (Andaiyani et al., 2023). Environmental banking is rapidly becoming a global standard for adopting business operations that are socially and environmentally acceptable, thereby making the Earth habitable for generations to come. Green loans are one of the tools that can protect the environment financially. Banks must consider living environmental financing, social responsibility, and sustainable financing (Luo et al., 2021).

Environmental credit policy is a way to direct the flow of funds and optimize the allocation of financial resources, which plays a crucial role in transitioning toward a low-carbon economy (Gao & Guo, 2022). Indonesia's greenhouse gas emissions tend to increase annually but experienced a decline in 2020-2021 due to COVID-19-related activity restrictions. According to the European Commission (2023), Indonesia's greenhouse gas emissions in 2022 reached 1.24 gigatons of carbon dioxide equivalent (Gt CO2e), which accounts for approximately 2.3% of global greenhouse gas emissions. In 2022, Indonesia's greenhouse gas emissions increased by 10% compared to the previous year, setting a new record. This annual increase rate is the highest among other countries. Looking at the source, Indonesia's greenhouse gas emissions in 2022 were generated mainly by fossil fuel exploitation (mining, production, and processing). The breakdown of Indonesia's greenhouse gas emissions in 2022

by sector is as follows: fossil fuel exploitation, 0.27 Gt CO2e; power generation, 0.25 Gt CO2e; agriculture, 0.19 Gt CO2e; industrial energy consumption, 0.18 Gt CO2e; transportation, 0.15 Gt CO2e; waste, 0.10 Gt CO2e; industrial processes, 0.07 Gt CO2e; and non-industrial building energy consumption, 0.04 Gt CO2e (EC, 2023).

The hydro-meteorological disaster trend is increasing in Indonesia and is influenced by short-term climate variability and the impact of climate change. The surface temperature in Indonesia continues to rise consistently. Greenhouse Gas (GHG) emissions are the leading cause of climate change, which can threaten the nation's life. Indonesia is one of the countries supporting various efforts to mitigate climate change. The Indonesian government has committed to reducing GHG emissions by 29% on its own and 41% with international support, based on the baseline GHG emissions in 2030, at the UNFCCC COP 21 meeting in Paris 2015. Low-Carbon Development (LCD) is a new development platform aimed at preserving economic and social growth through low-emission development activities and reducing excessive exploitation of natural resources. Based on Presidential Regulation Number 18 of 2020 regarding the 2020-2024 RPJMN, the reduction of greenhouse gas emissions and emission intensity will heavily depend on the implementation of policies in the energy, land and peat, industry, waste, agriculture, and coastal and marine (blue carbon) sectors. The transition to a low-carbon economy is not separate from risks. Therefore, this transition must be carried out to manage risks well. These risks can include physical risks, transition risks, and accountability risks. The potential financial impacts include physical damage to assets, disruptions to production processes, disruptions to supply chains, disruptions to raw material prices, and changes in product/service demand (OJK, 2021). The research from the University of California, Berkeley states that if climate change is not mitigated effectively, it could lead to a 23% decline in GDP by 2100 (Burke et al., 2015).

The condition highlights the importance for Indonesia to adopt a green economy. Eight major banks in Indonesia have committed to being pioneers in sustainable banking. This commitment is materialized through a pilot project titled "First Step to Be a Sustainable Bank," which is a collaboration between the Financial Services Authority (OJK) and WWF-Indonesia. The eight banks representing 46% of the national banking assets are Bank Mandiri, BRI, BNI, BCA, Bank Muamalat, Bank Syariah Indonesia, BJB, and Bank Artha Graha International. The targeted competencies through this pilot project are the ability of organizations to manage environmental, social, and governance (ESG) aspects in their business decisions and increasing the portfolio of

funding for businesses that implement sustainable practices (WWF, 2015). The commitment of banks to implementing sustainability initiatives is materialized through the development of a Sustainable Action Plan (RAKB) by OJK Regulation No. 51/POJK.03/2017, which encompasses the development of sustainable financial products/services, internal capacity building, and organizational governance aligned with sustainability principles. OJK has launched the Roadmap for Sustainable Finance Phase II (2021-2025) as an effort to accelerate the implementation of Environmental, Social, and Governance (ESG) principles for the financial sector, as well as the Green Taxonomy Edition 1.0 as a guide to expedite sustainable financing programs in the financial industry (OJK, 2021).

Chinese Banking and Insurance Regulatory Commission statistics show that the value of green loans issued by 21 major Chinese banks increased from 5.2 trillion yuan at the end of 2013 to 10.6 trillion yuan by June 2019 (Lian et al., 2022). Data from the China Banking Regulatory Commission shows that green loans issued by commercial banks in China exceeded 15 trillion yuan by the end of 2021, and carbon dioxide emissions reduction exceeded 700 million tons. The green lending policy has positively promoted commercial banks' development of green lending businesses (Gao & Guo, 2022). The total value of sustainable financing in Indonesia reached IDR 913.15 trillion by November 2020. The majority of these funds were in the form of green loans, valued at IDR 809.75 trillion, followed by green bonds and gender bonds worth IDR 59.9 trillion, and blended finance worth IDR 35.6 trillion. The global sustainability bond, on the other hand, had the lowest value among the instruments, at IDR 7.9 trillion. Implementing sustainable finance is a significant program that requires well-planned steps. Failure to achieve responsible growth will result in substantial costs (OJK, 2021).

Xi et al. (2022), research that studied the impact of green loans on the financial performance of companies in China, found that the green loan ratio positively impacted the financial performance of listed banks on the stock exchange. On the contrary, Pan & Lee (2022) explained in their research that green loans have a negative impact on the operational performance of commercial banks in Guangxi. Commercial banks have significant investments, low profits, and long repayment periods during the initial development of green loans. However, on the other hand, Chang's (2021) research shows that the growth rate of the green loan ratio does not have a significant impact on the growth rate of commercial bank profitability in China because of relatively low operational costs from high-pollution companies, high energy consumption, and excess capacity, as well as inadequate government penalties against these

companies in China. A limitation of previous research was using a static panel data model with lagged dependent variables, which led to biased estimation results. In contrast, the analysis technique used in this study is dynamic panel data regression, specifically the Generalized Method of Moments (GMM), which can address the issue of endogeneity related to the use of lagged dependent variables.

Based on empirical facts and previous research results, the impact of green loans on bank profitability remains a topic of debate, thus offering opportunities for further investigation. Empirical studies on green loans and bank profitability are still limited, requiring more studies investigating the relationship. Empirical research on green loans has focused on specific countries, mainly developed countries like the European Union and the United States. In contrast, research in developing countries, particularly Indonesia, as part of the "The First Movers on Sustainable Banking" group, is relatively scarce. Therefore, this study aims to find empirical evidence that supports the influence between green loans and bank profitability in Indonesia. This research uses the latest data covering the period from 2017 to 2022. This research differs from previous research because it adds the variable of corporate social responsibility, which has garnered significant attention from both companies and academics in recent years. Most research focuses on non-financial companies, and relatively few studies investigate banks. Since the banking industry has played a crucial role in a country's economic development, it is necessary to examine the impact of CSR on bank financial performance further.

This study is critical because it provides an understanding of how a bank's implementation of green loans can build the bank's social responsibility image and environmental-friendly reputation, which in turn affects its performance, as well as insights into how this product can support the transition to a greener and more sustainable economy. This research aims to test and analyze the impact of green loans, corporate social responsibility, and non-performing loans on bank profitability in Indonesia in 2017-2022. This research is expected to contribute as reference material for analysis of the influence of green loans, corporate social responsibility, and non-performing loans on bank profitability in Indonesia.

2. Theoretical Background

Green Economy

The green economy is defined as a system of economic activities related to producing, distributing, and consuming goods and services that generate long-term human well-being without making future generations bear significant environmental risks and ecological scarcity (Barbier & Markandya, 2013). The transition to a green economy must proceed in tandem with the development of green finance, as their success is interdependent. Green loans are one of the products of green finance. Green loans refer to all types of lending instruments provided exclusively to finance or refinance entirely or partially new and existing environmentally friendly projects that meet specific criteria. Green loans can increase bank profits by reducing the negative impact of economic activities on the environment, attracting more investors seeking environmentally friendly investments (Acar & Yeldan, 2019).

Lian et al. (2022) green loan increases the net interest margin of banking through the creation of new revenue sources for commercial banks, increasing income from interest-bearing assets, and enhancing the reputation of environmentally friendly banking, thereby reducing debt financing costs. The issuance of green loans by banks can contribute to a higher interest rate by increasing profits.

Triple Bottom Line

The Triple Bottom Line (TBL) is a framework for Corporate Social Responsibility (CSR) that integrates three performance dimensions: economy, social, and environmental, which must achieve sustainable outcomes. Companies must apply TBL to achieve long-term profit, social projects, and environmental sustainability. The economic dimension, which is crucial for a company, is not just about earning high profits but also about achieving sustainable profits in the long term. The business world must consider its social and financial affairs in the social dimension. The environmental dimension, or environmental sustainability, is one of the main concepts in the TBL framework. If a business company does not respect the environmental dimension, future generations will not be able to enjoy the quality of life as it is now (Elkington, 1998).

CSR creates value for stakeholders and creates internal capabilities, such as being a pioneer in an industry that contributes to a company's competitive

advantage. Three primary channels through CSR provide competitiveness in a company: collaborating with different stakeholders, developing new business opportunities through the community, improving working conditions by increasing employee confidence, and providing better care. By investing in social responsibility, a company builds a reserve of reputation, increasing financial performance. CSR builds positive customer relationships, motivates employees, reduces company risk, and spreads positive news through oral communication, which can impact costs. CSR increases reputation and reduces financial risk, thus resulting in a smaller chance of bankruptcy than non-CSR companies (Preston & O'Bannon, 1997).

Ramzan et al. (2021) CSR activities generate a positive perception among bank customers, with potential customers who are attracted by them, ultimately increasing the bank's profit. Banks that invest more in CSR activities build strong relationships with their customers, thereby helping to reduce the financial risk of their customer base and increase their financial stability.

Non-Performing Loan

Empirical banking literature emphasizes that NPL has a negative impact on bank performance. NPL is considered "financial pollution" as the higher the NPL rate, the weaker the bank's performance. The increase in non-performing loans leads to higher risk-taking by banks and non-payment of loans, which decreases bank profitability and can even cause bank failure. The decline in loan portfolio quality due to non-performing loans reduces the ability to repay loans, resulting in the loss of core income and interest. Banks with high NPL ratios become more rigid and limit lending, ultimately decreasing bank performance (Boussaada et al., 2023).

Xi et al. (2022) non-performing loans are loans that need to be repaid in a timely manner, are suspicious, or are in default, resulting in a very low probability of recovering the loan. This measures the condition and quality of a bank's assets. When the level of non-performing loans is high, the bank will suffer direct losses, including lower bank profitability.

Siddique, Khan, & Khan (2021) explanation states that NPL is related to the theory of asymmetric information, the leading agency theory, and the theory of non-performing loans. When asymmetric information is widespread, the distribution of NPL is not uniform, and there is a possibility that a bank or financial institution may be declared bankrupt.

3. Methodology

This study employs a dynamic panel regression method to investigate the impact of green loans, corporate social responsibility, and non-performing loans on bank profitability in Indonesia. The Generalized Method of Moments (GMM) is applied using STATA 14 software for model analysis. The data used is secondary, consisting of a panel of 6 banks (Bank Artha Graha Internasional, Bank Central Asia, Bank Pembangunan Daerah Jawa Barat and Banten, Bank Negara Indonesia, Bank Rakyat Indonesia, and Bank Mandiri) that are part of the First Movers on Sustainable Banking group, covering a period from 2017 to 2022. The research data was obtained from annual reports and company sustainability reports.

The model used in this research is based on research conducted by Xi et al. (2022) and Ramzan, Amin, & Abbas (2021). The analysis model used in this research is:

$$ROA_{it} = \alpha + \beta_1 ROA_{it-1} + \beta_2 GL_{it} + \beta_3 LnCSR_{it} + \beta_4 NPL_{it} + \varepsilon_{it}$$

ROA means *the return on asset,* $\mathrm{ROA_{t-1}}$ is the lag *return on asset,* GL is *a green loan,* LnCSR is a logarithm natural *corporate social responsibility,* and NPL is a *non-performing loan.*

Table 1. Variable Description

Variable	Symbol	Measurement	Sources
Dependent			
Return on Asset	ROA	Percent, the net income to total asset	Annual Report
Independent			
Green Loan	GL	Percent, the proportion of green loans compared to the total loan	Sustainability Report
Corporate Social Responsibility	LnCSR	Billion rupiah, the natural log of the actual amount spent on CSR activities	Sustainability Report
Non-Performing Loan	NPL	Percent, the ratio of total non-performing loans to total loan	Annual Report

Two approaches are often used to estimate dynamic panel data regression models: First Difference Generalized Method of Moments (FDGMM) and System GMM (SysGMM). Both are general estimators designed for several situations, including panel data with N>T, independent variables that are not entirely exogenous (meaning they are accumulated with errors from the previous period or the same period), the existence of a dynamic relationship because it depends on past realizations, individual effects, heteroscedasticity problems, and individual autocorrelation (Roodman, 2009).

The criteria for determining the best GMM estimator are the validity of the instrument variables (Sargan test) and consistent estimators (Arellano-Bond test) (Arellano & Bond, 1991). The instrument is said to be valid if the Sargan test p-value is > 5% significance level. The model is considered consistent if the second order p-value (AR-2) is > 5% significance level. The significance tests used in this research analysis include partial tests (t-test) and simultaneous tests. Independent variables individually or simultaneously significantly influence the dependent variable if the p-value < the significance level of 1%, 5%, or 10%.

4. Empirical Findings/Result

The results of the dynamic panel model testing using GMM estimation to analyze the impact of green loans and corporate social responsibility on bank profitability are presented in Table 2 below. Based on Table 2, the best model selected and used in this study is the Two-step First Difference GMM model. This is because this estimator meets the criteria for choosing the best model. The instrument is valid because the Sargan test p-value (0.999) exceeds the significance level (5%). The AR-2 p-value (0.911) is also more significant than the significance level (5%).

Table 2. Estimation Results of the GMM Model with Dependent Variable ROA

Variable	Coef.	Std. Err.	t	P>t
ROA_{t-1}	-0.4777985	0.2663203	-1.79	0.073*
GL	0.0500215	0.0291713	1.71	0.086*
lncsr	3.322097	2.37517	1.40	0.162

NPL	-1.175228	0.3216393	-3.65	0.000***
Sargan p-value		0.9992		
AR(2) p-value		0.9115		
Wald chi2 p-value		0.0002		

Note : * significant at 10% level, ** significant at 5% level, *** significant at 1% level.
Source: Data Processing Results (2024)

Based on the estimation results of the Two-step First Difference GMM model in Table 2, it appears that the partial effect of each independent variable on bank profitability in Indonesia can be determined.

1) The influence of green loans on return on assets in Indonesian banking shows a significant positive effect with a coefficient of 0.050, indicating that a one percent increase in green loans will increase return on assets by 0.050 percent, assuming other variables remain constant.
2) The influence of corporate social responsibility on return on assets indicates that the test results do not show a significant effect.
3) The influence of non-performing loans on return on assets shows a significant negative effect with a coefficient of -1.175, indicating that a one percent increase in non-performing loans will decrease return on assets by -1.175 percent, assuming other variables remain constant.

According to the estimation results of the First Difference GMM model in Table 2, it is also seen that the p-value Wald chi2 = 0.000 < significance level (5%). This indicates that the independent variables simultaneously affect bank profitability in Indonesia.

5. Discussion

The Influence of Green Loans on Bank Profitability in Indonesia.

The estimated results from the Two-step First Difference GMM model in Table 2 indicate that the variable green loan has a significant positive impact with a coefficient of 0.050, suggesting that green loans can increase bank profitability in Indonesia. The financial intermediation theory by Gurley & Shaw (1956) explains that banks collect funds from those with excess funds and lend them back to those with a shortage of funds in the form of credit, generating profit. Green loans are one type of credit that can increase bank profit by reducing the

negative impact of economic activities on the environment, thereby attracting more environmentally conscious investors (Acar & Yeldan, 2019). The positive impact in the banking sustainability report from the application of sustainable financial principles is reflected in the economic aspect, where there is an increase in the number of borrowers included in the portfolio of sustainable business activities. In the environmental aspect, financing sustainable businesses, such as those focusing on Environmental, Social, and Governance (ESG), has a positive impact on land-based conservation, efficient business processes using energy, and reducing greenhouse gas emissions. In the social aspect, banking solutions support businesses from marginalized groups, women, and people with disabilities.

The majority of the green loan-to-total credit ratio has experienced an increase each year, accompanied by a rise in bank profits, leading to an increase in return on assets over the past six years. Despite this, there are still opportunities for banks to increase the disbursement of green loans, as the latest data shows that the proportion of green loans to total disbursed credits remains relatively low. For example, Bank Artha Graha Internasional has a proportion of 4.54%, Bank Central Asia 25.4%, Bank Pembangunan Daerah Jawa Barat and Banten 13.48%, Bank Negara Indonesia 28.5%, and Bank Mandiri 24.5%.

The study's findings align with Xi et al. (2022) that the green loan ratio, a quantitative measure of green loan at registered banks, positively impacts financial performance. Implementing green loans by registered banks increases the green loan ratio and promotes environmentally friendly and sustainable development and community development. The positive impact of social image and positive news disseminated through social responsibility can compensate for the costs required to operate green loans. Research by Lian et al. (2022) suggests that green loans increase the net interest margin of commercial banks through two channels. First, green loans create new revenue sources for commercial banks and increase interest income. Second, green loans enhance the reputation of environmentally friendly banks and reduce debt financing costs. Banks' publication of green loans can contribute to higher interest rates with improved green development.

Commercial banks actively practicing green loans achieve higher profit growth and reduce concerns about the loss of business profits caused by social responsibility. The green loan policy increases the profitability of commercial banks by increasing non-interest income and reducing the non-performing loan ratio. Compared to large national banks, the profits of commercial banks in urban and agricultural areas increased significantly after implementing the

green loan policy (Gao & Guo, 2022). The study by Jiang & Qian (2022) explains that green loans can increase the profitability of general banks in China. Yuan & Zeng (2023) state that increasing bank investment in green loans positively impacts profitability. Research by Zhang (2018) shows that green loans positively impact banks' financial performance, providing a basis for continuing green loan development.

The study's findings differ from those of Ranning (2022), which showed that green loans have a negative impact on the profitability of general banks. Additionally, the study by Song et al. (2019) found a negative correlation between the green loan ratio of commercial banks in China and their profitability, attributed to differences in the development stages of green loans in China and abroad. According to Pan & Lee (2022), implementing green loans is not conducive to improving bank performance in the short term because many loans are disbursed to high-energy-consuming and high-polluting companies. If loans are unavailable, this can lead to a decrease in bank profits. However, the long-term development of general banks in developing green loans, enriching their credit structure, and increasing green loan balances over time can contribute to increased profitability.

The study's findings differ from those of Chang (2021), which showed that green loans have no significant impact on the profitability of general banks. China's commercial bank lending targets are still concentrated on high-pollution, high-energy consumption, and excess capacity industries. Research by Andaiyani et al. (2023) found that the green loan ratio has no significant effect on bank performance. The research sample primarily consists of state-owned banks, which tend to prioritize profit over profitability. The larger the green loan does not guarantee increased profits or profitability because the amount of credit given to customers without considering credit quality increases the likelihood of non-performing loans, resulting in decreased profits.

The Influence of Corporate Social Responsibility on Bank Profitability in Indonesia.

Research findings on the variable Corporate Social Responsibility (CSR) indicate that it does not significantly impact bank profitability. The Triple Bottom Line (TBL) framework, developed by John Elkington, can be considered a framework for CSR that integrates three dimensions of performance: economic, social, and environmental, which should yield

sustainable outcomes. Companies should apply TBL to achieve long-term financial gains and social and environmental projects (Elkington, 1998).

Bank Artha Graha Internasional released CSR funds worth IDR 6.74 billion in 2022 for disaster relief, energy conservation campaigns during Earth Hour, tree planting, and other initiatives. Bank Central Asia allocated IDR 143.1 billion in CSR funds in 2022 for quality education to enhance the competitiveness of young generations, infrastructure development, public facilities, social facilities, philanthropy, and other initiatives. Bank Negara Indonesia allocated IDR 99.7 billion in CSR funds in 2022 for food security, religious facilities, and teacher appreciation and certification. Bank Rakyat Indonesia released CSR funds worth IDR 284.99 billion in 2022 for social, economic, and environmental pillars. Bank Pembangunan Daerah Jawa Barat and Banten allocated IDR 171.5 billion in CSR funds in 2022 for infrastructure, public facilities, social community, and religious initiatives. Bank Mandiri released CSR funds worth IDR 137.6 billion in 2022 for religious facilities, natural disasters, education, and other initiatives. Most CSR bank initiatives focused on social and environmental pillars, with economic pillars receiving less attention. The research findings align with the views of Rampengan et al. (2024) that some companies focus too much on environmental performance but neglect their primary business goal of achieving profits. Although initially intended to generate benefits, social activities can become obstacles to achieving maximum profits. Implementing CSR requires significant costs, which can further burden a company's expenses and potentially decrease profitability. Banks, in particular, engage in CSR activities to maintain a good reputation and attract new customers. This is more effective than engaging in broader CSR activities that may not attract new customers or retain existing ones.

Research by Lin et al. (2020) shows that CSR involvement does not lead to an increase in a company's financial performance and strengthens the idea of the "charitable company model" as proposed by Gössling (2011), which is that CSR does not generate profits. CSR activities require additional resources, which result in higher costs for companies, potentially neutralizing the benefits gained from CSR activities, thus not affecting a company's financial performance. Theodoulidis et al. (2017) demonstrate that the impact of CSR on financial performance varies across companies in different industries due to the level of interest given to each stakeholder. Managers should recognize the role of social and environmental activities about employees, products, community, diversity, and the environment in creating market value for the company and other forms of value for society.

In contrast to Ramzan et al. (2021), CSR activities generate positive perceptions among potential customers and help attract customers, thereby increasing bank performance. Banks that invest more in CSR activities build strong relationships with their customers, which helps reduce financial risks and improve financial performance. Platonova et al. (2018) show a significant positive correlation between CSR disclosure and the financial performance of Islamic banks in GCC countries. Maqbool & Zameer (2018) found that CSR positively impacts the financial performance of Indian banks. Chi & Hang (2023) indicate that CSR expenses to the community are a positive factor in increasing bank efficiency by creating a positive image and good reputation among the community and customers. Szegedi et al. (2020) demonstrate that proper CSR disclosure has helped improve financial performance. Oyewumi et al. (2018) found a positive impact of CSR disclosure on bank financial performance, garnering government attention and increasing local community support, thereby contributing to long-term financial gains.

The research findings by Zhou et al. (2021) indicate that CSR activities initially increase financial burdens on banks in the short term, negatively impacting their financial performance. However, in the long term, CSR tends to provide more incentives for banking stakeholders, such as enhancing transparency and reducing environmental risks for banks. AlAjmi et al. (2023) found that the CSRD score has a negative impact on bank performance. Sharma & Aggarwal (2022) showed that CSR expenditures negatively impact companies' profitability.

The Influence of Non-Performing Loans on Bank Profitability in Indonesia.

Based on the research findings, the variable Non-Performing Loan (NPL) significantly and negatively impacts banks' profitability in Indonesia, with a coefficient of -1.175. This indicates that non-performing loans can decrease the profitability of banks in Indonesia. Empirical banking literature confirms that NPL has a negative impact on bank performance. NPL is considered a "financial pollution" as higher NPL levels correspond to weaker bank performance. The increase in non-performing loans leads to higher risk-taking by banks and non-payment of loans, which decreases bank profitability and can even cause bank failure. The decrease in loan portfolio quality due to non-performing loans reduces the ability to repay loans, resulting in the loss of primary income and interest. Banks with high NPL ratios become more rigid and limit loan disbursement, ultimately decreasing interest income and bank performance (Boussaada et al., 2023).

Banking credit risk, reflected in the NPL ratio, has been reduced to below 5% of the total credit held by the bank over the past six years. NPL at Bank Artha Graha Internasional in 2022 stood at 2.73%, a decrease from the previous year due to the bank's continued efforts to manage credit growth cautiously. NPL at Bank Central Asia in 2022 was 1.7%, lower than the previous year, with the restructuring caused by COVID-19 categorized as a loan with a clear collectibility for debtors meeting the criteria. The decrease in NPL at Bank Negara Indonesia in 2022 to 2.8% from the previous year was achieved through improved credit quality through a more prudent credit process. NPL at Bank Rakyat Indonesia was 2.82% in 2022, a decrease from the previous year due to the implementation of a soft landing strategy in managing credit risk by assessing credit risk according to the condition of the debtors. The prudent credit disbursement by Bank Pembangunan Daerah Jawa Barat and Banten resulted in NPL levels at the bank being maintained at 1.16% in 2022, lower than the previous year. The quality of assets at Bank Mandiri improved, with NPL at Bank Mandiri decreasing to 1.88% in 2022 compared to the previous year. In maintaining asset quality, Bank Mandiri has also managed its credit portfolio to anticipate potential decreases in quality, including by providing sufficient reserves.

Iqbal & Nosheen's (2023) research found that high non-performing loans (NPLs) in banks and the bank's inability to recover loans from customers negatively impact the bank's financial performance, even if the bank adopts sustainable development goals. Sustainable practices increase bank profits but cannot be increased if the bank's credit quality is low. Siddique, Khan, & Khan (2021) conducted a study on credit risk and financial performance, finding a significant negative relationship indicating that NPLs hinder bank profitability. NPLs affect the entire financial system of a country, particularly in developing countries.

Karim et al. (2022) found that the level of non-performing loans (NPLs) in Bangladesh is significantly higher than the global average, and NPLs significantly negatively impact bank profitability. The increasing trend of NPLs in Bangladesh may be driven by several factors, including information asymmetry, carelessness in evaluating loan applications by banks, inadequate bank management, and inadequate application of laws by regulators. To eliminate information asymmetry, banks must thoroughly review loan application data and information in credit analysis. Banks must also invest heavily in reliable credit information systems to eliminate information gaps and enhance the quality of borrowers' access to complete, accurate, and acceptable data. Effective loan portfolio management requires the use of cost-

effective solutions. Regulators must closely monitor operational efficiency and capital adequacy, paying attention to the cost-to-income ratio and bank capital position. Regulators must implement monitoring policies that indicate a bank is likely to experience a crisis.

Fadun & Silwimba (2023) examined the impact of credit risk management on the financial performance of commercial banks in Nigeria. Commercial banks accept deposits and lend for consumption and investment purposes. The disbursement of bank loans generates income, but it can also result in losses due to non-payment by borrowers. Risk arises when borrowers fail to pay and default on their obligations. Banks conduct comprehensive credit risk assessments before disbursing loans to ensure good credit risk management, protect deposits, avoid bank distress, and increase profitability. Commercial banks must do this effectively to control and monitor non-performing loans (NPLs).

Unlike Rahma & Sutrisno's (2023) research, which found that NPL does not affect financial performance, NPL reflects a bank's ability to manage problematic loans given by the bank. NPL represents credit risk, with higher ratios indicating poorer credit quality, a more significant number of problematic loans, and a greater burden on the bank. Banks must bear losses in their operational activities, affecting a decrease in profit (ROA). Theoretically, a high NPL means the bank's chances of earning interest income and loan repayments will be lost. Banks experience low credit risk but do not impact the increase in ROA, so NPL does not significantly affect profitability.

6. Conclusions

Based on the estimation model and previous discussions, there are several conclusions regarding the impact of green loans, corporate social responsibility, and non-performing loans on bank profitability in Indonesia. First, green loans have a positive impact on bank profitability. Green loans increase bank profits by creating new income sources for banks and interest income, as well as enhancing the reputation of environmentally friendly banking and reducing debt financing costs. Sustainable financial products positively impact economic, environmental, and social aspects. Second, corporate social responsibility does not significantly impact bank profitability. The realization of CSR programs focuses primarily on social and environmental pillars, while the economic pillar is still limited. CSR can be a long-term investment for banking companies in developing products and strengthening the trust of stakeholders. Finally, non-performing loans have a

negative impact on bank profitability. The increase in non-performing loans leads to higher risk-taking by banks and non-payment of loans. Banks limit lending, resulting in a decrease in interest income, which ultimately decreases bank performance.

However, this study has some limitations. First, the study has a limited period due to the recent issuance of the Financial Services Authority Regulation No. 51/POJK.03/2017. Second, the study has a limited number of banks due to the limited number of banks participating in The First Mover on Sustainable Banking. Some recommendations for future research include: First, increasing the number of banks and the study period to see more accurate trends. Second, comparing conventional banks or Shariah banks with banks from other countries to gain a more comprehensive understanding.

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