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The Sustainability Business of Indonesian Commercial Banks as Measured by Regulatory Compliance

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ABSTRACT

This research aimed to examine the relationship between the sustainability of bank business measured by bank performance and compliance with banking regulations. Bank compliance related to capital requirements, liquidity, and asset quality. This research uses quantitative methods to analyze the effect of compliance with banking regulations on bank performance. The research sample is a conventional private bank operating on the Indonesian Stock Exchange. The research period 2017 – 2021(before and during COVID-19) *with 25 banks that met the requirements was taken as the research sample. Data analysis uses Panel Estimation Corrected Standard Errors. The outcome demonstrates that strengthening bank performance is positively impacted by capital requirements compliance, especially return on assets, but has no effect on return on equity. Compliance with liquidity and asset quality does not affect bank performance. Another finding is that inflation functions as a control variable for bank performance, while bank size does not. Ultimately, these findings show that a bank must comply with capital adequacy requirements because it has been proven to improve its sustainability business.*
Keywords: *Sustainability Business, Bank Performance, Regulatory Compliance.*

Introduction

A preventive measure to guarantee that policies, provisions, systems, and procedures as well as the auctions conducted, conform with the relevant laws is to comply with the rules. Banks as service businesses that have the trust of community owners and communities who need funds play an important role in managing community funds and are committed to complying with the provisions made by the Financial Services Authority (Otoritas Jasa Keuangan-OJK), Bank Indonesia, and applicable laws in Indonesia. This compliance is related, among other things, to compliance in meeting capital requirements, liquidity provisions, credit distribution, etc.

Capital is an important element in encouraging business activities, including banking. Therefore, with capital, business activities can run to produce goods and services. For this reason, banks need sufficient capital, adequate liquidity, and good asset quality to encourage their performance and continue gaining public trust, all of which play important roles in encouraging bank performance (Sandow et al., 2021). Mehran and Thakor (2011) state that in a dynamic environment, greater capital will lead to bank survival and higher profitability. Depositors will have more confidence in banks that have sufficient capital, liquidity, and asset quality for the security of their deposit funds, so capital adequacy, liquidity, and quality of bank assets are important to maintain public confidence in banks.

Bank Indonesia as the highest authority in Indonesia, regulates the activities of banks operating in Indonesia. Minimum bank capital adequacy, liquidity, and asset quality are important aspects that are strictly regulated in the banking system in Indonesia because these involve guaranteeing the safety of public funds deposited in banks. Capital adequacy and liquidity requirements are very important to keep banks from failing to fulfill their obligations to their customers to avoid bankruptcy. According to Sandow et al. (2021), the minimum

capital adequacy is a crucial indicator of a bank's ability to absorb possible losses from operational and credit risks as well as a gauge of its solvency position.

Banks are required to maintain their health by remaining liquid, able to pay obligations and withstand unexpected possible losses. For this reason, Bank Indonesia makes provisions through Bank Indonesia Regulations (PBI) to ensure stability in the banking sector, all banks operating in Indonesia must meet and achieve a minimum capital.

Several previous studies provide empirical evidence and support the view that higher regulatory capital requirements will help reduce bank risk (Le et al., 2022). Some researchers found evidence that increased capital requirements help reduce bank risk because increased capital requirements increase the ability of banks to maintain capital adequacy so that liquidity risk from risk-based bank activities can be suppressed. Meanwhile, Rahman et al. (2020) found empirical evidence that banks with high capitalization tried to reduce credit risk and increase their financial stability. Therefore, compliance with regulations for banks is important not only to maintain bank soundness but also to improve bank performance.

This research examines the relationship between regulatory compliance and sustainability business practices in commercial banks. Compliance with capital requirements, liquidity, and asset quality capital is measured for the variable of regulatory compliance. The sustainability business uses bank performance measurement with Return on Asset and Return on Equity. This analysis is based on data from private commercial banks in Indonesia (IDR) from 2017 to 2021 (before and during COVID-19). The framework of sustainability in banking can be understood as a multifaceted concept that involves not just the financial health of a bank, but also its long-term ability to manage resources effectively, adhere to regulatory standards, and withstand financial shocks. Bank performance serves as a key proxy for assessing sustainability in the banking sector because it reflects the ability of banks to generate profits, manage risks, and fulfill their obligations to investors, customers, and regulators. Profitability Indicators (ROA & ROE) Proxy for Financial Performance: The Return on Assets (ROA) and Return on Equity (ROE) are key indicators of profitability, which is central to evaluating a bank's sustainability. These indicators reflect how efficiently a bank uses its resources to generate income (ROA) and how well it rewards its shareholders (ROE). Bank Performance and Sustainability: ROA is often seen as a better indicator of operational efficiency and long-term sustainability, as it shows how well the bank is managing its resources. In contrast, ROE reflects the bank's ability to generate profit for its equity holders, though high ROE may sometimes come at the cost of increased risk-taking.

Capital adequacy is a fundamental regulatory requirement that measures a bank's ability to absorb losses and maintain solvency. Higher capital buffers are indicative of a bank's financial strength, which ensures long-term sustainability by reducing the risk of insolvency during adverse economic conditions.

H_{1a}: Capital adequacy ratio significantly improves return on assets.

H_{1b}: Capital adequacy ratio significantly improves return on equity.

In the context of banking sustainability, **liquidity** is a critical factor that influences a bank's ability to meet its short-term obligations without compromising its long-term solvency and profitability. One of the key indicators of liquidity is the Loan-to-Deposit Ratio (LDR), which reflects the bank's capacity to convert deposits into loans and its reliance on deposits for funding.

H_{2a}: Loan-to-deposit ratio significantly improves return on assets.

H_{2b}: Lon to deposit ratio significantly improves return on equity.

Asset quality refers to the proportion of a bank's assets that are non-performing or at risk of default. A bank's ability to manage credit risk and maintain high asset quality is critical for sustaining profitability over time. A higher proportion of non-performing loans or bad debts can erode profitability, leading to lower performance indicators like ROA and ROE.

Banks that maintain high-quality assets are better positioned to weather economic downturns and regulatory scrutiny, supporting their long-term sustainability.

H_{3a}: Return on assets is adversely affected by non-performing loans.

H_{3b}: Return on equity is adversely affected by non-performing loans.

Overall, the contribution of this research lies in its ability to identify and quantify the relationship between regulatory compliance and sustainability business viewed by bank performance, providing both theoretical insights and practical guidance for regulators, policymakers, and banking institutions, particularly in emerging market economies like Indonesia. Understanding the Impact of Compliance on Bank Performance. This research provides valuable insights into the relationship between compliance with banking regulations (specifically, capital requirements, liquidity, and asset quality) and the sustainability of bank business, as measured by bank performance. It highlights the significance of capital adequacy compliance in enhancing bank performance, particularly return on assets (ROA), which is a key indicator of operational efficiency and profitability.

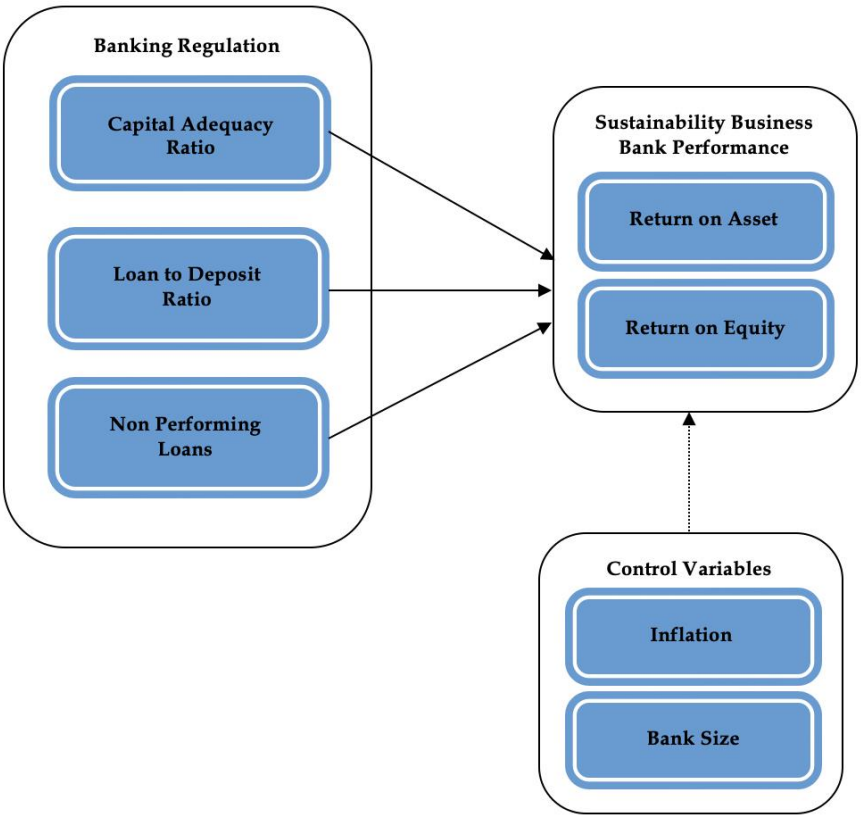
The study is contextualized within the Indonesian banking industry, examining 25 conventional private banks listed on the Indonesian Stock Exchange over a period from 2017 to 2021, encompassing both pre- and post-COVID-19 periods. This geographical and temporal scope adds contextual relevance and depth to the findings, as it covers different economic conditions and regulatory environments. Quantitative Analysis with Robust Methodology. The use of quantitative research methods, particularly Panel Estimation Corrected Standard Errors (PCSE), allows for a more rigorous and reliable assessment of the impact of banking regulation compliance on performance. This statistical technique accounts for potential heteroscedasticity and serial correlation, ensuring the robustness of the results.

Insights into Specific Regulatory Areas. The research emphasizes the varying impacts of different aspects of banking regulations on Capital Requirements, Liquidity, and Asset Quality. The study finds a positive relationship between compliance with capital adequacy requirements and bank performance, particularly in terms of return on assets (ROA). This highlights the importance of maintaining strong capital buffers to ensure long-term sustainability. In contrast, the study finds that compliance with liquidity and asset quality requirements does not have a significant effect on bank performance, which challenges some assumptions in previous research or policy discussions that these areas are key drivers of bank performance. Role of Inflation as a Control Variable. The research identifies inflation as an important control variable in understanding bank performance, suggesting that macroeconomic factors play a role in shaping the sustainability of bank operations. However, the study also finds that bank size does not significantly affect bank performance, which could be a surprising result, as larger banks are often thought to benefit from economies of scale.

Practical Implications for Policy and Bank Management. The findings suggest that bank regulators should continue to emphasize the importance of capital adequacy as a means of ensuring long-term sustainability. For bank management, the study underscores the need to focus on capital management strategies, as it is directly linked to improved performance outcomes, especially in terms of return on assets (ROA).

Conceptual Framework

Figure 1. Research Model The Sustainability Business of Indonesian Commercial Banks as Measured by Regulatory Compliance



Bank performance, as a measure of sustainability in business, serves as a key indicator of a bank's ability to manage its resources effectively and efficiently. Previous studies, including those by Tan (2016), Singh et al. (2020), Puspitasari et al. (2021), and Bhattarai (2021) have commonly used financial performance metrics such as Return on Assets (ROA) and Return on Equity (ROE) to assess this performance. These metrics reflect the bank's operational efficiency, profitability, and capacity to generate both current and future income (Aymen, 2013). Bank performance thus provides insights into the institution's strength in absorbing potential losses, maintaining adequate capital levels, developing its business, and ensuring long-term investor returns through dividends and interest payments.

Berger (1995) posited that banks operate with an optimal capital ratio that maximizes their value, acknowledging deviations from Modigliani and Miller's (MM) theory of capital structure. Supporting this, Tan (2016) argued that a higher capital ratio signals better creditworthiness, thereby enhancing bank performance by mitigating risks. However, according to Berger (1995), there is an inherent trade-off between risk and return. While increasing capital can reduce risk exposure, it may simultaneously limit the bank's return potential, potentially leading to a decrease in overall performance. Based on these considerations, the following hypothesis is proposed: Compliance with capital adequacy requirements positively influences bank performance, particularly Return on Assets (ROA), but may have a diminishing effect on Return on Equity (ROE) due to the trade-off between risk and return.

Relationship of Capital Adequacy Ratio on Return on Asset and Return on Equity. Research by Blum (1999) did not find any risk-reducing effect of more stringent capital change regulations. However, Bostandzic et al. (2022) who conducted a quasi-natural look at European banks found that systemic risk exposure increased against higher capital requirements. When a bank faces a capital shortage, the bank actively improves the balance

of its capital portfolio, resulting in bank assets that are correlated with higher risk. Thus, there is a balance between risk, rate of return, and value-at-risk, so that the banking sector becomes stable, and this will encourage economic growth. The results of research from Naceur and Kandil (2006) conducted in Egypt support that capital regulations improve the performance of the banking sector.Relationship of Loan to Deposit Ratio Ratio on Return on Asset and Return on Equity**.** The loan-to-deposit ratio describes the amount of loans that are financed with third-party funds, so the LDR represents liquidity. The bank's interest revenue rises in direct proportion to the loan-to-deposit ratio, and as interest rates rise, so does the bank's income, which in turn affects the bank's profitability or performance. Of course, this will happen if the bank can create a distribution of funds in the form of credit with good quality. Sandow et al. (2021), in their research results, show empirical evidence that the LDR has a positive effect on ROA and ROE.

Relationship of Non-Performing Loans on Return on Asset and Return on Equity. A non-performing loan is a ratio used to measure a bank's ability to face the risk of credit repayment failure by debtors. Banks with high NPL levels have a higher risk of incurring losses in credit provision. The provision of credit by banks carries the risk of delayed repayment, which will affect the bank's performance. The profitability of banks was found to be significantly impacted by credit risk management. An increase in credit risk is associated with a decline in bank performance. To function effectively, banks must handle non-performing loans using a variety of tactics, including debt factoring. Additionally, Peric and Konjusak (2017) found a negative correlation between non-performing loans and return on assets. A key indicator of a bank's financial performance was discovered to be credit risk. In the sustainability of a business venture, the profitability level is indicated by the ratio of return on equity.

According to Mankiw (2013), inflation is a condition of prices that generally rise and lasts continuously. The increase in question is widespread in various sectors, so inflation is often used as an indicator of the economy in a country. Higher inflation can force the Central Bank to raise interest rates earlier than planned, thus increasing the prices of goods in various sectors. Thus, inflation has a relationship with banking because it touches bank interest rates, which are prone to fluctuating to balance the economy when inflation occurs (Almansour et al. (2021). This condition will be able to decrease people's purchasing power because a condition of inflation will reduce the value of certain currencies. As stated by Almansour and Almansour (2016), the purchasing power of a certain currency can decrease due to inflation.

The amount of bank assets shows the value of the bank's assets that can be used to carry out its operations. In general, the assets owned by the bank are used as an indicator of the size of the bank. Banks with large assets are more flexible in carrying out their operations so that they can be more productive in generating income from the activities they carry out. Bank size is also often associated with economies of scale, as in the economic theory that if an industry is subject to economies of scale, large firms will be more efficient. Thus, large banks will be able to work more efficiently so that they can produce product services at lower costs. This condition is because large banks allow results in economies of scale, which will lower the costs of collecting and processing information, and this will increase the bank's income. However, if the size of the bank is too large, the effect can be negative due to longer bureaucracy and other reasons. Almazari (2014), Quang and Xin (2014), and Tan (2016) found empirical evidence that business size has a detrimental impact on ROA was discovered during their investigation. While the results of research from Al-Jafari and Alchami (2014), Tharu and Shrestha (2019), and AlFadhli and AlAli (2021) did not find empirical evidence of the effect of bank size on bank performance.

Methods Research

Data collection was used to pick 25 private banks from 44 IDX banks during 5 years. The availability of data and the fact that only 25 of the 44 banks matched the research standards were the primary reasons for selecting 25 banks, resulting in 125 observations in this study. Specifically, inflation statistics were collected by extracting annual inflation data from each selected bank.The Estimation Panel Corrected Standard Errors (PCSE) was used, which was also used by previous researchers, such as Le et al. (2022) and Sandow et al. (2021), with some modifications of the variables used. Equation 1 tests the relationship between capital requirements, liquidity, and asset quality with business sustainability proxied by ROA and ROE.

$$SB_{i,t} = \beta_0 + \beta_i CAR_t + \theta i Z_{i,t} + \varrho_1 SIZE_t + \varrho_2 INF_t + \varepsilon_{i,t} \quad 1)$$

$$\varepsilon_{i,t} = \eta_i + \gamma_t + v_{i,t} i = 1 \ldots N, t = 1 \ldots T$$

Where SBi,t is Sustainability Business is measured by bank performance for bank i at time t, which is the dependent variable, while CAR and Zi,t. CAR is the Capital Adequacy Ratio, the minimum capital requirement banks must satisfy. At the same time, Zi,t is a vector of other independent variables from bank liquidity (loan-to-deposit ratio) and asset quality (non-performing loan ratio). Meanwhile, two control variables are INF (inflation) and SIZE (bank sizes). Equations 2 and 3 establish the Panel Estimation Corrected Standard Errors (PCSE) model, which is a modified version of the regression model in Equation 1.

$$ROA = \beta_0 + \beta_1 CAR + \beta_2 LDR + \beta_3 NPL + \beta_4 INF + \beta_5 SIZE + \varepsilon \quad 2)$$

$$ROE = \beta_0 + \beta_1 CAR + \beta_2 LDR + \beta_3 NPL + \beta_4 INF + \beta_5 SIZE + \varepsilon \quad 3)$$

ROA and ROE are bank performance to measure Sustainability Business, CAR is capital requirements, NPL is asset quality, INF is inflation, SIZE is bank size, β is the regression coefficient, and ε is the error term.

Result and Discussion

The results of calculations from regression equation 1 and regression equation 2 are presented in Table 1 below which shows the regression coefficient, t-statistic value, and significance of t (prob) for each variable.

Table 1. Results of Hypothesis Testing

	Return on Assets (ROA)			Return on Equity (ROE)		
Variable	Coefficient	t-Statistic	Prob	Coefficient	t-Statistic	Prob
C	0.975	-0.319	0.750	-25958.33	-3.811	0.000
CAR	0.013	3.056	0.003***	-4.037624	-0.4977	0.620
LDR	-2.82E-05	-1.704	0.091*	-0.003275	-0.036	0.972
NPL	-0.0502	-1.479	0.142	-104.9988	-1.365	0.175
INF	0.261	7.943	0.000***	443.9672	5.099	0.000***
SIZE	0.002	0.486	0.628	33.17554	3.877	0.000***

Source: FEM Output Processed by Eviews

Notes: ***significant < 1%, **significant < 5%, *significant < 10%

As presented in Table 1 which is the result of the calculation of the regression equation, it can be explained that the capital adequacy ratio has a positive effect on return on assets but has no effect on return on equity. Loan to deposit ratio has a negative effect on return on assets at a significance of less than 10% but has no effect on return on equity. Non-performing loans have no effect on return on assets and return on equity. Inflation has a positive effect on return on assets and return on equity. Bank size does not affect return on assets but has a positive effect on return on equity.

Discussion. Empirical evidence shows that the capital adequacy ratio has a positive effect on ROA, meaning that the higher the capital adequacy ratio, the higher the return on assets, while the ROE does not. Thus, banks that meet the minimum capital requirements by the provisions stipulated by Bank Indonesia as the authority holder have a positive impact on bank performance (ROA). There are no foreign exchange private banks that do not meet the

minimum capital requirements set by Bank Indonesia.The results of this study follow research conducted by Sandow et al. (2021) but not following research from Dao and Nguyen (2020), Mir and Shah (2022), which found a positive effect. While its effect on return on equity is not in line with research from Sandow et al. (2021), which also found a positive effect, the results of research from Le et al. (2022), which found that a tight capital ratio failed to increase profitability and efficiency. This condition shows empirical evidence that the compliance of private foreign exchange banks operating in Indonesia is less likely to experience a capital shortage.

The loan-to-deposit ratio (LDR) ranges from 12.35% to 295.76%, so there are banks whose LDR value is greater than 110%. Based on the data collected, there are seven banks from a sample of 26 private foreign exchange banks that have a loan-to-deposit ratio (LDR) greater than 110%. This condition has the potential for banks to experience liquidity problems. The empirical test results show that the loan-to-deposit ratio (LDR) has a negative but not significant effect on bank performance, both on ROA and ROE, so LDR does not determine bank performance. This condition indicates that the management of funds from depositors is less effective, which is probably due to the impact of the COVID-19 pandemic during the period 2019 to 2021 which has an impact on bank operating activities. The results of this study support research from Dezfouli et al. (2014), Sandow et al. (2021) that LDR does not affect ROE, while research results from Dezfouli et al., (2014), Sandow et al. (2021) found a positive effect on ROA.

Non-performing loans as an indicator of compliance in maintaining the possibility of non-performing loans also indicate asset quality. The position of non-performing loans is between 0.00% to 4.33%, which means it is less than 5% as stipulated by Bank Indonesia, and all banks are in the right regulation. However, the results of hypothesis testing (sig-t) indicate that the effect of non-performing loans on bank performance is not significant, both on ROA and ROE. A negative coefficient of non-performing loans indicates that non-performing loan has a negative effect, but the effect is not statistically significant. Therefore, this finding can be interpreted as the asset quality is relatively good, although statistically, the asset quality has no significant effect on bank performance. However, the stability of cash flow from loan repayments is relatively stable, and this has an impact on lower non-performing loans. This condition is also supported by data on the magnitude of the CAR position value, which is at the level of 0.00% to 4.33% with a mean value of 1.38% and a relatively low standard deviation value of 0.88%, which is lower than the mean value.The results of this study support research from Gupta and Mahakud (2020), which also did not find the effect of non-performing loans on return on equity. This is in contrast to the results of research conducted by Dezfouli et al. (2014); and Sandow et al. (2021), who found empirical evidence that non-performing loans have a negative effect on ROA and ROE. Likewise, the results of research from Gupta and Mahakud (2020) found a negative effect of NPL on ROA.

Interest rate risk is an important element that banks must pay attention to in carrying out their operations. Interest risk occurs due to movements in market interest rates caused by rising inflation. Dao and Nguyen's research results (2020) found that inflation has a positive effect on bank performance. This result is not under the concept of economic theory, inflation causes high interest rates so it has the potential to reduce demand for bank credit which will have an impact on reducing bank income. Meanwhile, Le et al. (2022) who conducted research on bank performance in Australia and the UK found that banks in the UK performed well under inflationary pressures and higher policy levels, but in contrast to Australian banks whose performance was deteriorating. Tan (2016) in his research conducted in China also found that inflation has a positive effect on ROA. Different findings from this study were conducted by Dezfouli et al. (2014), Batayneh et al. (2021), Almansour et al. (2021) who found a negative effect, while Al-Jafari and Alchami (2014), Tan (2016) who did not find this effect.

Bank wealth which is indicated by the value of the assets owned by the bank is often used as a measure of the size of the bank. Large banks tend to have large assets, and large banks have a greater opportunity to expand their credit so large banks have more potential to increase bank income. Thus, the size of the bank determines the high income of the bank. However, something is interesting from the findings of this study, empirical facts show that bank size has a beneficial impact on ROE but does not have an impact on ROA. The results of this study support Tharu and Shrestha (2019); AlFadhli and AlAli (2021) who did not find any effect of bank size on ROA, but research from Al-Jafari and Alchami (2014), Almazari (2014), Dezfouli et al. (2014)), Quang and Xin (2014), Dao and Nguyen (2020), Sandow et al. (2021) who found a positive effect. The results of this study also support research from Dao and Nguyen (2020), and Sandow et al. (2021) who found a positive effect on ROE. Different findings were conveyed from research conducted by Al-Jafari and Alchami (2014), Gupta and Mahakud (2020), AlFadhli and AlAli (2021) which found no effect of bank size on ROE

Conclusion

This research seeks to see a complete portrait of the impact of compliance with regulatory capital requirements, liquidity, and asset quality on bank performance in Indonesia. The structural model used provides a good picture of bank compliance in implementing regulations and its impact on bank performance. Bank compliance in implementing regulations makes banks perform well because regulations are made so that banks operate in safe and comfortable conditions with measurable levels of risk. There are differences in these findings showing the complexity of banking operational activities in Indonesia. This research shows clear evidence that capital requirements have a beneficial impact on bank performance, especially return on assets even though they have no impact on return on equity. In terms of compliance with liquidity regulations, the ratio of bank loans to deposits is mostly in the position of 75% to 110%, which is the recommended point for the provisions in force in Indonesian banking. This is shown by the average loan-to-deposit ratio value of 93.66%, but empirical evidence shows that statistically the loan-to-deposit ratio does not affect bank performance. A similar thing also occurs in compliance with the provisions on asset quality positions which are proxied by non-performing loans, although the coefficient for non-performing loans is negative but is not statistically significant so non-performing loans also have no impact on bank performance. Based on descriptive data, the non-performing loan position is in the range of 0.00% to 4.33% with an average of 1.38%, which means that all private foreign exchange banks operating in Indonesia meet the maximum non-performing loan requirement of 5%.

Another important finding is that interest rate risk functions as a control variable in influencing bank performance. Meanwhile, bank size does not function as a control variable for return on assets, but functions as a control variable for return on equity. Based on these empirical findings, the results of this research have provided important input and information for the banking industry in Indonesia, especially private foreign exchange banking. However, this research has limitations, namely the fact that the population and sample used are national private banks. Thus, the results cannot guarantee generalization to banking as a whole nationally. Future research could replicate this research by including government-owned banks (BUMN) as part of the research population and sample.

Suggestion and Recommendation

Based on the conclusions drawn from this research, several suggestions and recommendations can be made for policymakers, regulators, and banks in Indonesia to enhance both regulatory compliance and bank performance. Focus on Capital Adequacy to Enhance Bank Performance. Recommendation for Banks: Given that compliance with capital adequacy requirements has a proven positive impact on bank performance, particularly in

terms of Return on Assets (ROA), banks should prioritize maintaining strong capital buffers. By doing so, banks can not only improve their financial performance but also enhance their resilience to external shocks and reduce financial risks. This will allow them to sustain growth while meeting regulatory expectations. Recommendation for Regulators**:** Regulatory bodies should continue to emphasize the importance of maintaining adequate capital levels, and they may even consider revisiting capital adequacy standards to ensure they remain effective in promoting long-term sustainability. Policymakers might also explore ways to incentivize banks to keep capital levels above the minimum regulatory requirements to ensure a healthy buffer for market volatility.

Reevaluate the Impact of Liquidity Regulations. Recommendation for Banks: The Loan-to-Deposit Ratio (LDR) is an essential measure of liquidity, but the research shows that it does not statistically influence bank performance in the Indonesian banking sector. Banks should continue to maintain an LDR within the optimal range (75% to 110%) to comply with regulatory standards and ensure sufficient liquidity. However, banks should focus on ensuring they have a diversified liquidity strategy beyond just LDR, considering other factors such as asset-liability management, interest rate risk, and market conditions. Recommendation for Regulators: The findings suggest that LDR compliance does not significantly affect bank performance, even though the ratio is within the recommended range. Regulators could consider conducting further research to determine if other liquidity indicators, such as liquid asset ratios or cash flow coverage, might be better predictors of performance. Additionally, regulators might explore whether relaxing certain liquidity constraints could lead to more efficient bank operations without compromising stability. Address Non-Performing Loans (NPLs) and Asset Quality Monitoring. Recommendation for Banks: Although Non-Performing Loans (NPLs) do not show a significant statistical effect on bank performance, maintaining a low NPL ratio remains essential for operational efficiency and profitability. Banks should continue to prioritize prudent lending practices, improve credit risk management, and invest in technology for better monitoring of loan quality. Early identification and proactive management of problem loans will help avoid potential future performance issues. Recommendation for Regulators: Given that asset quality indicators like NPLs have not shown a significant effect in this study, regulators may consider adjusting supervisory frameworks to focus more on early warning systems, stress testing, and other tools that can help banks manage asset quality more effectively. Additionally, regulators could ensure that loan loss provisioning guidelines are updated to reflect the current economic environment, enhancing banks' ability to absorb potential losses.

Future Research Considerations. Expanding the Research Population: Since this research was based on private foreign exchange banks in Indonesia, future studies should consider including state-owned banks (BUMN) to offer a more comprehensive view of the banking sector. Comparing government-owned versus private banks could reveal important insights into how regulatory compliance impacts different types of institutions. Longitudinal Studies: Future research should also consider a longitudinal approach to track the evolution of bank performance over longer periods, especially considering economic shocks (such as COVID-19 or global financial crises). This will allow researchers to explore how different regulatory factors contribute to the resilience of banks in various economic conditions. Policy Implications for the Indonesian Banking Sector. Holistic Regulatory Approach: Given the complexity of banking operations in Indonesia, regulators may need to adopt a more holistic regulatory framework that accounts for various operational factors beyond just capital adequacy, liquidity, and asset quality. This includes understanding the broader macroeconomic environment, the role of interest rate risk, and the overall stability of the banking system. Incentivizing Best Practices: Policymakers could also look into incentivizing

banks to adopt best practices in risk management, sustainable finance, and corporate governance. This might include rewards for exceeding minimum capital requirements, developing innovative financial products, or maintaining exceptional asset quality.

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