Non-Performing Loan and its Impact on Stock Price Index through Return on Equity in the Banking Industry

Zakaria*
Faculty of Economics, Universitas Yapis Papua Jayapura, Indonesia

Khusnul Khotimah
Faculty of Economics, Universitas Yapis Papua Jayapura, Indonesia

Saling
Faculty of Economics, Universitas Yapis Papua Jayapura, Indonesia

Abdul Rasyid
Faculty of Economics, Universitas Yapis Papua Jayapura, Indonesia

Abstract
This research aims to examine and analyze the influence of non-performing loans on the stock price index through return on equity in the banking industry listed on the Indonesia Stock Exchange. The study employs secondary data from 30 banking industries obtained from Indonesia Capital Market Directory for the period 2016 to 2020, as well as data from the Central Bureau of Statistics, Bank Indonesia, Jakarta Stock Exchange website, and Bank Indonesia. The data is analyzed using path analysis with AMOS version 7 to test the data and analyze the hypotheses. The research findings indicate the following: 1) Non-performing loans have a significant negative influence on return on equity, meaning that lower non-performing loan values in an industry lead to higher profitability levels measured by return on equity; 2) Return on equity has a significant positive influence on the stock price index, explaining that higher profits for banks, as measured by return on equity, correspond to higher stock prices as measured by the stock price index; 3) Non-performing loans have a significant negative influence on the stock price index through return on equity.

Keywords: Non-Performing Loans, Return On Equity, Stock Price Index

Introduction

The monetary crisis experienced by Indonesia since 1997-1998 was a consequence of financial liberalization initiated in 1989 (Ranciere et al., 2006). Financial liberalization eventually took place, marked by government regulations allowing domestic investors to invest in foreign equity markets and vice versa, enabling foreign investors to invest in the respective country (Bekaert et al., 2005; Van der Linden & Lasak, 2023).

The government implemented significant changes in the financial sector, particularly in the capital market, in 1988. This included easing the requirements for companies to be listed on the stock exchange and permitting foreign investors to transact up to 49% of total equity ownership in industries. Subsequently, in 2000, the government allowed foreign investors to hold up to 99% ownership. This resulted in an increase in the stock exchange activity, both in terms of transaction volume and the composite stock price index (IHSG). As time passed, foreign investment requirements in the capital market were less restricted, and often, it became unclear who was purchasing certain shares. However, it was widely understood that when the stock market was booming, foreign investors were entering to buy shares, followed by local or domestic investors.

Bank Indonesia believes that the assessment of liquidity aspects reflects a bank's ability to manage adequate liquidity levels to meet its obligations in a timely manner and fulfill other needs (Setiawan & Muchtar, 2021). Additionally, banks should ensure that their activities are managed efficiently, meaning they can minimize high liquidity management costs and quickly liquidate their assets with minimal losses (Edem, 2017).

Sound banking is crucial for maintaining a healthy financial system (Almahadin et al., 2020). This is based on several factors. Firstly, banking's unique characteristics make it vulnerable to mass withdrawal of funds by the public, which can potentially harm depositors and bank creditors. Secondly, losses can spread rapidly among banks through the contagion effect, leading to systemic problems. Thirdly, the loss of public trust in the banking system as an intermediary institution can create pressures in the financial sector. Fourthly, financial sector instability can have macroeconomic implications, particularly in relation to the bank's role in transmitting monetary policies. Lastly, the resolution process for troubled banks can be costly. Indeed, a healthy financial system is crucial in maintaining stability and promoting economic growth (Rusdianti et al., 2022).

Azeem and Amara (2014) found a negative relationship between Non-Performing Loans (NPL) and financial performance measured by Return on Assets (ROA) and Return on Equity (ROE). This finding is supported by Joseph et al. (2000), who explained that non-performing loans negatively impact the liquidity and profitability performance of banks. Non-performing loans represent one of the risks that banks face in credit distribution. The extent of non-performing loans relative to total loans disbursed is measured by the Nonperforming Loan (NPL) ratio. Total loans referred to here are those given to third parties and do not include loans to other banks.

Bank Indonesia issued Regulation No. 6/10/PBI/2004 on April 12, 2004, concerning the Health Level Assessment System for Commercial Banks. If the NPL exceeds a certain threshold (above 5%), the bank is considered unhealthy. High NPLs lead to reduced profits for the bank, resulting in decreased dividend income and a decline in the bank's return on equity. As a consequence, a higher non-performing loan level reduces interest income and the net interest margin. Conversely, a lower non-performing loan level indicates better credit management and has a positive impact on the net interest margin. Using the Loan to Deposit Ratio (LDR), we can assess how far the extension of credit to borrowers can balance the bank's obligation to meet depositors' demands for withdrawal. A higher LDR ratio indicates a lower liquidity capability of the bank.

Changes in stock prices will affect the return received by shareholders, as returns consist of dividends and stock price changes. Investors need to examine the differences in stock prices and the factors influencing those changes. These factors include ownership concentration and financial performance (Gul et al., 2007). The success of a bank's intermediation function is not only measured by credit and third-party funds' growth but also by evaluating the size of non-performing loans (NPL).

The stock price index summarizes the simultaneous and complex effects of various influencing variables, primarily economic events. Nowadays, the stock price index not only reflects economic events but also social, political, and security events. It serves as an indicator of market trends, depicting the market's condition at a specific time, whether the market is active or sluggish. As such, the stock price index can be used as a barometer of a country's economic health and as a basis for statistical analysis of the latest market conditions (Halim, 2005).

The return on equity model provides a comprehensive overview of a bank's performance concerning operational efficiency, asset utilization, and leverage. It consists of three components: profit margin, asset utilization, and equity multiplier. Therefore, return on equity cannot be regarded solely as an investment profitability measured by dividend yield and stock price changes.

Based on Bank Indonesia Circular No.7/10/DPNP dated March 31, 2005, NPL measures problematic loans against the total loans disbursed by the bank. The size of NPL affects the net interest margin. If disbursed loans become problematic or classified as doubtful, substandard, or non-performing, the interest on those loans is no longer recognized as interest income, and reporting is redirected to commitment and contingency reports.

A strong positive relationship between ROE and stock prices indicates that a high ROE implies that the company tends to have a higher stock price relative to its book value, and vice versa. As profits increase, the public will perceive that the company has good performance, which can affect the stock price (Higgins, 1992). The hypothesis in this study is that there is a negative influence of non-performing loans on the stock price index through return on equity in the banking industry on the Indonesia Stock Exchange.

Methods

In this research, the author selected the location at the Indonesia Stock Exchange by accessing data through the Market Information Center (Pusat Informasi Pasar Modal-PIPM) branch in Jayapura, as well as through the IDX (Indonesia Stock Exchange) website and Bank Indonesia. The study focused on the banking industry listed on the Indonesia Stock Exchange (BEI).

Secondary data sources were obtained from the Indonesian Capital Market Directory for the years 2016 to 2020, the Central Bureau of Statistics, Bank Indonesia, as well as the Jakarta Stock Exchange website and Bank Indonesia. The research population and sample technique utilized the census method, including all banks listed on the Indonesia Stock Exchange. The research tool employed path analysis, which is used to analyze paths and estimate the strength of causal relationships (Johnson & Christensen, 2014).

Results and Discussion

To address the research questions, the coefficients of the paths can be presented in the form of a diagram as follows:
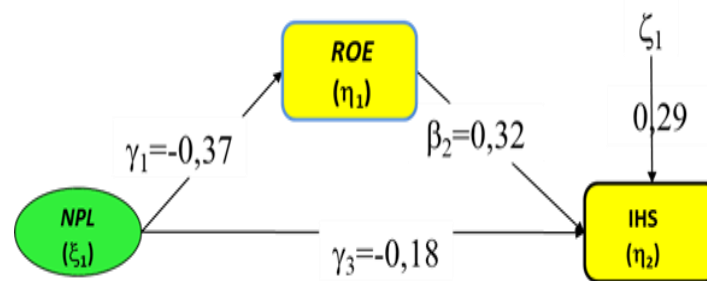

Figure 1. The Structural Model
Source: Data Processed (2022)

Alternatively, the path coefficients can be presented in tabular form as follows:

Table 1. Path Coefficient Testing Results Stock Price Index ($\eta 2$) through Return on Equity ($\eta 1$)

Variable	Coefficient	C.R.	Sig.	Information
Non Performing Loan (ξ_1) Return on Equity (η_1)	-0.366	-4.873	0.000	Signifikan
Return on Equity (η_1) Stock Price Index (η_2)	0.318	4.318	0.000	Signifikan
Non Performing Loan (ξ_1) Stock Price Index (η_2)	-0.178	-2.345	0.019	Signifikan

Source: Data Processed (2022)

Non-Performing Loans (NPL) have a significant negative impact on Return on Equity ($\eta 1$) in the banking industry listed on the Indonesia Stock Exchange. This implies that as the ratio of non-performing loans decreases, the industry's profitability measured by return on equity increases. The implication of this research is that the level of non-performing loans in banks listed on the Indonesia Stock Exchange is measured using NPL. Banks undertake various efforts to reduce NPL figures, and the regulations set by Bank Indonesia regarding status determination and intensive supervision of banks with potential difficulties also contribute to safeguarding their viability.

Return on equity has a significant positive impact on the stock price index in the banking industry listed on the Indonesia Stock Exchange. This means that higher bank profitability measured by return on equity corresponds to higher stock price development measured by the stock price index. Through return on equity, shareholders can gain an overall view of operational performance. Return on equity serves as a signal for investors in the capital market, especially regarding industry financial performance, dividend policy, and expected earnings per share. A high return on equity will have a positive impact on improving stock price development.

Non-performing loans have a significant negative impact on the stock price index. This can be logically explained, firstly, as non-performing loans serve as a negative signal. Non-performing loans cause banks to lose interest income, which is a primary source of banking revenue. Additionally, high non-performing loans reflect poor bank management governance, making NPL a negative signal or bad news in the capital market. Secondly, non-performing loans reduce the amount of dividends. In the case of the banking industry, the main risk that may occur is a reduction in the amount of earnings per share distributed to shareholders due to the large number of problematic loans leading to reduced interest income.

Non-performing loans have a significant negative impact on the stock price index through Return on Equity. The results indicate that the regression coefficient of -0.057 is lower compared to the direct relationship between non-performing loans and Return on Equity (-0.178) and Return on Equity and the stock price index (0.318). This means that investors respond faster to changes in non-performing loans rather than waiting for financial performance information measured by Return on Equity to assess stock price developments. This finding is supported by previous research conducted by Azeem and Amara (2014), and Sujan (2013). Furthermore, Suzuki and Sohrab (2014) emphasize that non-performing loans also influence revenue growth, thereby affecting a company's stock price. This emphasizes that non-performing loans can negatively influence the stock price index through Return on Equity.

With the significant negative influence of non-performing loans on the stock price index through Return on Equity, it can be said that Return on Equity has a partial mediation effect.

Table 2. Summary of Testing ROE as a Mediator between NPL and Stock Price Index (IHS)

Effect	Indirect Coefficient	Information Significant
NPL Kepada IHS melalui *ROE*	-0,057	*Partial mediating*

Source: Data Processed (2022)

The findings from this study indicate the following: 1) Effect of Bad Loans on Return on Equity: Bad loans have a significant negative effect on return on equity. That is, when the value of bad loans in the banking industry is lower, the level of profitability as measured by return on equity will be higher. 2) Effect of Return on Equity on Stock Price Index: Return on equity has a significant positive effect on stock price index. This explains that higher profits for the bank, as measured by return on equity, are associated with an increase in stock prices as measured by the stock price index. 3) Effect of Bad Loans on the Stock Price Index through Return on Equity: Bad loans have a significant negative effect on the stock price index through return on equity. This means that changes in the value of bad loans affect the company's performance, measured by return on equity, which in turn affects stock prices as measured by the stock price index. Thus, this study shows that there is a relationship between bad loans, return on equity, and the stock price index in the banking industry on the Indonesia Stock Exchange. The results of this study can provide important insights for investors and decision makers in the banking industry to understand how these factors interact and influence the performance of banking stocks.

Conclusion

In general, there are several reasons for banks to go public, including raising capital, expanding credit, improving company liquidity, and increasing transparency in their performance. By involving the general public as bank owners, the public's control over the operational management of these banks becomes more significant. As a consequence, it is expected that these banks will be able to implement good corporate governance effectively, which ultimately enhances the performance of publicly listed banks. Additionally, with the increasing public control over publicly listed banks, it is anticipated that the bank's management will become more professional, driven by a clear vision and strategy.

This research has several limitations that need to be considered. First, the data sources used come from various secondary sources such as the Indonesia Capital Market Directory, the Central Bureau of Statistics, Bank Indonesia, and the Jakarta Stock Exchange website. The level of reliability and accuracy of these data sources may be different, so that it can affect the accuracy of the research results. Second, the sample size of the study only focused on 30 banking industries listed on the

Indonesia Stock Exchange. While this sample size may be sufficient for some analyses, it may not be representative of the entire banking industry, limiting the generalizability of the research results. Third, the research design which is cross-sectional in nature makes it impossible to establish a causal relationship between bad loans, return on equity, and stock price index. Other factors not measured in this study may have influenced the observed associations, so longitudinal studies may be needed to come up with more robust causal conclusions. Fourth, this research only focuses on the banking industry in Indonesia, so it has limitations in drawing broader conclusions and can be applied to other regions or countries.

To overcome these limitations, further research can consider several suggestions. First, diversifying data sources by using audited financial reports and regulatory data can increase the reliability of research results. Second, expanding the sample size by taking banks from various market segments can strengthen the generalizability of the research results. Third, adopting a longitudinal research approach over a longer period of time can help in establishing cause-and-effect relationships. Fourth, conducting comparative studies with banks from different countries or regions can provide valuable insights into how cultural, regulatory, and economic differences affect the relationship between the variables studied. Finally, supplementing the quantitative analysis with qualitative research such as interviews or surveys with bank executives and stakeholders can provide a deeper understanding of the factors influencing corporate governance and management strategy.

References

Almahadin, H. A., Kaddumi, T., & Qais, A. K. (2020). Banking soundness-financial stability nexus: empirical evidence from Jordan. *Banks and Bank Systems*, *15*(3), 218-227. https://doi.org/10.21511/bbs.15(3).2020.19

Azeem, A., & Amara (2014). Impact of Profitability on Quantum of Non Performing Loans. *International Journal of Multidisciplinary Consortium (IJMC)*, *1*(1), 1-14.

Bekaert, G., Harvey, C. R., & Lundblad, C. (2005). Does financial liberalization spur growth?. *Journal of Financial economics*, *77*(1), 3-55. https://doi.org/10.1016/j.jfineco.2004.05.007

Cao, S., Nie, L., Sun, H., Sun, W., & Taghizadeh-Hesary, F. (2021). Digital finance, green technological innovation and energy-environmental performance: Evidence from China's regional economies. *Journal of Cleaner Production*, *327*, 129458. https://doi.org/10.1016/j.jclepro.2021.129458

Edem, D. B. (2017). Liquidity management and performance of deposit money banks in Nigeria (1986–2011): An investigation. *International Journal of Economics, Finance and Management Sciences*, *5*(3), 146-161. https://doi.org/10.11648/j.ijefm.20170503.13

Gul, F. A., Kim, J., & Qiu, A. (2007). Ownership Concentration, Foreign Shareholding, Audit quality and Firm-specific Return Variation : Evidence from China, *Hong Kong Politechnic University-School of Accounting and Finance and Citigroup Japan Inc, Working Paper Series*, 1- 37. https://doi.org/10.2139/ssrn.984142

Halim, A. (2005). *Analisis Investasi* . Salemba Empat.

Higgins, R. C. (1992). *Analysis for Financial Management*, Irwin, Inc.

Johnson, R. B., & Christensen, L. (2014). *Educational Research : Quantitative, Qualitative and Mixed Approaches*. SAGE Publications, Inc.

Joseph, S. J., & Carter, David A., 2000. Evidence on the Financial Characteristic of Banks that Do and Do Not Use Derivatives, *the Quarterly Review of Economics and Finance*, *40*(4), 431-449.

Paul, S. C., Bhowmik, P. K., Islam, M. R., Kaium, M. A., Masud, A. A. (2013). Profitability and Liquidity of Conventional Banking and Islamic Banking in Bangladesh: A Comparative Study. *European Journal of Business and Management*. 5(24), 113-123.

Ranciere, R., Tornell, A., & Westermann, F. (2006). Decomposing the Effect of Financial Liberalization: Crisis vs. Growth, *Journal of Banking and Finance*, *30*(12), 3331-3348. https://doi.org/10.1016/j.jbankfin.2006.05.019

Rusdianti, I. S., Irmadariyani, R., & Kustono, A. S. (2022). E-Finance: Mitigation of Fraud Tendency in Indonesia. *IJEBD International Journal Of Entrepreneurship And Business Development*, *5*(3), 581-589. https://doi.org/10.29138/ijebd.v5i3.1857

Setiawan, A., & Muchtar, S. (2021). Factor affecting the capital adequacy ratio of banks listed in Indonesia Stock Exchange. *Jurnal Ekonomi, 26*(1), 153-169. https://doi.org/10.24912/je.v26i1.733

Suzuki, Y. and Sohrab Uddin, S.M. (2014), Islamic Bank Rent : A Case Study of Islamic Banking in Bangladesh. *International Journal of Islamic and Middle Eastern Finance and Management,* 7(2), 170-181. https://doi.org/10.1108/IMEFM-11-2013-0119

Van der Linden, R. W., & Łasak, P. (2023). The Future Sino-US Financial Coupling or Decoupling Accompanied by Their Fierce Rivalry with Different National Approaches. In Financial Interdependence, Digitalization and Technological Rivalries: Perspectives on Future Cooperation and Integration in Sino-American Financial Systems (pp. 119-128). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-27845-7_10