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The Effect Of Risk Management On Listed Indonesian Banking Financial Performance (Period 2019-2023)

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Abstract
This study aims to examine the influence of management risks including credit risk, liquidity risk, operational risk, and market risk on banking financial performance. The method used is quantitative with 33 samples of banks listed on the Indonesia Stock Exchange for the period 2019–2023. The sampling technique used purposive sampling. Data analysis was performed by multiple regression using Eviews12 software. The results of the study indicate that market risk (NIM) has a positive effect on (ROA) banking financial performance, while credit risk (NPL), liquidity risk (LDR), and operational risk (BOPO) have a negative effect on (ROA) banking financial performance. The study contributes to the testing of banking risk management using the perspective of agency theory and portfolio theory. The results of this study provide implications for regulators in implementing government policies to help banks reduce risk in improving banking financial performance. Implications for investors in considering and being careful in making investment decisions in banking companies.

Keywords: financial performance, credit risk, liquidity risk, operational risk, market risk.

Abstrak
Penelitian ini bertujuan menguji pengaruh risiko manajemen meliputi risiko kredit, risiko likuiditas, risiko operasional, dan risiko pasar terhadap kinerja keuangan perbankan. Metode yang digunakan adalah kuantitatif dengan 33 sampel bank yang terdaftar di BEI periode 2019–2023, Teknik pengambilan sampel menggunakan purposive sampling. Analisis data dilakukan dengan regresi berganda menggunakan software Eviews12. Hasil penelitian menunjukkan bahwa risiko pasar (NIM) berpengaruh positif terhadap (ROA) kinerja keuangan perbankan, sedangkan risiko kredit (NPL), risiko likuiditas (LDR), dan risiko operasional (BOPO) berpengaruh negatif terhadap (ROA) kinerja keuangan perbankan. Penelitian berkontribusi pada pengujian manajemen risiko perbankan menggunakan perspektif teori agensi dan teori portofolio. Hasil penelitian ini memberikan implikasi terhadap regulator dalam penerapan kebijakan pemerintah untuk membantu perbankan mengurangi risiko dalam meningkatkan kinerja keuangan perbankan. Implikasi terhadap investor dalam mempertimbangkan dan kehati-hatian terhadap pengambilan keputusan investasi pada perusahaan perbankan.

***Kata Kunci**:* kinerja keuangan, risiko kredit, risiko likuiditas, risiko operasional, risiko pasar.

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INTRODUCTION

In developing a country's economy, financial institutions play an important role as the main driver. In Indonesia, economic progress and improvement of people's welfare are closely related to the existence of financial institutions. One of the important financial institutions is the bank, which functions to collect public funds, and distribute them back to the public in various ways, as well as providing various banking services (Assa & Loindong, 2023)

The performance of the banking sector plays a vital role in a country's economic growth. The growth of banks and an effective banking system drive economic development (Boamah et al., 2022). Banking financial performance is a crucial factor for any company, including those in the banking industry. The assessment of banking financial performance has been regulated by Bank Indonesia through the Decree of the Board of Directors of Bank Indonesia No. 30/11/KEP/DIR dated April 30, 1997, and Decree No. 30/277/KEP/DIR dated March 19, 1998, which govern the procedures for evaluating the soundness of banks. Banks strive to maintain good performance, particularly by achieving high profitability levels that enable dividend distribution, sustaining business prospects for continued growth, and complying with prudential banking regulations (Aprianti et al., 2021).

A company's financial condition can be assessed through its financial statements, which serve as a benchmark for consumers and investors when making investment decisions. The success of financial performance in the banking sector can be measured by the level of return on assets (ROA), which acts as a reference for corporate decision-making (Bahtiar et al., 2023). ROA is a financial ratio used to measure a bank's ability to generate profit. The higher a bank's ROA, the greater the profitability achieved, indicating better asset utilization and, consequently, stronger financial performance (Desiko, 2020).

Based on Figure 1, it can be observed that the growth of banking performance in Indonesia experienced fluctuations between 2019 and 2023. A decline occurred in 2020, with performance dropping to 1.59% from 2.47% in 2019. However, banking performance showed a gradual recovery, increasing to 1.85% in 2021, 2.45% in 2022, and 2.76% in 2023—surpassing the performance level recorded in 2019.

Return on Assets (ROA) is a profitability ratio that measures pre-tax profit relative to the average total assets over a given period. ROA is recognized as one of the key indicators of a bank's financial performance because it reflects the effectiveness of a company in generating profit from its asset utilization. The higher the return on assets, the greater the company's profitability (Rahma & Nurfauziah, 2022). Several factors influence financial performance, including credit risk, liquidity risk, operational risk, and market risk. Credit risk refers to the potential loss that arises when a borrower is unable to repay the assets obtained or the premiums owed to the bank (Komalasari & Manda, 2022). High credit risk can be detrimental to banks, as observed during the COVID-19

Figure 1. Return On Asset Indonesia Banking Sector

Source: (Banking Statistics (OJK), author (2025))

pandemic when many debtors failed to meet their credit obligations (Wandhini & Kusuma, 2024). The Non-Performing Loan (NPL) ratio is used to measure credit risk by comparing the amount of non-performing loans to the total loans disbursed (Binasthika et al., 2025).

Liquidity risk is a performance indicator reflecting a financial situation in which a company is unable to meet its short-term obligations. Such a condition can reduce public trust, as it indicates poor bank performance caused by high risk levels (Silitonga & Manda, 2022). The ratio commonly used to measure a bank's liquidity risk is the Loan to Deposit Ratio (LDR) (Arini & Sparta, 2023). Operational risk refers to the type of risk that originates from internal company issues caused by weak management control systems. Operational risk can be measured using the BOPO ratio (Operating Expenses to Operating Income), which assesses the company's ability to manage its operations efficiently (Heryani et al., 2022).

Market risk (NIM) refers to the risk that arises from positions in financial statements and administrative accounts due to changes in market prices—either from overall market fluctuations or changes in option prices. The indicator used to measure market risk is the Net Interest Margin (NIM) ratio, which compares net interest income to productive assets. Since a bank's operating income largely depends on the interest spread from loans disbursed, a higher NIM indicates greater interest income from productive assets managed by the bank. Consequently, higher NIM values suggest fewer banking problems, meaning the NIM ratio has a positive effect on ROA (Desiko, 2020).

Risk management is a set of methodologies and procedures used to identify, measure, monitor, and control risks arising from all banking activities (Financial Services Authority Regulation No. 18/POJK.03/2016 on the Implementation of Risk Management for Commercial Banks, 2016). The implementation of risk management is an essential component in achieving a bank's financial performance. Increasing losses borne by banks due to inadequate risk management practices and their adverse effects on financial performance have become a major concern for bank management (Fadun

& Oye, 2020).

The purpose of this study is to examine the effect of risk management on financial performance in the Indonesia Stock Exchange, using the risk categories outlined in the Financial Services Authority Regulation No. 18/POJK.03/2016 on the Implementation of Risk Management for Commercial Banks (2016). This research focuses on credit risk, liquidity risk, operational risk, and market risk, and analyzes how these factors influence financial performance.

THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

Agency Theory

Agency theory was first introduced by Michael C. Jensen and William H. Meckling (1976), explaining the agency relationship between shareholders (principals) and company management (agents). This theory seeks to address agency problems that arise due to differing objectives among cooperating parties. Agency theory focuses on resolving two main issues within the principal–agent relationship. First, the agency problem that occurs when the goals or interests of the principal and the agent conflict. Second, the problem of risk sharing, which arises when the principal and the agent have different attitudes toward risk.

In the context of banking institutions, in addition to the relationship between agents and owners, there also exists a relationship between agents and debtors as well as between agents and regulators. Within the framework of financial management, the disclosure of financial statements must be carefully managed, as banking regulations and national laws serve to ensure that banks effectively manage their risks (Nurmalita Hapsari, 2021).

Portfolio Theory

The modern portfolio theory introduced by Markowitz (1952) emphasizes that by combining uncorrelated assets, banks can reduce total risk without sacrificing expected returns. According to Sembiring (2021), portfolio theory refers to the concept of diversifying investments across various types of assets to minimize overall risk and enhance potential investment returns. The diversification decision—specifically, Markowitz diversification—leads to the formation of financial safety or an optimal portfolio, which highlights how investors should optimally diversify their investments (Riski & Sulistianingsih, 2024).

Banking Financial Performance

Banking financial performance reflects the extent to which a bank has achieved success in its operational activities. It serves as a key factor in assessing the overall performance of a bank, encompassing aspects such as asset management, liabilities, liquidity, and other financial indicators.

Overall, banking financial performance provides an overview of a bank's financial condition during a specific period, typically measured through indicators of capital adequacy, liquidity, and profitability (Euphrasia et al., 2020).

According to the Financial Services Authority Regulation (POJK) No. 4/POJK.03/2016, a bank's soundness level is the result of an evaluation of its risk profile and performance. Banks are required to maintain and/or improve their soundness level by applying prudential principles and effective risk management in conducting their operations.

Risk Management

Risk management is an essential management system that serves as a fundamental need in supporting efforts to seize business opportunities while maintaining financial performance through effective risk control, loss prevention, liquidity management, and profitability enhancement to ensure regulatory compliance and stakeholder trust (Wandhini & Kusuma, 2024).

According to the Financial Services Authority Regulation (POJK) No. 18/POJK.03/2016, risk management is defined as a set of procedures and methodologies used to identify, measure, monitor, and control risks arising from banking activities. Based on this regulation, banks are required to manage risks through systematic processes of risk identification, measurement, monitoring, and control.

HYPOTHESIS DEVELOPMENT

Credit Risk (NPL) effect on Financial Performance (ROA)

The Non-Performing Loan (NPL) ratio is used to measure a bank's ability to assess the risk of credit default by debtors, which results in non-performing loans (Iskandar & Wijaya, 2021). A higher NPL ratio indicates poorer credit quality, leading to an increase in problematic loans and a higher likelihood of the bank experiencing financial distress. In other words, the NPL ratio has a negative effect on financial performance (ROA) (Desiko, 2020).

According to portfolio theory, a company can balance its credit portfolio by selecting a diverse range of loans based on varying risk levels and characteristics. By applying portfolio theory, companies can enhance the performance of their credit portfolios and reduce exposure to poorly diversified credit risk (Salsabilla & Taswan, 2024). Research by Bahtiar et al. (2023) and Assa & Loindong (2023) also provides evidence that NPL has a negative impact on ROA. Based on this explanation, the researcher formulates the following hypothesis:

H1: Credit risk (NPL) has negative effect on financial performance (ROA)

Liquidity Risk (LDR) effect on Financial Performance (ROA)

The Loan to Deposit Ratio (LDR) reflects a company's ability to meet its short-term obligations (Sidik & Yuneline, 2022). LDR measures a bank's capacity to extend loans using third-party funds collected and distributed as credit. A higher LDR indicates that the bank is effectively channeling its loans, which is expected to reduce the number of non-performing loans and, consequently, improve financial performance (ROA) (Agnia & Sari, 2023).

According to agency theory, managers must act professionally and utilize resources effectively and optimally to increase profitability, as management is responsible for maintaining the liquidity value of the bank (Nurmuzakki & Mulawarman, 2024). Research by Rahma and Nurfauziah (2022) demonstrates that LDR has a significant negative effect on ROA. Based on this explanation, the researcher formulates the following hypothesis:

H2: Liquidity risk (LDR) has negative effect on financial performance (ROA)

Operational Risk (BOPO) effect on Financial Performance (ROA)

Operational risk arises from internal processes caused by human error, lack of competence in operational procedures, system failures, or external events that affect banking activities. Operational risk can cause both direct and indirect losses and may lead to missed opportunities to gain potential benefits. If a bank fails to manage its operational risks effectively, its profitability decreases, thereby reducing overall financial performance (Agustuty et al., 2024).

Based on agency theory, operational risk is associated with issues in managing and utilizing financial resources, such as changes in the composition of operational expenses and other related factors. The ratio of Operating Expenses to Operating Income (BOPO) represents the level of efficiency in a bank's operational activities (Asyhari & Sulistyowati, 2023). Previous research by Rahma and Nurfauziah (2022) found that BOPO has a significant negative effect on ROA. Management (as the agent) has control over operational costs, and a high BOPO ratio may indicate inefficiency in cost management, which can be detrimental to shareholders (the principals). Based on this explanation, the researcher formulates the following hypothesis:

H3: Operational Risk (BOPO) has negative effect on financial performance (ROA)

Market Risk (NIM) effect on Financial Performance (ROA)

Market risk refers to the condition experienced by a company due to changes in market conditions and situations that are beyond the company's control. It is often referred to as a systemic or overall risk because its nature is broad and affects all companies within the market (Pasole et al., 2023).

Based on portfolio theory, market risk can be assessed by comparing the net interest income with the average level of productive assets. A bank's income heavily depends on the margin or interest rate spread generated from loans and the net interest income earned. The Net Interest Margin (NIM) is directly proportional to the income from productive assets—the higher the NIM, the greater the bank's earnings from these assets. This indicates that NIM has a positive effect on ROA (Asyhari & Sulistyowati, 2023). However, Nur Rahma (2022) found that NIM negatively affects ROA. Based on these findings, the researcher formulates the following hypothesis:

H4: Market Risk (NIM) has negative effect on financial performance (ROA)

RESEARCH METHOD

Based on the type of data analyzed, this research is quantitative in nature. The study uses secondary data, including credit risk, liquidity risk, operational risk, market risk, and financial performance, obtained from annual reports of banks listed on the Indonesia Stock Exchange (IDX) for the 2019–2023 period. To provide a clear understanding of the measurement of each variable, the following summary is presented in table 1.

This research uses a sample of companies from the banking sub-sector listed on the Indonesia Stock Exchange (IDX) during the 2019–2023 period. The sampling technique employed is purposive sampling. The sample consists of 33 banking companies listed on the IDX over a five-year period (2019–2023) that meet the following criteria. The sample screening process is explained in detail in table 2.

Table 1. Research Variable

Variable	Measurement
Financial Performance (Y)	$Return\ On\ Assets\ (ROA) = \frac{Net\ Income}{Total\ Asset} \times 100\%$
Credit Risk (X1)	$Non\ Perfoming\ Loan\ (NPL) = \frac{Total\ Unperforming\ Loan}{Total\ Loan} \times 100\%$
Liquidity Risk (X2)	$Loan\ to\ Deposit\ Ratio\ (LDR) = \frac{Total\ loan}{Total\ Saving} \times 100\%$
Operational Risk (X3)	$Operating\ Expenses\ Operating\ Income\ (BOPO) = \frac{Total\ Operational\ Expenses}{Total\ Operational\ Revenue} \times 100\%$
Market Risk (X4)	$Net\ Interest\ Margin\ (NIM) = \frac{Net\ Interest\ Income}{Total\ Productive\ Asset} \times 100\%$

Table 2. Sampling Process

No	Information	Firm Quantity
1	Listed Bank in IDX period 2019 - 2023	66
2	Incomplete financial report	(27)
3	Banks that meet the research criteria	33
4	Research period	5
	Total observation (Banks x Year)	165

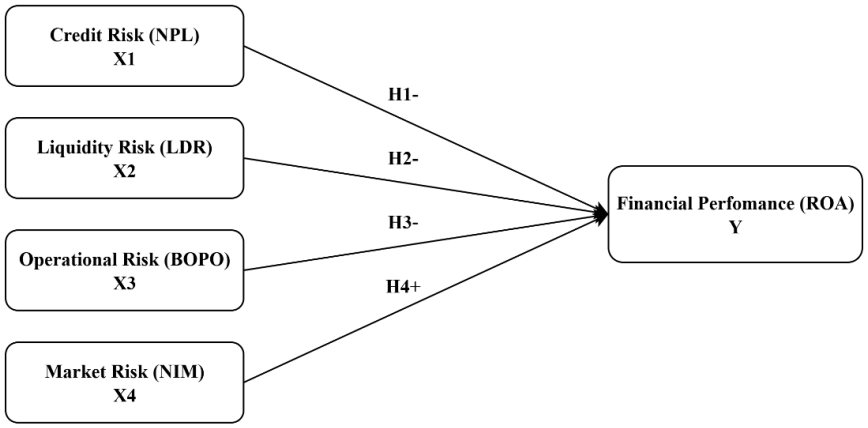

Figure 2. Research Framework

The data analysis method uses linear regression method with the framework of thought in Figure 2. The linear regression method is as follows:

$$\mathbf{ROA_{it}} = \alpha + \beta_1 \mathbf{NPL}_{it} + \beta_2 \mathbf{LDR}_{it} + \beta_3 \mathbf{BOPO}_{it} + \beta_4 \mathbf{NIM}_{it} + \varepsilon$$

RESULT, DISCUSSION, AND MANAGERIAL IMPLICATION

Research result

Based on table 3 the results of the model selection test, the Chow test results show a probability value of 0.00 <0.05 which indicates a Fixed Effect Model, so the next data test is the Hausman Test. The Hausman test results show a probability value of 0.00 <0.05 which indicates a Fixed Effect Model, so it can be concluded that the best model used is the Fix Effect Model (Napitupulu et al., 2021).

Based on table 4 of the results of the classical assumption test, the results of the normality test show that the Jarqueì-Beìra Probability value is 0.11 > 0.05, which indicates that the data is normally distributed or the data normality test has been fulfilled. The results of the multicollinearity test show that the VIF of the independent variables included in the model (<10.00) indicates that the data does not show symptoms of multicollinearity or the multicollinearity test has been fulfilled. The results of the heteroskeidasticity test show that the residual graph data does not exceed the limits of 500 and -500 (0.02 < 500 and -0.04 < -500), which means that the residual variance is the same, indicating that there are no heteroskeidasticity symptoms or that it passes the heteroskeidasticity test (Napitupulu et al., 2021).

Panel Regression Model

ROA = 0.41 - 0.48*NPL - 0.09*LDR - 0.89*BOPO + 3.40*NIM

The results of the multiple linear regression equation provide the following explanation:

Based on the coefficient value of 0.41 or 41%, this means that without the NPL, LDR, BOPO, and NIM variables, the ROA variable would increase by 41%.

The coefficient value of the NPL variable is -0.48. If the value of other variables, the instantaneous coefficient and the NPL variable increase by 1%, then the ROA variable will decrease by 48%. Likewise, if the value of other variables, the instantaneous coefficient and the NPL variable, decreases by 1%, then the ROA variable will increase by 48%.

The coefficient value of the LDR variable is -0.09. If the value of the other variables, the instantaneous coefficient and the LDR variable increases by 1%, then the ROA variable will decrease by 9%. Likewise, if the value of the other variables, the instantaneous coefficient and the LDR variable decreases by 1%, then the ROA variable will increase by 9%. The coefficient value of the BOPO variable is -0.89. If the value of the other variables is constant and the BOPO variable experiences an increase of 1% then the ROA variable will experience a decrease of around 89%.

Table 3. Panel Model Determination Test

Panel A. Chow Test				
Effect	Statistic	d.f.	Prob.	Conclusion
Cross-section F	2.26	(32,12)	0,00	There is Fix Effect model then the next test is the hausman test
Cross-Section Chi-square	74.10	32	0,00	
Panel B. Hausman Test				
Test Summary	Chi-S1. Statistic	Chi-Sq. d.f	Prob.	Conclusion
Cross-section Random	14.83	4	0,00	Model the best used by using Fix Effect Model

Source: Data process, 2025

Table 4. Classical Assumption Test

Panel A. Normality Test				
Jarque-Bera	4.40			Conclusion
Probability	0,11			
Number of sample	165			Normal distribution
Panel B. Multikolinearitas Test				
Variabel	Coeficient Variance	Uncentered VIF	Centered VIF	Conclusion
C	0.00	319.12	NA	
NPL	0.00	322.22	8.32	
LDR	7.18	9.37	1.26	
BOPO	0.00	13.7	8.72	no multicollinearity
NIM	0.01	61.44	1.54	
Panel C. Heteroskedastisitas				
Residual graph	0,02<500	-0,05<-500		Conclusion Pass the Heteroscedastic

Source: Data process, 2025

Likewise, conversely, if the values of the other variables are constant and the BOPO variable experiences a decrease of 1%, then the ROA variable will experience an increase of around 89%. The coefficient value of the NIM variable is around 3.40. If the value of the other variables, the coefficient and the NIM variable experience an increase of 1%, then the ROA variable will experience an increase of around 340%. Likewise, conversely, if the values of the other variables are constant and the NIM variable experiences a decrease of 1%, then the ROA variable will experience a decrease of around 340%.

The results of table 5 of the f test with a calculated f value of 484.28 > F table, namely 2.44135 and a sig value of 0.00 < 0.5, means that the variables NPL, LDR, BOPO and NIM have a simultaneous influence on the ROA of banking companies listed on the Indonesian Stock Exchange. The results of the determination test show an adjusted R Square value of 0.99 or 99%. The value of the determination coefficient shows that the independent variables consisting of NPL, LDR, BOPO and NIM are able to explain the ROA variables of banks listed on the Stock Exchange by 1% (100-adjusted R Square value) explained by other variables not included in this research model.

The t-test results on the NPL variable are obtained over a sig. 0.00 < 0.05, meaning that the NPL variable has a significant effect on the ROA of banks listed on the Indonesian Stock Exchange. The t-test results on the LDR (X2) variable are obtained over a sig. 0.00 < 0.05, meaning that the LDR variable has a significant effect on the ROA of banks listed on the Indonesian Stock Exchange. The t-test results on the BOPO variable are obtained over a sig. 0.00 < 0.05, meaning that the BOPO variable has a significant effect on the ROA of banks listed on the Indonesian Stock Exchange.

Tabel 5. Hypothesis Test

Panel A. F test					
F-statistic	F Count				Conclusion
Prob(F-statistic)	484.28 0.00				The variables NPL, LDR, BOPO and NIM have a simultaneous effect on ROA
Panel B. Determination test					
Model			R-Squared	Adjusted R-Squared	Conclusion
$ROA_{it} = \alpha + \beta_1 NPL_{it} + \beta_2 LDR_{it} + \beta_3 BOPO_{it} + \beta_4 NIM_{it} + \varepsilon$			0.99	0.99	The coefficient of determination value of 0.99 or 99% indicates that the independent variable is able to explain ROA by 99%
Panel C. T test					
Variabel	Coefficient	Std. Error	t-Statistic	Prob.	Conclusion
C	0.41	0.01	33.23	0.00	
NPL	-0.48	0.01	-31.44	0.00	H1 Accepted
LDR	-0.09	0.00	-10.94	0.00	H2 Accepted
BOPO	-0.89	0.03	-24.95	0.00	H3 Accepted
NIM	3.40	0.12	27.63	0.00	H4 Accepted

Source: Data process, 2025

The t-test results on the NIM variable have a sig. value of 0.00 < 0.05, meaning that the NIM variable has a significant effect on the ROA of banks listed on the Indonesian Stock Exchange.

DISCUSSION

Credit Risk (NPL) effect on Financial Performance (ROA)

This study shows an inverse relationship between NPL and ROA. Credit risk contributes to a decline in bank profitability due to the presence of non-performing loans, which reduces the availability of funds and negatively impacts operational activities, ultimately lowering financial performance. Financial institutions that provide lending services must maintain a low Non-Performing Loan (NPL) ratio to sustain their business operations (Assa & Loindong, 2023).

According to portfolio theory, a higher NPL ratio reflects poorer credit quality, leading to an increase in problematic loans and a subsequent decline in financial performance. Conversely, a lower NPL ratio indicates that banks can manage credit risk more effectively, thereby improving profitability. This finding is consistent with previous research by Rahma & Nurfauziah (2022) and Bahtiar et al. (2023), which demonstrated that NPL has a significant negative effect on ROA.

Liquidity Risk (NPL) effect on Financial Performance (ROA)

The study reveals an inverse relationship between LDR and ROA. This indicates that an increase in third-party funds not accompanied by a proportional rise in credit distribution leads banks to bear excessive interest expenses, resulting in losses that affect equity levels and reduce financial performance (Agnia & Sari, 2023).

Based on agency theory, poorly managed liquidity risk can trigger conflicts of interest between management and shareholders. When management prioritizes short-term gains, it may increase liquidity risk, thereby reduce the bank's financial performance and creating agency costs borne by shareholders. These findings are consistent with Rahma & Nurfauziah (2022), who found that LDR has a significant negative effect on ROA, but differ from Desiko (2020), who reported a significant positive relationship between LDR and ROA.

Operational Risk (NPL) effect on Financial Performance (ROA)

The study demonstrates an inverse relationship between BOPO and ROA. A high level of operational risk indicates inefficiency in a bank's operational cost management, which in turn reduces profitability. This occurs because the efficiency level of a bank's operations directly affects the income it generates. Conversely, a lower level of risk reflects efficient operational activities, which positively impact profitability as measured by Return on Assets (ROA). Therefore, higher operational risk leads to a decline in ROA, while lower risk contributes to improved profitability (Binasthika et

al., 2025).

Based on agency theory, agents (managers) who are not properly managed or supervised tend to cause or allow operational errors, ultimately reducing the company's financial performance. These findings are consistent with Rahma & Nurfauziah (2022), who found that BOPO has a significant negative effect on ROA.

Market Risk (NPL) effect on Financial Performance (ROA)

This study demonstrates a positive relationship between Net Interest Margin (NIM) and Return on Assets (ROA), indicating that a higher NIM corresponds to greater bank profitability. This risk arises from market price fluctuations influenced by both national and global macroeconomic conditions. In Indonesia, stock prices and banking sector performance are highly sensitive to changes in interest rates, inflation, and the exchange rate of the rupiah against foreign currencies. For instance, an increase in the Bank Indonesia interest rate can reduce the attractiveness of equity investments, as interest-bearing instruments such as bonds become more appealing (Syafiqah et al., 2023).

Based on the portfolio theory assumption, well-managed market risk is not a threat but rather an opportunity to enhance financial performance through strategic and measured investment decisions. Thus, the more effectively market risk is managed, the higher the potential return that the company can achieve. The findings of this study are consistent with Bahtiar et al. (2023) and Desiko (2020), who found that NIM has a significant positive effect on ROA, but contradict Rahma & Nurfauziah (2022), who found a negative relationship between NIM and ROA.

CONCLUSION, SUGGESTION, AND LIMITATIONS

This study aims to examine the effect of risk management, which includes credit risk, liquidity risk, operational risk, and market risk, on the financial performance of banking companies listed on the Indonesia Stock Exchange (IDX) during the 2019–2023 period that meet the sampling criteria. The findings reveal that market risk has a positive effect on financial performance, indicating that higher risk provides greater potential returns due to the bank's ability to manage risks through measured and effective strategies. Conversely, credit risk, liquidity risk, and operational risk have a negative effect on financial performance, implying that higher risks reduce the bank's ability to generate profits. These findings highlight the need for banks to strengthen their risk management systems.

Credit risk shows a negative effect, suggesting an imbalance between the increase in non-performing loans and the lack of effective portfolio diversification strategies. This occurs because banks have not fully implemented portfolio diversification principles to reduce credit concentration risk, leading to lower financial performance. The implication for regulators is the importance of

enforcing portfolio management practices that enable banks to balance risk and return in credit exposures. The implication for investors is to carefully evaluate investment decisions, as an increase in the NPL ratio may decrease bank profitability.

Liquidity risk has a negative effect, indicating that bank management faces difficulties in maintaining liquidity management and keeping the Loan-to-Deposit Ratio (LDR) at an optimal level to prevent an increase in non-performing loans, which may lead to short-term funding challenges and a decline in financial performance. The regulatory implication is to enhance the early warning system to detect potential liquidity pressures. For investors, caution is advised when making investment decisions in banks with high LDR ratios, as these may reflect inefficiency and a potential decline in profitability.

Operational risk has a negative effect, indicating that weak internal supervision and control systems by management directly reduce operational effectiveness and profitability. Therefore, banks are required to strengthen their internal control systems to minimize risks and improve financial performance. The implication for regulators is to establish minimum standards for operational risk management, prioritizing governance, technology, and human resource aspects to help banks achieve more optimal financial performance. For investors, high operational risk reflects potentially weak corporate governance, which may lower profitability prospects. Thus, investors should exercise caution when making investment decisions in banks with high operational costs.

Market risk has a positive effect, indicating that the ability of banks to manage market fluctuations can serve as a source of profit when appropriate strategies are implemented. Banks can leverage these conditions to exploit market opportunities and gain profits through investment portfolio diversification. The implication for regulators is that an efficient and responsive Indonesian financial market can facilitate banks in developing diverse derivative instruments to help them optimize market risk management. For investors, this provides a potential investment opportunity, as banks with strong market management capabilities are better positioned to enhance their financial performance. By implementing integrated risk management, banks demonstrate the importance of comprehensive monitoring and control mechanisms that can reduce risks disrupting financial performance. This approach ultimately enhances efficiency and profitability, leading to stronger overall banking financial performance.

The limitations of this study lie in the fact that the research sample includes only companies operating in the banking industry within a specific time period. In this study, financial performance is represented solely by the Return on Assets (ROA) variable, even though there are many other financial ratios that can be used to define financial performance more comprehensively. Additionally, the scope of variables is limited to risk management, thus not yet covering all possible factors that may influence the financial performance of banking companies.

Given these limitations, future research is recommended to incorporate other factors beyond risk management in assessing financial performance. These may include the impact of Good Corporate Governance (GCG) on financial performance, as examined by Fitriana et al. (2023), or the influence of Corporate Social Responsibility (CSR) and Environmental, Social, and Governance (ESG) approaches on financial performance, as studied by Sutrismi et al. (2022).

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