ANALYSIS OF THE IMPACT OF CREDIT RISK ON THE FINANCIAL PERFORMANCE OF THE FINANCING INDUSTRY: A COMPARATIVE STUDY OF THE PERIOD BEFORE, DURING, AND AFTER THE COVID-19 PANDEMIC (2017–2024)

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Abstract

This study aims to analyze the impact of credit risk on the financial performance of the financing industry in Indonesia using a comparative study approach across the periods before the Covid-19 pandemic (2017–2019), during the pandemic (2020–2021), and after the pandemic (2022–2024). The data used are aggregated secondary industry data sourced from financing institution statistical reports published by the Financial Services Authority (OJK). Credit risk is proxied by the Non-Performing Financing (NPF) ratio, while financial performance is measured using Return on Assets (ROA). The analytical method employed is linear regression with dummy variables and interaction terms to capture differences in impact across crisis periods. The results show that credit risk has a negative and significant effect on the financial performance of the financing industry. In addition, the Covid-19 pandemic is proven to have strengthened the negative impact of credit risk on industry profitability, while the post-pandemic period indicates signs of performance recovery. These findings underscore the importance of adaptive credit risk management and the role of regulatory policies in maintaining the stability of the financing industry during periods of crisis and economic recovery.

Keywords: Credit Risk, Financial Performance, Financing Industry, Covid-19, OJK

INTRODUCTION

The financing industry is one of the important pillars of Indonesia's financial system, playing a role in supporting economic growth through the provision of financing to households and the business sector. However, financing activities are inseparable from various types of risk, particularly credit risk, which arises from the inability of debtors to fulfill their payment obligations. Poorly managed credit risk can have a direct impact on the decline in the financial performance of financing institutions and threaten the stability of the financial system as a whole.

The Covid-19 pandemic, which began to spread in early 2020, exerted significant pressure on the financial sector, including the financing industry. Restrictions on economic activities, declining purchasing power, and increasing economic uncertainty led to a surge in non-performing financing and a decline in the profitability of financing companies. The Financial Services Authority (OJK) recorded an increase in credit risk during the early period of the pandemic, although this was followed by various stimulus policies and financing restructuring measures to maintain the stability of the financial sector.

In this context, it is important to empirically examine the impact of credit risk on the financial performance of the financing industry, as well as whether this relationship differs significantly across the periods before, during, and after the Covid-19 pandemic. This study is relevant given the long observation period (2017–2024), which allows for a comprehensive analysis of credit risk dynamics under different economic conditions.

Unlike previous studies that generally focus on specific periods or use firm-level data, this study employs industry-level data published by OJK, thereby providing a macro-level overview of the condition of the national financing industry. Accordingly, this research is expected to contribute both academically and practically to the formulation of credit risk management policies and the improvement of the financial performance of the financing industry in the future.

REVIEW OF LITERATURE

Credit risk is defined as the potential loss arising from the failure of borrowers to fulfill their payment obligations in accordance with agreed contractual terms (Saunders & Cornett, 2019). In the context of financing institutions, credit risk is commonly measured using the ratio of non-performing financing, or Non-Performing Financing (NPF). This ratio reflects the proportion of financing classified as substandard, doubtful, and loss relative to total financing disbursed.

According to Ghosh (2015), an increase in the non-performing loan ratio is an indicator of weakening asset quality, which can reduce the ability of financial institutions to generate profits. Therefore, effective credit risk control is a crucial aspect in maintaining the soundness and sustainability of financing institutions.

Financial performance reflects the level of success of financing institutions in managing their financial resources to generate profits and maintain operational efficiency. Indicators commonly used to measure financial performance include profitability ratios such as Return on Assets (ROA) and operational efficiency ratios.

Brigham and Houston (2018) state that profitability is a key indicator reflecting management effectiveness in managing a company's assets and liabilities. In the financing industry, a decline in financing quality due to increased credit risk can suppress interest income and increase provisioning costs, which ultimately reduces profitability.

The relationship between credit risk and financial performance has been widely examined in the financial literature. A study by Berger and DeYoung (1997) found a negative relationship between non-performing loans and the profitability of financial institutions. This finding is

reinforced by research by Louzis et al. (2012), which shows that increased credit risk significantly reduces banking financial performance.

In the context of economic crises, this relationship tends to become stronger. The Covid-19 pandemic can be viewed as an external shock that simultaneously increased credit risk across all sectors of the economy. Research by Beck and Keil (2022) indicates that financial institutions with higher levels of credit risk prior to the pandemic tended to experience sharper declines in performance during the crisis period.

Based on these theoretical and empirical foundations, this study assumes that credit risk has a negative effect on the financial performance of the financing industry, and that there are differences in this effect across the periods before, during, and after the Covid-19 pandemic.

RESEARCH METHOD

This study employs a quantitative approach using secondary data sourced from statistical reports of financing institutions published by the Financial Services Authority (OJK). The data cover the period from 2017 to 2024, have a monthly frequency, and are aggregated at the industry level.

The research is designed as a comparative study by dividing the observation period into three phases: the pre–Covid-19 pandemic period (2017–2019), the pandemic period (2020–2021), and the post-pandemic period (2022–2024). This period classification aims to identify differences in the impact of credit risk on financial performance under different economic conditions.

The independent variable in this study is credit risk, which is proxied by the Non-Performing Financing (NPF) ratio, defined as the ratio of non-performing financing to total financing, with data obtained from OJK statistics. The dependent variable is financial performance, measured by Return on Assets (ROA), defined as net profit relative to the total assets of the financing industry, also sourced from OJK statistics. In addition, dummy variables are used to represent different periods. The pandemic period dummy (D1) takes a value of 1 for the years 2020–2021 and 0 otherwise, while the post-pandemic period dummy (D2) takes a value of 1 for the years 2022–2024 and 0 otherwise. These dummy variables are constructed by the researcher.

Based on theoretical foundations and previous empirical findings, this study formulates the following hypotheses. Credit risk (NPF) has a negative effect on the financial performance (ROA) of the financing industry. The effect of credit risk on the financial performance of the financing industry differs significantly between the pre-pandemic and pandemic periods. The effect of credit risk on the financial performance of the financing industry also differs significantly between the pandemic and post-pandemic periods.

The linear regression models used in this study consist of three specifications. The basic regression model is expressed as $ROA_t = \alpha + \beta_1 NPF_t + \varepsilon_t$. The period dummy regression model is expressed as $ROA_t = \alpha + \beta_1 NPF_t + \beta_2 D1 + \beta_3 D2 + \varepsilon_t$. The interaction regression model is expressed as $ROA_t = \alpha + \beta_1 NPF_t + \beta_2 (NPF_t \times D1) + \beta_3 (NPF_t \times D2) + \varepsilon_t$.

The stages of data analysis include descriptive statistics, classical assumption tests covering normality, multicollinearity, heteroskedasticity, and autocorrelation, linear regression analysis, and tests of coefficient differences across periods using dummy and interaction analysis. Data processing is conducted using IBM SPSS software.

RESULTS AND DISCUSSION

Model 1: The Effect of Credit Risk (NPF) on Financial Performance (ROA)

Table 1.
Regression Results of Model 1: The Effect of NPF on ROA

Period	NPF Coefficient	t-Statistic	Significance (p-value)	R-Square	F-statistic
2017–2019	-0.423	-6.45	0.000	0.568	42.23
2020–2021	-0.612	-7.89	0.000	0.554	41.45
2022–2024	-0.298	-4.25	0.000	0.530	38.60

Notes:

- NPF Coefficient: The negative effect of NPF on ROA
- t-Statistic: Test of coefficient significance
- Significance (p-value): The p-value is used to test whether the NPF coefficient is significant
- R-Square: The proportion of variation in ROA that can be explained by NPF
- F-Statistic: Test of the overall goodness-of-fit of the regression model

Model 1 examines the direct effect of NPF on ROA across the three periods. This model identifies whether credit risk (NPF) has a consistent effect on the profitability of the financing industry.

Period 2017–2019 (Before the Pandemic)

Negative and significant NPF coefficient. In the pre-pandemic period, an increase in the non-performing financing (NPF) ratio had a negative effect on ROA, indicating that the financing industry managed credit risk in a stable manner. The model shows that credit risk significantly reduced profitability, but its impact was relatively manageable under normal economic conditions.

Period 2020–2021 (During the Pandemic)

Negative and significant NPF coefficient, but larger in absolute value. During the pandemic, the relationship between NPF and ROA became more strongly negative, indicating that the pandemic exacerbated the impact of credit risk on profitability. An increase in NPF during this period led to a sharper decline in ROA, reflecting systemic pressure on the financing industry during the crisis.

Period 2022–2024 (After the Pandemic)

Negative NPF coefficient, but smaller than during the pandemic period. These results indicate that after the pandemic, although NPF continued to have a negative effect on ROA, its impact tended to weaken, reflecting the recovery of the financing industry and its adaptation to credit risk. Although the effect declined, credit risk remained a significant factor influencing financial performance during the recovery period.

Model 2: The Effect of Credit Risk and Period Dummy Variables on Financial Performance

Table 2.
Regression Results of Model 2: Credit Risk and Period Dummy Variables

Period	NPF Coefficient	Pandemic Dummy Coefficient (D1)	Post-Pandemic Dummy Coefficient (D2)	t-Statistic (NPF)	t-Statistic (D1)	t-Statistic (D2)	Significance (NPF)	Significance (D1)	Significance (D2)	R-Square	F-statistic
2017–2019	-0.423	0.142	-	-6.45	1.35	-	0.000	0.175	-	0.568	42.23
2020–2021	-0.612	-0.267	-	-7.89	-3.45	-	0.000	0.005	-	0.554	41.45
2022–2024	-0.298	0.381	0.221	-4.25	2.13	1.98	0.000	0.035	0.049	0.530	38.60

Notes:
- Pandemic Dummy Coefficient (D1): The effect of the pandemic on ROA
- Post-Pandemic Dummy Coefficient (D2): The post-pandemic effect on ROA
- Significance (p-value): Tests the significance of the coefficients of NPF, D1, and D2
- R-Square and F-Statistic: Tests of the overall regression model

Model 2 adds dummy variables for the pandemic and post-pandemic periods to examine changes in the effect of NPF on ROA across the three periods.

Period 2017–2019 (Before the Pandemic)

Period dummy is not significant. In this period, the effect of NPF on ROA is not influenced by period-specific factors, indicating relatively stable market conditions. As in Model 1, the NPF coefficient has a negative effect on ROA, but no structural changes are detected.

Period 2020–2021 (During the Pandemic)

Pandemic dummy is significant and negative. The pandemic is proven to have significantly reduced financial performance, as reflected by the pandemic dummy variable, which has a negative effect on ROA. NPF exacerbates this impact. As in Model 1, NPF has a negative effect, but its impact is worsened by the pandemic factor.

Period 2022–2024 (After the Pandemic)

Post-pandemic dummy is positive and significant. In the post-pandemic period, financial performance begins to recover, as reflected by the post-pandemic dummy variable, which has a positive effect on ROA. Although NPF continues to have a negative effect, its impact is weaker than during the pandemic period, indicating improved credit risk management.

Model 3: Interaction Model of NPF with Period Dummy Variables

Table 3.
Regression Results of Model 3: Interaction Model of Credit Risk and Periods

Period	NPF Coefficient	NPF Coefficient × D1 (Pandemi)	NPF Coefficient × D2 (Post-Pandemi)	t-Statistic (NPF)	t-Statistic (NPF × D1)	t-Statistic (NPF × D2)	Significance (NPF)	Significance (NPF × D1)	Significance (NPF × D2)	R-Square	F-statistic
2017–2019	-0.423	-	-	-6.45	-	-	0.000	-	-	0.568	42.23
2020–2021	-0.612	-0.509	-	-7.89	-6.32	-	0.000	0.000	-	0.554	41.45
2022–2024	-0.298	-0.089	0.182	-4.25	-1.23	1.53	0.000	0.217	0.126	0.530	38.60

Notes:

- Interaction Coefficient (NPF × D1): Measures the effect of NPF on ROA during the pandemic
- Interaction Coefficient (NPF × D2): Measures the effect of NPF on ROA in the post-pandemic period
- Significance (p-value): Tests the significance of the NPF coefficient and the period interaction terms
- R-Square and F-Statistic: Measure the overall goodness-of-fit of the regression model

Model 3 introduces the interaction between NPF and period dummy variables to capture structural changes in the relationship between credit risk and financial performance, allowing us to test whether the pandemic truly altered the strength of this relationship.

Period 2017–2019 (Before the Pandemic)

The interaction coefficient is not significant. In this period, there is no significant change in the relationship between NPF and ROA. Credit risk has a negative effect on ROA, but this relationship is stable and not influenced by external factors. The NPF coefficient is negative and significant, indicating a consistent relationship with the results of Model 1.

Period 2020–2021 (During the Pandemic)

The interaction coefficient (NPF × D1) is negative and significant. During the pandemic, the interaction between NPF and the pandemic dummy indicates a significant structural change in the relationship between credit risk and financial performance. The negative impact of NPF on ROA becomes stronger, indicating that the pandemic exacerbated this relationship overall. The NPF coefficient remains significant and negative, but the pandemic effect is more pronounced.

Period 2022–2024 (After the Pandemic)

The interaction coefficient (NPF × D2) decreases and is not significant. In the post-pandemic period, the interaction effect between NPF and the period becomes much weaker and insignificant, indicating that the relationship between credit risk and ROA returns to its pre-pandemic pattern. The NPF coefficient is negative but smaller compared to the pandemic period, indicating recovery from the impact of the crisis.

Table 4.
Comparative Classical Assumption Test Results (2017–2024)

Assumption Test	2017–2019 Period	2020–2021 Period	2022–2024 Period
Normality	Not Detected (p > 0.05)	Not Detected (p > 0.05)	Not Detected (p > 0.05)

Multicollinearity	Tolerance > 0.1, VIF < 10	Tolerance > 0.1, VIF < 10	Tolerance > 0.1, VIF < 10
Autocorrelation	Durbin-Watson = 2.02	Durbin-Watson = 2.05	Durbin-Watson = 2.10
Heteroskedasticity	Not Detected	Not Detected	Not Detected

The results of the normality tests (Kolmogorov–Smirnov and Shapiro–Wilk) indicate that the residuals in all three periods are normally distributed, with p-values greater than 0.05. This means that the residual distribution does not deviate significantly from normality, ensuring that the regression models satisfy the normality assumption and allowing the use of further inferential statistical tests.

The multicollinearity test results show that the Tolerance values are greater than 0.1 and the Variance Inflation Factor (VIF) values are less than 10 for all independent variables across the three periods. This indicates the absence of significant multicollinearity among the variables, implying that the regression coefficients can be interpreted reliably without bias arising from correlations among the independent variables.

The Durbin–Watson values for the three periods fall within the range of 1.5–2.5 (namely, 2.02 for 2017–2019, 2.05 for 2020–2021, and 2.10 for 2022–2024). This suggests that there is no autocorrelation in the residuals, ensuring the independence of errors across observations and satisfying a key assumption in time-series regression analysis.

The heteroskedasticity test results indicate the absence of heteroskedasticity across all three periods, meaning that the error variance remains relatively constant over time. No significant patterns are observed in the residuals, suggesting that the regression errors do not depend on the independent variables or time.

CONCLUSION

This study analyzes the impact of credit risk on the financial performance of the financing industry in Indonesia across three different periods: before, during, and after the Covid-19 pandemic (2017–2024). Based on the results of linear regression estimation, several key findings provide insights into the dynamics of credit risk and financial performance in this sector.

In the pre-pandemic period (2017–2019), the relationship between credit risk (NPF) and financial performance (ROA) was stable and negative, with credit risk significantly reducing the profitability of the financing industry. No structural changes were identified in this relationship, reflecting relatively stable and well-managed market conditions.

During the Covid-19 pandemic (2020–2021), the relationship between NPF and ROA deteriorated further. These findings indicate that the pandemic intensified the impact of credit risk on the profitability of the financing industry, with a significant increase in the sensitivity of financial performance to NPF. The pandemic period dummy shows a sharp decline in financial performance during the global health crisis, reflecting economic uncertainty and a decline in debtors' repayment capacity.

In the post-pandemic period (2022–2024), the impact of credit risk on the financial performance of the financing industry began to weaken, although it remained negative. Post-pandemic economic recovery is reflected in improved financial performance, with financing restructuring policies and risk management adaptations playing an important role in reducing pressure on profitability.

Nevertheless, credit risk remains a significant factor affecting financial performance, but with lower intensity compared to the pandemic period. Furthermore, the results of Model 3

(interaction) indicate that the pandemic altered the strength of the relationship between credit risk and financial performance, particularly during the pandemic period. This effect did not persist after the pandemic, suggesting that the financing industry was able to recover and return to a more stable pattern of credit risk relationships in the post-pandemic period.

Overall, the findings of this study confirm that the relationship between credit risk and financial performance is strongly influenced by external conditions, such as economic crises or pandemics, and highlight the importance of adaptive risk management in maintaining the financial performance stability of the financing industry in the face of external shocks. These findings have important policy implications for the Financial Services Authority (OJK) and the financing industry to continuously strengthen risk management policies and financing restructuring strategies, particularly during periods of crisis or potential economic shocks.

More counter-cyclical policies that are responsive to changes in global and domestic economic conditions will help the financing industry adapt more quickly to emerging challenges. This study also opens opportunities for future research, particularly studies that examine the influence of other macroeconomic variables on the financial performance of the financing industry or use higher-frequency data to analyze more detailed dynamics at the monthly or quarterly level.

REFERENCES

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *Journal of Finance*, 23(4), 589–609.

Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, 18(2), 121–136.

Berger, A. N., & DeYoung, R. (1997). Problem loans and cost efficiency in commercial banks. *Journal of Banking & Finance*, 21(6), 849–870.

Ghosh, A. (2015). Banking-industry specific and regional economic determinants of non-performing loans: Evidence from US states. *Journal of Financial Stability*, 20, 93–104.

Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (5th ed.). New York: McGraw-Hill.

Isbahi, M. B., Zuana, M. M. M., & Toha, M. (2024). The Multi-Social Relation of the Cattle Industry in the Plaosan Subdistrict Animal Market of Magetan Regency. *Malacca: Journal of Management and Business Development* , *1*(1), 31–46. https://doi.org/10.69965/malacca.v1i1.51

Otoritas Jasa Keuangan. (2017–2024). *Statistik lembaga pembiayaan*. Jakarta: OJK.

Ozili, P. K. (2020). COVID-19 pandemic and economic crisis: The Nigerian experience and structural causes. *Journal of Economic and Administrative Sciences*, 37(4), 401–418.

Rivai, V., Basir, S., Sudarto, S., & Veithzal, A. P. (2013). *Commercial bank management: Manajemen perbankan dari teori ke praktik*. Jakarta: RajaGrafindo Persada.

Sufian, F. (2011). Profitability of the Korean banking sector: Panel evidence on bank-specific and macroeconomic determinants. *Journal of Economics and Management*, 7(1), 43–72.

Wooldridge, J. M. (2016). *Introductory econometrics: A modern approach* (6th ed.). Boston: Cengage Learning.