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# THE EFFECT OF PEER TO PEER LENDING, DIGITALIZATION, AND CREDIT RISK ON INDONESIAN BANK PROFITABILITY

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**Abstract:** This study aims to analyze the effect of Peer to Peer Lending, Digitalization Banking, and Banking Credit Risk on the profitability of banking companies as measured by Return on Assets (ROA), with Firm Size and Leverage as control variables. The research object consists of banking companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. The sampling technique used purposive sampling, resulting in 161 observations. The analysis method employed is multiple linear regression using SPSS. The results show that Peer to Peer Lending has a positive and significant effect on profitability, Digitalization Banking has a negative and insignificant effect, and Banking Credit Risk has a negative and significant effect on profitability. Meanwhile, the control variables indicate that Firm Size has a positive significant effect, and Leverage has a negative significant effect on profitability. The Adjusted R Square value of 0.514 indicates that the model explains 51.4% of the variation in profitability. This study highlights that fintech factors and financial risks play an important role in influencing banking profitability, although digitalization has not yet provided optimal short-term impacts.

***Keywords:*** *Banking Credit Risk, Digitalization Banking, Peer to Peer Lending, Profitability*

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## 1. Introduction

Profitability is essential for companies as it serves as an indicator of business sustainability, including in the banking sector (Sari & Nurdiawansyah, 2024). Profitability is used to assess a company's ability to generate income from its operational activities, sales, assets, and capital (Sari et al., 2024). In the banking industry, profitability can be measured using Return on Assets (ROA), which reflects a bank's ability to manage its assets to generate profits. A higher ROA indicates greater efficiency in generating earnings, while a lower ROA suggests inefficiencies in asset management and profitability (Amalia & Diana, 2022). The ROA of banking companies during the period from July 2024 to July 2025 experienced a significant decline, particularly from December 2024 to January 2025, decreasing from 2.69% to 2.34%. This decline reflects a reduction in banks' efficiency in generating profits from their total assets, indicating financial performance pressures in the banking sector at the beginning of 2025 (Otoritas Jasa Keuangan, 2025).

Banking performance is influenced by several key factors, including the rapid growth of Peer-to-Peer (P2P) lending, banking digitalization, and credit risk. The expansion of P2P lending ((Nisa et al., 2025), as reported by the Otoritas Jasa Keuangan (Otoritas Jasa Keuangan, 2025), reflects the increasing role of fintech in providing financing, particularly for micro,

MSME, and consumer segments. Meanwhile, banking digitalization enhances profitability through improved efficiency, service expansion, and competitiveness, although high technology investment may suppress short-term performance (Atasyadila & Muchlis, 2024; Putra, 2024; Maharani & Nugroho, 2024). In addition, credit risk remains a critical factor affecting profitability (Setiawan, Zulbetti, & Perwito, 2024), as higher default potential—especially in high-risk lending segments—can negatively impact asset quality, financial stability, and overall banking performance (Utari & Viverita, 2024).

Previous studies on the impact of P2P lending, banking digitalization, and credit risk on banking profitability have been conducted both domestically and internationally; however, the findings remain mixed and context-dependent. These differences may be attributed to variations in research periods, study objects, as well as economic and regulatory conditions across regions.

Atahau, Anggara, and Huruta (2025) found that prior to the emergence of P2P lending, credit risk had a significantly positive effect on profitability. However, after the introduction of P2P lending, the relationship weakened and turned negative. This finding is consistent with Prawira, Susilowati, and Ratnaningrum (2024) as well as Tobing and Wijaya (2020), who reported that P2P lending has a significantly negative effect on bank profitability due to increased competition, particularly in the micro and MSME financing segments. Sari (2020) further supports this finding by showing that the growth of fintech P2P lending exerts pressure on banking performance. However, Koranteng & You (2025) found contrasting results, indicating that P2P lending positively affects financial inclusion, suggesting that fintech can serve as a complement to banking under certain conditions. Meanwhile, Adilah & Diana (2025) found that P2P lending has no significant effect on the profitability of state-owned banks.

The research gap lies in the limited scope of previous studies, which generally focus only on specific groups of banks, such as KBMI 4 banks (Prawira et al., 2025), state-owned banks (Adilah & Diana, 2025), and conventional banks (Pratiwi, 2024), thus not fully representing the overall banking industry in Indonesia. The novelty of this study lies in the use of all banking companies listed on the Indonesia Stock Exchange as the research population and the integration of P2P Lending, Banking Digitalization, and Credit Risk into a single analytical model, with Firm Size and Leverage as control variables to provide a more comprehensive understanding of banking profitability.

The results of this study are expected to serve as a consideration for banking companies and regulators, such as the Otoritas Jasa Keuangan (OJK), in addressing the development of the digital financial industry, particularly regarding the growth of Peer-to-Peer (P2P) Lending, banking digitalization, and credit risk management in order to maintain profitability and financial sector stability. In addition, this study is expected to enrich the literature on the effects of P2P Lending, Banking Digitalization, and Banking Credit Risk on banking profitability, as well as support the development of the Technology Acceptance Model (TAM) and Risk Management Theory in explaining digital transformation and credit risk phenomena in the modern banking sector.

## 2. Literature Review

### 2.1. Technology Acceptance Model Theory

The Technology Acceptance Model (TAM) was first developed by Fred D. Davis (1989), which posits that user acceptance of a technology is primarily influenced by two key constructs: perceived usefulness (the degree to which an individual believes that using a technology will

enhance their performance) and perceived ease of use (the degree to which an individual believes that using the technology will be free of effort) (Davis, 1989).

Recent studies indicate that TAM remains highly relevant in explaining technology adoption in the financial sector, particularly in the context of digital banking and financial technology. Ly & Ly, (2022) emphasizes that the core constructs of TAM play a significant role in driving the adoption of internet banking in developing countries. Amnas et al. (2025) integrates TAM with a digital service quality model and finds that perceived usefulness is the primary determinant of FinTech adoption. Meanwhile, Ashoer et al. (2024) highlights that ease of use and trust strengthen the relationship between user perceptions and the intention to adopt mobile fintech services.

The selection of the Technology Acceptance Model in this study is based on its strong relevance in explaining technology acceptance behavior in the modern financial sector. TAM is one of the most widely used theoretical frameworks in studies of technology adoption, particularly in digital banking and fintech contexts (Ly et al., 2022 ; Amnas et al., 2025).

### 2.2. Risk Management Theory

Credit Risk Theory originates from the work of Robert C. Merton (1974), who developed the structural credit risk model to explain how the probability of default can be estimated based on a firm's asset value and capital structure (Merton, 1974). This model has become the foundation of modern credit risk theory, which is widely applied in the financial and banking sectors.

In the banking industry, this theory is highly important because credit risk is one of the main components affecting the financial health of banks and the overall stability of the financial system. Regulatory frameworks such as the Basel Committee on Banking Supervision through the Basel Accords further reinforce the application of this theory in banking risk management practices to ensure long-term resilience and profitability (Ash Shidiqie et al., 2024).

### 2.3. Peer to Peer Lending

Peer-to-Peer (P2P) Lending is a fintech innovation that directly connects borrowers and lenders through digital platforms without intermediaries, serving as a fast, flexible, and inclusive financing alternative, particularly for MSMEs (Rabbani et al., 2020). P2P lending plays a significant role in enhancing financial inclusion and improving intermediation efficiency (Laia & Windijarto, 2025), while also emerging as an important research topic related to financial innovation and credit risk (Kholidah et al., 2022). In addition to acting as a complement, P2P lending also serves as a competitor to traditional banking in the credit market (Sulastri & Janssen, 2023), although it still faces challenges such as default risk and information asymmetry, which may potentially affect the profitability of the banking sector.

Based on the Technology Acceptance Model (TAM), its adoption can influence market structure and banking profitability through changes in interest income (Nguyen-Thi-Huong et al., 2023). Its presence can act as a competitor that pressures the bank's credit market share, but it also has the potential to become a partner through collaboration and income diversification. Previous studies show mixed findings, where Atahau et al. (2025) found that P2P lending weakens the relationship between credit risk and profitability, Prawira et al. (2025) and Tobing & Wijaya (2020) found a significant negative effect, while (Koranteng & You, 2025) and (Cahyaningrum & Indraswari, 2025) found a positive impact through increased financial inclusion that supports bank profitability.

*H1: Peer-to-Peer (P2P) Lending has a positive effect on the profitability of banking companies.*

### 2.4. Digitalization Banking

Banking digitalization refers to the transformation of financial services from conventional forms into technology-based digital platforms, such as mobile banking, internet banking, and financial platforms, which influence operational efficiency, cost structures, and banks' competitiveness (Acosta-Prado et al., 2024). Digitalization has been proven to enhance efficiency, expand market reach, and improve customer satisfaction (Chen et al., 2023), while also becoming a crucial strategy in addressing competition with fintech, including peer-to-peer (P2P) lending.

Research by Al-Haija et al. (2026) indicates that Digital Banking Transformation (DBT) can improve financial performance and bank profitability when supported by adequate technological investment and organizational readiness. However, its success largely depends on infrastructure, cybersecurity, and customer trust. Therefore, digitalization has become a key factor in maintaining banking profitability in the era of digital competition (Acosta-Prado et al., 2024).

Based on the Technology Acceptance Model (TAM), it enhances convenience and perceived usefulness, thereby expanding the customer base and profitability. Theoretically, the implementation of digital banking can increase fee-based income and reduce operational costs; however, large technology investments may suppress profitability in the short term. Previous studies generally show positive results, where Adilah & Diana (2025) and Pratiwi (2024) found a significant positive effect on profitability, although some findings are insignificant due to differences in infrastructure readiness and levels of technology adoption (Prawira et al., 2025).
*H2: Banking Digitalization has a positive effect on the profitability of banking companies.*

### 2.5. Banking Credit Risk

Banking credit risk is a primary risk in the banking sector arising from a borrower's inability to meet their obligations, which directly impacts an increase in loan loss provisions, a decline in interest margins, and overall bank profitability (Tarawneh et al., 2024). Effective credit risk management is therefore essential in maintaining financial stability and bank performance.

Various studies indicate that credit risk generally has a negative effect on profitability (Rastogi et al., 2022), with factors such as regulation, capital adequacy, and portfolio diversification influencing this relationship. Furthermore, the development of fintech also affects credit risk, as the expansion of digital-based lending may increase the likelihood of default if not accompanied by robust risk management practices (Liu et al., 2025).

Based on Risk Management Theory, an increase in credit risk can reduce profitability due to rising non-performing loans, higher loan loss provisions, and declining interest income. Logically, an increase in NPL reflects inefficiency in credit distribution, which leads to lower income and higher provisioning costs, thereby reducing profits and profitability (ROA). Empirical findings support this, where Sutrisno (2025), Prawira et al. (2025), and Sari (2020) consistently show that credit Sari (2020) risk has a significant negative effect on banking profitability.
*H3: Banking Credit Risk has a negative effect on the profitability of banking companies.*

## 3. Research Method

This research adopts a quantitative approach by utilizing secondary data as its primary source. The dataset is obtained from several platforms, including the official websites of Otoritas Jasa Keuangan (OJK) and the annual reports of banking firms listed on the Indonesia Stock

Exchange for the 2020–2024 period. To examine the data, this study applies multiple linear regression analysis, which is used to evaluate both the joint (simultaneous) and individual (partial) influences of independent variables on the dependent variable. This method is selected because it enables the assessment of both the magnitude and the direction of relationships among variables within the proposed model.
The multiple linear regression model used to test the hypotheses in this study is as follows:

$$ROA = \alpha + \beta 1P2P + \beta 2DB + \beta 3BCR + \beta 4FS + \beta 5Lev + \varepsilon \quad (1)$$

This research targets all publicly listed firms within the banking sector in Indonesia. The sample is determined using a purposive sampling approach, meaning that only companies meeting certain predetermined criteria relevant to the research objectives are included. The criteria applied in selecting the sample are as follows: (1) banking companies that are consistently listed on the Indonesia Stock Exchange throughout the 2020–2024 period; (2) companies that provide complete annual financial reports during the observation years; (3) companies that are neither delisted nor subject to trading suspension within the research timeframe; and (4) companies that do not undertake merger activities during the period of study.

**Table 1. Operational Definitions**

| Variable | Definition | Measurement |
|---|---|---|
| Return on Assets (ROA) | Measures a bank's ability to manage its assets to generate profit | $ROA = \frac{Net\ Income}{Total\ Assets} \times 100\%$ |
| Peer to Peer (P2P) | Measures the level of company involvement in investment in P2P platforms | 1 = P2P investment<br>0 = No P2P investment |
| Digitalization Banking (DB) | Measures the extent of digital technology utilization by banks in their operations | Natural logarithm of keyword frequency |
| Banking Credit Risk (BCR) | Measures the risk of loss due to borrower default | $NPL = \frac{Non-performing\ Loa}{Total\ Loans}$ |
| Firm Size (FS) | Measures company size based on total assets | Natural logarithm of total assets |
| Leverage (Lev) | Measures the level of debt usage in the company's capital structure | $Lev = \frac{Total\ Debt}{Total\ Assets} \times 100\%$ |

## 4. Result and Discussion

### 4.1. Result

**Table 2. Data Description**

| Sample Criteria | Total |
|---|---|
| Banking companies listed on the IDX during 2020–2024 | 46 |
| Companies that conducted mergers during the research period | (1) |
| Total Banking Companies | 45 |
| Total Samples (5 years) | 225 |

| | |
|---|---|
| Observations with incomplete data | (64) |
| **Total Research Sample** | **161** |

The table presents the results of the sample selection process. During the 2020–2024 period, out of 46 banking listed on the IDX, one company underwent a merger. Consequently, 45 companies were eligible for analysis, resulting in a total sample of 161 observations.

**Descriptive Statistics**

**Table 3. Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| ROA | 161 | -1.43 | 3.93 | 1.2742 | 1.03514 |
| P2P | 161 | 0 | 1 | 0.30 | 0.459 |
| BCR | 161 | 0.00 | 5.69 | 2.6260 | 1.22260 |
| DB | 161 | 2.71 | 5.79 | 4.3168 | 0.61435 |
| SIZE | 161 | 15.50 | 21.61 | 18.1300 | 1.61031 |
| LEV | 161 | 0.61 | 0.92 | 0.8064 | 0.06996 |

Descriptive statistics for the 161 observations reflect considerable variation in the characteristics of each variable. The ROA variable has a mean value of 1.2742 with a standard deviation of 1.03514, indicating that, on average, banking companies generate profits of 1.2742 from their total assets. The minimum ROA value of −1.43 suggests that some banks experienced losses during the observation period, while the maximum value of 3.93 indicates the presence of highly profitable banks.

The P2P variable has a mean of 0.30 with a standard deviation of 0.459, and ranges from 0 to 1. This indicates that P2P is measured using a dummy variable, where a value of 1 represents companies involved in P2P lending, while 0 indicates otherwise. The mean value of 0.30 suggests that approximately 30% of the sample is associated with P2P lending.

The Banking Credit Risk (BCR) variable has a mean value of 2.6260 with a standard deviation of 1.22260, ranging from 0.00 to 5.69. Meanwhile, the Digitalization Banking (DB) variable has a mean of 4.3168 with a standard deviation of 0.61435. Its minimum value of 2.71 and maximum value of 5.79 indicate variations in the level of digitalization across banks, although the differences are not substantial.

The control variable SIZE has a mean of 18.1300 with a standard deviation of 1.61031, ranging from 15.50 to 21.61, indicating differences in firm size as measured by total assets. Furthermore, the leverage control variable shows a mean of 0.8064 with a standard deviation of 0.06996, with values ranging from 0.61 to 0.92, suggesting that leverage levels across companies are relatively stable.

**Robustness Testing**

**Normality Test**

In the Kolmogorov–Smirnov normality test, data are deemed to follow a normal distribution when the significance value exceeds 0.05.

**Table 4. Normality Test**

| | | | Unstandardized Residual |
|---|---|---|---|
| N | | | 161 |
| Normal Parameters | Mean | | 0.0000000 |
| | Std. Deviation | | 0.71043454 |
| Most Extreme Differences | Absolute | | 0.070 |
| | Positive | | 0.070 |
| | Negative | | -0.059 |
| Test Statistic | | | 0.070 |
| Asymp. Sig. (2-tailed) | | | 0.052 |
| Monte Carlo Sig. (2-tailed) | Sig. | | 0.052 |
| | 99% Confidence Interval | Lower Bound | 0.046 |
| | | Upper Bound | 0.058 |

Referring to the table, the residual analysis yields an Asymp. Sig. (2-tailed) value of 0.052. Because this figure exceeds the 0.05 threshold, the residuals can be regarded as normally distributed. Accordingly, the normality assumption of the linear regression model is fulfilled, suggesting that the estimated results are statistically acceptable.

**Multicollinearity Test**

A regression model is considered free from multicollinearity if each independent variable has a Tolerance value greater than 0.1 and a VIF value of less than 10.

**Table 5. Multicollinearity Test**

| Model | | Collinearity Statistics | |
|---|---|---|---|
| | | Tolerance | VIF |
| 1 | (Constant) | | |
| | P2P | 0.823 | 1.216 |
| | BCR | 0.918 | 1.089 |
| | DB | 0.784 | 1.275 |
| | SIZE | 0.860 | 1.163 |
| | LEV | 0.910 | 1.098 |

No correlation issues among the independent and control variables—P2P, DB, BCR, SIZE, and LEV—are identified based on the multicollinearity test results. All variables exhibit tolerance values above 0.1 and VIF values below 10. Specifically, Peer-to-Peer Lending (tolerance 0.823, VIF 1.216), Digitalization Banking (tolerance 0.784, VIF 1.275), Banking Credit Risk (tolerance 0.918, VIF 1.089), Firm Size (tolerance 0.860, VIF 1.163), and Leverage (tolerance 0.910, VIF 1.098) all meet the required criteria.

**Heteroscedasticity Test**

A significance value above 0.05 indicates that heteroscedasticity is not present, meaning the residuals have constant variance (homoscedastic).

**Table 6. Multicollinearity Test**

| Model | | t | Sig. |
|---|---|---|---|
| 1 | (Constant) | 2.797 | 0.006 |
| | P2P | 0.657 | 0.512 |
| | BCR | -1.491 | 0.138 |
| | DB | -1.089 | 0.278 |
| | SIZE | -0.375 | 0.708 |
| | LEV | -0.914 | 0.362 |

The results indicate that the significance values for each variable are as follows: P2P = 0.512, BCR = 0.138, DB = 0.278, SIZE = 0.708, and LEV = 0.362. Since all values exceed the 0.05 threshold, it can be inferred that the model does not suffer from heteroscedasticity, meaning the assumption of constant residual variance is satisfied.

**Autocorrelation Test**

The autocorrelation test aims to identify whether the error term in a given period is correlated with the error terms from previous periods within a linear regression model.

**Table 7. Autocorrelation Test**

| Model | Durbin-Watson |
|---|---|
| 1 | 1.004 |

Based on the autocorrelation test, the Durbin–Watson value obtained is 1.004. Since this value falls within the range of −2 to +2, it can be inferred that the regression model is free from autocorrelation issues.

**Hypothesis Testing**

The following presents the outcomes of the multiple linear regression analysis conducted to examine the proposed hypotheses in this study:

**Table 8. T-Test**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -2.906 | 0.858 | | -3.386 | 0.001 |
| | P2P | 0.344 | 0.137 | 0.153 | 2.511 | 0.013 |
| | BCR | 0.294 | 0.049 | -0.347 | -6.037 | 0.001 |
| | DB | -0.061 | 0.105 | -0.036 | -0.586 | 0.559 |
| | SIZE | 0.427 | 0.038 | 0.664 | 11.165 | 0.001 |
| | LEV | -3.249 | 0.855 | -0.220 | -3.800 | 0.001 |

Referring to the table, the regression model can be expressed in the form of the following equation:

$$ROA = -2.906 + 0.344P2P - 0.061DB + 0.294BCR + 0.427FS - 3.249Lev \quad (2)$$

**t-Test (Partial Test)**

The t-test is conducted to analyze the individual influence of each independent variable on the dependent variable in the regression model. An independent variable is deemed to have a significant influence when its significance value is below 0.05

Based on table 8, the P2P variable records a t-value of 2.511 with a significance level of 0.013, which is below 0.05. This suggests that P2P exerts a positive and statistically significant influence on the dependent variable. In contrast, the DB (Banking Digitalization) variable shows a t-value of −0.586 and a significance value of 0.559, exceeding the 0.05 threshold. This implies that DB does not have a statistically significant effect on the dependent variable. Meanwhile, the BCR (Banking Credit Risk) variable produces a t-value of −6.037 with a significance level of 0.001, which is below 0.05. This result indicates that BCR has a significant negative impact on the dependent variable.

Regarding the control variables, SIZE (Firm Size) shows a t-value of 11.165 with a significance level of 0.001, which is below 0.05. This indicates that SIZE has a positive and statistically significant influence on the dependent variable. On the other hand, LEV (Leverage) records a t-value of −3.800 with a significance value of 0.001, also below 0.05, suggesting that LEV exerts a significant negative effect on the dependent variable.

**F-Test (Simultaneous Test)**

The F-test is used to determine whether the independent variables simultaneously have a significant effect on the dependent variable in the regression model. A model is regarded as valid if the calculated F-value exceeds the critical F-value and the significance level is below 0.05.

**Table 10. F-Test**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 90.687 | 5 | 18.137 | 34.813 | 0.001 |
| | Residual | 80.755 | 155 | 0.521 | | |
| | Total | 171.442 | 155 | | | |

Based on the F-test (simultaneous test), Peer-to-Peer Lending (P2P), Banking Digitalization (DB), Banking Credit Risk (BCR), as well as the control variables Firm Size (SIZE) and Leverage (LEV) simultaneously have a significant effect on ROA.

**Coefficient of Determination**

The explanatory power of the model is assessed through the Adjusted R-squared, which indicates the extent to which the independent variables explain variations in the dependent variable. This value lies between 0 and 1, where a figure approaching 1 indicates that the independent variables provide stronger explanatory capability for changes in the dependent variable.

**Table 9. Coefficient of Determination**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.727 | 0.529 | 0.514 | 0.72180 |

Based on the results of the coefficient of determination test, the R-squared value is recorded at 0.529. This indicates that 52.9% of the variation in banking profitability can be

accounted for by the independent variables,, namely Peer-to-Peer Lending (P2P), Banking Digitalization (DB), and Banking Credit Risk (BCR). Furthermore, the Adjusted R-squared value of 0.514 suggests that, after considering the number of variables included in the model, 51.4% of the changes in the dependent variable are explained by those independent variables. The remaining 48.6% is attributed to other factors that are not incorporated in the model.

### 4.2. Discussion

#### Peer-to-Peer Lending and Banking Profitability

Based on the test results, the Peer-to-Peer (P2P) Lending variable has a positive regression coefficient of 0.344 with a significance level of 0.013, indicating that P2P lending has a positive and significant effect on banking profitability (ROA). This suggests that banks' involvement in P2P lending activities can enhance financial performance.

This finding is consistent with studies by Koranteng & You (2025) and Cahyaningrum & Indraswari (2025), which found that peer-to-peer lending has a significant positive effect on traditional financial inclusion. These studies indicate that the development of fintech does not always pose a threat to the banking sector. The results of this study differ from those of Prawira et al. (2025) because banking companies have begun to adapt through digital transformation, investment, and collaboration with P2P lending platforms, so the presence of fintech can instead support the improvement of bank profitability.

Theoretically, this result also supports the TAM, which suggests that technology adoption is influenced by users' perceptions of usefulness and ease of use. Thus, fintech adoption by banks can improve efficiency and expand market reach. Increased profitability occurs as collaboration with P2P lending platforms enables banks to reach new customers, expand financing, and increase fee-based income, while also promoting operational efficiency and financial service innovation.

#### Banking Digitalization and Banking Profitability

Based on the test results, the Banking Digitalization variable has a negative regression coefficient of −0.061 with a significance value of 0.559, indicating that digitalization has a negative but insignificant effect on profitability (ROA). This implies that increased digitalization tends to reduce profitability, although the effect is relatively small.

This result is consistent with the study by Haryono & Widiyanti (2024), which states that digital banking has a negative effect on banks' Return on Assets (ROA) in Indonesia. Furthermore, Setiawan & Prakoso (2024) explain that the adoption of digital banking has not always been able to improve banks' financial performance, as the effectiveness of digitalization depends on bank size, infrastructure readiness, and management capability in utilizing technology efficiently. The results of this study differ from those of Adilah & Diana (2025) and Prawira et al. (2025), who found a positive effect of digital banking on profitability, because the implementation of digital banking in several banks still requires substantial technology investment, operational costs, and digital infrastructure development, thereby limiting its direct impact on improving profitability.

Theoretically, this can also be explained by the TAM, where the benefits of new technology are optimal only when they are fully realized and effectively utilized. In this context, the costs of digital transformation—such as technology investment, system maintenance, and cybersecurity—may outweigh the short-term benefits, resulting in an insignificant impact on profitability during the study period.

**Banking Credit Risk and Banking Profitability**

Based on the regression analysis results, the Banking Credit Risk (BCR) variable has a negative coefficient of −0.294 with a significance value of 0.001, indicating that credit risk has a negative and significant effect on banking profitability (ROA). This means that higher credit risk leads to a greater decline in bank profitability.

This finding is consistent with Sutrisno (2025) and Prawira et al. (2025), who state that non-performing loans (NPL) negatively affect banks' financial performance. The results of this study differ from those of Lestari & Nagita (2026), who found a positive but insignificant effect, because banking companies in this study still face pressure from credit quality deterioration and high borrower default risk, which directly affect banks' financial performance.

Theoretically, this result aligns with Risk Management Theory, which emphasizes the importance of effective risk management, as increased credit risk reduces interest income due to problematic loans and increases loan loss provisions, ultimately lowering profits and bank profitability.

**Firm Size and Banking Profitability**

The test results show that the control variable Firm Size (SIZE) has a positive regression coefficient of 0.427 with a significance value of 0.001, indicating that firm size has a positive and significant effect on banking profitability. This implies that larger banks tend to generate higher profitability. This finding is consistent with Listy & Imronudin (2025), who find that firm size significantly affects ROA in Indonesia's financial sector. In general, larger banks have advantages such as greater total assets, wider operational networks, stronger market share, and a higher capacity to raise funds, enabling them to achieve operational efficiency through economies of scale and ultimately enhance profitability.

**Leverage and Banking Profitability**

Based on the regression analysis, the control variable Leverage (LEV) has a negative coefficient of −3.249 with a significance value of 0.001, indicating that leverage has a negative and significant effect on banking profitability. This means that higher leverage leads to greater pressure on profitability. This finding is consistent with Listy & Imronudin (2025), who state that leverage negatively affects the financial performance of companies in Indonesia's financial sector. This occurs because a high proportion of debt financing increases interest expenses and financial risk, thereby reducing the company's ability to generate profits. Therefore, maintaining a balanced capital structure is crucial to ensure that the use of debt does not reduce company profitability.

## 5. Conclusion

Based on the findings, it can be concluded that Peer-to-Peer (P2P) lending has a positive effect on banking profitability, indicating that banks' involvement in the fintech ecosystem can enhance financial performance. Meanwhile, Banking Digitalization has a negative and insignificant effect, suggesting that it has not yet provided an optimal contribution to improving ROA. In addition, Banking Credit Risk and Leverage have negative effects on profitability, while Firm Size has a positive effect on the profitability of banking companies.

Banking companies are advised to optimize the implementation of digitalization more effectively, improve credit risk management, and maintain leverage at an optimal level to avoid suppressing profitability. Future researchers are encouraged to include additional relevant

variables, apply more comprehensive measurement methods, and expand the research period and sample scope in order to obtain more accurate results.

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