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The Effect of Inflation, Exchange Rate and Credit Risk on Banking Profitability in Indonesia (2021 – 2024)

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ABSTRACT

This study aims to analyze the influence of inflation, credit risk, and exchange rates on banking profitability in Indonesia, which is an important issue in a dynamic economic context. Measured by ROA with the period 2021-2024 based on Signaling theory. By understanding whether these macroeconomic factors can affect the bank's financial performance. Using quantitative methods, multiple linear regression was conducted through SPSS 16, with secondary data from 11 large conventional banks on the IDX and produced 44 observations. As a result, simultaneously, inflation, exchange rates, credit risk affect banking profitability significantly are shown by the results ($F = 3.123$, $p = 0.036$), explaining the 15.4% variation ($R^2 = 0.154$; Adjusted $R^2 = 0.106$), but only a fraction of the credit risk ($t = 2.618$, $p = 0.012$, $\beta = 0.051$) was affected. inflation ($t = 0.975$, $p = 0.335$) and exchange rate ($t = 0.995$, $p = 0.326$) are not. These findings contribute to understanding the importance of risk control in maintaining bank profitability amid uncertain economic conditions, emphasizing the priority of internal credit risk management over external macroeconomic signals in post-pandemic banking stability. The recommendations include stricter supervision of NPLs by the OJK and BI, as well as hedging for exchange rate risks. The conclusions of this study emphasize the need for banks to improve risk management and transparency of financial statements, further research is recommended to examine other factors besides the variables in this study.

Keywords: Inflation, Exchange Rate, Credit Risk, Banking Profitability, Risk Management.

1. INTRODUCTION

Banking plays a role in Indonesia's economy, namely as a financial intermediation institution, functioning in collecting funds from the community then distribute them to productive sectors, so that economic growth can be encouraged. In addition, it also has a contribution that not only maintains national economic stability, but also creates public trust in the financial system. However, Indonesia's banking sector is also inseparable from challenges, especially related to inflation, and exchange rates and other risks that can disrupt operations in generating profitability. Banks are business entities that move by collecting funds from the community and distributing them in the form of credits or others to handle, develop national development, economic growth and national stability. In the progress of the times increasingly changing and require adjustments to global challenges such as the most reliable funding alternatives when the economy is declining due to *lockdown policies.*

Based on research in the first quarter of 2022, Indonesia faces significant challenges for economic recovery, especially due to the variant Omicron and geopolitical tensions between Russia and Ukraine. Despite the impact (Haspramudilla, 2022) *Omicron* not as severe as expected, health challenges and PPKM policies remain. Russia-Ukraine tensions have the potential to affect food and energy prices, as well as global inflation, which could hamper economic recovery. The three main challenges faced are:

1. The vulnerability of the Covid-19 situation and the decline in vaccination enthusiasm.
2. Adapt to rapid digital transformation.
3. Environmental issues and climate change are increasingly urgent.

Suggested strategies include transformation of the economic structure, increased investment, and greater engagement in the global economy. Indonesia's economic growth projections for 2022 range from 4.7% to 5.5%, depending on the handling of health issues and global dynamics. OJK as a financial regulator has an important role in regulating and supervising bank activities, including in evaluating performance through financial ratio analysis, such as Return on Assets (ROA) which is an important indicator or instrument to know and assess the profitability of bank management with the intention of supporting the sustainability and growth of the banking sector. (Paramita & Yudha, 2024)

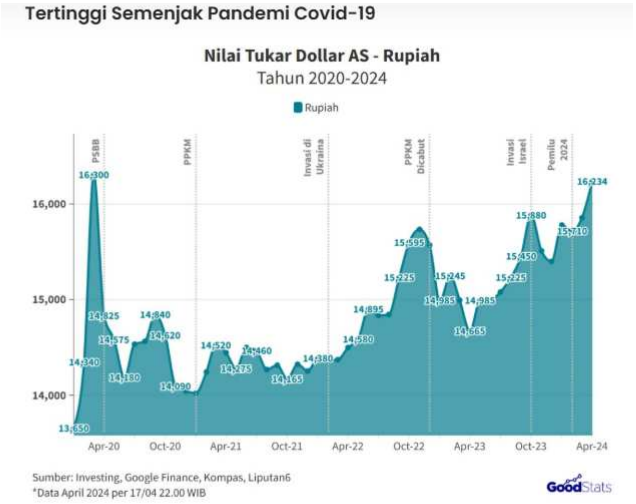
In the bank's operational activities, the main goal is to get the maximum profit (profitability) as possible. Profitability is used to assess a bank's ability to manage its assets. In the context of this study, profitability describes the ability of banks to obtain profits measured using ROA by reflects the Bank's efficiency in generating profits. with the high level of ROA value of a bank, the potential profits that can be obtained are also high, and the bank's position in utilizing its assets is also high, as well as demonstrating management capabilities in fund management, financing and financing risk handling, and vice versa.

Table 1 Indonesia's Inflation Data for 2021 - 2024

Month/Year	2021	2022	2023	2024
December	1.87 %	5.51 %	2.61 %	1.57 %
November	1.75 %	5.42 %	2.86 %	1.55 %
October	1.66 %	5.71 %	2.56 %	1.71 %
September	1.6 %	5.95 %	2.28 %	1.84 %
August	1.59 %	4.69 %	3.27 %	2.12 %
July	1.52 %	4.94 %	3.08 %	2.13 %
June	1.33 %	4.35 %	3.52 %	2.51 %
May	1.68 %	3.55 %	4 %	2.84 %
April	1.42 %	3.47 %	4.33 %	3 %
March	1.37 %	2.64 %	4.97 %	3.05 %
February	1.38 %	2.06 %	5.47 %	2.75 %
January	1.55 %	2.18 %	5.28 %	2.57 %
Total	18,72	50,47	44,23	27,64
Average	1,56	4,205833333	3,685833333	2,303333333

Source: BPS Inflation Data (BPS, 2020)

The Central Statistics Agency states (BPS), inflation in Indonesia has reached 5.47% in 2023, which shows that there is a fairly high inflationary pressure. This phenomenon shows that this inflation rate far exceeds BI's target (3±1%) triggered by the increase in global food and energy prices. Rising inflation can cause people's purchasing power to decrease and bank operating costs are also increasing, while exchange rate fluctuations can affect the cost of goods and selling prices of products. In addition to inflation, the exchange rate also plays an important role in banking performance, because exchange rate fluctuations can affect the price of raw materials and the selling value of a product, especially for banks that have exposure to foreign currencies. (BPS, 2020)



Picture 1 US Dollar to Rupiah Exchange Rate 2020-2024
Source: Good stats (Rainer, 2024)

In the diagram above, it is explained that the rupiah has changed dynamically, namely recorded in April 2024 it has reached Rp 16,234 against the US dollar and is the highest since 2000, considering the 1998 monetary crisis that causes the exchange rate to weaken and affect the economy. The monetary crisis that began in July 1997 has resulted in the closure of many companies, causing increased unemployment. Fears of a repeat of a similar crisis, especially after the rupiah currency plummeted. Because this can have an impact on banks that have foreign currency exposure. His research shows that fluctuations in exchange rates and inflation rates can directly affect the financial performance of banks, which significantly affects inflation and exchange rates on profitability. The soaring rupiah exchange rate has the potential to affect bank profitability, while rising inflation can reduce it. In addition, simultaneously inflation and exchange rates also affect. The weakening of the rupiah to Rp16,249/USD (April 2024) was the worst since 2000, impacting 32% of banks with foreign exchange exposure >20% of assets. (Sabrina, Yenti, & Husni, 2021)

With this, it is hoped that the government can take appropriate policies, while the public remains calm and can act rationally in the face of shocks or global geopolitical problems in the hope that the fundamental condition of the Indonesian economy can withstand the weak rupiah. This research was conducted on the grounds of unstable exchange rate fluctuations that can affect bank operating costs and revenues, especially for banks that have exposure to foreign currencies. So that banks involved in foreign exchange transactions can experience changes in their income if the moving exchange rate cannot be profitable, then the income obtained from the transaction can be reduced and have an impact on profitability. (Irdhansyah, 2024)

Meanwhile, credit risk arises because the debtor is unable to meet his credit payment obligations, this can directly affect the bank's loan portfolio. The banking industry's NPL ratio increased from 2.4% (2021) to 3.1% (2024), with UMUR loans accounting for 45% of non-performing loans. In a study (Aji & Manda, 2021) that stated that Credit Risk (NPL) has a simultaneous impact on profitability, so effective risk management requires a thorough analysis of the debtor profile or background, regular monitoring of the loan portfolio and the implementation of mitigations such as diversification and write-off allowances (Aji & Manda, 2021). Risk management is very crucial because it is related to market fluctuations that can cause credit risk to increase, in addition to the high level of non-performing loans can worsen banks' vulnerability and resilience to market shocks. Therefore, the approach in risk management is the basis for banks to maintain their profitability. (Mosey, Tommy, & Untu, 2018)

2. LITERATURE REVIEW

Signaling Theory

Signal theory (*signalling theory)* It is related to profitability and was first introduced by Akerlof (1970) through the concept of asymmetric information, which shows an imbalance of information between buyers and sellers regarding product quality. This theory was later expanded by Spence in 1973 which he introduced in a study titled Job Market Signaling, which described that companies with good performance use financial information to send positive signals to the market. Signal theory highlights the difference in information between the company's management, who have a deeper understanding of the company and its prospects, and external parties such as investors and debtors Therefore, the manager publishes the financial statements required by the interested parties. Profitability describes the ability to generate profits, according to signal theory, the delivery of transparent information is expected to convince external parties about the accuracy of financial statements, so as to assess the company's prospects well and not assume that the reported profit is the result of engineering. (Pertiwi & Susanto,, 2019) High profitability, measured by indicators like Return on Assets (ROA), serves as a key signal of efficient asset management and risk handling. This framework is particularly relevant for analyzing how macroeconomic factors (inflation, exchange rates) and internal risks (credit risk) influence banking signals in Indonesia's dynamic economy.

Profitability

Profitability as seen from the ratio measures a company in obtaining profits from its asset management. And it can be measured through indicators such as ROA, which reflects the effectiveness of profit-making banking. The magnitude of the profit level can be described from the size of the bank's ROA, which can indicate that it is also good to use its assets (Taufiq Akbar, 2019) The level of ROA in a bank indicates a bank's ability in management to manage its funds for safe and clear financing. Profit optimization can be achieved if the bank has been able to meet the financing target and to minimize if there is problematic financing. Banking supervisors in Indonesia prioritize the value of profits measured by assets because most of them come from public deposits. In order to increase its profitability, a bank will place the funds that have been obtained in the form of credit or financing, both short-term and long-term. The ROA can be formulated as follows: (Irsyad, Ahmad Mulyadi, & Hilman, 2024)

$$ROA \quad = x\ 100\% \frac{Laba\ Bersih}{Total\ Aktiva}$$

Inflation

Inflation is a general price spike over a period of time. High inflation can send negative signals to the market, and when it increases, people's purchasing power decreases, which can reduce demand for banking products. On the other hand, if inflation is controlled, it can increase public confidence to use investing or borrowing money. A study that discussed the effect of inflation on bank profitability was also conducted by Molyneux & Thornton in 1992 used the Consumer Price Index (CPI) indicator as its limit, resulting in research that inflation is related to the profit rate of its operating banks. (Suseno & Asiyah, 2009)

Based on research (Raharjo, Wijayanti, & Riana R, 2020) mentioned that Inflation also has an influence on the financial sector, especially Sharia Commercial Banks because people tend to use their money for daily needs which is increasing over time compared to saving or investing in banks. This results in difficulties in raising funds from third parties who are a source of capital in business activities. These difficulties have an impact on banks' ability to meet customer loan requests which can ultimately also affect banking profitability. These findings contradict previous research that stated that ROA is not affected by inflation (Raharjo, Wijayanti, & Riana R, 2020). A study (Nita, Ariffin, & Nurisniani, 2021)that analyzed the influence of inflation and profit sharing on the

profitability of Islamic commercial banks in Indonesia from 2011 to 2018 stated that inflation had a significant negative effect and a significant positive profit share (Nita, Ariffin, & Nurisniani, 2021)

Exchange rate

The thing that can affect people's savings decisions is that when the rupiah exchange rate rises, people will tend to choose to save their money, because people will benefit from the strengthening of the rupiah exchange rate (Anindya, Aprilianto, & Atut Frida, 2022). In research Prosperous (Makmur, Taufq, & Fisman Adisaputra, 2023)) states that an increase in the currency exchange rate tends to reduce banking profitability. This explains by the identification that banks are ineffective in managing foreign exchange. Because there may be a difference in profit benchmark with a selling price that is not too large, causing the profit obtained to be insignificant or the allocation is not correct. (Makmur, Taufq, & Fisman Adisaputra, 2023). (Sabrina, Yenti, & Husni, 2021) states that exchange rates and inflation can affect profitability significantly so that when the exchange rate rises, profitability increases, while inflation can decrease it.

Credit Risk

It is a risk arising from inability or default in repaying credit and interest within a mutually agreed period or it can also be said that this risk arises when the borrower is unable to fulfill his obligations. And in this study, the level of risk is carried out using the NPL indicator, as NPLs can be used to measure and assess the extent to which non-performing loans can be dealt with productive assets. (Mosey, Tommy, & Untu, 2018). Research conducted (Kumaralita & Purwanto, 2019) states that NPLR affects negatively significantly, whereas LLPR does not. (Kumaralita & Purwanto, 2019)

Frame of Mind

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Picture 2 Frame of Mind

Information: _____ = Partial Test
---------- = Simultaneous Test

Based on Figure 2, the above research framework was conducted to see the effect of inflation, exchange rates, partial or simultaneous credit risk on banking profitability measured using ROA. Here's the explanation:

1. Independent Variable (X)

These are those that can affect or can be the cause of changes in dependent variables and have positive and negative relationships, namely inflation, exchange rates and credit risk according to what has been described earlier

2. Dependent Variable (Y)

This is a variable that can be influenced or have consequences of independent existence, namely profitability

Hypothesis

This is a temporary form of conjecture about answers, because the truth still needs proof. So that tests are still needed to obtain the truth with the data collected in the research.

Research Hypothesis

H_1 : Inflation is suspected to affect the profitability of banks

H_2 : Exchange rates allegedly affect bank profitability in Indonesia

H_3 **:** Credit risk is suspected to have a significant affect the profitability of banks in Indonesia.

H_4 **:** The relationship between inflation, exchange rates, and credit risk is thought to significantly affect bank profitability

3. RESEARCH METHOD

Namely using a quantitative method with an associative approach, to determine the influence of inflation, exchange rates, and credit risk on banking profitability in Indonesia, using secondary data obtained based on the population, namely all conventional banks listed on the IDX in 2021 - 2024, with a sample of some or a number of snippets that can be taken from the population studied, which are as follows: *(Enterprise, 2014)*

Table 2 Sample Selection Based on Research Criteria

No.	Criterion	Result
1.	Banks listed on the IDX	58
2.	Is a Conventional Bank	37
3.	Have complete financial statements and publish them on the IDX during the 2021-2024 research period	13
4.	Has total assets above Rp 100 trillion for large banks	11
5.	Have significant exposure to exchange rates and inflation. Or have a portfolio	11
6.	Banks that passed the sample	11

Source: Managed SPSS 16, 2025

4. RESULTS AND DISCUSSION

Descriptive Statistical Analysis

This data description section contains secondary data recapitulation analysis in the form of Annual Report and Banking Sustainability Report, namely:

Table 3 Statistical Descriptive

	N	Minimum	Maximum	Mean	Std. Deviation
Inflation	44	1.56	4.21	2.9400	1.07166
Exchange Value	44	14242.00	16162.00	1.5334E4	683.38294
Credit Risk	44	.96	34.84	4.9405	6.48905
ROA	44	.20	3.78	1.7307	.90498
Valid N (listwise)	44				

Source: Managed SPSS 16, 2025

Classic Assumption Test

a. Normality Test

This is to see the normality of distribution of variable data using the Normal P-P Plot which can visualize the residual distribution compared to the normal distribution, in addition to being

useful for detecting patterns that are not seen in statistical analysis by paying attention to the distribution of data can be seen through the distribution of data (points), where:

1. Scattered around and following a diagonal line, so it is said that the data is distributed normally
2. If the data deviates significantly or the data spreads far irregularly according to the direction of the line, then it is said that the regression model is not abnormality because it shows abnormalities in the residual distribution

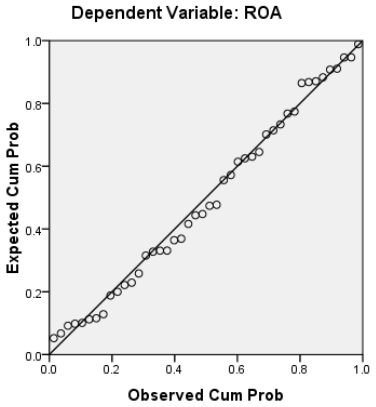

Figure 3 Normal Normality Test Results P-P Plot
Source: Managed SPSS 16, 2025

Figure 3 illustrates the points on the graph distributed linearly around the diagonal line, indicating that the residue has been standardized following the normal distribution and has been met. Overall, this graph can provide a positive indication that this regression model corresponds to the assumptions necessary for further analysis and can be said to have a normal error distribution, thus making its significance more reliable and valid.

b. Multicollinearity Test

It is a test performed to evaluate the correlation between independent variables that ideally do not experience multicollinearity among their independent variables. Identification was carried out by studying, which was indicated by a tolerance > 0.10 and VIF < 10.

Table 4 Multicollinearity Test

Variable	Tolerance	VIF	Information
Inflation	0.771	1.296	free
Exchange rate	0.770	1.299	free
Credit Risk	0.996	1.004	free

Source: Managed SPSS 16, 2025

Table 4 above, shows that there is no multicollinearity in the variables used in this test.

c. Heteroscedasticity Test

Refers to the consistency of a variable's variance in regression, which means that the variance is not constant. For its ideal form, the condition is homokedasticity, where there is no heteroscedasticity. The impact is that the resulting translators or estimators become inefficient, both small and large samples. The results of the Spearman Test Rank Correlation test:

Table 5 Heteroscedasticity Test

Variable	Sig. (2-tailed)	Information
Inflation	0.918	free
Exchange rate	0.788	free
Credit Risk	0.002	free

Source: Managed SPSS 16, 2025

Table 5, significant value (2 tailed) was also obtained with inflation 0.918 > 0.01, exchange rate 0.788 > 0.01 and credit risk 0.002 > 0.01. The conclusion regarding the heteroscaddasticity test was that all independent variables were significantly above 0.01 which means that there was no association or heteroscedasticity, or constant residual variance (homokedasticity).

Multiple Linear Regression Analysis

The results of the calculation are:

Table 6 Multiple Linear Regression

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.141	3.075		-.696	.490
	Inflation	.132	.135	.156	.975	.335
	Exchange rate	.000	.000	.159	.995	.326
	Credit Risk	.051	.020	.368	2.618	.012

Source: Managed SPSS 16, 2025

Profitability (ROA) (Y) = -2.141 (α) + (0.132 (X1)) + (0.000 (X2)) + 0.051 (X3))

1. Constant -2,141 which means that if inflation, the credit risk exchange rate is 0, then the profitability (ROA) is -2,141
2. The value of the coefficient X1 is 0.132 indicating inflation (X1) affects Y
3. A coefficient value of 0.000 indicates that the exchange rate (X2) has no significant effect on profitability (ROA)
4. A coefficient of 0.051 indicates that there is an influence between the variables of credit risk (X3) and profitability (ROA).

Hypothesis Test Results

Hypothesis testing is conducted to evaluate the research hypotheses and determine their acceptance or rejection based on statistical evidence.

a. Partial Test (T Test)

To find out the influence of the three partially independent variables as follows:

Table 7 T Test Result

Type		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-2.141	3.075		-.696	.490
	Inflation	.132	.135	.156	.975	.335
	Exchange rate	.000	.000	.159	.995	.326
	Credit Risk	.051	.020	.368	2.618	.012

Source: Managed SPSS 16, 2025

Table 7 to analyze the impact of independent variables that can be seen at a significant level by:

1. Used to test significance with 2 < t or t < -2 indicates that the significant coefficient
2. Significant value, the value of p which indicates the value of p < 0.05 or t-count of > ttable, then X effects Y. And conversely, if the value of p > 0.05 or $t_{-count} < t_{table}$, then there is none.

Formula for viewing t_{tables}
t = n-k-1 Bound:
n = Number of samples
k = Total number of variables
α = Defined significance level, 0.01 or 0.05
So, the result is obtained=

T = (0.05;(df = 44 – 3 - 1))
t = (0.05; 40)
t = 2.02108

Therefore, from the calculation, the following results were obtained:
P value < 0.01 or $t_{count} > t_{table}$

Variable	p < 0.05	Significant	$T_{-Count} > T_{Table}$	Significant
Inflation	0.335>0.05	□	0.975 <2.02108	□
Exchange rate	0.326>0.05	□	0.995 <2.02108	□
Credit Risk	0.012<0.05	✓	2.618 >2.02108	✓

Independent variables (inflation and exchange rate) had no impact on profitability, either from the p<0.05 value comparison or the calculation of the > table, while credit risk has an effect on the calculation of both.

b. Simultaneous Test (F Test)

That is, to see the influence of variables simultaneously on the variables tested at a significant level of 5% using the SPSS 16 calculation as follows:

Table 7 Test F

	Type	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.498	3	2.499	3.607	.021a
	Residual	27.719	40	.693		
	Total	35.216	43			

Source: Managed SPSS 16, 2025

Table 7, the hypothesis of inflation, exchange rate and credit risk were obtained with a significant value of 0.021 < 0.05 and obtained the calculation of F of 3.607 and the determination of the level of freedom to see table $F_{table.}$

DF = K-1 and DF2 = N-K
Known:
Df1 = k-1
= k (Number of Independent Variables) =3
= 3-1 = 2
Qf2 = n - k – 1, then

= 44-3
= 41,

And the number in Table 7 is obtained, then the results of the calculation are obtained, namely:

1. When the value of sig. < 0.05, then simultaneously variable X has an effect on Y. 0.021 < 0.05, which means that variable X (inflation, exchange rate, credit risk) has a significant effect on variable Y.
2. If $F_{cal} < F_{table}$, then H0 is accepted or has no effect and if $F_{cal} > F_{table}$, then Ha is accepted or influential. And the results of the calculation were obtained > 3.23, which means that Ha is accepted or variable X affects the variable Y.

Determinant Coefficients

Table 8 Determination Coefficient Results

Type	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.461a	.213	.154	.83245	.213	3.607	3	40	.021	.659

a. Predictors: (Constant), Credit Risk, Inflation, Exchange Rate

b. Dependent Variable: ROA

Source: Managed SPSS 16, 2025

Table 8 states that the coefficient in the R Square column is 0.154, meaning that inflation, exchange rate and credit risk only affect 15.4% of banking ROA in Indonesia and the remaining 84.6 % variation in ROA with other factors outside the study. This shows that although inflation, exchange rates, and credit risk contribute to profitability, there are many other factors that affect bank finances that need to be further researched.

The model also illustrates that these variables have an overall effect on ROA, although there is room for improvement in explaining greater variations in financial performance.

DISCUSSION

a. Inflation on Banking Profitability

The result was that inflation did not affect profitability (ROA), with a regression coefficient of 0.132 indicating a weak positive relationship between inflation and ROA, but the significant value obtained was 0.335 > 0.05, meaning that partially, inflation did not have a significant effect on banking profitability (ROA). As for tcal is 0.0975, $t_{\text{-table}}$ is 2.02108 so that $t_{\text{-table}} < t_{table}$, meaning the acceptance of H01 and the rejection of H1, so that inflation does not significantly affect Profitability (ROA). From these results, results were obtained that were contrary to previous research, namely (Raharjo, Wijayanti, & Riana R, 2020) stating that inflation affected the ROA of banks.

Although it shows that inflation has no influence on banking profitability, it can be explained through the perspective of signal theory. In conditions of insignificant inflation, it means that banks have succeeded in providing positive signals to the market through efficiency and good strategy. Banks have been able to communicate with investors and other stakeholders that they have been able to maintain their profitability despite inflationary fluctuations. The signal that banks can do is with transparent and accurate financial statements transparency to convince investors or others that the reported profits are not the result of engineering, carry out effective risk management by communicating strategies to protect the value of assets and maintain their profitability and finally innovate products and services by offering innovative products and services so that they can attract

customers which can ultimately increase the bank's revenue, which can reduce the negative impact of inflation.

b. Exchange Rates on Banking Profitability

As a result, the exchange rate has no impact on the ROA with an exchange rate regression coefficient of 0.000 which indicates that the change has no impact on the bank's profitability. The value is 0.326 > 0.05, meaning that some exchange rates do not affect profitability (ROA). The value of t_{count} 0.995 and t_{table} 2.02108, this shows that t counts < t of the table which means the acceptance of $H0_2$ and the rejection of H_2.

In contrast to (Sabrina, et al., 2021) which shows that the rupiah exchange rate and inflation affect bank profitability (Sabrina, Yenti, & Husni, 2021). However, support (Fikri, 2021) stated that BI's interest rate and inflation do not affect profitability, with a negative coefficient. Meanwhile, an exchange rate with a positive coefficient has a significant effect. In addition, simultaneously these three risks affect profitability, showing the same effect on banking profitability (Fikri, 2021)

Exchange rates that have no effect on profitability can be interpreted through signal theory. That means-77 banks have succeeded in signaling to the market that the bank has effective *hedging* with transparent disclosure to protect itself from exchange rate risks or adequate revenue management by showing that income does not only depend on exchange rate-related transactions but can also be sourced from other sources such as service fees or non-interest income so that exchange rate fluctuations have no impact on banking profitability, or it can also be by providing positive signals by conducting effective foreign exchange risk management that is effective and able to manage exposure well. This can ensure that these banks are able to maintain profitability well despite exchange rate fluctuations.

c. Credit Risk on Profitability

As a result, the credit risk variable showed different research results, namely credit risk affecting profitability (ROA), a regression coefficient of 0.051 showed a relationship. The significance obtained was 0.012 < 0.05 which means that some credit risk affects the bank's profitability. While the tcal value obtained was 2.618 and ttable was 2.02108 which indicates that $t_{count} > t_{table}$, which means that H_3 acceptance, $H0_3$ rejection. which supports the research of (Mosey, Tommy, & Untu, 2018) that NPLs have a significant influence on ROA in banks, but in the study, it has a negative direction. Meanwhile, (Rinofah, Sari, & Widyastuti, 2022) declare that Credit Risk affects significantly negatively,

d. Inflation, Exchange Rate, Credit Risk on Profitability

The result was a significant simultaneous variable value of 0.021 > 0.05, which can be concluded that simultaneously variable X affects banking profitability (ROA). While the results obtained F_{count} 3,607 and F_{table} 3.23 or 3,607 > 3.23, it can be stated that F is $_{calculated} > F_{table}$, which means the acceptance of H_4, the rejection of $H0_4$. Therefore, simultaneously, inflation, exchange rates, credit risk affect the ROA (F_{cal} = 3,607 > F_{table} = 3.23; sig. 0.021 < 0.05). However, only in part, credit risk had a significant effect (sig. 0.012 < 0.05), while inflation and exchange rates did not.

This finding can be explained by signal theory (*signalling theory)*, that is, even though inflation is not partially significant, it means that banks are able to maintain their profitability due to effective signal management. Based on signal theory (Spence, 1973), banks with strong management will be able to send positive signals through stable financial performance despite high inflation. For example, maintaining a consistent ROA has shown resilience to economic pressures that can increase investor and customer confidence (Akerlof, 1970). And an insignificant exchange rate indicates the bank's ability to mitigate foreign exchange risks by using (*Hedging*) or

diversification of foreign exchange portfolios that can reduce the impact of exchange rate fluctuations (Sabrina, Yenti, & Husni, 2021). Thus, (Sabrina, Yenti, & Husni, 2021), it is explained that the bank market has good, mature and effective risk management so that exchange rate fluctuations do not directly affect profitability (Sabrina, Yenti, & Husni, 2021). Credit risk as a negative signal with a significant gain is significant NPL (sig. 0.012) according to Signal Theory, where high NPLs send bad signals about the quality of the bank's assets. Based on research (Mosey, Tommy, & Untu, 2018) states that banks with high NPLs are considered to have failed to manage credit risk, so that investors and regulators can respond with hesitation or lack of trust to unproven or accurate information, so that it can affect and suppress profitability (Mosey, Tommy, & Untu, 2018). In the research of (Aji & Manda, 2021), this emphasizes effective risk management in maintaining the health of banks to manage credit risk properly and be better able to maintain bank profitability. (Aji & Manda, 2021) These results reinforce the concept that banking profitability is not only determined by macroeconomic factors (inflation or exchange rates), but also by the credibility signals managed by banks through transparency of financial statements and risk management policies.

5. CONCLUSION

This research focuses on inflation, exchange rate and credit risk on banking profitability in Indonesia which are essential and dynamic issues because they play a role in growth, facing inflation fluctuations and exchange rates on financial performance. It aims to partially and simultaneously analyze the influence of the three variables (inflation, exchange rate, credit risk) on banking profitability based on ROA by quantitative method, associative approach using secondary data during the study. Using purposive sampling in the sampling, namely conventional banks have total assets above Rp 100 trillion and are exposed to exchange rates and inflation, using multiple linear regression to test the influence of inflation, exchange rates, and credit risk on banking profitability. As a result, inflation, exchange rates, credit risks simultaneously affect the bank's profitability significantly. And some inflation and exchange rates do not affect profitability, while credit risk affects banking profitability significantly. These findings can be explained through signaling theory, which suggests that banks with good management will be able to send positive signals to the market even in conditions of high inflation or volatile exchange rate fluctuations. The implication explains effective risk management in maintaining the health of banks, especially in managing credit risk. In addition, banks need to increase the transparency of financial statements to be able to provide positive signals to investors and other stakeholders.

Based on the above conclusions, this study has the advantages, namely it succeeds in highlighting issues that are very relevant to Indonesia's economic conditions post-COVID-19 pandemic, such as inflation fluctuations (for example, a peak of 5.47% in 2023), the weakening of the rupiah (up to Rp16,249/USD in 2024), and an increase in NPLs (from 2.4% in 2021 to 3.1% in 2024). The use of secondary data from credible sources such as BPS (Central Statistics Agency) and IDX (Indonesia Stock Exchange) reinforces this context, including monthly inflation tables (Table 1) and exchange rate graphs (Figure 1). This approach can be further developed with the integration of real-time data from the Financial Services Authority (OJK) to enrich policy implications. Application of Consistent and Relevant Signaling Theory The use of Signaling Theory (from Akerlof 1970 and Spence 1973) as the main theoretical framework is very appropriate to explain how banks send positive signals through risk management and transparency of financial statements, especially in linking macroeconomic variables (inflation, exchange rate) with profitability (ROA). The application of this theory is extended to sub-theories such as Inflation Signaling Theory and Credit Risk Signaling. This theory can be reinforced with specific case examples from sample banks to illustrate the actual signals sent, thus increasing practical applicability. The limitations lie in the data period and the small sample size of secondary data, so the suggestion for further research is to conduct a comprehensive study of primary data and consider other factors, by adding new independent variables, such as BI Rate (Bank Indonesia Policy Interest Rate), GDP Growth (Gross

Domestic Product Growth) which was declared positive by the (Irsyad, Ahmad Mulyadi, & Hilman, 2024) researcher because high GDP encourages credit demand and reduces NPLs. This covers the macroeconomic gap, especially in the 2021-2024 period. In addition, you can also add the Capital Adequacy Ratio (CAR) or control variable (Bank size can be multiplied) (Rinofah, Sari, & Widyastuti, 2022)

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