

Research Article

The Effect of Interest Rates and Inflation on Credit Demand through Non-Performing Loans: A Study of Banks Listed on the IDX

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Abstract . This study aims to analyze and test the effect of changes in interest rates and inflation rates on credit demand, with *non-performing loans* (NPLs) as a mediating variable. The research objects include conventional banks listed on the Indonesia Stock Exchange for the 2019-2024 period. Through *purposive sampling technique* , 40 banks were obtained that met the criteria as research samples. Data analysis was conducted using the *path analysis method* to identify direct and indirect relationships between variables. The results of the study revealed that interest rates did not affect NPLs, nor did inflation affect NPLs. Interest rates and inflation also did not affect credit demand. Meanwhile, NPLs had a negative effect on credit demand. However, NPLs were unable to mediate the effect of interest rates and inflation on credit demand. These findings indicate that the NPL level affects credit demand in conventional banks listed on the IDX for the 2019-2024 period.

Keywords: Credit Demand , Inflation, Interest Rate , Non Performing Loan, NPLs

1. BACKGROUND

Bank credit plays a vital role in supporting a country's economic activity (Hakim *et al .* , 2023). In a macroeconomic context, credit serves as the primary instrument for transmitting monetary policy and is a key driver of production, distribution, and consumption activities (Akgun & Gunay, 2025). Through credit distribution, banks contribute to increasing the production capacity of the real sector, creating jobs, and expanding public access to financing (Muhajir *et al .* , 2022). For households, credit facilities open up opportunities for consumption beyond their current income, while for businesses, credit provides a source of funds for investment, business expansion, and productivity increases that may not be financed solely from internal capital.

Sari *et al .* (2021) explain that in the Indonesian financial system, conventional banks have a dominant position in financial intermediation. Furthermore, Sari *et al .* (2021) explain that the primary function of banks as collectors and distributors of public funds makes credit activities a major driving force of the economy. Credit not only serves as a source of profit for banks but also reflects the social and economic functions of financial institutions in supporting national economic growth. The majority of banks' productive assets are in the form of credit portfolios, and credit interest income is a major contributor to bank profitability (Sari *et al .* , 2021). However, credit activities also carry consequences in the form of default risks, so strict risk management is required to ensure that credit expansion does not threaten financial

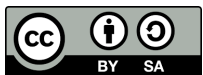
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stability (Darjana *et al.* , 2022). The demand for bank credit is influenced by several macroeconomic factors that play a major role in determining household and business decisions regarding borrowing funds. Among these factors, interest rates, inflation, and *non-performing loans* occupy the most important positions because all three directly affect costs, risks, and expectations in financing decisions (Bendezu & Rodriguez, 2025; Iqbal, *et al.* , 2025; Ozili, 2022; Ribeiro, 2025; Sari, *et al.* , 2021; Wang & Zhao, 2025).

Interest rates represent the price of borrowed funds (Prabheesh *et al.* , 2021; Fakhrunnas *et al.* , 2023). Classical economic theory views interest rates as a mechanism that balances savings and investment in the economy (Saputra & Rambe, 2025). In the banking context, lending rates are a key determinant for prospective borrowers when deciding whether to borrow. According to Ekananda (2022), interest rates are the price of borrowing; the higher the interest rate, the greater the cost of borrowing, thus suppressing credit demand. This view aligns with Keynes's liquidity preference theory, which states that individuals prefer to hold cash when interest rates are low and reduce the demand for money (including loans) when interest rates are high due to the increased *opportunity cost* of holding money (Saputra & Rambe, 2025).

In practice, when banks set high lending rates, businesses tend to delay expansion because interest burdens increase capital costs (Handayani & Kacaribu, 2021). Ekananda (2022) explains that when interest rates decrease, financing costs become cheaper, driving increased demand for credit. However, this relationship is not always linear (Kurniawati & Koesrindartoto, 2020). Under certain conditions, even when interest rates are low, economic uncertainty can make businesses cautious about taking out loans. Empirical research results show mixed findings. Several studies, such as Hakim *et al.* (2023) and Prabheesh *et al.* (2021), found that interest rates significantly influence credit demand, with a negative relationship. However, Bendezu & Rodriguez (2025) and Fakhrunnas *et al.* (2023) found a positive relationship, indicating that under certain conditions, interest rate increases are actually followed by increased credit demand due to perceived optimism about the economic outlook or previously loose monetary policy.

The second factor that also has a strong influence is inflation. Inflation is defined as a general and sustained increase in the prices of goods and services (Zulfa & Syahnur, 2025). Continuous price increases cause a decline in the purchasing power of money and create uncertainty about the real value of loan obligations. From a credit demand perspective, high inflation can reduce the willingness of the public and businesses to borrow because expectations of continuously rising interest rates and prices increase financial risk (Wang & Zhao, 2025). However, the relationship between inflation and credit is not always negative. In certain situations, particularly during periods of economic expansion, moderate inflation can encourage businesses to increase working capital financing in response to increasing demand for goods and services (Ozili, 2022). Efficient working capital management has a positive effect on credit provision because banks with optimal management of current assets and short-term liabilities have sufficient liquidity to expand credit distribution sustainably without disrupting operational stability (Kawakibi *et al.* , 2019). Thus, the effect of inflation on credit

demand is contextual and dependent on macroeconomic stability and expectations regarding monetary policy.

Previous studies have shown mixed results. Prabheesh *et al.* (2021) and Wang & Zhao (2025) found that inflation had no effect on credit demand. However, Ekananda (2022) and Fakhrunnas *et al.* (2023) demonstrated a positive relationship between inflation and credit demand, particularly when increased inflation is accompanied by production expansion and increased working capital requirements. In addition to macroeconomic factors, *non-performing loans* (NPLs) are a variable that represents the risk aspect of the banking industry (Ozili, 2022). *NPLs* reflect the quality of a bank's credit assets and the level of debtors' ability to meet payment obligations (Fakhrunnas *et al.*, 2023). Fakhrunnas *et al.* (2023) also explain that the higher the *NPL rate*, the greater the credit risk borne by the bank, and this will directly impact lending behavior. Banks facing rising *non-performing loans* typically tighten lending standards, increase loss provisions, and reduce credit portfolio expansion (Hakim *et al.*, 2023). Furthermore, ineffective working capital management can increase the *non-performing loan ratio*, as the imbalance between current assets and short-term liabilities reduces the bank's ability to bear the risk of debtor default and weakens the quality of its credit portfolio (Kawakibi & Kurniawan, 2025).

Ozili (2022) stated that when *non-performing loans* increase, banks will bear the potential for significant losses due to decreased interest income and increased provisioning costs. Conversely, a low level of *non-performing loans* indicates good bank health and encourages increased credit activity (Ozili, 2022). Empirically, studies such as Sari *et al.* (2021) found that *non-performing loans* had no effect on credit demand. Fakhrunnas *et al.* (2023) found that *non-performing loans* negatively affected credit demand. However, different results were shown by Iqbal *et al.* (2025) and Muhajir *et al.* (2022), which showed a positive relationship, as during certain periods banks were still willing to expand credit despite an increasing *non-performing loan ratio*.

The 2019–2024 period was a unique phase in the Indonesian banking industry because it encompassed two major episodes: the crisis caused by the COVID-19 pandemic and the post-pandemic economic recovery phase. In early 2020, the pandemic depressed all aspects of the economy, causing a decline in household consumption, supply chain disruptions, and a surge in default risk (Prabheesh *et al.*, 2021). Consequently, credit demand plummeted, and *non-performing loans* experienced significant pressure. Bank Indonesia and the Financial Services Authority (OJK) subsequently issued various stimulus policies, such as credit restructuring, macroprudential relaxation, and a reduction in the benchmark interest rate (*BI 7-Day Reverse Repo Rate*) to stabilize the financial system and maintain debtor business continuity (Handayani & Kacaribu, 2021).

Entering 2022–2024, the economy began to recover, marked by increased consumption, exports, and investment activity (Darjana *et al.*, 2022). However, new dynamics emerged due to global inflationary pressures and tighter monetary policy adjustments. Benchmark interest rates experienced gradual increases in response to rising global energy and food prices, while the banking sector attempted to balance credit growth and risk management

(Kurniawati & Koesrindartoto, 2020). In this situation, the sensitivity of credit demand to changes in interest rates, inflation, and *non-performing loans* is an important topic to re-examine because the relationship between these variables may experience a structural shift compared to the pre-pandemic period. Furthermore, the development of banking digitalization, changes in consumer behavior, and the emergence of new sectors such as the digital economy also influence credit demand patterns (Nguyen, 2025).

2. THEORETICAL STUDY

Credit

According to Banking Law Number 10 of 1998 Article 21, credit is the provision of money or bills based on an agreement between the bank and another party that requires repayment of the debt within a certain period with interest. In line with that, Sari, *et al.* (2021) emphasized that credit is the distribution of funds from parties who have capital to parties who need it, based on trust and an agreement on repayment and compensation. In general, credit means the activity of borrowing capital based on elements of trust and time, with the main goal of obtaining profits through interest and encouraging community economic activity (Iqbal, *et al.*., 2025). The objectives of providing credit include obtaining profits (interest), assisting customer business and investment activities, and supporting national economic growth (Bendezu & Rodriguez, 2025).

Credit Request

The demand for credit is essentially a form of demand for money, as credit is a liquid facility used for transactions, precautionary measures, or investment (Ribero, 2025). According to classical theory (Irving Fisher), the demand for money is related to the public's need for a medium of exchange for transactions (Atahuu, *et al.*., 2025). This theory emphasizes the relationship between the money supply (M), the velocity of money circulation (V), the price level (P), and the volume of transactions (T), which is formulated in the equation $M \times V = P \times T$ (Zulfa & Syahnur, 2025). This means that the value of money is determined by the balance between the amount of money in circulation and the volume of economic activity. Meanwhile, Keynes's theory explains the demand for money through three motives (Saputra & Rambe, 2025) :

1. The transaction motive is the need for cash to purchase goods and services, which increases with income.
2. The precautionary motive is the need to save money to face uncertainty, influenced by income and interest rates.
3. The speculative motive is to hold money as an asset to gain profit from changes in interest rates, where the relationship between interest rates and the demand for money is negative.

Overall, classical theory emphasizes money's function as a medium of exchange, while Keynesian theory emphasizes money as a store of value and a means of investment. Both theories are relevant in explaining the demand for bank credit, as the behavior of individuals

and businesses in borrowing money is influenced by income, interest rates, and economic expectations.

Non-Performing Loan

A *non-performing loan* (NPL) is a condition where a debtor is unable to fulfill their obligations as agreed. According to Sari *et al.* (2021), a non-performing loan occurs when a customer fails to pay some or all of their obligations to the bank. Ozili (2025) emphasized that *non-performing loans* (NPL) are an important indicator of a bank's health; the higher the NPL, the greater the cost of capital and the risk of loss, which ultimately depresses bank profits. Ozili (2025) also explained that a loan is considered non-performing if the principal or interest payment has passed 90 days after maturity. NPLs include substandard, doubtful, and loss loans and reflect a bank's failure to assess credit risk and the debtor's ability to repay.

According to Hakim, *et al.* (2023), the main causes of NPL include deviations from credit agreements (debtors do not comply with credit provisions); inconsistencies in disbursement schedules, which can lead to violations of the contract; a decrease in debtor assets, such as savings or deposits; irregularities in credit use, namely funds not being used for their original purpose; and credit extension applications that are not followed by business improvements. To prevent an increase in NPL, Hakim, *et al.* (2023) suggest several safety measures, namely providing managerial advice to debtors (sales, production, collections); additional capital or seeking new investors; *mergers* or partnerships with other companies to strengthen financial positions; postponing business expansion until financial conditions are stable; improving inventory control to facilitate cash flow; obtaining additional guarantees from related parties; debt restructuring, with an extension of the tenor or the elimination of part of the obligation; adding new credit only if business prospects are assessed as improving.

Problematic credit can be resolved in two ways: amicably, through interest relief, collateral sales, or installment payments through a direct agreement between the bank and the debtor; and through legal channels, such as court proceedings, transfer of responsibility to state institutions (BUPLN/PUPN), involvement of the prosecutor's office, or credit insurance claims (Sari *et al.*, 2021). Amicable resolution is generally preferred because it provides a mutually beneficial solution. Banks can reduce the NPL ratio, while debtors have the opportunity to realistically repay their obligations. In this study, the formula for determining NPL is:

$$NPL = \frac{\text{Total NPL}}{\text{Total Credit}} \times 100\%$$

(Hakim, *et al.*, 2023)

Interest rate

According to Bank Indonesia, the interest rate, or *BI Rate*, is a short-term benchmark interest rate that reflects monetary policy stance and is announced periodically to the public. Handayani & Kacaribu (2021) define interest rates as the price for using borrowed funds. Fakhrunnas *et al.* (2023) explain that interest rates are the price of financial assets, divided into nominal and real interest rates. Ekananda (2022) views the *BI Rate* as a monetary policy signal that reflects current economic conditions and the direction of achieving the inflation target.

Thus, *the BI Rate* serves as Bank Indonesia's primary instrument in maintaining the stability of the rupiah and inflation. According to Prabheesh *et al.* (2021), interest rates are divided into two types: deposit interest (reward for customer funds such as savings and time deposits) and loan interest (fees paid by debtors for credit received). The longer the deposit period, the higher the interest rate generally because the funds can be used by the bank for a longer period. In this study, the formula for determining interest rates is:

$$SBK = HPDK + BO + PM$$

(Sari, *et al.*, 2021)

Where: HPDK = Cost of Goods Sold; BO = *Overhead Cost* ; PM = *Profit Margin*

The determination of credit interest rates is influenced by several main components (Kasmir, 2018) :

1. Cost of funds (*cost of fund*) , interest paid to obtain savings funds.
2. Operational costs , such as salaries, administration, and maintenance.
3. Bad debt risk reserves, to anticipate potential defaults.
4. Desired profit, taking into account market conditions and customer characteristics.
5. Taxes, as an obligation imposed by the government.

The BI Rate is determined through a monthly meeting of the Board of Governors (RDG) of Bank Indonesia. This decision takes into account inflation, exchange rates, monetary conditions, and market liquidity, as well as the lag effect of *monetary policy* on inflation. If unexpected conditions arise, the weekly RDG can be used to adjust policy. Therefore, *the BI Rate* not only serves as a signal for the direction of monetary policy but also as a basis for determining deposit and credit interest rates in the banking sector. Changes in the *BI Rate* influence consumption behavior, investment, and credit demand, thus being a crucial factor in maintaining macroeconomic stability and the national financial system.

Inflation

Inflation is a general and persistent increase in the prices of goods and services (Akgun & Gunay, 2025). Temporary price increases or increases in only a few goods cannot be called inflation. Thus, inflation reflects a decline in the value of money due to widespread and sustained price increases (Wang & Zhao, 2025). In this study, inflation is measured using *the annual inflation rate* as a proxy (Atahuu *et al.*, 2025). According to Aryansyah *et al.* (2025), there are four main theories explaining the causes of inflation:

1. Quantity Theory, inflation occurs because the growth in the money supply exceeds the growth in the output of goods and services.
2. Keynes' theory states that inflation is caused by aggregate demand exceeding the supply of goods (*demand-pull inflation*), triggered by the behavior of the government, entrepreneurs and workers who want to live beyond their economic means.
3. Mark-up theory , inflation occurs due to increases in production costs (*cost of production*) and profit margins (*profit margin*).
4. Structural Theory , inflation stems from long-term structural imbalances in the economy, especially in the production and export-import sectors.

According to Aryansyah, *et al.* (2025), inflation can be classified as follows:

1. Based on the nature and causes

- a) General inflation (*headline*): covers all goods and services.
- b) *Core* inflation : influenced by fundamental economic factors such as exchange rates and demand.
- c) *Administered* price inflation : resulting from government policies such as increases in fuel prices or tariffs.
- d) *Volatile* goods inflation : caused by seasonal factors or production disruptions, such as crop failures.

2. Based on its origin

- a) Domestic inflation: originates from within the country.
- b) Imported inflation: comes from increases in the prices of goods/services abroad.

3. Based on the scope of influence

- a) Covered inflation: only in certain commodities.
- b) Open inflation: occurs widely across a wide range of goods and services.

4. Based on the speed

- a) *Creeping* inflation : slow and steady price increases.
- b) *Gallop*ing inflation : a rapid increase over a short period of time.
- c) Hyperinflation: an extreme increase in the value of money to a sharp decline.

5. Based on the level

- a) Mild: <10% per year.
- b) Medium: 10–30% per year.
- c) Weight: 30–100% per year.
- d) Hyperinflation: >100% per year.

6. Based on measurement period

- a) Annual inflation (*year-on-year*) – comparison of the CPI for a given month with the same month in the previous year.
- b) Monthly inflation (*month-to-month*) – comparison of the current month's CPI with the previous month.
- c) Calendar inflation (*year-to-date*) – comparison of the current month's CPI with the beginning of the year.

3. RESEARCH METHODS

Types of research

This research is an explanatory research *with* a quantitative approach. Explanatory research aims to explain the causal relationship (cause and effect) between variables formulated in a theoretical framework, by using hypothesis testing based on relevant economic and banking theories. In the context of this research, the independent variables consist of interest rates and inflation, while the intervening (mediating) variable is the NPL, and the dependent variable is credit demand. This study seeks to explain how changes in interest rates

and inflation can affect credit demand, both directly and indirectly through NPL in conventional banks listed on the Indonesia Stock Exchange (IDX) during the period 2019–2024. A quantitative approach was chosen because all research variables are measured in the form of numerical data and analyzed using inferential statistical methods to test the established hypotheses. Thus, this research is not only descriptive, but also analytical and confirmatory, as it aims to empirically prove the theoretical relationship between interest rates, inflation, NPL, and credit demand as explained in the macroeconomic and banking management literature.

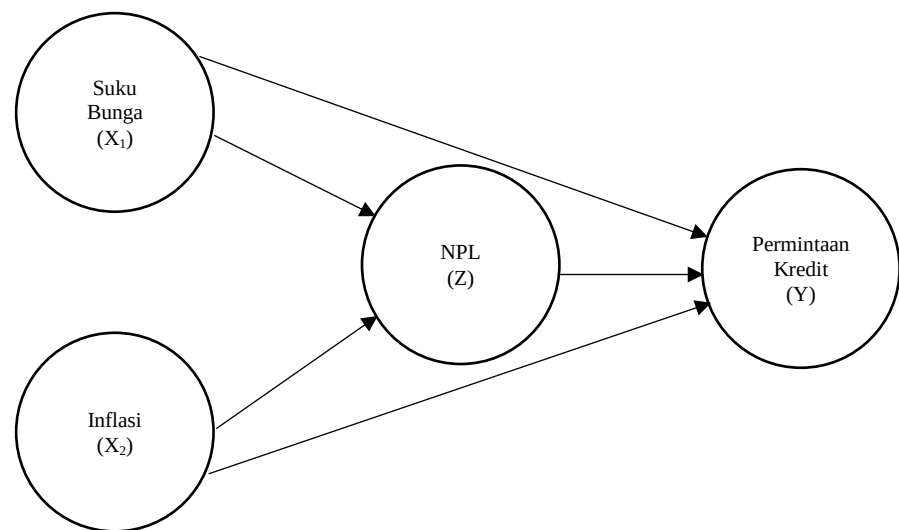


Figure 1 Conceptual Framework of the Research.

Population and Sample

The population in this study is all banking companies (issuers) listed on the Indonesia Stock Exchange (IDX) for the 2019–2024 period. This population was selected because the banking sector is a strategic sector that plays an important role in maintaining the stability of the national financial system and is a key indicator of a country's economic health. The sampling technique used in this study is the *judgment sampling method*, which is a sample selection method based on certain considerations tailored to the objectives and problems of the study (Ferdinand, 2014). The criteria for determining the sample in this study are as follows: (a) Is a conventional commercial bank listed on the IDX during the 2019–2024 period. (b) Has been registered as an active issuer on the IDX since at least 2019. (c) Published a complete annual financial report for the period December 31, 2019–2024, presented in Rupiah (IDR).

Data Analysis Methods

The data analysis method used in this study was multiple linear regression analysis with the help of SPSS software. Multiple linear regression analysis is used to predict changes in the value of the dependent variable based on changes that occur in the independent variable (Ghozali, 2024). To test the mediation effect, the Sobel test is used to determine whether the mediating variable significantly mediates the relationship between the independent and dependent variables. The Sobel test is performed by calculating the Z value from the results of the path coefficients a (the effect of X on M) and b (the effect of M on Y). If the Z value is > 1.96 ($p < 0.05$), then the mediation effect is considered significant. Thus, the combination

of path analysis and the Sobel test allows researchers to understand both direct and indirect relationships between variables (Sekaran & Bougie, 2019).

4. RESULTS AND DISCUSSION

Classical Assumption Test Results

1. Normality Test Results

Kolmogorov-Smirnov test, the significance of each independent variable for both models, as seen from *the Asymp. Sig.* (2-tailed), is 0.200 ($0.200 > 0.05$). Therefore, it can be concluded that the data for each independent variable used for the regression model is normally distributed.

2. Multicollinearity Test Results

multicollinearity test for both models, it shows that each independent variable has a VIF value ≤ 10 and a tolerance value higher *than* 0.1. Thus, it can be concluded that all independent variables are free from multicollinearity problems.

3. Autocorrelation Test Results

Based on the results of the autocorrelation test with *Durbin Watson*, the DW value is 1.976 for both models. The dL value is 0.9272, and the value of $d_U = 1.8116$. Because the DW value for the two regression models of 1.976 is between $d_L = 0.9272$ and $4 - d_U = 2.1884$, which is the area where there is no autocorrelation, it can be concluded that there is no autocorrelation in the regression model.

4. Results of the Heteroscedasticity Test

heteroscedasticity test with *Scatterplot*, it shows that the points are spread above and below the number 0 on the Y axis and do not form a particular pattern. Therefore, it can be concluded that in the two regression models, heteroscedasticity does not occur

Hypothesis Test Results

Based on the results of the t-test analysis in Table 1 and Table 2 for direct influence and also the Sobel test for mediation influence, the influence of the variables of interest rates, inflation, NPL, and credit demand can be seen as follows:

Table 1 Multiple Linear Regression Analysis Table Model 1.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	3,360	4,291		.768	.447
X ₁	.425	.379	.042	.386	.744
X ₂	-.603	.838	-.031	-.287	.736

Source: processed data

Table 2 Multiple Linear Regression Analysis Table Model 2.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	12,360	3,291		4,068	.000

X_1	-.025	.309	-.012	-.186	.844
X_2	-.303	.538	-.091	-.687	.536
Z	-.434	.043	-.362	-4.130	.009

Source: processed data

1. Hypothesis test 1, the interest rate variable has a significant value of 0.744, which is greater than the significance level of 0.05. Therefore, H_0 is accepted and H_a is rejected, meaning that H_1 , which states that interest rates have a significant effect on NPL, is rejected.
2. Hypothesis test 2, the inflation variable has a significant value of 0.736, which is greater than the significance level of 0.05. Therefore, H_0 is accepted and H_a is rejected, meaning that H_2 , which states that inflation has a significant effect on NPL, is rejected.
3. Hypothesis test 3, the interest rate variable has a significant value of 0.844, which is greater than the significance level of 0.05. Therefore, H_0 is accepted and H_a is rejected, meaning that H_3 , which states that interest rates have a significant effect on credit demand, is rejected.
4. Hypothesis test 4, the inflation variable has a significant value of 0.536, which is greater than the significance level of 0.05. Therefore, H_0 is accepted and H_a is rejected, meaning that H_4 , which states that inflation has a significant effect on credit demand, is rejected.
5. Hypothesis test 5, the NPL variable has a significant value of 0.009, which is smaller than the significance level of 0.05. Therefore, H_0 is rejected and H_a is accepted, meaning that H_5 , which states that NPL has a significant effect on credit demand, is accepted.
6. Hypothesis test 6, the results of the Sobel test of the NPL variable as a mediator have a *p-value* of 0.912, which is greater than the *p-value level* of 0.05. Therefore, H_0 is accepted and H_a is rejected, meaning that H_6 , which states that NPL is able to mediate the effect of interest rates on credit demand, is rejected.
7. Hypothesis 7 test, the results of the Sobel test of the NPL variable as a mediator have a *p-value* of 0.971, which is greater than the *p-value level* of 0.05. Therefore, H_0 is accepted and H_a is rejected, meaning that H_7 , which states that NPL is able to mediate the effect of inflation on credit demand, is rejected.

Discussion of Results

The Effect of Interest Rates on *Non-Performing Loans*

The results of this study indicate that interest rates do not significantly influence the level of *non-performing loans* (NPLs) in conventional banks listed on the Indonesia Stock Exchange (IDX) during the 2019–2024 period. This finding indicates that fluctuations in the benchmark interest rate (*BI Rate*) do not directly affect the level of non-performing loans in the Indonesian banking system. In other words, changes in Bank Indonesia's interest rate policy have not been a dominant factor determining the quality of conventional banking credit portfolios. Theoretically, an increase in interest rates should increase borrowing costs and suppress debtors' ability to repay their obligations, potentially increasing NPLs. However, the

empirical results of this study show a different situation. The lack of influence of interest rates on NPLs can be explained by the characteristics of the Indonesian banking system, which has a strict level of regulation and risk control mechanisms. Since the COVID-19 pandemic until the economic recovery period (2019–2024), Bank Indonesia's monetary policy has tended to be accommodative and measured, so that interest rate transmission to the credit sector occurs with *a time lag* and does not cause direct pressure on loan quality (Atahuu, *et al.* , 2025; Handayani & Kacaribu, 2021).

This research also aligns with the views of Akgun & Gunay (2025) and Wang & Zhao (2025), who found that the sensitivity of NPLs to interest rate changes will weaken when a country's financial system has a strong capital *buffer* and credit risk mitigation mechanisms. In conventional banks in Indonesia, prudential policies such as the implementation of *the capital adequacy ratio* (CAR) and *loan-to-value* (LTV) ratio are able to maintain credit portfolio stability, despite interest rate adjustments in the money market. Furthermore, this research supports the findings of Ekananda (2022) and Kurniawati & Koesrindartoto (2020), who stated that monetary policy transmission in Indonesia is stronger on credit volume than on credit quality (NPL). This means that changes in interest rates more quickly affect the amount of new credit demand, rather than the magnitude of existing non-performing loans. The effect of interest rate changes on NPLs is generally only felt after several quarters, depending on the loan profile, loan tenor structure, and debtor resilience.

The Effect of Inflation on *Non-Performing Loans*

The results of this study indicate that inflation did not significantly impact *non-performing loans* (NPLs) in conventional banks listed on the Indonesia Stock Exchange (IDX) during the 2019–2024 period. This finding indicates that fluctuations in the inflation rate during the study period did not directly affect credit quality or the level of non-performing loans in conventional banking in Indonesia. Theoretically, high inflation typically increases the cost of living and reduces borrowers' repayment capacity, potentially increasing NPLs. However, these empirical results confirm that during the study period, inflation in Indonesia was within a controlled and moderate range, and was balanced by effective monetary and fiscal policies. This condition maintained the stability of the banking system despite fluctuations in the prices of goods and services (Ekananda, 2022; Fakhrunnas, *et al.* , 2023; Handayani & Kacaribu, 2021).

This finding aligns with research by Atahau *et al.* (2025) and Bendezu & Rodriguez (2025) which states that the relationship between inflation and credit quality is non-linear: low to moderate inflation can actually drive economic growth and maintain credit performance, while only extreme inflation tends to trigger an increase in NPLs. In the Indonesian context for the 2019–2024 period, Bank Indonesia's price stabilization policy successfully maintained inflation within the target range, thus not causing significant pressure on banking credit portfolios. From a monetary policy transmission perspective, Nguyen (2025) and Wang & Zhao (2025) show that the effect of inflation on NPLs tends to be contained by the effectiveness of benchmark interest rate policies and open market operations. When monetary policy is able to dampen price pressures, banks do not experience a significant spike in default

risk. This is in line with conditions in Indonesia, where policy coordination between Bank Indonesia and the Financial Services Authority (OJK) strengthens financial system stability and restrains inflation transmission to the credit sector (Hakim, *et al.*, 2023; Prabheesh, *et al.*, 2021; Sari, *et al.*, 2021).

The results of this study also support the views of Akgun & Gunay (2025) and Ribeiro (2025), who emphasized that in an institutionally strong banking system, the impact of inflation on NPLs will be weakened because banks have hedging mechanisms *and* risk-based credit interest adjustment strategies. Conventional banks in Indonesia are able to anticipate potential inflation risks through the implementation of *interest rate smoothing* and adaptive credit *pricing policies*, preventing significant spikes in NPLs despite fluctuating inflation. This research is also in line with Darjana *et al.* (2022) and Muhajir *et al.* (2022), who showed that the quality of risk management and the effectiveness of credit restructuring policies have a far greater influence on NPL stability than inflation. In the post-pandemic context, banks are focusing more on improving operational efficiency, controlling the cost of funds, and structuring credit, which have proven to be more crucial in maintaining low NPL ratios.

The Effect of Interest Rates on Credit Demand

The results of this study indicate that interest rates do not significantly affect credit demand in conventional banks listed on the Indonesia Stock Exchange (IDX) during the 2019–2024 period. This finding indicates that changes in Bank Indonesia's benchmark interest rate (*BI Rate*) do not directly affect the volume of credit disbursement in the banking sector. In other words, credit demand behavior during this period is not sensitive to fluctuations in loan interest rates. In theory, an increase in interest rates should reduce credit demand because borrowing costs become more expensive, while a decrease in interest rates encourages increased credit because interest expenses decrease. However, these empirical results show an anomaly in credit behavior in the Indonesian banking sector, where the relationship between interest rates and credit demand does not follow the conventional pattern. This phenomenon can be explained by several structural factors and monetary policy during the 2019–2024 period.

First, these results indicate that the monetary policy transmission mechanism through the interest rate channel *is* relatively slow and indirect. Handayani & Kacaribu (2021) found that the transmission of *the BI Rate* to lending rates has a relatively long *time lag* due to structural factors such as the rigidity of deposit rates and high bank funding costs. This condition prevents banks and credit customers from responding immediately to changes in the benchmark interest rate. Second, during the study period, Indonesia's monetary policy tended to be accommodative and stable. Bank Indonesia maintained low interest rates to encourage post-pandemic economic recovery. However, credit demand remained subdued because non-interest factors such as consumer confidence, global economic uncertainty, and bank selectivity in lending played a more dominant role (Ekananda, 2022; Fakhrunnas *et al.*, 2023; Hakim *et al.*, 2023).

This finding aligns with research by Atahau *et al.* (2025) and Bendezu & Rodriguez (2025), which states that in developing countries with transforming financial systems, the relationship between interest rates and credit demand is not always significant due to the influence of other variables such as economic expectations, bank liquidity, and fiscal policy. Credit demand is often more sensitive to market optimism and government stimulus policies than to changes in short-term interest rates. Furthermore, Akgun & Gunay (2025) found that in a stable financial system, banks can manage loan portfolios by considering credit risk, liquidity, and profitability, rather than solely based on fluctuations in the benchmark interest rate. Thus, changes in interest rates do not necessarily change credit decisions because banks have their own risk mitigation strategies and *pricing policies*. Similar findings were revealed by Nguyen (2025) and Ribeiro (2025), who showed that the elasticity of credit demand to interest rates in the banking sector tends to be small when there is macroprudential policy support and guarantees of financial stability. In such conditions, the business world continues to apply for credit for investment and working capital needs, even though there has been a slight increase in loan interest rates.

The Effect of Inflation on Credit Demand

The results of this study indicate that inflation did not significantly affect credit demand at conventional banks listed on the Indonesia Stock Exchange (IDX) during the 2019–2024 period. This finding indicates that fluctuations in the prices of goods and services during this period were not a major factor determining the fluctuations in demand for bank credit. In other words, although inflation fluctuated, it did not directly affect public and business interest in applying for loans at conventional banks. In theory, high inflation should reduce public purchasing power and increase production input costs, thus driving down credit demand due to decreased investment and consumption activities. However, the empirical results of this study show that in the context of Indonesian banking, the relationship between inflation and credit demand is not direct but is mediated by other macroeconomic factors, such as monetary stability, interest rates, and real economic growth.

This finding aligns with the studies of Ekananda (2022) and Handayani & Kacaribu (2021), which explain that in the post-pandemic period, inflation in Indonesia tends to be within Bank Indonesia's target range (2–4%), thus not putting significant pressure on banking intermediation activities. Relatively stable inflation conditions ensure that businesses and households remain confident in borrowing funds, particularly to support business expansion and productive consumption. Research by Atahau *et al.* (2025) and Bendezu & Rodriguez (2025) confirms that under conditions of moderate inflation, banks and economic actors tend to adjust price expectations quickly, so that inflation fluctuations do not significantly influence credit demand decisions. Inflation will only significantly impact credit when an extreme inflationary *shock occurs*, which suppresses business profit margins and reduces borrowers' repayment capacity. Because there was no extreme spike in inflation during the 2019–2024 period, the effect of inflation on credit demand is relatively insignificant.

These results are also consistent with the findings of Akgun & Gunay (2025) and Nguyen (2025), who explained that in a stable financial system, the inflation transmission mechanism to credit decisions tends to be weak because banks have adaptive policies, such as *risk-based pricing*, *adjustable lending rates*, and credit restructuring. These policies enable banks to maintain credit demand despite general price fluctuations. Furthermore, Fakhrunnas *et al.* (2023) and Hakim *et al.* (2023) highlight that during the study period, credit activity in Indonesia was more influenced by fiscal and monetary stimulus policies, such as lowering the benchmark interest rate, credit guarantee programs, and support for the MSME sector. These policies created high liquidity in the banking sector, which ultimately neutralized the potential negative impact of inflation on credit distribution.

This finding is further supported by Prabheesh *et al.* (2021) and Sari *et al.* (2021), who argue that in developing countries like Indonesia, economic growth and market expectations are far more dominant in determining credit demand than inflation. When the economy is growing and business sentiment is positive, businesses continue to borrow despite rising inflation, as profit opportunities are still perceived as greater than the increase in borrowing costs. Meanwhile, Ozili (2025) and Ribeiro (2025) emphasize that inflation does not impact credit in countries with high financial stability and effective monetary policy, as central banks are able to keep inflation under control and prevent economic actors from overestimating their expectations. This situation is similar to Indonesia during 2019–2024, where relatively stable inflation and strict macroprudential supervision kept credit demand constant.

The Impact of *Non-Performing Loans* on Credit Demand

The results of this study indicate that *non-performing loans* (NPLs) significantly negatively impact credit demand in conventional banks listed on the Indonesia Stock Exchange (IDX) during the 2019–2024 period. This means that the higher the non-performing loan ratio experienced by banks, the lower the volume of credit disbursed to the public and the business sector. This finding is theoretically consistent with the concept of the banking intermediation function, where a bank's ability to channel funds to the real sector is highly dependent on the quality of its credit assets. When NPLs increase, banks face an increased risk of default and decreased cash inflow from non-performing loans, thus tending to tighten credit policies to maintain financial stability (Ekananda, 2022; Hakim *et al.*, 2023; Ozili, 2025).

Akgun & Gunay (2025) and Bendezu & Rodriguez (2025) in their research explain that increasing NPLs directly impact bank liquidity capacity and increase loan loss allowance costs. This causes banks to be more cautious in disbursing new loans and raises credit risk analysis standards, ultimately reducing the demand for approved loans. The domino effect of this NPL increase is known as the *credit contraction effect*, where high credit risk forces banks to reduce exposure to risky sectors. In line with these findings, Atahau *et al.* (2025) and Handayani & Kacaribu (2021) emphasize that high NPLs often reduce trust between banks and borrowers, especially in the MSME sector. When banks tighten credit requirements, many prospective borrowers ultimately delay or cancel loan applications. This has a psychological

effect in the form of reduced borrowing desire (*credit demand dampening*) due to the perception that banks are becoming more selective in the credit process.

Research by Nguyen (2025) and Ribeiro (2025) reinforces this finding by stating that the negative relationship between NPLs and credit distribution is a common phenomenon in many developing countries, where the financial intermediation system is still heavily dependent on banks. When NPLs increase, banks tend to shift their focus from credit expansion to asset recovery , resulting in a slowdown in new credit. Furthermore, this research also supports the findings of Fakhrunnas et al. (2023) and Hakim et al. (2023) who assert that increasing NPLs lead to an increase in the cost of funds because banks must provide larger allowances for impairment losses (CKPN). This increase in operational costs forces banks to adjust credit interest rates to remain profitable, which in turn reduces public interest in loans. Thus, the negative effect of NPLs on credit demand occurs both directly (through risk management) and indirectly (through increased credit interest rates).

The Effect of Interest Rates on Credit Demand Through *Non-Performing Loans*

The results of this study indicate that *non-performing loans* (NPLs) do not mediate the effect of interest rates on credit demand in conventional banks listed on the Indonesia Stock Exchange during the 2019–2024 period. Therefore, changes in interest rates do not affect credit demand through changes in NPL levels. Statistically , the mediation pathway between interest rates and credit demand through NPLs is proven to be insignificant. Theoretically, within the framework of financial intermediation, the benchmark interest rate (*BI Rate*) is the primary monetary policy instrument that can influence banks' decisions regarding credit distribution and the risk of borrower default. Interest rate increases are typically accompanied by increased borrowing costs and decreased repayment capacity, potentially increasing non-performing loans (NPLs) and suppressing credit demand. However, this study's findings indicate that this mechanism did not significantly affect Indonesia's conventional banking sector during the study period.

This finding is consistent with the results of studies by Ekananda (2022) and Handayani & Kacaribu (2021), which showed that the transmission of interest rate policy to the real sector in Indonesia is weak and lagged . Fluctuations in *the BI Rate* do not necessarily increase credit risk because banks have a moderate lending rate adjustment mechanism and effective risk mitigation policies. As a result, interest rates have an insignificant effect on NPLs, thus preventing the mediation effect of NPLs on credit demand. Research by Akgun & Gunay (2025) and Atahau et al. (2025) confirms that in a stable financial system, banks do not directly transmit changes in policy interest rates into increases in lending rates. The phenomenon of *interest rate smoothing* means that changes in the benchmark interest rate have only a small impact on credit risk. When interest margins are maintained stable and debtor quality is controlled, interest rate changes do not lead to an increase in NPLs. In addition, Bendezu & Rodriguez (2025) and Nguyen (2025) show that in many developing countries, *asymmetric pass-through* between policy interest rates and lending rates causes the relationship between interest rates and NPLs to be weak.

Banks tend to maintain stable lending rates to remain competitive and maintain customer trust, so interest rate pressures do not affect non-performing loan levels. As a result, NPLs become insignificant in terms of credit demand. This finding is also consistent with research by Fakhrunnas *et al.* (2023) and Hakim *et al.* (2023), which explains that Indonesian banking credit risk is more influenced by internal factors, such as risk management quality, loan loss provisioning policies, and operational efficiency, than by macro variables such as interest rates. Banks with strong risk governance are able to manage interest rate changes without experiencing an increase in NPLs. This explains why interest rate changes do not flow through NPLs to affect credit demand.

The Effect of Inflation on Credit Demand Through *Non-Performing Loans*

The results of this study indicate that *non-performing loans* (NPLs) do not mediate the effect of inflation on credit demand in conventional banks listed on the Indonesia Stock Exchange (IDX) during the 2019–2024 period. In other words, changes in inflation do not significantly impact NPLs, which in turn impact the amount of credit disbursed by banks. Statistically, the mediation pathway between inflation and credit demand through NPLs is proven to be insignificant. Theoretically, within the framework of banking intermediation, high inflation can increase operational costs, reduce purchasing power, and increase the risk of customer default, thus should impact NPL increases and ultimately suppress credit distribution. However, the results of this study confirm that this mechanism did not occur significantly during the observation period. This condition indicates that the Indonesian financial system in 2019–2024 was in a stable state, where price fluctuations were relatively controlled and did not pose significant pressure on credit risk (Ekananda, 2022; Fakhrunnas *et al.*, 2023; Handayani & Kacaribu, 2021).

This finding is consistent with research by Akgun & Gunay (2025) and Atahau *et al.* (2025), which shows that in a stable macroeconomy, moderate inflation does not have sufficient transmission power to increase NPLs. In this context, inflation tends to be adaptive to monetary policy, where banks adjust risk expectations and lending interest rates to price changes. Thus, rising inflation does not necessarily disrupt existing credit quality. The results of this study also align with the findings of Bendezu & Rodriguez (2025) and Nguyen (2025), who explained that banking system effectiveness and monetary policy coordination can disrupt the transmission channel between inflation and credit risk. When monetary authorities maintain price stability and strengthen capital buffer mechanisms, rising inflation does not directly drive NPL increases. Therefore, the NPL variable fails to act as a significant mediator between inflation and credit demand.

Implications of Research Results

The implications of this research indicate that the stability of the Indonesian banking system for the 2019–2024 period is capable of withstanding the impact of interest rate fluctuations and inflation on credit risk (NPL) and credit demand. The finding that NPL negatively impacts credit demand underscores the importance of risk management and efficient credit distribution in maintaining bank intermediation performance. The absence of a mediating role for NPL indicates that monetary policy has not been fully channeled through

the credit risk channel. Therefore, coordination between Bank Indonesia and the Financial Services Authority (OJK) needs to be strengthened to improve the effectiveness of policy transmission and maintain the quality of national banking credit.

5. CONCLUSION AND SUGGESTIONS

Based on the analysis, it can be concluded that interest rates and inflation do not significantly affect *non-performing loans* (NPLs) or credit demand in conventional banks listed on the Indonesia Stock Exchange (IDX) for the 2019–2024 period. This indicates that macroeconomic fluctuations are not yet a dominant factor in determining risk and credit distribution in the banking sector. Meanwhile, NPLs negatively affect credit demand, meaning that an increase in non-performing loans will reduce banks' ability and willingness to disburse new loans. Furthermore, NPLs do not act as a mediating variable between interest rates and inflation and credit demand, indicating that monetary policy transmission through the credit risk channel remains weak. Overall, this condition reflects the stability of the financial system and the effectiveness of prudential supervision in maintaining the quality of banking assets in Indonesia.

Recommendations for the monetary authority (Bank Indonesia) include strengthening the transmission of interest rate policy through the credit channel by increasing transparency in determining the prime lending rate and improving the effectiveness of macroprudential policies. The Financial Services Authority (OJK) needs to continue tightening oversight of asset quality and the NPL ratio to increase intermediation efficiency without compromising financial system stability. For conventional banks, strengthening credit risk management, operational efficiency, and portfolio diversification is crucial to reduce over-reliance on macroeconomic factors to maintain profitability. Future researchers are advised to expand their research variables, such as adding internal bank factors (BOPO, CAR, ROA) or other macro variables (exchange rates, economic growth) and using dynamic panel models for more comprehensive results.

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