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The Impact of Macroeconomic Variables on Firm Value: The Moderating Role of Expected Credit Loss in the Indonesian Banking Sector

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ABSTRACT

Macroeconomic conditions influence firm value, particularly in the banking sector, where financial performance is closely linked to economic stability and credit risk management. In Indonesia, the implementation of the Expected Credit Loss (ECL) framework under PSAK 71 encourages banks to adopt a forward-looking approach in recognizing credit risk, which may influence how macroeconomic factors affect firm value. This study examines the effect of inflation and the Rupiah exchange rate (EXR) on firm value with ECL as a moderating variable in the Indonesian banking sector. This study employs a quantitative causal approach using secondary data from commercial banks listed on the Indonesia Stock Exchange (IDX) during 2012–2023. Data were analyzed using multiple regression and Moderated Regression Analysis (MRA). The results show that inflation (β = −0.003; p = 0.909) and the Rupiah exchange rate (β = −3.810; p = 0.413) do not significantly affect firm value measured by Price-to-Book Value (PBV). However, the interaction between ECL and inflation (β = 0.027; p = 0.006) and between ECL and the exchange rate (β = −0.147; p = 0.000) significantly affects firm value. These findings highlight the importance of forward-looking credit risk management in maintaining firm value stability.

Keywords: Expected Credit Loss; Firm Value; Inflation; Rupiah Exchange Rate; Indonesian Banking; Macroeconomic Factors

JEL Classification: G21; E31; F31; G32

INTRODUCTION

Firm value is a key indicator used by investors to assess a company's financial performance and future prospects. In capital markets, firm value reflects market perceptions of a firm's ability to generate sustainable returns and manage risks effectively (Afandi, 2018). In the banking sector, firm value is particularly sensitive to macroeconomic conditions because banks operate as financial intermediaries whose performance depends heavily on economic stability, credit quality, and monetary conditions (Lestari, 2021). Changes in macroeconomic variables such as inflation and exchange rate (EXR) may influence banking performance through their effects on lending activities, asset quality, and risk exposure (Nițescu & Anghel, 2023).

Inflation and EXR fluctuations are widely recognized as key macroeconomic factors affecting financial markets. High inflation can reduce purchasing power and increase operational costs, potentially affecting profitability and investor perceptions of firm performance (Barizi et al., 2022). Similarly, EXR volatility may influence banks through foreign currency exposure, international transactions, and investor sentiment in emerging markets (Abdulsalam et al., 2021). Previous studies have shown mixed results regarding the relationship between macroeconomic variables and firm value. Some studies find that inflation and EXR movements significantly influence firm valuation and stock prices, while others report insignificant or inconsistent effects across sectors and countries (Famubode & Ali, 2024).

In Indonesia, the relationship between macroeconomic conditions and firm value in the banking sector has become increasingly relevant following the implementation of PSAK 71, which adopts the Expected Credit Loss (ECL) model based on forward-looking credit risk assessment (Anwar, 2016). Unlike the previous incurred-loss model, the ECL framework requires banks to estimate potential credit losses using macroeconomic forecasts and future economic conditions. This change implies that macroeconomic information plays a more significant role in determining credit risk recognition and financial reporting in banks (Faizah et al., 2023).

Although prior research has examined the effects of macroeconomic variables on firm value, limited studies have incorporated credit risk accounting frameworks such as ECL as a moderating factor in this relationship (Mirawati et al., 2021). Most studies focus on direct relationships between macroeconomic indicators and firm performance without considering how accounting standards related to credit risk measurement may influence investor perceptions and firm valuation (Reyad et al., 2022). Therefore, a research gap exists regarding how the implementation of forward-looking credit loss models may strengthen or alter the relationship between macroeconomic conditions and firm value in the banking sector.

This study addresses this gap by examining the effect of inflation and the Rupiah EXR on firm value, while incorporating ECL as a moderating variable in Indonesian banking firms listed on the Indonesia Stock Exchange (IDX) during the 2012–2023 period (Agustina & Pratiwi, 2023). The novelty of this research lies in integrating macroeconomic factors with the forward-looking credit risk framework introduced by PSAK 71, thereby providing new insights into how accounting-based risk measures interact with macroeconomic conditions in influencing firm valuation.

The findings of this study are expected to contribute to the literature in several ways. First, it enriches empirical evidence on the relationship between macroeconomic variables and firm value in emerging market banking sectors. Second, it introduces ECL as a moderating variable that reflects forward-looking credit risk management in financial

reporting. Third, the study provides practical insights for investors, regulators, and banking institutions regarding the importance of macroeconomic risk management and credit loss provisioning in maintaining firm value stability.

LITERATURE REVIEW

Behavioral Finance and Firm Value

Behavioral Finance Theory explains how psychological factors and investor perceptions influence financial decision-making and market outcomes (Brigham & Houston, 2014). Unlike traditional finance theory, which assumes that investors behave rationally, behavioral finance suggests that investors may react differently to economic information depending on their expectations, risk perceptions, and cognitive biases. In the context of capital markets, investor sentiment toward macroeconomic signals may affect stock prices and ultimately influence firm value (Goh et al., 2022).

Firm value reflects the market's assessment of a company's performance and future prospects (Avinda et al., 2025; Hery, 2016; Saksono et al., 2024). In banking institutions, firm value is particularly sensitive to external economic conditions (Ariyanti et al., 2017). This is because banks operate as financial intermediaries whose performance depends heavily on macroeconomic stability and credit risk management (Hasibuan, 2017; Prasetyo & Prasetio, 2025). Investors often interpret macroeconomic indicators as signals regarding future banking performance, which may influence investment decisions and stock market valuation (Khan et al., 2024). Therefore, understanding how macroeconomic variables influence firm value is essential in analyzing financial market behavior, especially in emerging economies.

Macroeconomic Factors and Firm Value

Macroeconomic conditions play a crucial role in determining firm performance and market valuation. Among various macroeconomic indicators, inflation and EXR are widely recognized as key determinants affecting financial markets (Hidayat et al., 2021). Inflation represents the general increase in price levels within an economy and can affect corporate profitability, operational costs, and investment decisions (Astuti, 2022). High inflation may reduce purchasing power and increase uncertainty in financial markets, potentially influencing investor perceptions of firm performance (Famubode & Ali, 2024).

Several empirical studies have examined the relationship between inflation and firm value or stock market performance. Some studies find that inflation negatively affects firm valuation due to increased uncertainty and reduced real returns. However, other studies report mixed results depending on the sector and economic environment, suggesting that the relationship between inflation and firm value may not always be straightforward. These inconsistent findings indicate the need to consider additional factors that may influence how macroeconomic variables affect firm value.

EXR movements also play an important role in influencing firm value, particularly in open economies. EXR fluctuations may affect firms through international trade activities, foreign currency exposure, and capital market flows. In the banking sector, EXR volatility may influence asset quality, foreign currency liabilities, and investor expectations regarding financial stability. Empirical studies in emerging markets suggest that EXR changes may significantly influence stock prices and firm valuation, although the magnitude and direction of the relationship vary across countries and sectors (Li et al., 2025).

Overall, the existing literature indicates that macroeconomic variables may influence firm value through various transmission channels, including investor expectations, financial performance, and risk perception. However, these relationships may also be affected by institutional and regulatory frameworks, particularly those related to financial reporting and risk management in the banking sector (Dendawijaya, 2009).

ECL and Credit Risk Management

The introduction of forward-looking credit risk measurement has significantly transformed financial reporting in the banking industry. Under IFRS 9, which is adopted in Indonesia through PSAK 71, banks are required to recognize ECL based on forward-looking assessments of potential credit risk rather than relying solely on incurred losses. This approach requires financial institutions to incorporate macroeconomic forecasts and future economic scenarios when estimating credit losses.

The ECL framework reflects a proactive approach to credit risk management because it requires banks to recognize potential losses earlier and incorporate economic expectations into financial reporting (Fadhil & Riza, 2020). As a result, macroeconomic variables such as inflation, interest rates, and EXR become important inputs in determining credit risk provisions (Sharma et al., 2024). This forward-looking approach increases the sensitivity of banking financial statements to macroeconomic changes.

Recent studies highlight that ECL implementation may influence how investors interpret bank performance and financial stability (Prisco et al., 2025). Because ECL provisions reflect anticipated credit risk based on economic forecasts, they may serve as signals regarding the resilience of banks under changing macroeconomic conditions. Consequently, the presence of ECL in financial reporting may strengthen the relationship between macroeconomic variables and firm valuation by providing additional information regarding risk exposure and expected financial performance.

Conceptual Linkage Between Macroeconomic Variables, ECL, and Firm Value

The relationship between macroeconomic variables and firm value can be understood through both economic and behavioral perspectives. From an economic perspective, macroeconomic conditions influence firm performance through operational costs, financial stability, and credit risk exposure. From a behavioral perspective, investors interpret macroeconomic information as signals that influence their expectations about future firm performance.

The implementation of ECL introduces an additional mechanism that links macroeconomic conditions to firm value. Because ECL estimates incorporate macroeconomic forecasts in credit risk measurement, changes in inflation or EXR conditions may affect how banks recognize potential credit losses. This process may subsequently influence financial statements and investor perceptions of banking stability. Therefore, ECL may play an important role in shaping the relationship between macroeconomic variables and firm value. By incorporating forward-looking economic information into financial reporting, ECL can enhance the informational content of financial statements and strengthen the transmission of macroeconomic signals to financial markets. This mechanism suggests that the impact of macroeconomic conditions on firm value may depend on how credit risk is recognized and communicated through accounting frameworks such as PSAK 71.

Hypotheses Development

Inflation and Firm Value

Inflation reflects the general increase in price levels within an economy and represents an important macroeconomic indicator influencing financial markets. Rising inflation may increase operational costs, reduce purchasing power, and create economic uncertainty, which may negatively affect corporate profitability and investor expectations regarding future performance. In the banking sector, inflation may influence lending activities, interest margins, and credit risk exposure, which may ultimately affect firm valuation in capital markets (Iriani & Yuliafitri, 2018).

From a behavioral finance perspective, investors often interpret macroeconomic signals such as inflation as indicators of future economic stability. High inflation may reduce investor confidence and increase uncertainty in financial markets, leading to lower stock prices and firm valuation. Empirical studies also suggest that inflation can influence firm value through its impact on financial performance and investor sentiment, although the magnitude of the effect may vary across sectors and economic conditions. Based on these theoretical arguments, inflation is expected to influence firm value in the banking sector.

H1: Inflation affects firm value.

EXR and Firm Value

EXR movements play an important role in determining financial market stability and corporate performance, particularly in emerging economies. EXR fluctuations may influence firms through foreign currency exposure, international transactions, and capital market flows. In the banking sector, EXR volatility may affect foreign currency loans, cross-border financial transactions, and investor perceptions of financial stability.

From a behavioral finance perspective, EXR depreciation may signal economic instability to investors and influence their expectations regarding firm performance. As a result, EXR fluctuations may lead to changes in stock prices and firm valuation. Previous empirical studies indicate that EXR movements may significantly influence firm value and stock market performance, although the direction of the relationship may differ depending on industry characteristics and economic conditions. Therefore, EXR fluctuations are expected to influence firm value in the banking sector.

H2: EXR affects firm value.

The Moderating Role of ECL on Inflation and Firm Value

The implementation of the ECL model under PSAK 71 requires banks to estimate potential credit losses using forward-looking economic information, including macroeconomic forecasts (Hidayat et al., 2021). This approach increases the sensitivity of financial reporting to macroeconomic conditions and integrates economic expectations into credit risk measurement.

Because ECL incorporates macroeconomic information into credit risk estimation, inflation may influence how banks recognize potential credit losses. Higher inflation may increase economic uncertainty and borrower risk, which may lead to higher ECL and affect investor perceptions of bank stability (Desalegn et al., 2023). Consequently, ECL may strengthen the relationship between inflation and firm value by transmitting macroeconomic information through credit risk provisions. Therefore, ECL is expected to moderate the relationship between inflation and firm value (Afkar et al., 2020).

H3: ECL moderates the relationship between inflation and firm value.

The Moderating Role of ECL on EXR and Firm Value

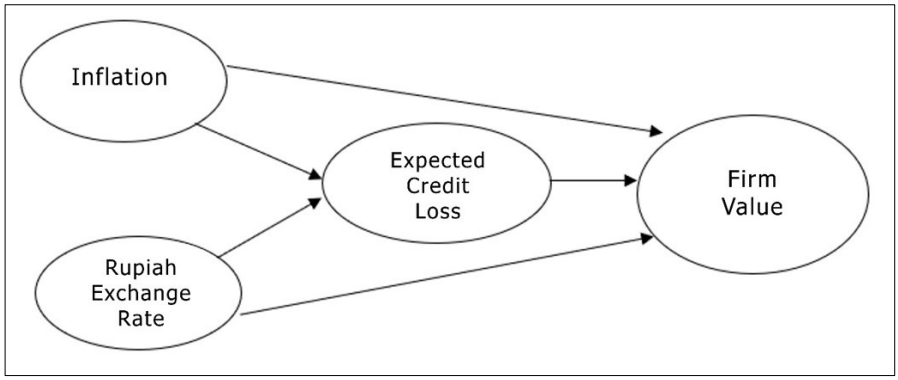
EXR fluctuations may influence banking performance through foreign currency exposure and financial market stability (Ali et al., 2025). Under the ECL framework, banks must incorporate macroeconomic expectations, including EXR conditions, when estimating potential credit losses. This requirement makes financial reporting more responsive to macroeconomic changes.

Changes in EXR may increase financial risk and affect borrower repayment capacity, which may lead to higher ECL. As a result, ECL provisions may provide signals to investors regarding the financial resilience of banks in responding to macroeconomic volatility. This mechanism suggests that ECL may strengthen the relationship between EXR fluctuations and firm value (Anwar & Arianta, 2022). Therefore, ECL is expected to moderate the relationship between the EXR and firm value.

H4: ECL moderates the relationship between EXR and firm value.

The conceptual framework of this study is presented in Figure 1.

Figure 1. Research Framework



RESEARCH METHOD

Research Design

This study adopts a quantitative research design to examine the influence of macroeconomic variables on firm value in the Indonesian banking sector and to evaluate the moderating role of ECL (Ghozali, 2018). The quantitative approach is appropriate because the research aims to test causal relationships among measurable financial and macroeconomic variables using statistical modelling (Kuncoro, 2013).

Specifically, the study employs multiple linear regression analysis combined with Moderated Regression Analysis (MRA) to examine the influence of macroeconomic variables on firm value and to evaluate the moderating role of ECL. MRA is used to test whether the interaction between macroeconomic variables and ECL significantly affects firm value. This approach enables the analysis of both direct effects and interaction effects among the variables (Ghozali, 2018).

Population and Sample Selection

The population of this study consists of all commercial banks listed on the Indonesia Stock Exchange (IDX) during the research period. A purposive sampling technique was applied to select the research sample based on several criteria. First, the bank must be listed on the IDX throughout the observation period. Second, the bank must publish complete annual financial statements during the study period. Third, the bank must report

ECL data in accordance with PSAK 71 (Financial Instruments). Finally, the bank must provide complete financial information required to calculate all research variables.

Based on these criteria, ten commercial banks met the requirements and were selected as the final research sample. The observation period covers 2012–2023, resulting in 120 firm-year observations (10 banks × 12 years). This panel dataset enables the analysis of variations across both cross-sectional (bank-level) and time-series (yearly) dimensions. The list of banking institutions included in the sample is presented in Table 1.

Table 1. Group of Listed Commercial Banks

No.	Bank
1	PT Bank Central Asia Tbk
2	PT Bank Negara Indonesia Tbk
3	PT Bank Rakyat Indonesia Tbk
4	PT Bank Mandiri Tbk
5	PT Bank CIMB Niaga Tbk
6	PT Bank Danamon Tbk
7	PT Bank Tabungan Negara Tbk
8	PT Bank Maybank Tbk
9	PT Bank Panin Tbk
10	PT Bank OCBC NISP Tbk

Source: Financial Services Authority (OJK, 2024)

Data Sources

This study utilizes secondary data obtained from several reliable sources. Annual reports and financial statements of listed banks were collected from the official website of the IDX. Macroeconomic data on inflation rates were obtained from Bank Indonesia and the Central Statistics Agency (BPS). In addition, data on the EXR against the US dollar were sourced from Bank Indonesia. All financial and macroeconomic data were gathered from publicly accessible sources to ensure transparency and reproducibility of the research.

Operational Definition and Measurement of Variables

This study includes one dependent variable, two independent variables, and one moderating variable.

Firm Value (PBV)

Firm value is measured using the Price-to-Book Value (PBV) ratio, which reflects how the market values a firm relative to its book value. A higher PBV indicates stronger investor confidence in the firm's future prospects.

Inflation (INF)

Inflation represents the annual percentage change in the general price level in Indonesia. It reflects macroeconomic conditions that may influence corporate performance and investment decisions. Inflation data were obtained from official statistics published by Bank Indonesia and the Central Statistics Agency (BPS).

EXR (EXR)

The EXR variable represents the average annual EXR against the US dollar. EXR movements may influence banking performance through their effects on international financial exposure and overall macroeconomic stability.

Expected Credit Loss (ECL)

ECL represents the forward-looking credit risk provision recognized by banks under PSAK 71, which adopts the IFRS 9 framework. It reflects the expected loss arising from potential borrower default over the life of financial assets. In this study, ECL serves as a moderating variable indicating the level of credit risk provisioning relative to banks' lending activities.

Variable Measurement
The variables used in this study include inflation and the Rupiah EXR as independent variables, ECL as a moderating variable, and firm value measured by PBV as the dependent variable.

Table 2. Variable and Indicator

Type of Variables	Name of Variables	Indicator	Scale
Independent Variable	Inflation	Annual inflation rate	Ratio
	Rupiah EXR	Average annual Rupiah/USD exchange rate	Ratio
Moderating Variable	ECL	ECL / productive assets	Ratio
Dependent Variable	PBV	Price per share / book value per share	Ratio

As shown in Table 2, inflation is measured using the annual inflation rate in Indonesia. The Rupiah EXR is measured using the average annual Rupiah-to-US dollar exchange rate. ECL is measured as the ratio of expected credit loss provisions to productive assets. Firm value is measured using the PBV ratio, calculated as the market price per share divided by the book value per share. All variables are measured on a ratio scale.

Data Analysis Procedure
The data analysis was conducted through several stages. First, descriptive statistics were used to summarize the distribution and characteristics of each variable. Second, correlation analysis was performed to examine the relationships among variables and to detect potential multicollinearity. Third, multiple linear regression analysis was applied to evaluate the direct effects of inflation and the Rupiah EXR on firm value. In addition, MRA was employed to assess whether ECL moderates the relationship between macroeconomic variables and firm value. Hypothesis testing was conducted using t-tests to evaluate the significance of individual coefficients and F-tests to assess the overall significance of the regression model. All statistical analyses were carried out using econometric software, with statistical significance evaluated at conventional levels of 1%, 5%, and 10%.

Moderated Regression Analysis (MRA)
To examine the moderating role of ECL, this study employs MRA. This method is used to determine whether the relationship between macroeconomic variables and firm value changes depending on the level of credit risk provisioning. In this context, ECL is expected to moderate the effects of inflation and EXR fluctuations on firm value.

Regression Model
Two regression models are applied in this study. The first model examines the direct effects of macroeconomic variables, namely inflation and EXR, on firm value. The second model introduces ECL as a moderating variable to evaluate whether credit risk provisioning strengthens or weakens the relationship between macroeconomic factors and firm value. Interaction terms between the independent variables (inflation and EXR) and the moderating variable (ECL) are included to assess the moderating effects.

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RESULTS

Correlation Analysis

Correlation analysis was conducted to examine the relationships among the research variables before performing regression analysis. The results indicate that inflation and the Rupiah EXR show relatively weak correlations with firm value (PBV). These findings suggest that macroeconomic variables may not have strong direct associations with market valuation in the Indonesian banking sector.

ECL, however, shows a moderate association with PBV, indicating that credit risk management practices may influence investors' perceptions of bank performance. In addition, the correlation coefficients among independent variables remain within acceptable limits, suggesting that multicollinearity is unlikely to affect the regression models.

Classical Assumption Test

Before conducting regression analysis, classical assumption tests were performed to ensure the validity of the regression model. The normality test using the One-Sample Kolmogorov–Smirnov method shows that the residuals are normally distributed because the significance value exceeds 0.05. Multicollinearity was evaluated using tolerance and Variance Inflation Factor (VIF) values, where all variables exhibit tolerance values above 0.10 and VIF values below 10. These results confirm that multicollinearity is not present in the model.

Heteroskedasticity was examined using the Glejser test, and the results show significance values above 0.05 for all independent variables, indicating the absence of heteroskedasticity. Furthermore, the Durbin–Watson statistic falls within the acceptable range, suggesting that autocorrelation is not present in the regression model. Overall, the regression model satisfies the classical assumptions and is suitable for further statistical analysis.

Linear Regression Analysis

Effect of Inflation on Firm Value

The effect of inflation on firm value was tested using regression analysis with PBV as the dependent variable. The regression results are presented in Table 3.

Table 3. Regression Results: Inflation and Firm Value

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.741	0.098		17.813	0.000
	Inflation	-0.003	0.028	-0.011	-0.115	0.909
a. Dependent Variable: PBV						

As shown in Table 3, the regression coefficient for inflation is −0.003 with a significance value of 0.909. Although the coefficient indicates a negative relationship, the result is not statistically significant. This finding suggests that inflation does not significantly influence firm value among Indonesian banking firms during the observation period.

Effect of EXR on Firm Value

The relationship between the Rupiah EXR and firm value was also tested using regression analysis. The results are presented in Table 4.

Table 4. Regression Results: EXR and Firm Value

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.497	4.586		1.199	0.233
	Rupiah EXR	-3.810	4.640	-0.075	-0.821	0.413
a. Dependent Variable: PBV						

Based on Table 4, the EXR coefficient is −3.810 with a significance level of 0.413. Similar to inflation, the relationship between EXR movements and PBV is not statistically significant. This result indicates that EXR fluctuations do not directly influence the market valuation of banking firms during the study period.

Moderated Regression Analysis

To examine whether ECL moderates the relationship between macroeconomic variables and firm value, MRA was conducted by including interaction terms.

Moderating Effect of ECL on EXR and Firm Value

The moderating effect of ECL on the relationship between the EXR and firm value is presented in Table 5.

Table 5. Moderated Regression: EXR × ECL

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.969	4.352		1.372	0.173
	Rupiah EXR	-4.076	4.402	-0.081	-0.926	0.356
	ECL	-1.340	1.228	-0.133	-0.140	0.889
	Rupiah EXR x ECL	-0.148	0.039	-0.327	-3.759	0.000
a. Dependent Variable: PBV						

Based on Table 5, the interaction between the EXR and ECL has a negative and statistically significant coefficient. This finding indicates that ECL significantly moderates the relationship between EXR fluctuations and firm value. In other words, the impact of EXR changes on PBV becomes more relevant when credit risk exposure is considered.

Hypothesis Testing

Partial Significance Test (t-test)

Table 6. H1 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.741	0.098		17.813	0.000
	Inflation	-0.003	0.028	-0.011	-0.115	0.909
a. Dependent Variable: PBV						

The regression results in Table 6 show that inflation has a coefficient of −0.003 with a significance value of 0.909. Because the significance value is greater than 0.05, inflation does not have a statistically significant effect on firm value. Therefore, H1 is not supported.

Table 7. H2 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.497	4.586		1.199	0.233
	Rupiah EXR	-3.810	4.640	-0.075	-0.821	0.413
a. Dependent Variable: PBV						

Based on Table 7, the regression results indicate that the Rupiah EXR has a coefficient of −3.810 with a significance value of 0.413. Because the significance value exceeds 0.05, the Rupiah EXR does not significantly affect firm value. Therefore, H2 is not supported.

To examine the moderating role of ECL on the relationship between inflation and firm value, an interaction term between inflation and ECL was included in the regression model. The results of the moderated regression analysis are presented in Table 8.

Table 8. H3 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.853	0.059		31.215	0.000
	Inflation X ECL	0.027	0.009	0.251	2.820	0.006
a. Dependent Variable: PBV						

According to Table 8, the interaction term between inflation and ECL has a coefficient of 0.027 with a significance value of 0.006. Because the significance value is less than 0.05, the result indicates that ECL significantly moderates the relationship between inflation and firm value. Therefore, H3 is supported.

Table 9. H4 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.940	0.068		28.378	0.000
	Rupiah EXR x ECL	-0.147	0.039	-0.326	-3.747	0.000
a. Dependent Variable: PBV						

Based on data in Table 9, the interaction term between the Rupiah EXR and ECL has a coefficient of −0.147 with a significance value of 0.000. Because the significance value is below 0.05, ECL significantly moderates the relationship between the Rupiah EXR and firm value. Therefore, H4 is supported.

F-Test (Simultaneous Test)

The F-statistic test is used to examine whether the independent variables jointly influence firm value. A significance value of less than 0.05 indicates that the independent variables simultaneously have a statistically significant effect on the dependent variable.

Table 10. ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.792	4	0.698	3.664	0.008[b]
	Residual	21.904	115	0.190		
	Total	24.696	119			

As shown in Table 10, the F-statistic is 3.664 with a significance value of 0.008. Because the significance value is below 0.05, the regression model is statistically significant. This result indicates that inflation, EXR, and the interaction terms jointly influence firm value.

Coefficient of Determination Test (R^2)
The coefficient of determination (R^2) is used to measure the explanatory power of the model, which includes Inflation, the Rupiah EXR, Inflation moderated by ECL, and the Rupiah EXR moderated by ECL, in explaining PBV. This study employs the adjusted R^2. A higher adjusted R^2 value approaching one (1) indicates a better ability of the model to explain the dependent variable (Ghozali, 2018).

Table 11. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.251[a]	0.063	0.055	0.44281

a. Predictors: (Constant), Inflation x ECL

Based on Table 11, the adjusted R^2 value is 0.055, indicating that approximately 5.5% of the variation in PBV can be explained by the independent variables included in the model.

Table 12. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.326[a]	0.106	0.099	0.43248

As shown in Table 12, the model incorporating interaction effects produces an adjusted R^2 value of 0.099, indicating that approximately 9.9% of the variation in firm value can be explained by the independent variables and interaction terms included in the model.

DISCUSSION

This study examines the relationship between macroeconomic variables, specifically inflation and EXR, and firm value in the Indonesian banking sector, as well as the moderating role of ECL. The results provide several important insights into how macroeconomic conditions and credit risk management interact in shaping market valuation.

The Effect of Inflation on Firm Value

The empirical results indicate that inflation does not have a statistically significant effect on firm value in the Indonesian banking sector. Although the regression coefficient shows a negative direction, the relationship is not statistically significant. This finding suggests that fluctuations in inflation during the observation period did not meaningfully influence market valuation among listed banking institutions.

This result is consistent with several prior studies that report mixed or insignificant relationships between inflation and firm valuation depending on sectoral characteristics and economic conditions. In regulated financial sectors such as banking, the direct impact of inflation may be mitigated through monetary policy frameworks, interest rate

adjustments, and risk management mechanisms implemented by financial institutions.

From a theoretical perspective, behavioral finance suggests that investors interpret macroeconomic indicators as signals about future economic conditions (Khan et al., 2024). However, in the context of the Indonesian banking sector, inflation may not be perceived as a dominant determinant of firm value because banks possess mechanisms to adjust interest rates and lending strategies in response to inflationary pressures. Consequently, investors may place greater emphasis on bank-specific performance indicators rather than macroeconomic inflation when evaluating firm value.

These findings support the argument that the relationship between macroeconomic variables and firm value is not always direct and may depend on institutional and regulatory conditions within the financial sector (Dendawijaya, 2009).

The Effect of EXR on Firm Value

The results also indicate that EXR fluctuations do not significantly influence firm value among Indonesian listed banks. Although the regression coefficient shows a negative direction, the relationship is statistically insignificant.

This finding suggests that EXR movements may not directly influence investor perceptions of banking performance in Indonesia. Unlike export-oriented manufacturing firms, banks mainly conduct domestic financial intermediation activities. As a result, their exposure to EXR volatility may be relatively limited.

Previous studies suggest that EXR movements tend to have stronger impacts on firms with significant foreign currency exposure or international trade activities (Umoru et al., 2024). In contrast, banks whose primary operations are domestic may be less sensitive to EXR changes.

Furthermore, banking institutions often manage EXR risk through hedging strategies, foreign currency asset–liability management, and regulatory supervision. These mechanisms may reduce the extent to which EXR volatility directly influences market valuation. Therefore, the absence of a significant relationship between EXR and firm value in this study aligns with theoretical expectations regarding sectoral exposure to macroeconomic shocks.

The Moderating Role of ECL

Although inflation and EXR do not directly influence firm value, the findings demonstrate that ECL plays a significant moderating role in these relationships. Specifically, the interaction between inflation and ECL has a positive and significant effect on firm value, while the interaction between EXR fluctuations and ECL has a negative and significant effect.

These results highlight the importance of credit risk management in shaping how macroeconomic conditions influence banking firm valuation. Under the PSAK 71 framework, which adopts IFRS 9, banks are required to recognize credit risk using forward-looking ECL estimates. This approach incorporates macroeconomic forecasts and economic expectations when assessing potential credit losses.

Because ECL integrates macroeconomic information into credit risk provisioning, changes in macroeconomic conditions may influence how banks recognize potential losses and communicate financial risk to investors. As suggested by Madegowda (2026), ECL provisions can function as signals of financial resilience because they reflect a bank's ability to anticipate and manage potential credit losses under changing economic

conditions.

The moderating effect observed in this study, therefore, indicates that macroeconomic variables become more relevant for firm valuation when credit risk exposure is taken into account. Inflation or EXR fluctuations may affect borrower repayment capacity, which in turn influences ECL. Consequently, investors may interpret macroeconomic shocks differently depending on the level of credit risk provisioning reported by banks.

These findings are consistent with the argument that forward-looking credit risk measurement frameworks increase the sensitivity of banking financial reporting to macroeconomic conditions (Breed et al., 2023). By incorporating macroeconomic expectations into financial statements, the ECL framework strengthens the informational link between economic conditions and firm valuation.

Economic and Managerial Implications

The findings of this study provide several important implications for financial institutions, investors, and policymakers. First, the insignificant direct effects of inflation and EXR suggest that macroeconomic indicators alone may not determine firm value in the Indonesian banking sector. Instead, firm-specific financial performance and risk management practices may play a more central role in shaping market valuation.

Second, the significant moderating role of ECL highlights the growing importance of forward-looking credit risk management under modern financial reporting standards. The implementation of PSAK 71 requires banks to incorporate macroeconomic expectations into credit loss provisioning, thereby increasing transparency regarding financial risk exposure.

Third, the results suggest that investors may rely more heavily on indicators of credit risk management when evaluating banking firm performance. ECL provisions provide signals regarding the stability and resilience of banks under changing economic conditions, which may influence investor confidence and market valuation.

Overall, the findings emphasize the importance of integrating macroeconomic analysis with credit risk management when evaluating firm value in the banking sector.

CONCLUSION

This study aims to examine the effect of macroeconomic variables, namely inflation and the Rupiah EXR, on firm value in the Indonesian banking sector, while also evaluating the moderating role of ECL under the PSAK 71 framework. The research seeks to understand whether macroeconomic conditions directly influence firm valuation and whether forward-looking credit risk recognition strengthens this relationship.

The empirical findings show that inflation and the Rupiah EXR do not have a statistically significant direct effect on firm value, measured by PBV, among listed commercial banks in Indonesia during the observation period. These results suggest that macroeconomic indicators alone are not sufficient to explain variations in market valuation within the banking sector. However, the MRA reveals that ECL plays a significant moderating role in the relationship between macroeconomic variables and firm value. Specifically, the interaction between ECL and inflation has a positive and significant effect on PBV, while the interaction between ECL and the EXR has a negative and significant effect. These results indicate that the influence of macroeconomic conditions on firm value becomes more relevant when credit risk exposure and forward-looking loss recognition are incorporated into financial reporting.

The findings have several important implications. From a managerial perspective, the results highlight the importance of proactive credit risk management in the banking industry. The implementation of ECL encourages banks to adopt forward-looking risk assessment practices, which may improve transparency and strengthen investor confidence during periods of macroeconomic uncertainty. From a regulatory perspective, the results support the relevance of PSAK 71 in enhancing the informational value of financial statements by incorporating macroeconomic expectations into credit loss provisioning. For investors, the findings suggest that indicators of credit risk management may provide more meaningful signals of bank stability than macroeconomic variables alone when evaluating firm value.

This study contributes to the literature in several ways. First, it enriches empirical evidence on the relationship between macroeconomic variables and firm value in emerging market banking sectors. Second, it introduces ECL as an accounting-based moderating variable that links macroeconomic conditions with firm valuation through forward-looking credit risk measurement. Third, the research provides new insights into how the implementation of modern financial reporting standards, such as PSAK 71, can influence the way macroeconomic information is transmitted to financial markets. Overall, the study demonstrates that credit risk provisioning under the ECL framework plays a crucial role in shaping the relationship between macroeconomic conditions and firm value in the Indonesian banking sector.

LIMITATION

An analysis of the limitations of this study is important to understand the methodological and interpretative constraints that should be considered when interpreting the findings. First, this study focuses exclusively on listed commercial banks in Indonesia during the 2012–2023 period. Consequently, the results may not be directly applicable to the banking industries of other countries or to organizations operating in different sectors. Differences in industry characteristics, regulatory frameworks, and macroeconomic environments across countries and sectors may influence the extent to which the findings can be generalized.

Second, the study employs firm value, measured by PBV, as a proxy for financial performance. This approach assumes that PBV reflects the fair market value of a firm. However, PBV may also be affected by other factors, such as short-term stock market volatility, investor sentiment, or other non-economic influences that are not captured in the present analysis. As a result, the measurement of firm value may not fully represent all underlying determinants of financial performance.

Third, although this research examines inflation, the Rupiah EXR, and ECL as a moderating variable, there are other macroeconomic and institutional factors that could potentially influence firm value but are not included in the model. Variables such as interest rates, monetary policy adjustments, and political or regulatory developments may also play important roles in shaping firm performance and market valuation.

Fourth, the research period covering 2012–2023 may not be sufficiently long to fully capture the long-term effects of ECL strategies in responding to economic fluctuations. Risk management policies, particularly those related to credit loss provisioning, may generate impacts that unfold over a longer time horizon. Therefore, a longer observation period could provide a more comprehensive understanding of the long-term implications of ECL implementation.

Finally, limitations related to data availability and the quality of the data used in the analysis may also influence the validity of the findings. Ensuring the accuracy and completeness of financial and macroeconomic data is essential for reliable empirical analysis, and any constraints in data quality may affect the robustness of the results.

Despite these limitations, this study contributes to the growing body of literature by providing empirical evidence on the role of ECL as a moderating variable in managing financial risk and enhancing firm value in the context of macroeconomic challenges. In addition, the findings offer practical implications for financial managers and policymakers, particularly in optimizing risk management strategies while taking into account the potential impact of macroeconomic variables on firm valuation.

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The author affirms that there are no personal, financial, or professional relationships that could be perceived as influencing the conduct of the research, the analysis and interpretation of the data, or the preparation of this manuscript.

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