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IMPACT OF CREDIT RISK MANAGEMENT AND INTEREST RATES ON STOCK VOLATILITY IN THE REAL ESTATE INDUSTRY

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ABSTRACT
This study examines the relationship between credit risk management, policy interest rates, loan interest rates, and share price volatility of issuers in the real estate developer and operator industry. The research employs quantitative methods and uses data from issuers listed on the Indonesia Stock Exchange during the 2018-2023 period. Multiple linear regression analysis is conducted to assess the influence of policy interest rates and loan interest rates on the share price volatility of H111 issuers, which are the largest issuers in the real estate developer and operator industry. The study also explores the role of credit risk management in the context of bank performance and interest rate determination. The results indicate a significant negative relationship between loan interest rates and share price volatility of H111 issuers, while the impact of policy interest rates is minimal. The findings highlight the importance of credit risk management in the banking sector, as poor management of credit risk is identified as a major cause of banking crises. The study contributes to the understanding of the interconnections between credit risk, interest rates, and stock market performance in the real estate industry, providing insights for investors, regulators, and industry players.
Keywords: credit risk management, share price volatility; Real Estate Developer; Operator Industry

INTRODUCTION

An essential area of a nation's economy is the developer and operator of real estate. This industry is expanding and contributing significantly to the economy at the same time as it is growing at an ever-increasing rate (Myovella, Karacuka, & Haucap, 2020). Interest rates are one of the variables influencing this industry. The volatility of issuers' share prices in this industry can be influenced by policy interest rates and lending rates. Numerous scholars have conducted preliminary study on the equity instruments and reference rates one of them prove that central bank policy interest rates can have on stock prices (Chanias, Myers, & Hess, 2019).

However, most of these studies focus on the financial sector rather than the real estate developer and operator industry. Meanwhile, in the real estate developer and operator industry, stock price movements are often heavily influenced by macroeconomic variables such as interest rates. Higher policy rate of the central bank, for example, tend to reduce the interest of investors to invest in the real estate sector because loans become more expensive, so that it can reduce stock prices. In addition, lending rates can also affect stock price volatility on real estate developer and operator industry. High lending rates can cause borrowing costs for companies to become more expensive, thereby reducing company value and triggering a decline in stock prices (Ashraf & Shen, 2019). Conversely, low lending rates can spur business growth and strengthen stock prices.

It is important to know the factors related to risk management such as credit risk and interest rate risk. Because the Bank has a policy in determining interest rates and fees granting credit. To facilitate and provide a comparison with competitors, interest rates and fees should be adjusted to market conditions or the community's ability to provide reasonable interest rates in accordance with Bank Indonesia (BI) regulations. The correct way to manage risk is of course not to eliminate risk. For example, a deposit money bank's credit operations are subject to insider risk of possible credit losses, but by taking on the risk, the deposit money bank can compensate for the risky investment and generate profits. Therefore, risk can be “a source of income for keeping money in the bank (Obayagbona & Osagiende, 2023).

Credit risk is the possibility that a bank borrower will not be able to fulfill its obligations according to the agreed terms. Credit risk is inherent in the lending business and operations which are closely related to market risk variables. The goal of credit risk management is to reduce risk and increase the bank's risk-adjusted rate of return by taking credit exposure for granted and keeping it within permissible parameters. The bank's success rate has become so challenged that the bank's health has become doubtful. Loans are the main output provided by banks, but loans are a risk output. There is always a risk that is expected to occur if the loan is not repaid before the loan eventually becomes non-performing which can be considered an undesirable output or cost for the bank and have a negative impact on the bank (Obayagbona & Osagiende, 2023). Loan-specific factors and borrower-specific characteristics play an important

role in determining loan rates and loan default status. The number of borrowers has increased much more than the number of lenders. The supply shortage then pushed up loan interest rates (Santoso et al., 2020). Therefore, this research is important to the field of management on how to understand the policy interest rates and lending rates towards the volatility of issuers' stock prices in the real estate developer and operator industry. It is been greater expectation that the insights resulted from the research conducted may serve useful perspectives for investors, regulators, and industry players in making investment decisions in the future.

Gap analysis of this problem is important because the volatility of issuer stock prices can affect investors' decisions in investing. If the volatility of the issuer's stock price gets higher, investors may tend to reduce their investment or even exit the market (Agliardi & Agliardi, 2019). This might affect declination in the sector's growth and the economy all in all. The study is referred to the impact of two exogenous variables on the volatility of H111 issuer stock prices in the real estate developer and operator industry. Ultimately, the research is expected to provide insightful views for investors, regulators and the real estate industry in making investment decisions. As previously mentioned, several identified research have examined the correlation on specific rates that might influence the movement of stock exchange items. Huy et al. (2020), for instance, claimed that any certain market rates would have a pertinent impact on banking sector stock prices. The study's findings suggest that a rise in interest rates could lead to a drop in the value of financial sector stocks. Nevertheless, the financial sector and the real estate developer and operator industries are not the same, thus the findings of earlier studies cannot be applied directly to the real estate sector. Different conclusions have been drawn from a number of earlier research that looked at the relationship between interest rates and stock prices in the real estate developer and operator sector.

For example, research conducted by Fahlevi, (2019) found that central bank policy interest rates have a positive and significant influence on stock prices in the property sector in Indonesia. While research conducted by Alhodiry et al., (2021) shows that lending rates have a detrimental effect on stock prices in the property sector in Malaysia. Thus, it is critical to carry out this research in order to make a more precise and thorough knowledge of the relationship between policy reference rates and lending rates on issuer stock price volatility in the real estate developer and operator business. This study offers an update by concentrating on how loan rates and policy interest rates affect the volatility of issuer stock prices in the real estate developer and operator sector. To ensure that the findings may serve as a guide for future investment decisions, this study also makes use of issuer data from H111, the largest issuer in the industry.

METHODS

This research uses quantitative research methods with several materials and methods used to obtain valid and accurate research results (Bloomfield & Fisher, 2019). A purposive selection approach was used to identify a sample of real estate developer and operator businesses listed on the Indonesia Stock Exchange (IDX) which consisted of 82 companies as classified in IDX Industrial Classification (IDX-IC) (Kayo, 2023). The sample companies were chosen based on the following criteria: 1) listed on IDX in the 2018-2023 period, 2) entered real estate developer and operator industry, 3) stock prices that were actively traded during the study period.

The data employed in this research is by using secondary data obtained from the official websites of the Indonesia Stock Exchange (IDX) and Bank Indonesia (BI) (Bank Indonesia, 2023). Obtained data includes issuer stock prices in the 2018-2023 period, BI policy interest rates, and commercial bank lending rates. The data that have been obtained will be analyzed using multiple linear regression methods to stipulate policy interest rates and lending rates on the volatility of H111 issuer stock prices in the real estate developer and operator industry. In addition, a classical assumption test will be carried out to ensure that the data used in the regression analysis meets the necessary assumptions.

The hypothesis in this study is that policy interest rates and lending rates have a tremendous impact on the volatility of H111 issuer stock prices in the real estate developer and operator industry. The t-test and F-test were used to assess hypotheses, with a significance threshold of 5%. Using the materials and procedures specified above, it can be concluded that this research can provide valid and accurate results and may offer great contribution to understand the impact of two types of rates to the volatility of issuers' stock prices in the real estate developer and operator industry. The chart of the variables studied, among others:

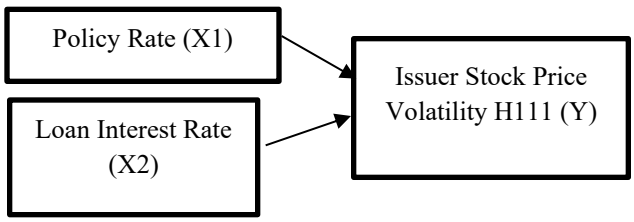

Figure 1. Research Variable Design Chart

The following describes the variable indicators used in the study, among others:
Table 1. Research Variable Indicators

No	Variable	Indicator
1	Policy Rate	The official reference interest rate set by the central bank (Rochon & Seccareccia, 2023).
2	Loan Interest Rate	Loan interest rates offered by commercial banks (Xu & Zhou, 2021).
3	Issuer Stock Price Volatility H111	Standard Deviation of Stock Prices (Raza et al., 2019).

The flow of thinking in this research can be seen in Figure 2 below.

Figure 2. Flow of Thinking

RESULT AND DISCUSSION

The first stage begins by carrying out a classical assumption test with the aim of assuring that the data obtained is accurate in estimation, unbiased and consistent and to determine whether the results of the classical assumption test are met or not. If fulfilled, the data can be analyzed further at the next stage.
Table 2. Classical Assumption Test Results

Exogenous Var.	VIF	1/VIF
X1	2.44	0.409754
X2	2.44	0.409754
Mean VIF	2.44	

The results of the multi-collinearity test show that there are no symptoms of multi-collinearity in the impact of policy interest rates and lending rates on share price volatility of issuers in the real estate developer and operator industry. This is evident from the two variables is 2.44 which is less than 10, indicating that there are no symptoms of multicollinearity.

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Table 3. Regression Analysis Results

Residual	.895820536	57	.01571615	R-squared	= 0.3064
				Adj R-squared	= 0.2821
Total	1.29160986	59	.021891693	Root MSE	= .12536

Y	Coefficient	Std. err.	t	P>|t|	[95% conf.	interval]
X1	.0389207	.1137918	0.34	0.734	-.1889434	.2667848
X2	-3.047319	.8787882	-3.47	0.001	-4.807062	-1.287576
_cons	6.528867	.7734505	8.44	0.000	4.980059	8.077675

The t-count value was calculated during hypothesis evaluation to identify the influence of the independent variables on the dependent variable. The Policy Rate variable (X1) gets a t-count value of 0.34, while the Loan Interest Rate variable (X2) gets a t-count value of -3.47. It is known that there is an effect by comparing the t-count value to the t-table value of 8.44 between the Loan Interest Rate (X2) variable on the Issuer Stock Price Volatility H111 (Y), while the Policy Rate Variable (X1) has weak influence on H111 Stock Price Volatility. This is indicated by a significance value of 0.000 for the Loan Interest Rate variable (X2) which is smaller than alpha (0.05), while the Policy Rate variable (X1) is higher than alpha (0.05). Overall, the conclusion of this paragraph is that the Loan Interest Rate (X2) has a significant and strong influence on the volatility of the issuer's share price, while the Policy Rate (X1) has a weak and insignificant influence on this volatility. More details can be seen in the image of the influence path of the Policy Rate Variable (X1) and the Loan Interest Rate (X2) variable on the Issuer Stock Price Volatility H111 (Y), including:

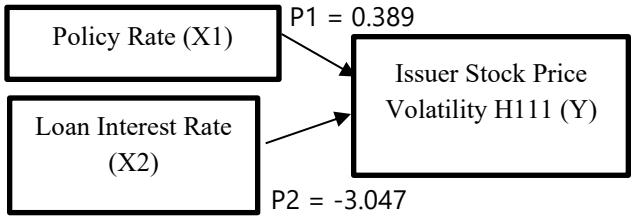

Figure 3. Path Analysis the Policy Rate Variable (X1) and the Loan Interest Rate (X2) variable on Issuer Stock Price Volatility H111 (Y)

According to the model simulation table, the R Square value generated is 0.3064, indicating a contribution of 30.64% of the Policy Rate Variable (X1) and the Loan Interest Rate (X2) variable on the Issuer Stock Price Volatility H111 (Y). Other variables not investigated in this study had an effect of 69.36%. The model run obtained an R2 score of 0.3064. This indicates that, depending on the two independent variables under investigation, namely Policy Interest Rates (X1) and Loan Interest Rates (X2), the model may account for 30.64% of the variation in issuer share price volatility (Y). regarding the contribution of variables, the variance of the issuer's share price (Y) is accounted for by 30.64% by the variables representing the policy rate (X1) and loan interest rate (X2). Put differently, 30.64% of the variations in issuer stock price volatility may be explained by a model that incorporates these two factors as predictors. In addition, the value of e1 is obtained at 0.12536 after calculation. This research has a gap in data preprocessing since the data employed consists of all entities classified as H111 for five years duration and not all entities have same data available during observation. Overall, the sentence states that although the Policy Rate and Loan Interest Rate have a significant influence on the volatility of issuers' stock prices, there are many other factors that also contribute to this volatility and need to be investigated further.

The outcomes of this investigation are consistent with previous studies, which indicates that interest rates are one of the variables influencing stock price volatility. For example, Endri, et. al., (2020) found that interest rates had a considerable impact on stock price volatility in the Malaysian stock market. However, according to our findings, the Policy Rate (X1) has no substantial influence on the Issuer Stock Price Volatility H111 (Y) and Lending Rates (X2) has significant impact with negative correlation to the endogenous variable.

There is a strong relationship between bank performance and sustainable economic growth. Therefore, a better understanding of the impact of credit and market risks on bank performance can contribute to the better functioning of the banking system and help to understand the impact of monetary policy on it (Ekinci, 2016). Credit risk management is very important for banks because it is an integral part of loan facilitation. Credit risk management maintains credit risk exposure and thereby increases the bank's risk-adjusted returns. Credit risk management and bank

performance have a significant relationship. Poor credit risk management is the main cause of the banking crisis. For the long-term survival and sustainability of financial institutions such as banks, to manage credit risks adequately is very important (Hamza, 2017). Simultaneously, bad credit has an influence on return on assets. Partially, Net Performing Loans have a negative and significant effect on Return On Assets (Fahrul & Rusliati, 2016). This shows that over time, very low interest rates and flat term structures will erode bank profitability (Borio et al., 2017).

Smaller credit risk means high profits with lower volatility for the bank. In other words, smaller credit risk means stronger and more stable growth for the bank and vice versa, credit and market risks have a positive and significant effect on bank conditions (Ekinci, 2016). High loan interest rates affect borrowers' ability to repay because they cannot generate enough returns from their business to repay their loans. Loan interest rates impact their business in the sense that they are unable to earn enough profits to expand their business (Evans & Adjei, 2014).

Other researchers agree with the findings of this study, as stated by Singhal, et. al., (2019), who found that interest rates had a considerable impact on stock price volatility. According to the report, interest rate dynamics, have a positive and substantial link with stock price volatility on the Indonesia Stock Exchange. Furthermore, Kalam's (2020) research demonstrates that interest rates have a significant impact on stock price volatility in the Malaysian stock market. As a consequence, the findings of this study can serve as a guide for investors and decision makers in the real estate developer and operator industries who want to consider interest rates while making investment or business decisions.

CONCLUSION

This study examined the relationship between credit risk management, policy interest rates, loan interest rates, and share price volatility of issuers in the real estate developer and operator industry. The findings indicate a significant negative relationship between loan interest rates and share price volatility of H111 issuers, suggesting that higher lending rates are associated with increased volatility in stock prices of these companies.

However, the impact of policy interest rates on share price volatility was found to be minimal. The study also highlights the importance of credit risk management in the banking sector, as poor management of credit risk is identified as a major cause of banking crises, which can ultimately affect interest rate determination and stock market performance. The research contributes to the understanding of the interconnections between credit risk, interest rates, and stock market performance in the real estate industry. The findings have practical implications for investors, regulators, and industry players, providing insights into the factors that influence share price volatility and the role of credit risk management in the banking sector. However, it is important to acknowledge the limitations of the study, such as the potential for unobserved heterogeneity among issuers, the assumption of linearity in the regression analysis, and the use of secondary data. Future research could explore alternative econometric models, incorporate industry-specific factors, or consider a broader range of macroeconomic variables that may influence stock market performance in the real estate sector.

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