

# THE ROLE OF INTEREST RATE MODERATION IN THE RELATIONSHIP OF INVESTMENT DECISIONS, AND FUNDING DECISIONS TO COMPANY VALUE

## Abstract

**Research aim :** The purpose of this study was to examine the effect of investment decisions and funding decisions on firm value and the moderating relationship of interest rates in influencing the strength or weakness of the relationship between investment decisions and funding decisions on firm value.

**Design/Method/Approach :** This study used a sample of property and real estate sector companies listed on the Indonesia Stock Exchange during 2019-2021 as many as 7 companies with a total sample of 84 financial reports obtained using the purposive sampling method. The analysis method used is multiple linear regression and Moderated Regression Analysis (MRA) with the analysis tool IMB SPSS ver.21.

**Research Finding :** Based on the study's results, investment decisions are positive but insignificantly affecting firm value, while funding decisions significantly negatively impact firm value, interest rates do not moderate the relationship between investment decisions and firm value, and interest rates do not moderate the relationship between funding decisions and firm value.

**Theoretical contribution/Originality :** The objective of this study was to investigate whether interest rates influence the weak or strong relationship between investment decisions and funding decisions and company value, and to determine whether interest rates play a role Practitioner/Policy implication

**Research limitation :** The research only focuses on property and real estate sector companies listed on the Indonesian IDX in 2019-2021

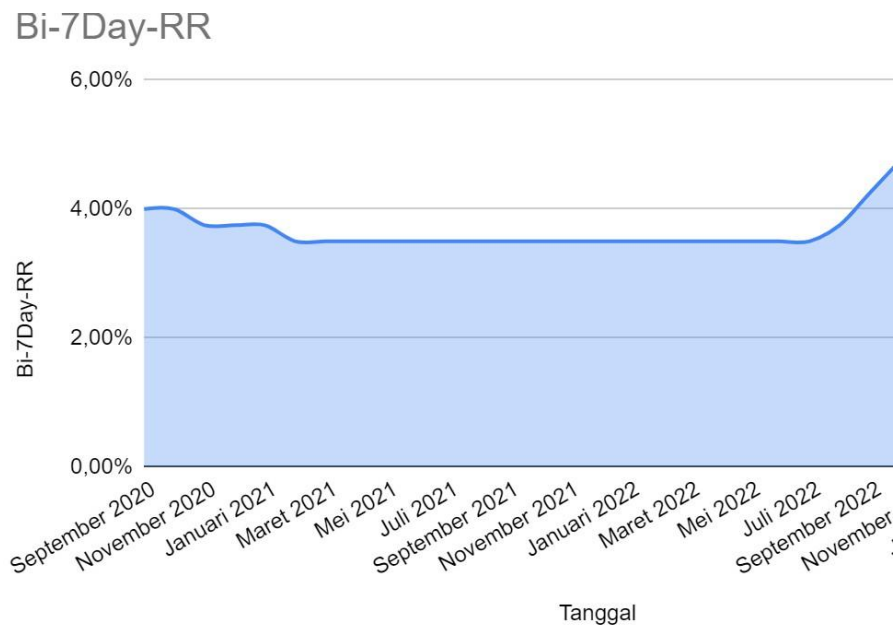
**Keywords :** Investment Decisions, Funding Decisions, Value of Firm, Interest Rate

## 1. Introduction

In running a business, every company will try to obtain and increase profits optimally. With profits, the company not only aims to improve the company's internal quality but also to increase investor attractiveness. When investing, investors tend to choose companies that have good performance so that they can get maximum returns on their investment with minimal risk. A company's financial performance can be assessed from several things, one of which is company value. Company value is a crucial factor for investors because company value can indicate the condition of the company which can describe the prosperity of investor holders and welfare within the company. The value of the company itself can be influenced by several factors, both internal factors such as company managerial decisions and external factors such as company managerial decisions as the country's macroeconomic conditions. Internal factors that influence company value such as managerial ownership, capital structure, institutional ownership, profitability, company growth, company size, and dividend policy. Meanwhile, external factors that influence company value include interest rates and inflation.

In mid-2022, Indonesia experienced an economic crisis, namely inflation, which was the impact of the conflict between Russia and Ukraine. The conflict between these two countries not only has an impact in Indonesia but in several countries around the world, including the United States. Inflation that occurred in the United States made the United States Central Bank or what is often called the Federal Reserve (The Fed) increase interest rates by 75 basis points to 3.75% - 4%. The increase in the benchmark interest rate was carried out to fight accelerating inflation and maintain price stability. With the Fed's increase in interest rates, Indonesia also raised the benchmark interest rate which is often called the BI 7-Day (Reverse) Repo Rate to reduce inflation by 2.25% from the initial reference interest rate of 3.50% to

5.75%.



Source: *bi.go.id*, 2022

**Figure 1. BI-&Day-RR**

With the increase in interest rates that occurs, companies must be able to quickly adapt to this policy and must be wiser in acting to maintain the stability of company value so that investor confidence in the company can still survive. In maintaining company value, some factors are managerial decisions that can influence company value, such as investment decisions, funding decisions and interest rates.

Investment decisions are company management policies in using existing funds optimally to obtain maximum profits. Investment decisions will be reflected in the assets section of the company's statement of financial position. The success of the investment carried out will reflect the company's performance. The success of the investment made by the company will increase the confidence of potential investors who will invest in the company. Funding decisions are management decisions relating to the use of internal and external funding sources to optimize profits. [1] explained that some companies believe using debt will be safer than issuing new shares. Managers must consider funding investment in the company's current assets, these funding sources include commercial bank loans, credit from suppliers (trade payables), accrued liabilities, long-term debt, and ordinary equity. Managers must analyze the strengths and weaknesses of each source. Next, which financing is the best source for investment in working capital [2]. The company believes that if it is financed with debt, it will be safer because with debt financing the company will have an obligation to pay loan debt and loan interest, where this loan interest will increase the company's burden, thereby reducing the company's profits, which will impact the tax credit that must be paid.

Interest rates are one of the country's monetary policies that will indirectly affect company performance. Companies must pay attention to interest rate policies issued by the state so that they can take action to adapt to policy changes that occur. Interest rates will indirectly influence decision-making and strategies carried out by company management. Company management must be able to assess the influence of interest rates on company performance so that the company can maintain current achievements.

### 1.1. Statement of Problem

Based the introduction that explained previously, the problem statement of the research as follows:

1. Investment decisions has a positive effect on company value.
2. Funding decisions has a negative effect on company value.
3. Interest Rates Moderate the Relationship between Investment Decisions and Company Value.
4. Interest Rates Moderate the Relationship between Funding Decisions and Company Value.

### 1.2. Research Objectives

Research Objectives as follows:

1. To determine how investment decisions affect the value of a company.
2. To determine how funding decisions affect company value.
3. To determine how investment decisions are related to company value when interest rates are moderated.
4. To determine how funding decisions are related to company value when interest rates are moderated.

## 2. Method

This type of research is causal research which aims to determine the causal influence between independent and dependent variables (Sugiyono 2018). The research makes use of secondary data in the form of documentation, which it received from the [www.idx.co.id](http://www.idx.co.id) website. This documentation includes the quarterly financial reports of sector businesses that are listed on the Indonesia Stock Exchange from 2020 to 2022, as well as real estate and property. Purposive sampling using preset criteria is the sample approach used. A sample of eighty-four financial reports, suitable for data analysis, was gathered through sampling. One independent variable

one moderating variable, and two independent variables are used in the research.

Investment Decisions are company management decisions relating to company investment, both internal and external capital investment. Investment decisions are made to determine the allocation of use of the funds obtained from funding. Investments made by companies include short-term investments and long-term investments. Short-term investments are usually identified by an investment period of less than one year, while long-term investments are investments that have a period of more than one year. Investment decisions are projected in PER (per earnings ratio), with the following formula:

$$PER = \frac{\text{Harga Saham}}{\text{Laba Per Lembar Saham}}$$

Funding decisions are decisions related to selecting and determining the most efficient and effective funding sources for the business run by the company. This decision must be taken by the financial manager quickly and carefully by paying attention to several factors such as capital structure and cost of capital [3]. Funding decisions are financial decisions regarding the origin of funds to purchase assets [4]. Sources of company funds are divided into 2, namely internal sources of funds such as business capital, retained earnings, and shares, and external sources of funds such as bank loans and bonds. Funding decisions are made by management

because raising funds through external funding is believed to be more effective than issuing shares to attract funds from investors. This funding decision was also made as a strategy to reduce profits and reduce the company's tax obligations.

The Debt to Equity Ratio (DER) can be used to measure funding decisions. A high level of debt to equity ratio (DER) indicates that the amount of total debt is greater than the amount of total own capital, resulting in a greater burden on external parties [5]. Based on this ratio, you can compare debt-financed funding with equity-financed funding. In the measurement results, it can be seen how well the company can pay back its debts. Funding decisions are projected in DER (Debit to Equity Ratio), with the following formula:

$$\text{Debt to equity ratio} = \frac{\text{Total Utang}}{\text{Total Ekuitas}}$$

Company value is a certain condition that has been achieved by a company and company value is an illustration of public trust in the company [6]. According to [7] the main goal of the company is to produce company value which has been assigned to financial managers by maximizing company value. Company objectives according to theory of the firm, is that the company can maximize the wealth or value of the company. Company value has an important meaning for the company itself because company value can reflect the health of the company, the prosperity of shareholders, and the welfare of the company. The value of the company can be reflected in the share price which is the benchmark for shareholders in making investment decisions. By looking at the company value, investors can decide whether to increase investment, maintain investment, or sell investment.

The value of a company refers to the wealth it owns. Company value is investors' perception of the company's level of success associated with share prices. Markets and investors place a great deal of trust in high share prices and high company values, not just because of the current performance but also because of the prospects and sustainability of the company for the future. Market value can also be defined as company value. Market value is based on the perception investors, creditors, and other stakeholders have about the company's condition reflected in the market value of its shares, which can be used to measure the company's worth.

James Tobin submitted Tobin's Q. The value of a company's assets at replacement cost is gauged by Tobin's Q. Tobin's Q is thought to offer superior information because it clarifies a number of phenomena related to business operations, including variations in cross-sectional investment and diversification choices, the connection between share ownership and firm value, and funding, dividend, and compensation policies. Tobin's Q measures every component of the company's debt and share capital.

Tobin's Q is used to measure company value because it is more accurate than the ratio of market value to book value [8]. Tobin's Q can reflect all assets in the company, reflect market sentiment, and overcome estimation problems in company profits and costs. Companies that have a high Q value usually have very strong branding, while companies that have a low Q value are usually in very competitive industries or industries that are starting to get smaller. The dependent variable is projected in Tobin's Q with the following formula:

$$\text{Tobin's } Q = \frac{(\text{Nilai Pasar Ekuitas} + \text{Nilai Pasar Utang})}{(\text{Nilai Buku Ekuitas} + \text{Nilai Buku Utang})}$$

Interest rates are a moderate variable used in this research. The interest rate used is the

interest rate recorded by Bank Indonesia with data sources at [www.bi.go.id](http://www.bi.go.id). The interest rate is the return given or paid by the borrower to the party who lends the money. The reference interest rate is the determination of the interest rate determined by Bank Indonesia as a means of carrying out monetary operations. Reference interest rates have a stronger relationship to money market interest rates, are transactional or traded on the market, and can encourage financial market deepening. Bank interest rates can be interpreted as remuneration provided by banks to customers who sell or buy their products based on conventional principles.

The interest rate policy issued by Bank Indonesia as one of the policies in the monetary sector usually changes following by the current economic conditions in a country. One of the causes of rising and falling interest rates is inflation. Inflation is a condition where the prices of general goods increase. With money inflation, the value of money will fall and cause the circulation of money in the country to become very large. Therefore, to suppress inflation, Bank Indonesia will issue a policy regarding increasing interest rates.

Data analysis used multiple linear regression methods and Moderated Regression Analysis (MRA) with analysis tools using SPSS ver.21. The regression equation used in the research is:

#### Multiple Regression Analysis

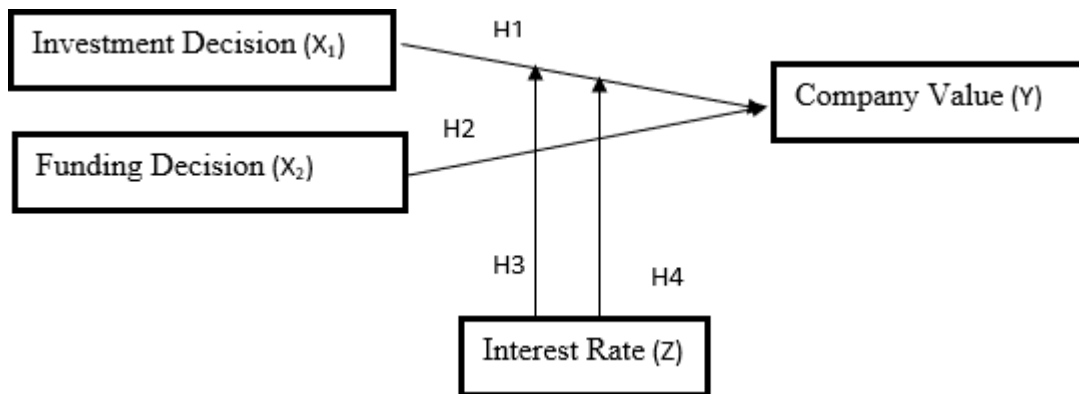
$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Y = Company Value  
 $\beta_0$  = Constant Number  
 $\beta_1$ -  $\beta_2$  = Variable Regression Coefficient  
 $X_1$  = Investment Decision  
 $X_2$  = Funding Decision  
 $\varepsilon$  = error or residue

#### Moderated Regression Analysis

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 Z + \beta_4 (X_1 * Z) + \beta_5 (X_2 * Z) + \varepsilon$$

Y = Company Value  
 $\beta_0$  = Constant Number  
 $\beta_1$ -  $\beta_5$  = Variable Regression Coefficient  
 $X_1$  = Investment Decision  
 $X_2$  = Funding Decision  
 $Z$  = Interest Rate  
 $X_1 * Z$  = Interaction between Investment Decisions and Interest Rate  
 $X_2 * Z$  = Interaction between Funding Decisions and Interest Rate  
 $\varepsilon$  = error or residue



Source: Researcher development, 2022

**Figure 2. Conceptual Framework**

### 3. Results and Discussion

#### 3.1 Classic assumption test

##### 3.1.1 Normality test

**Table 1. Normality Test**

One-Sample Kolmogorov-Smirnov Test			Unstandardized Residual
N			84
Normal Parameters <sup>a,b</sup>	Mean		,0000000
	Std. Deviation		,31133975
Most Extreme Differences	Absolute		,115
	Positive		,115
	Negative		-,066
Kolmogorov-Smirnov Z			1,055
Asymp. Sig. (2-tailed)			,216
Monte Carlo Sig. (2-tailed)	Sig.		,196 <sup>c</sup>
		Lower Bound	,186
		Upper Bound	,206

Source: Data Processing, 2022

In the table, it can be seen that the Monte Carlo significance value is sig. (2-tailed) obtained a result of 0.196 which is higher than 0.05, so the data is normally distributed. Thus, the regression model meets the normality test requirements.

##### 3.1.2 Heteroscedasticity Test

**Table 2. Heteroscedasticity Test**

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,400	,125		3,211	,002
	Investement Decision	,000	,001	,086	,570	,570
	Funding Decision	-,045	,024	-,282	-1,870	,065
	Interest Rate	-,029	,031	-,103	-,945	,347

Source: Data Processing,2022

The investment decision variable obtained a significance result of 0.570, greater than 0.05. The funding decision variable obtained a significance result of 0.065 which is greater than 0.05. The interest rate variable obtains a significance value of 0.347 which is greater than 0.05. The significance value of the three variables is above 0.05, so it can be said that the model does not have symptoms of heteroscedasticity. Thus, the model passes the heteroscedasticity test.

### 3.1.3 Auto Correlation Test

**Table 3. Autocorrelation Test**

Model Summary <sup>b</sup>						
Model	R	R Square	Adjusted Square	R Std. Error of the Estimate	Durbin-Watson	
1	,269 <sup>a</sup>	,072	,037	,17744	1,757	

Source: Data Processing,2022

From the table results above, compare the calculated DW value with the table DW value. The DW value of the table with k=3 and n=84 is 1.7199. The model does not have autocorrelation if  $dU < DW < 4-dU$ . The value of DW counts: 1,757, dU: 1,7199, and  $4 - dU$  : 2,2801. The results of the comparison carried out showed that  $1.7199 < 1.757 < 2.2801$ . So the regression model does not contain symptoms of autocorrelation. Thus, the regression model passes the autocorrelation test.

### 3.1.4 Multicollinearity Test

**Table 4. Multicollinearity Test**

Coefficients <sup>a</sup>			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Investment Decision	,511	1,956
	Funding Decision	,514	1,945
	Interest Rate	,990	1,010

Source: Data Processing,2022

The VIF value of the investment decision variable is 1.956, the VIF value of the funding decision variable is 1.945, and the VIF value of interest rates is 1.010. The three variables obtained VIF results of less than 10. The Tolerance value for the investment decision variable was 0.511, the Tolerance value for the funding decision variable was 0.514, and the Tolerance

value for interest rates was 0.990. The three variables obtained a Tolerance value greater than 0.1. So, it can be concluded that the regression model does not contain symptoms of multicollinearity. Thus, the regression model passes the multicollinearity test.

### 3.2 Multiple Linear Regression Test

**Table 5. Multiple Linear Regression Test**

		Coefficients <sup>a</sup>			
Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	1,331	,238		5,601
	Investment Decision	,002	,001	,241	1,614
	Funding Decision	-,108	,046	-,350	-2,351
	Interest Rate	-,083	,059	-,150	-1,399

Source: Data Processing, 2022

Based on the results of the data analysis, the following regression equation is obtained.

$$\gamma = 1,331 + 0,002X_1 + (-0,108)X_2 + \varepsilon$$

### 3.3 Moderation Test

**Table 6. Moderation Test**

		Coefficients <sup>a</sup>			
Model		Unstandardized Coefficients		Standardized Coefficients	t
		B	Std. Error	Beta	
1	(Constant)	1,289	,302		4,262
	Investment Decision	-,019	,011	-,2858	-1,716
	Funding Decision	,507	,428	1,640	1,185
	Suku Bunga	-,072	,076	-,131	-,951
	Interaction between Investment Decisions and Interest Rates	,006	,003	3,159	1,872
	Interaction between Funding Decisions and Interest Rates	-,164	,111	-2,133	-1,478

Source: Data Processing, 2022

Based on the results of the data analysis, the following moderation equation was obtained.

$$\gamma = 1,289 + (-019)X_1 + 0,507X_2 + (-0,072)Z + 0,006(X_1 * Z) + (-0,164(X_2 * Z)) + \varepsilon$$

### 3.4 Discussion

#### 3.4.1 The Influence of Investment Decisions on Company Value in Property and Real Estate Sector Companies



The statistical results of linear regression in the t test show a significance value of 0.110 which is greater than the error tolerance  $\alpha = 0.05$  with a regression coefficient value of 0.002. This means that it can be said that investment has a positive but not significant effect on company value. So, the hypothesis stating investment decisions has a positive effect on company value is rejected

Investment decisions in research are described using the PER ratio (Per Earnings Ratio). PER is used to find out or assess whether the price of a share is expensive or cheap by calculating the share price divided by profit per share. The greater the PER result, the more expensive the share price. Investments are made with the hope of getting returns in the future which can provide benefits for the company. Investments made by companies are based on the level of liquidity or cash availability that the company has. Investment decisions that do not affect the value of the company can occur due to several factors, such as inappropriate management in choosing the type of investment to be made, future government policy/regulatory factors, economic, social and cultural changes. The results of this research are research conducted by [9] and [10] which state that investment decisions have no effect on company value.

#### 3.4.2 The Influence of Funding Decisions on Company Value in Property and Real Estate Sector Companies

The statistical results of linear regression in the t-test show a significance value of 0.021, which is smaller than the error tolerance  $\alpha = 0.05$  with a regression coefficient value of -0.108. This means that it can be said that the funding carried out by the company has a negative and significant effect on the value of the company. So, the hypothesis stating Investment decisions has a negative effect on accepted company value.

Funding decisions in this research are described using the DER ratio (Debt to Equity Ratio). DER is used to find out how much benefit the funding provides to increase the company's equity or capital. Funding decisions influence company value because companies use funding to assist operational activities to maximize company profits. With the funding provided, the company will make maximum use of its resources to increase company productivity which will have an impact on increasing company profits. These profits will increase the company's value. In this way, funding decisions made by the company will affect the value of the company. Funding decisions made by the company will increase the value of the company, but only up to a certain point. This is in accordance with theory trade off. In theory Trade Off It is said that the use of funds will increase the value of the company but only up to a certain point. If a company has debt that exceeds the intended point or has too much debt, the company will pay a lot of interest which will cause a decrease in the company's profits/or profits. With a decrease in company profits/profits, the value of the company will also decrease. This is in accordance with research conducted by [11] and [12] which stated that funding decisions have a negative and significant effect on company value.

#### 3.4.3 The role of interest rates in moderating the relationship between investment decisions and company value in property and real estate sector companies

The statistical results of the Moderation test with MRA show a result of 0.065 which is greater than the significance value of  $\alpha = 0.05$ . This means that interest rates do not affect the strength or weakness of the relationship between investment decisions and funding decisions. So, the hypothesis stating interest rates moderate the relationship between investment decisions and company value is rejected.

Interest rates are an indicator that can be used to assess the economic condition of a region or country. The government's monetary policy issued will of course directly or indirectly

affect the continuity of a company's activities. The increase or decrease in interest rates that occurs does not have a role in influencing the relationship between investment and company value, this could be because the company does not really pay attention to whether the increase or decrease in interest rates will affect the returns obtained by the company. The company is only concerned that the investment made will provide future returns, whether small or large. Company management has a range of increases or decreases in interest rates which will influence investment decisions. If the increase and/or decrease in interest rates is not too significant, this is not yet a special concern for company management.

#### 3.4.4 The role of interest rates in moderating the relationship between funding decisions and company value in property and real estate sector companies

The statistical results of the Moderation test with MRA show a result of 0.143 which is greater than the significance value of  $\alpha=0.05$ . This means that interest rates have no role in influencing the strength or weakness of the relationship between investment decisions and company value. So, the hypothesis stating interest rates moderate the relationship between funding decisions and firm value is rejected.

Interest rates are one of the policies regulated by the government and indirectly affect the sustainability of company activities. Interest rates do not affect the relationship between funding decisions and company value because the company still uses financing other than debt to meet the company's operational needs. The company will also continue to provide funding even if interest rates are rising or falling so that it can still meet the company's operational needs. Even though high interest rates will make companies incur higher interest expenses, this does not make companies selective in providing funding because if funding is needed, it must be taken. So high or low interest rates will not affect the company's funding.

## 4. Conclusion

Based on the study's results, investment decisions are positively but insignificantly affecting firm value, while funding decisions significantly negatively impact firm value, interest rates do not moderate the relationship between investment decisions and firm value, and interest rates do not moderate the relationship between funding decisions and firm value.

In order to achieve long-term financial goals, it is hoped that the research's findings will give investors, decision-makers, and company management important insight into the significance of funding and investment decisions. This study can also add to the body of knowledge in the fields of funding decisions, investment decision theory, and financial management.

The author provides suggestions for researching variables in other company sectors on the Indonesia Stock Exchange, including other additional variables in similar research and re-examining the moderation of economic factors such as interest rates in other company sectors on the Stock Exchange. Indonesia

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