

The Effect of Leverage and Managerial Ownership on Company Risk Using Derivative Instruments as Moderating Variables

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Abstract

This study aims to analyze the effect of leverage, managerial ownership and use of derivatives on corporate risk of manufacturing companies on the Indonesia Stock Exchange IDX.. This research was conducted using a quantitative approach. The population in this study are all manufacturing companies listed on the IDX. The sampling technique used was purposive sampling method. The companies included in the sample of this study are manufacturing companies that use derivative instruments and are always listed on the IDX from 2022 to 2024. A total of 12 companies can be used as final samples in this study. Based on the results of regression analysis and mediation test, it can be concluded that the leverage variable has a negative effect on company risk, the managerial ownership variable has a significant positive effect on the Usage of Derivative Instruments. The variable Usage of Derivative Instruments has a significant negative effect on company risk. The Usage of Derivative Instruments is able to mediate the relationship between managerial ownership and corporate risk.

Keywords : Leverage; Managerial Ownership; Derivative Instruments; Company Risk.

Introduction

Companies have a very important role for the economy of a country. The company is also the main factor that determines the movement of the business world. In 2022, 606 companies were listed on the Indonesia Stock Exchange. Of all companies listed on the Indonesia Stock Exchange, 28% are manufacturing companies. But now, the main challenge for the company is how the company is able to face the increasing risk. Globalization, liberalization and technological advances cause companies to have various kinds of risks that must be faced such as exchange rate risk, risk of changes in interest rates, market risk, credit risk, operational risk, technology risk, credit risk, liquidation risk, risk of changes in commodity prices, crisis risk. global finance and others (Saunders & Cornett, 2014). These risks are difficult to avoid, can occur at any time and at worst can result in bankruptcy for the company. The volatility of the company's stock returns can be used to measure all risks faced by the company (Bartram et al., 2009). Study about how face risk company very important for done .

Based on previous research, liquidity, managerial ownership and the use of derivative instruments are important factors that can affect company risk (Biase & Apolito, 2012; Capozza & Seguin, 2003; Gatopoulos & Louberge, 2013). Leverage is a financial ratio that reflects the company's ability to meet its total debt needs by using the company's total equity. The higher the leverage of a company, the lower the risk because the company has the ability to meet its short-term needs (Biase & Apolito, 2012). Managerial ownership is the number of shares owned by management from all share capital in the company. Managerial ownership has an important role to invest in assets that have lower risk and decide to use a lower proportion of debt, so that the total risk of the company tends to decrease (Capozza & Seguin, 2003). Derivative

instruments are tools for companies and other users to reduce company risk (Gatopoulos & Louberge, 2013). When a company reduces its risk exposure by using derivatives, this is referred to as hedging.

In addition, leverage and managerial ownership can also affect the use of derivatives by companies as hedging instruments (Lantara, 2010; Biase & Apolito, 2012; Tufano, 1996). When companies have leverage problems, they tend to use derivative instruments to overcome this problem (Lantara, 2010). Companies with a larger proportion of managerial ownership tend to have greater motivation to use derivatives as a risk management tool (Tufano, 1996). Therefore, it can be observed that the use of derivative instruments can have a mediating role. This study aims to analyze the effect of liquidity and managerial ownership on the use of derivative instruments and company risk in manufacturing companies listed on the Indonesia Stock Exchange (IDX). In-depth research on the effect of liquidity and managerial ownership on the use of derivative instruments and corporate risk is still very much needed in Indonesia. The implementation of this research is expected to help companies in Indonesia in tackling corporate risk, so that companies are able to survive and contribute to the Indonesian economy.

Risk can be defined as an adverse event (Hanafi, 2014). The types of risks faced by the company are physical asset risk, employee risk, legal risk, interest rate risk, currency exchange risk, market risk, credit risk, leverage risk, operational risk, and country risk. Meanwhile, according to Horne & Warchowicz (2008) company risk is categorized into three types of risk, namely business risk, financial risk, and total risk. Aggregate company risk can be measured by calculating the volatility of the company's stock returns (Guay, 1999). Thus, the company risk referred to in this study is the daily stock return volatility for one year in manufacturing companies on the IDX for the 2018-2024 period.

Literature Review

Signal theory is a guide given by the company's internal parties to external parties regarding the company's future prospects (Brigham and Houston, 2011). A hint is given because of the asymmetry between internal parties who have more information about the condition of the company than external parties. Signal theory illustrates that high or low levels of debt in the capital structure used by the company can be information that distinguishes the good or bad condition of the company. Not only paying attention to the use of debt, signal theory reveals that companies with the performance shown by management. A good management will try to provide information about the company to investors to increase investor confidence. Based on Hussainey (2011) the market considers that and an increase in dividend payments is a signal of an increase in the company's current performance and prospects for the future.

Leverage reflects the company's ability to meet its short-term needs by using the company's current assets Horne & Warchowicz (2008). The level of leverage in a company also affects the company's ability to take available investment opportunities. If the company is not able to take investment opportunities due to short-term liquidity constraints, the company tends to use derivative instruments by means of hedging to overcome this problem (Froot, 1993). Research by Carter & Sinkey (1998) concludes that leverage problems in a company are closely related to the need to use derivatives as hedging instruments. Lantara's research (2010) proves that the company's leverage is very influential on the use of derivative instruments negatively and significantly. The company's liquidity level can be measured by calculating the company's Current Ratio.

H1: Leverage has a negative and significant effect on the use of derivative instruments.

Ownership structure is an important factor in corporate governance that can affect the use of derivatives. In his research, Lantara (2010) stated that companies that have a larger proportion of shares held by managerial, then company leaders have a greater motivation to use derivative instruments to reduce risk and increase firm value. This is because the management of the company is part of the shareholders so that it has the same goal as other shareholders, namely to increase the value of the company. Research by Tufano (1996) found empirical evidence that managers who have larger shareholdings tend to use derivatives as a hedging tool.

H2: Managerial Ownership has a positive and significant effect on the Use of Derivative Instruments.

Leverage is used as a tool to measure how far a company relies on creditors to finance assets company. Companies that have high leverage mean very depend on external borrowing to finance its assets, whereas Companies that have low leverage are more likely to finance investment with their own capital. Thus the higher Leverage means the higher the risk because there is a possibility, the company unable to pay its debt obligations, both in the form of principal and the flower, Sartono (2001). To minimize the costs incurred in connection with the conflict interests between managers and shareholders. Shareholders include a third party for monitoring fees / the supervision. This is known as the control hypothesis, that is for Minimizing actions will benefit oneself taken by managers, companies that have high free cash flow with low growth rates will tend to be more increase debt, with the logic of utilizing free cash flow that available will be invested in projects that have a net positive present value and will increase the value of the company. In this case, the manager's actions are limited by the debt covenants set by debt holders.

H3: Leverage has a positive and significant effect on company risk

Managerial ownership in the company is believed to be able to improve the company's performance because with managerial ownership the company's leaders (board of directors and board of commissioners) will be encouraged to carry out their duties properly and supervise efficiently (Brickley et al., 1988). When the company has managerial ownership, the directors and commissioners are also part of the shareholders, so they have the same goals as other shareholders, namely increasing company value and reducing risk. Jensen & Murphy (1990); Chung & Pruitt (1994) concluded that board ownership can improve firm performance. In addition, the research of Chen et al., (1998) found evidence that managerial ownership can reduce market risk. Furthermore, Capozza & Seguin (2003) stated that companies that have a higher proportion of insider ownership tend to invest in assets that are not risky and use a lower proportion of debt in their capital structure, so that the total risk of the company tends to decrease. Reduce.

H4: Managerial ownership has a negative and significant effect on company risk

Modigliani & Miller (1963), developing the classical theory of funding decisions, revealed that corporate risk management is irrelevant because shareholders are able to create a well-diversified stock portfolio with the assumption of a perfect capital market. However, this does not happen because in the real world there is no perfect capital market. Smith & Stulz (1985) developed a theory of corporate hedging which states that imperfect capital markets create conditions that hedging is economically justified. Research by (Guay, 1999) found that companies that use derivatives for hedging experience a significant reduction in corporate risk. There are several types of derivatives that companies can use, for example interest rates, foreign exchange and commodity derivatives. Each of these types of derivatives can be used to manage each type of risk such as interest rate risk, foreign exchange risk and investment risk. This study attempts to capture the total number and all types of derivatives used by the company. The use of derivatives by means of hedging is able to reduce company risk by reducing expectations of financial distress costs and reducing tax costs (Gatopoulos & Louberge, 2013). Therefore, it is clear that the use of derivatives is very beneficial for companies to reduce costs, maintain and maximize the value of the company indicated by the company's stock price, and at that time the company's risk can be reduced. (Guys, 1999). Company risk is measured by the total risk calculated by the annual standard deviation of daily stock returns over the years (Guay, 1999).

H5: The use of Derivative Instruments has a negative and significant effect on company risk

As previously explained, leverage is suspected to have a negative effect on Company Risk. Company liquidity can be used as a measure to assess the company's financial performance. Good financial performance, as measured by the leverage ratio indicates that the company has a good health condition, so that the company's risk also tends to decrease (Chun & Ramasamy, 1999; Hardwick & Adams, 1999; Biase & D'Apolito, 2012).

Leverage is also suspected to have a negative effect on the Use of Derivative Instruments. In running its business, of course, the company has experienced financial difficulties or problems. The company's leverage can be a reference or an assessment of whether the company is experiencing financial problems. Poor

financial performance, which is reflected in the level of leverage ratios, indicates that the company faces various financial problems such as short-term liquidity, financial difficulties, cash shortages (Froot et al., 1993; Bartram et al., 2009). . This financial problem can be solved by using derivative instruments.

The use of such Derivative Instruments is suspected to have a negative impact on the Company's Risk. The purpose of using derivative instruments is as a tool to manage company risk through hedging techniques (McDonald, 2006). Companies that are able to manage their risk by using derivative instruments through hedging have a tendency to reduce the risk faced by the company (Guay, 1999).

Based on the description of several empirical studies, it can be concluded that the use of derivative instruments has a mediating role in this study. Leverage variables affect the use of derivative products (Froot et al., 1993; Bartram et al., 2009). Leverage variables affect firm risk (Hardwick & Adams, 1999; Biase & D'Apolito, 2012). Variable Use of Derivative Instruments affects the company's risk (Guay, 1999). Some of these studies can build a new concept where the use of derivative instruments has a mediating role between leverage and company risk.

H6: The use of Derivative Instruments is able to mediate the relationship between leverage and company risk

Managerial ownership is one of the indicators in corporate governance that affects the success of a company. Poor corporate governance, one of which is reflected in the level of managerial ownership, can result in various problems such as financial pressure, possible bankruptcy and agency conflicts (Elloumi & Gueyie, 2001; Daily et al., 2003). This causes the company's risk to tend to increase (Bukley et al., 2007; Salhi & Boujelbene, 2012). Previous research also explains that managerial ownership is related to the use of derivative instruments. With the increase in the number of managerial ownership in a company, the company has a better ability to make all the best decisions for the company, one of which is the decision to use derivative products (Borokhovich et al., 2004). This is because the company's managerial acts as a shareholder so that it has the same goal as other shareholders, namely maximizing company value. Therefore, managerial ownership is suspected to have a positive effect on the Use of Derivative Instruments. Empirical research has revealed that the use of derivative instruments can reduce firm risk (Guay, 1999; Zhang, 2009). Derivative instruments have a function as a company risk management tool through hedging techniques (McDonald, 2006). Companies that hedging with derivative instruments aims to reduce risk (Hull, 2009). Based on the description of several empirical studies, it can be concluded that the use of instrument derivatives has a mediating role in this study. Managerial ownership variables affect the use of derivative products (Borokhovich et al., 2004; Osuoha, 2013). Managerial ownership variables affect the company's risk (Bukley et. al., 2007; Salhi & Boujelbene, 2012). Variable Use of Derivative Instruments affects the company's risk (Guay, 1999). Some of these studies can build new concepts where the use of derivative instruments has a mediating role between managerial ownership and company risk.

H7: The use of Derivative Instruments is able to mediate the relationship between managerial ownership and firm risk.

Methodology

The population in this study are all companies listed on the Indonesia Stock Exchange from 2022 to 2024, totaling 136 companies. The sampling technique in this study was purposive sampling method. Purposive sampling method is a sampling technique based on the criteria determined by the researcher. The sampling criteria used in this study are manufacturing companies that use derivative instruments that are always listed on the IDX for the period 2022 to 2024. There are 12 manufacturing companies that meet the sample criteria.

Leverage is a financial performance that shows the company's ability to meet its short-term needs. The company's liquidity in this study is measured using the debt to equity ratio which is calculated by dividing total debt by total equity in manufacturing companies on the IDX from 2022 to 2024. The scale of this data is a ratio and the unit is percent.

Managerial Ownership (MO) is the proportion of the number of shares owned by the directors and commissioners in the company compared to the total number of shares of the company. This proportion is measured by dividing the number of shares owned by directors and commissioners by the number of shares in manufacturing companies on the IDX from 2022 to 2024. The scale of this data is ratio data and the unit is a percentage.

Use of Derivative Instruments (DERIV) is the value of the derivative instrument used by the company or the amount of funds issued in the Use of Derivative Instruments as a risk management tool by manufacturing companies on the IDX in 2022 to 2024. The value of derivatives used by the company includes all types of derivatives used. The total value of the derivatives used by the company in this study was obtained from the annual reports of the sample companies, by adding up the fair value of the derivatives displayed in the financial statements, namely the company's balance sheet. This variable is measured by calculating the natural logarithm of the total value of the company's derivatives.

The Corporate Risk (RISK) used in this study is the daily stock return volatility of manufacturing companies on the IDX from 2022 to 2024. This measurement refers to previous research by Guay (1999); Bartram et al., (2008) who said that the measurement of risk in the aggregate can be measured using the volatility of stock returns.

The first data analysis conducted in this study was descriptive statistics. Descriptive statistics is a data analysis method used to describe or describe the data that has been collected (Sugiyono, 2017). Descriptive statistics in this study will calculate the average, standard deviation, percentage of sample data for all variables with ratio data such as leverage, managerial ownership, Use of Derivative Instruments, and company risk.

The second data analysis conducted in this study is inferential analysis. Inferential analysis is used to test the hypotheses formulated in this study. The inferential analysis technique used in this study is multiple linear regression analysis to test the hypothesis using the SPSS program. Multiple linear regression analysis technique can be used to test how much influence the independent variables have on the dependent variable in the empirical research model. Multiple linear regression equation model is the most appropriate regression model to analyze the empirical model of this study, because in the empirical model there are 2 independent variables and 2 dependent variables. Furthermore, this study uses the method of path analysis (path analysis). Path analysis is used to determine whether the independent variable has a direct or indirect effect on the dependent variable.

Result and Discussion

Descriptive Statistical Analysis

Descriptive statistical analysis was conducted to provide an overview or description of research variables consisting of Leverage (DER), Managerial Ownership (MO), Use of Derivatives (DERIV) and Company Risk (RISK) through the average value (mean), maximum value, minimum value. and standard deviation. The complete descriptive statistics can be seen in Table 1.

Table 1. Descriptive Statistics of Research Variables					
	N	Minimum	Maximum	Average	Standard Deviation
DER	36	63.60	373.90	152.06	85.49
MO	36	0.00	59.63	4.59	10.43
DERIV	36	2.60	13.80	9.06	2.04
RISK	36	1.00	4.30	2.58	0.87

Source: Secondary data processed

The Company Risk Variable (RISK) has a minimum value of 1.00, namely the Indomobil Sukses International Tbk company in 2024, and the maximum value of 4.30 is the Unggul Indah Cahaya Tbk company in 2020. The Variable Use of Derivatives (DERIV) has a minimum value of 2.60 namely the

Krakatau Steel Tbk company in 2016, and the maximum value of 13.80 is the Astra International Tbk company in 2022. The Leverage variable (DER) has a minimum value of 63.60%, namely the Multi Bintang Indonesia Tbk company in 2024, and the maximum value is 373, 90%, namely at the Selamat Sempurna Tbk company in 2020. The Managerial Ownership (MO) variable has a minimum value of 0.00, namely in several manufacturing companies that do not implement the managerial share ownership program during 2022 to 2024. The maximum value is 59.63%. at the company Krakatau Steel Tbk in 2022.

Testing the strength and suitability of the model in equation 1. The model of equation 1 in this study is: $DERIV = a_1 + b_1CR + B_2MO + 1$. The equation consists of 1 dependent variable, namely Derivative Use which is proxied by the natural logarithm of the fair value of the company's derivative use and 2 the dependent variable is the liquidity ratio (CR) and managerial ownership (MO).

Table 2. Normality Test Results of Equation Model 1			
			Unstandardized Residual
	N		36
	Normal Parameters a,b	mean	.0000000
		Std. Deviation	1.69643196
		Absolute	.081
	Most Extreme Differences	Positive	.081
		negative	-.060
	Kolmogorov-Sirnov Z		.081
	asyp. Sig. (2-tailed)		.200

Source : Processed data 2025

The results of the normality test in Table 2 show the value of asyp.Sig. (2-tailed) of 0.200 ($p > 0.05$). This shows a normal distribution of data, so that the data can be used for further regression analysis.

Classical assumption testing is done by testing multicollinearity, heteroscedasticity and autocorrelation. This test is carried out to meet the assumptions specified in the linear regression analysis technique or Ordinary Least Square (OLS). The results of the classical assumption test: multicollinearity, heteroscedasticity and autocorrelation can be seen in Table 3.

Table 3. Testing Results of Classical Assumption Model Equation 1			
Independent Variables	Multicollinearities	Heteroscedasticity	Autocorrelation
	(VIP)		(DW-test)
Leverage (DER)	1,001	t= -0.468 ; sig= 0.643	1,590
Managerial Ownership (MO)	1,001	t= -0.979 ; sig= 0.335	1,590

Source : Processed data, 2025

The VIP test results produce VIP values for all independent variables less than 10, so that all variables are free from multicollinearity problems. The results of the multicollinearity test in Table 3 present the VIP value for each independent variable less than 10 ($VIP < 10$), so it can be concluded that all independent variables included in the regression model are free from multicollinearity problems. The results of the heteroscedasticity test as presented in Table 3 show that all independent variables included in the regression model are not statistically significant ($sig = > 0.05$) have an effect on the residuals, so that the regression model is free from heteroscedasticity problems. Testing whether there is autocorrelation in the regression model is done using the Durbin-Watson test. The sample values of dL, dU, 4-dU, and 4-dL are 36 with = 0.05 namely 1.3537 (dL), 1.5872 (dU), 2.4128 (4-dU), and 2.6463 (4-dL). So, if the Durbin-Watson value lies between dU to 4-dU or 1.5872 to 2.4128, the regression model is free from autocorrelation symptoms.

The results of the autocorrelation test with the Durbin-Watson test as presented in Table 3 show that the DW-test value is 1.590, which means the regression model is free from autocorrelation symptoms.

Testing the suitability of the model (goodness of fit) is done by looking at the R-square value and the significance of F. The R-square value explains the ability of the independent variable to influence the dependent variable. While the significance of F describes the level of confidence that the model is appropriate.

Table 4. R-Square Calculation Results and Significance of F Equation 1						
Model		R	R Square	Adjusted R Square	Std. Error of the Estimate	
1		.558	.312	.270	1,74708	
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	45,580	2	22,790	7.466	.002***
1	Residual	100,726	33	3.052		
	Total	146,306	35			
	Information :					
	* Significant at 10% level					
	** Significant at 5% level					
	***Significant at 1% level					

Source : Processed data, 2025

The test results with the SPSS program show the Rsquare value of 0.312 and F of 7.466 with sig. 0.002. Thus, the Leverage Ratio (DER) and Managerial Ownership variables included in the regression model have the ability to explain the Use of Derivative Products (DERIV) of 31.2 percent, while the remaining 68.8 percent is explained by other factors not included in the regression model, for example profitability ratios, activity ratios, directors, independent commissioners and external factors. The regression model used according to empirical evidence meets the model fit at a significance level of less than 1 percent (sig. 0.002). The results of the calculation of R-square and the significance of F can be seen as presented in Table 4.

Testing the Strength and Suitability of the equation model 2. The equation model 1 in this study is: $RISK = a_1 + b_{11}DER + b_{12}MO = b_{13}DERIV + 2$. The equation consists of 1 variable, namely company risk (RISK), and 3 dependent variables of leverage ratio (DER), managerial ownership (MO) and use of derivatives (DERIV).

The results of the normality test in Table 5 show the asymp value. Sig (2-tailed) was 0.200 ($p > 0.005$). This shows a normal distribution of data, so that the data can be used for further regression analysis.

Table 5. Normality Test Results of Equation Model 2		
		Unstandardized Residual
N		36
Normal Parameters a,b	mean	.0000000
	Std. Deviation	.81457074
	Absolute	.096
Most Extreme Differences	Positive	.052
	negative	-.096
Kolmogorov-Sirnov Z		.096
asypm. Sig. (2-tailed)		.200

Source : Processed data, 2025

Classical Assumption Testing. Classical assumption testing is done by testing multicollinearity, heteroscedasticity and autocorrelation. This test is carried out to meet the assumptions specified in the linear regression analysis technique or Ordinary Least Square (OLS). The results of the classical assumption test: multicollinearity, heteroscedasticity and autocorrelation can be seen in Table 6.

Table 6. Testing Results of Classical Assumption Model Equation 2			
Independent Variables	Multicollinearities	Heteroscedasticity	Autocorrelation
	(VIP)		(DW-test)
Leverage (DER)	1.007	t= 0.218 ; sig= 0.829	2.264
Managerial Ownership (MO)	1,452	t= -0.725 ; sig= 0.474	2.264
Usage of Derivative	1,453	t= -1.092 ; sig= 0.335	2.264
Instruments (DERIV)			

Source : Processed data, 2025

The results of the VIF test produce VIF values for all independent variables less than 10, so that all independent variables are free from multicollinearity problems. The results of the multicollinearity test in Table 6 show that the VIF value for each independent variable is less than 10 ($VIF < 10$), so it can be concluded that all independent variables included in the regression model are free from multicollinearity problems. The results of the heteroscedasticity test as presented in Table 6 show that all independent variables included in the regression model are not statistically significant ($sig = > 0.05$) have an effect on the residuals, so that the regression model is free from heteroscedasticity problems. The results of the autocorrelation test with the Durbin-Watson test as presented in Table 6 show the DW test value of 2.264, which means the regression model is free from autocorrelation symptoms.

Model Fit Testing. Testing the suitability of the model (goodness of fit) is done by looking at the R-square value and the significance of F. The R-square value explains the ability of the independent variable to influence the dependent variable. While the significance of F describes the level of confidence that the model is appropriate. The test results with the SPSS program show an Rsquare value of 0.126 and an F value of 2.533 with sig. 0.025. So, the variables of Leverage Ratio (DER), Managerial Ownership (MO) and Use of Derivative Products (DERIV) which are included in the regression model have the ability to explain Corporate Risk (RISK) of 12.6 percent, while the remaining 87.4 percent. explained by other factors not included in the regression model. The regression model used according to empirical evidence meets the model fit at a significance level of less than 5 percent (sig. 0.025). The results of the calculation of R-square and the significance of F can be seen as presented in Table 7.

Table 7. R-Square Calculation Results and Significance of F Equation 2						
Model		R	R Square	Adjusted R Square	Std. Error of the Estimate	
1		.355a	.126	.044	.85190	
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	3.339	2	1.113	2,533	.025**
1	Residual	23,223	33	.726		
	Total	26,562	35			
	Information :					
	* Significant at 10% level					
	** Significant at 5% level					
	***Significant at 1% level					

Source : Processed data, 2025

Regression Testing Equations 1. Regression equation 1 consists of the leverage ratio (CR) and managerial ownership (MO) variables as independent variables and the use of derivative instruments (DERIV) as the dependent variable. The form of the equation is: $DERIV = b_{11}DER + b_{12}MO + \varepsilon_1$

Table 8. Summary of Empirical Model Regression Test Results Equation 1					
Model	Unstandardized		Standardized Coefficients	t	sig.
	Coefficients				
	B	Std. Error	Beta		
(Constant)	9,336	,611		15,290	,000
DER	.001	,003	,062	,430	,670
MO	,109	0.028	,557	3,854	.001

Source : Processed data, 2025

Regression test equation 2. Regression equation 2 consists of the variable leverage ratio (DER), managerial ownership (MO), and the use of derivative instruments (DERIV) as the independent variable and firm risk (RISK) as the dependent variable. The form of the equation is: $RISK = b_{11}DER + b_{12}MO + b_{13}DERIV + \varepsilon_2$

Table 9. Summary of Empirical Model Regression Test Results Equation 2					
Model	Unstandardized		Standardized Coefficients	t	sig.
	Coefficients				
	B	Std. Error	Beta		
(Constant)	4,308	,847		5.089	,000
DER	,000	,002	-,035	-,213	,833
MO	-,015	0.017	-,177	-,886	,382
DERIV	-,177	,085	-,416	-2,088	0.045

Source : Processed data, 2025

Regression testing was carried out with multiple regression and the SPSS 21 program was used. The summary of the results of the regression testing on the equation 2 model can be seen in Table 9. Based on Table 9, the regression equation can be written as follows: $RISK = -0.035 - 0.117MO - 0.416DERIV$. The value of the leverage coefficient (DER) of 0.035 (negative) means that the leverage ratio has a negative effect on company risk. The coefficient of managerial ownership is 0.177 (negative), meaning that managerial ownership has a negative effect on company risk. The coefficient value of the use of derivative instruments (DERIV) is 0.416 (negative), meaning that the use of derivative instruments has a negative effect on company risk. The use of derivative instruments (DERIV) was 12.6%, while the remaining 87.4% was caused by other external factors, such as company characteristics, economic conditions, culture and others.

The results of the calculation of regression analysis 1 are as follows: $DERIV = 0.062DER + 0.55MO$. Based on the results of the regression analysis, it can be concluded that liquidity (CR) has a positive effect on the use of derivatives. Meanwhile, managerial ownership has a positive effect on the use of derivatives.

Equation 2 consists of three independent variables, namely leverage (DER), managerial ownership (MO), and use of derivatives (DERIV) and one dependent variable, namely firm risk (RISK). The result of the calculation of the regression analysis of equation 2 is $RISK = -0.035DER - 0.117MO - 0.416DERIV$. Based on the results of the regression analysis, it can be concluded that liquidity, managerial ownership, and the use of derivatives have a negative effect on company risk.

If the regression results in equation 1 and equation 2 are included in the empirical research model, the path analysis results will be obtained that can be observed and analyzed whether the variable using derivative (DERIV) is a moderating variable or not. The results of the path analysis can be interpreted as in Table 10.

Table 10. Interpretation of Empirical Model Path Analysis			
Variable	Information	Usage of Derivative	Company Risk
		Instruments (DERIV)	(RISK)
Leverage (DER)	No Significant Effect on	No Effect	No Effect
	DERIV and RISK		
Managerial Ownership (MO)	Significant Effect on DERIV	Direct Effects	No Effect
Usage of Derivative Instruments (DERIV)	No Significant Effect on RISK	-	Direct Effects

Source : Summary of data processing results

Based on the results of the empirical path model analysis calculations that can be tested with existing hypotheses, it can be seen from the leverage variable that has no significant effect on the derivative instrument variable. So, hypothesis 1 which states that leverage has a negative and significant effect on the use of derivative instruments is rejected (H1 is rejected). Managerial ownership has a significant direct influence on derivative instruments. It can be concluded that hypothesis 2 which states that managerial ownership has a positive and significant effect on the use of derivative instruments is accepted (H2 is accepted).

Leverage variable has no significant effect on company risk. So, hypothesis 3 which states that leverage has a negative and significant effect on company risk is rejected (H3 is rejected). The relationship between Managerial Ownership and Company Risk was found to have no significant effect. It can be seen that Hypothesis 4 which states that Managerial Ownership has a negative and significant effect on Company Risk is rejected (H4 is rejected). There is a significant direct effect between the use of derivative instruments on company risk. Hypothesis 5 which states that the use of Derivative Instruments has a negative and significant effect on company risk is acceptable (H5 is accepted).

Relationships that don't significant occur on variable leverage to instrument derivative variable and also variable risk company . Results analysis calculation show that influence no direct (liquidity to risk company through Use Instrument Derivatives) more small than influence direct (leverage to risk company). So could is known that Hypothesis 6 which states that Use Instrument Derivatives capable mediate connection Among leverage with risk company rejected (H6 rejected). Influence direct variable ownership managerial to risk company no significant , however if through Use Instrument Derivatives so influence no directly more big . So that Hypothesis 7 which states that Use Instrument Derivatives capable mediate connection Among ownership managerial with risk company could accepted (H7 accepted). View from Thing the there is three the accepted hypothesis , that is hypothesis second , hypothesis fifth , and hypothesis seventh . Whereas rejected hypothesis there is four that is hypothesis first , hypothesis third , hypothesis fourth , and hypothesis sixth . Results study this could give input to management company that managerial ownership plays an important role in the company's decision to use derivatives in an effort to reduce company risk. This study also supports Smith & Stulz's

(1985) corporate hedging theory that hedging is economically justified by finding the important role of the use of derivatives in reducing corporate risk.

Conclusion and Recommendations

The results of the suitability test and the strength of the model in this study indicate that the regression model used is very good because it is proven to be in accordance with the data. Based on the results of the regression analysis and mediation test, it can be concluded that the managerial ownership variable has a significant positive effect on the use of derivative instruments. The use of Derivative Instruments can mediate the relationship between managerial ownership and company risk. Companies must pay attention to the role of managerial ownership and the use of derivative instruments in reducing company risk. The limitation of this study is that the research period is limited to 3 years. A longer study period can provide better insight. Future research can incorporate other factors into the analysis such as company characteristics, economic conditions and culture.

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