



Hedging In Indonesian Sharia Stock Index Manufacturing Companies

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Abstract

Purpose - This study aims to determine the influence of financial distress, profitability, and liquidity on hedging activities in manufacturing companies listed on the Indonesian Sharia Stock Index during the period 2016-2020.

Method - The analysis in this study uses logistic regression analysis to answer the research questions. The study utilizes purposive sampling technique to determine the sample, and total of 80 samples are obtained from manufacturing companies listed on the Indonesian Sharia Stock Index during the period of 2016-2020.

Result - The results of this study that financial distress, proxied by the Altman Z-score model, does not have a significant effect on hedging activities in manufacturing companies. On the other hand, profitability, proxied by return on assets, has a positive and insignificant effect on hedging activities in manufacturing companies, while liquidity, proxied by the current ratio, has a negative and significant effect on hedging activities in manufacturing companies.

Implication - In this study, uses secondary data obtained from the annual report and financial reports of manufacturing companies listed on the Indonesian Sharia Stock Index during the period 2016-2020.

Originality - Future research is expected to be able to add or replace different proxies, particularly those related to financial distress, will be utilized in the theory of hedging activities. This will expand the discussion on the determinants of hedging policy in manufacturing companies in Indonesia.

Keywords: Hedging, Financial Distress, Profitability, Liquidity.



Introduction

Every country in the world certainly needs interaction with other countries. One of the forms of interaction carried out is economic activities between countries, commonly referred to as international trade (Mahyus, 2014). A simple definition of international trade business is cross-border business activities of certain countries, divided into four types: 1). Foreign exchange, particularly the import/export of commodity goods; 2). Exchange services such as insurance protection, banks, lodging, expert consultants, travel, and transportation; 3). Securities, purchases of domestic bonds or shares; 4). Direct business or foreign capital speculation (Rahman, 2003). International companies in various countries cannot be separated from international trade activities in their business areas through export and import transactions. Manufacturing companies also bear the risks they have to take in expanding their market share to promote wealth and prosperity. Risks can be foreign exchange rate risk, commodity prices, and interest rates (Verawaty et al., 2019).

International companies in various countries cannot be separated from international trade activities in carrying out their business through export and import transactions. Manufacturing companies also bear the risks they have to bear in expanding their market share to promote wealth and prosperity. Risks can be foreign exchange rate risk, commodity prices, and interest rates (Krisdian & Badjra, 2017). Risk is difficult to eliminate, but if the company does not take risks, the company can lose opportunities to make a profit. Risk is the possibility that the results obtained will be inversely proportional to the expected. One alternative to minimize risk is to apply derivatives for hedging instruments in the company's risk management activities. Hedging is used as a tool or instrument to mitigate or eliminate risks from other investments. Hedging or hedging can be done by applying derivative products. A derivative product is a contractual agreement between the parties agreeing to trade a set of assets currently in use at the agreed price but will be used at the date specified in the future contract (Darmawan, 2018). The following is presented the movement of the rupiah exchange rate against the dollar in 2016-2020.



The existence of exchange rate fluctuations from 2016 to 2020, proving that companies that use the foreign exchange as a transaction can face risks in foreign exchange exposure. The losses incurred in the company are seen in the summary of the company's financial statements, so the company will bear more burdens due to foreign exchange exposure. Foreign exchange exposure is susceptibility to changes in the original value of resources, liabilities, or wages written in national currency at unexpected changes in exchange rates. The direct influence of fluctuations in foreign exchange rates is a reduction in sales turnover, evaluation of high prices, and a gradual decrease in profit. This influence can be seen based on the decline in the company's profits, profit per share, and the cost of shares in the capital market (Hamdy, 2010).

In addition, internal factors are also determinants of a company in carrying out hedging policies. These factors include financial distress, profitability and liquidity. Financial distress is a measurement of the financial difficulties of returning a company's obligations to creditors, which is a measure of a company's bankruptcy. Financial distress can also be interpreted as a condition in which the company cannot pay all obligations when they are due. Although financial distress is generally experienced by companies that utilize more debt than their capital, it is also caused by the company's low capacity to create profits through its operational process (Jiwandhana & Triaryati, 2016).

Literature Review

There are several previous studies related to this research, including: Afza (2011) research aims to identify the factors influencing the company's decision to use foreign derivative instruments by using non-parametric tests and logit models. From this study, the results of companies that carry out buying and selling activities in the international market and companies that experience financial pressure will be better if they use foreign derivative instruments for hedging.

Further research was conducted by Ahmed et al. (2014) on the effect of hedging on 288 nonfinancial companies listed on the FTSE-All listed on the London Stock Exchange (LSE) for 2005-2012. This research focuses on foreign



exchange hedging, interest rates and commodity price risk with futures, forwards, swaps, and options. This study shows that the effectiveness of risk management activities has a variable impact according to the company's financial risks and derivative instruments used as hedging. As an example of the results of this study, it was found that the relationship between hedging interest rate risk and the company's financial performance is negative for the overall hedging but positive for hedging with forwarding contracts.

Profitability is the capacity or potential of an enterprise to obtain a profit in a certain period, assets and share capital at a certain level of sales. Return can measure this ratio on Asset-based on research conducted by Ika Elinda Sasmita and Ulil hartanto in 2016 (Sasmita & Hartono, 2019a), obtaining the result that Return on assets has a significant positive influence on hedging decisions. However, the research by Ariani & Sudiarta, (2017) obtained the opposite result: The return on assets to the company's hedging policy has an insignificant negative influence.

Liquidity is the company's capacity to pay short-term liabilities. Measure the level of liquidity of a company, it can be done by using a current proxy ratio. Based on the research carried out by Lestari (2018), obtaining results is current ratio has a positive but insignificant influence on hedging decisions. Meanwhile, the study by Putro and Chabachib 2012 (Putro & Chabchib, 2012) obtained the opposite result, namely that liquidity has a positive but insignificant influence if the company implements a hedging policy as one of the company's risk management instruments.

Hypotheses

The Effect of Financial Distress on Hedging Activities With Derivative Instruments in Manufacturing Companies

Financial distress in this study was proxied using the Altman z-score model. The Altman Z-Score proxies can be formulated, namely:

$$Z = 1,21X1 + 1,4X2 + 3,3X3 + 0,64X4 + 1,0 X5$$



W :

Z = Z-Score

$$X1 = \frac{\text{Working Capital}}{\text{Total Assets}}$$

$$X2 = \frac{\text{Retairned Earning}}{\text{Total Assets}}$$

$$X3 = \frac{\text{EBIT}}{\text{Total Assets}}$$

$$X4 = \frac{\text{Market Value Of Equity}}{\text{Total Liability}}$$

$$X5 = \frac{\text{Total Revenue}}{\text{Total Assets}}$$

A company with a low z-score means that it has a high bankruptcy rate, so it will increase the company's hedging policy. As for a company with a high z-score value, the company has a low bankruptcy rate, so the hedging policy that the company will carry out will also be lower. This supports the research conducted by (Nuzul & Lautania, 2016) dan (Jiwandhana & Triaryati, 2016)

H1: Financial distress negatively affects hedging activities in manufacturing companies

The Effect Of Profitability On Hedging Activities With Derivative Instruments In Manufacturing Enterprises

The profitability in this study was proxied using ROA. The ROA measurement can be formulated as follows:

$$\text{Return on asset} = \frac{\text{Net Profit}}{\text{Total Aset}}$$

Profitability proves the company's capacity to make a profit related to total assets, sales and own capital. In this study, the profitability ratio uses ROA as its proxy. ROA proves the potential that a company has to make a profit by utilizing the resources it has. Companies that have a high degree of productivity will generally develop their business faster. However, the global market is dynamic, so each of its developments can cause considerable losses if the company carries out transactions in large quantities. Therefore, companies need supporting policies such as hedging to reduce these losses. Based on the explanation presented, it can be concluded that roa is a proxy of profitability to positively influence the hedging decisions of manufacturing companies.



H2: Profitability positively affects hedging activities in manufacturing enterprises

The Effect Of Liquidity On Hedging Activities With Derivative Instruments In Manufacturing Enterprises

The liquidity ratio is intended to see the extent to which the company is able to pay its current obligations when it matures. In the study, a current ratio is used as a proxy for liquidity. The current ratio measurement can be formulated as follows:

$$\text{Current ratio} = \frac{\text{Aktiva Lancar}}{\text{Utang lancar}}$$

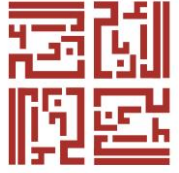
Companies that have a high degree of liquidity will attract investors to fund the company because they can be categorized as healthy companies. Therefore the risks faced will be lower. Consequently, it can be concluded that the lower liquidity value owned by the company will tend to make higher-risk management such as hedging policy will be carried out. On the contrary, the higher the liquidity value held by the company, the lower risk management such as hedging procedures will be carried out. This follows research from Irawan (2014) and Ameer (2010).

H3 = Liquidity negatively affects hedging activities in manufacturing companies.

Methods

Research variables

This study analyzes things that affect hedging activities in manufacturing companies listed in the Indonesia Sharia Stock Index. In this study, hedging bound variables and free variables, namely financial distress, profitability, and liquidity as research variables. The bound variable hedging is measured using dummy data, with the rule that companies that carry out hedging activities using derivative instruments are marked with the number 1. In contrast, companies that do not carry out hedging activities with derivative instruments are marked with the number 0.



Population and Research Sample

The research used all manufacturing companies listed in the Indonesia Sharia Stock Index in 2016-2020 as a data population. Meanwhile, the determination of samples using purposive sampling techniques has the criteria desired by the researcher. The criteria include: Manufacturing companies listed in the Indonesia Sharia Stock Index; Companies that are consistently listed in the Indonesia Sharia Stock Index during the research period; Companies that have accounts receivable in the form of foreign currency; The company presents complete information and financial statements as needed by the researcher.

Analysis Methods

The research used logistic regression analysis techniques in testing the hypothesis. Logistic regression analysis is a type of regression intended to show the relationship of dependent variables with unbound or independent variables, where the bound variables are data in the form of dichotomies or binaries. This regression can be used to estimate and determine the percentage of variants in a bound variable that a free variable can describe and as a determinant of the degree of significance of the overall bound variable that can be classified against a free variable.

Logistic regression analysis in this study aims to measure the influence of free variables on bound variables. Related to this is to determine whether the company is "doing hedging activities" or "not doing hedging activities". The use of this regression is because this study has bound variables in the form of dichotomies and must be measured with dummy data. Mathematically logistic regression is formulated as follows:

$$\ln \left(\frac{P(X_i)}{1-P(X_i)} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \dots + \beta_k X_k$$

Keterangan :

$p(X_i)$ = Probability of dependent variables

β_0 = Constant



$\beta_1, \beta_2, \dots, \beta_k$ = Coefficient

X_1, X_2, \dots, X_k = Independent variables

As shown by Ghozali (2011) and Gujarati (2003), the analysis of logistic regression model tests has several stages, especially in the early stages, namely measuring the overall fit model on data information. The statistics used depend on the likelihood function. The probability L model is the probability of the hypothesized model showing input data. To test the hypothesis of 0 or alternatively, L is changed to -2LogL . The scoping of -2LogL is sometimes called the probability of the constellation χ^2 statistics, where the χ^2 distribution has a degree of chance $n - q$, q , i.e. the quantity of the parameter in the model. The -2LogL measurement can also be used to decide whether independent variables are added to the model in a way that can significantly improve the model fit.

The 2 Cox % Snell's R Square, a measure that will mimic the size of R^2 in multiple regression based on the probability estimation technique, has the most considerable value, which is below 1, then it is not easy to decipher. Nagelkerke's R square is a change of Cox & Snell's coefficients to ensure a variation in values, i.e. from the numbers 0 to 1.

The 3 Hosmer and Lemeshow's Goodness of Fit Test aims to test the hypothesis of 0 empirical data in line with the model (the absence of differences between the model and the data, then the model can be declared appropriate). If the value of Hosmer and Lemeshow's Goodness-of-fit test statistics is equal to or below 0.05, so the hypothesis of 0 is not accepted. This can mean a considerable difference between the models and their observation values.

The 4th Testing of the regression coefficient is carried out to see to what extent each independent variable entering the model affects the dependent variable. The test results are obtained through the SPSS program in the form of a table display of variables in the equation. Based on the table, the value of the statistical wald value and significance coefficient is obtained. To see whether



or not H_0 is accepted, he can use the Wald statistic. At the same time, the probability value (sig) is done by comparing the value of the Wald statistic and the chi-square table. In contrast, the probability value is compared with a significant degree (α) of 5%.

The 5 Classification Tables to estimate incorrect and correct values. For example, the column section shows two predicted values through free variables. In this case, it is vulnerable to being marked with the number one or not vulnerable to being marked with zero. In contrast, the row section shows the value of the bound variable vulnerable (one) or not vulnerable (zero).

Results and Discussion

Description of the Object of Study

Secondary data is used as a collection of data in the study. The secondary data originated through annual reports from manufacturing companies listed in the Indonesia Sharia Stock Index from 2016-2020. The data was obtained from the IDX website, which was reached from the www.idx.co.id so that a total of 180 manufacturing companies were received. In addition, a sample of 16 sample of manufacturing companies was obtained in line with the predetermined purposive sampling criteria.

Descriptive Statistics

This study has 16×5 data = 80 observational data. Based on these 80 data, there are 35 or a percentage of 43.75% of observation data that do not carry out hedging activities using derivative measuring instruments. In contrast, 45 or 56.25% of observation data carry out hedging activities using derivative measuring instruments.

Table. 1 Descriptive Statistics of Research

	N	Minimum	Maximum	Mean	Std. Deviation
Hedging	80	0	1	0,56	0,499
Financial distress	80	0,95	22,70	4,6924	4,94100
Profitabilitas	80	-0,19	0,23	0,0400	0,07215
Likuiditas	80	0,00	10,22	2,2608	1,73192



The results showed results, among others: first, financial distress showed that the mean value was smaller than the standard deviation with the value obtained, namely 4.94100, so it can be interpreted that the distribution of the z-score value is not good. PT obtained the highest deal of financial distress. Ultrajaya Milk Industri And Trading Company Tbk in 2019. While PT obtained the lowest z-score value. Indorama Synthetic in 2016. Second, the mean value of ROA as a proxy of the profitability obtained is also smaller than the standard deviation with the obtained value of 0.07215, implying that the allocation of profitability value is not reasonable. PT obtains the highest profitability value. Selamat Sempurna Tbk in 2018. Meanwhile, the lowest profitability value was owned by PT Polychem Indonesia Tbk in 2020. Third, the three average current ratios (CR) values as proxies of liquidity obtained an average value more significant than the standard deviation with a value of 1.73192, so it can be concluded that the allocation of the current ratio value is reasonable. PT obtains the highest current ratio value. Mandom Indonesia Tbk in 2020. Meanwhile, the lowest current ratio value is owned by PT. Sumi Indo Kabel Tbk in 2020.

Overall fit model

The first step in the research with logistic regression analysis techniques is to check the suitability of the model or overall fit model on the step data. The first test is through the likelihood function by comparing the numbers contained in segment -2 of the likelihood log in block zero and the numbers in segment -2 of the likelihood log in block one. The presence of a decrease in the value on the likelihood signals that the regression model is good.

Table. 2 Overall fit Research Data model

	Literation	-2 Log-likelihood	Coefficients Constant
Step 0	1	109,650	0,250
	2	109,650	0,251
	3	109,650	0,251



iteration		-2 Log-likelihood	Coefficients			
			Constant	X1	X2	X3
Step 1	1	91,511	0,723	0,078	7,395	-0,502
	2	88,956	1,011	0,136	10,069	-0,821
	3	88,804	1,088	0,154	10,882	-0,923
	4	88,803	1,094	0,156	10,940	-0,931
	5	88,803	1,094	0,156	10,940	-0,931

Table 2 shows a decrease in the value in the -2 log-likelihood column in block zero (initial), which has a value of -2 log-likelihood in block one (end). The value of -2 log-likelihood, initially 109,650 in block 0, changes to 88,803 in block 1. Based on these results, it can be concluded that this regression model is good.

Nagelkerke's R Square

The second test was through Nagelkerke's R Square. Again, understanding how much the combination of independent variables to clarify the dependent variables is the purpose of this test.

Table 3 illustrates the results of Nagelkerke's R Square test on the SPSS analysis tool, which is worth 0.307. This figure shows that the model can exert an influence of 30.7% on the predictive strength of the model, which is clarified by three predictor variables such as financial distress, profitability, and liquidity, while variables outside the model define a percentage of 69.3%.

Hosmer and Lemeshow's Goodness Of Fit Test

Table. 3 Model Summary of The Research

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	88,803a	0,229	0,307



Table. 4 Hosmer and Lemeshow's Goodness Of Fit Test

Step	Hosmer and Lemeshow Test		
	Chi-square	Df	Sig.
1	5,677	8	0,17

Testing at this stage has the aim of seeing the alignment between information and capital data. The model can be declared fit or appropriate if there is no difference between the model and the information data. The existence of any provision if the statistical value of Hosmer and Lemeshow Goodness of fit exceeds the significance level of 0.05, so hypothesis 0 is accepted. This shows that the model can know the observation value and can be expressed if the model is aligned with the observation data so that the model can be accepted.

Table 4 shows the Hosmer and Lemeshow Test results on the SPSS analysis tool of 18.677 with a significance of 0.17. The value of 0.17 is above the significant 0.05, meaning it receives H0. This suggests that the regression model is feasible for subsequent analysis.

Classification Table

Table. 5 Classification Table

Observed		Predicted Hedging		Percentage Correct	
		Not Using The Hedging Policy	Using the Hedging Policy		
Step 1	Hedging	Not Using The Hedging Policy	17	18	48,6
		Using the Hedging Policy	5	40	88,9
	Overall Percentage				71,3



Table 4.7 shows the results of the Classification Table in the SPSS analysis tool used to measure incorrect or correct estimate values. The number of research samples was 16 companies, while the research period was carried out for five years, from 2016 to 2020. As a result, 45 observation units were obtained from companies that carried out hedging activities and 35 observation units that did not carry out hedging.

The table above shows that the observation predictions that carry out hedging 45 while the observation results of 50 have a prediction accuracy of 88.9%. In addition, the prediction of observations that did not carry out hedging 35 had the results of seventeen observations with a prediction accuracy of 48.6%, so a total sample unit of 80 research samples was obtained. Table 4.7 shows the predictive capabilities possessed by this model with an overall percentage value of 71.3%. This means that this model has a total accuracy rate of 71.3%. The remaining 28.7% of variables were not able to be predicted correctly.

Partial Test (Wald Test)

The purpose of using the Wald statistical test for significance tests is to determine the effect of free variables on bound variables in logistic regression models. The wald test shows whether each logistic regression coefficient shows a significant value. The test is said to be significant if it produces a probability value below the significance level or the results of the Wald $< \alpha$ test (0.05). The wald test or hypothesis test can be completed after the logistic regression model obtains the appropriate acyl shown based on the overall fit model, Cox and Snell R Square, Nagelkerke R Square, Hosmer and Lemeshow Goodness of Fit Test, along with the Classification Plot that has been fulfilled.

Table. 6 Wald Test Research Data

		Variables in the Equation					
		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1a	X1	0,156	0,111	1,976	1	0,160	1,169
	X2	10,940	6,321	5,996	1	0,001	56393,107
	X3	-0,931	0,317	8,637	1	0,003	0,394
	Constant	1,094	0,464	5,572	1	0,018	2,987



The results of the hypothesis one test prove that the financial distress variable does not influence the use of derivative instruments that are hedging activities in manufacturing companies, thus rejecting hypothesis one. Furthermore, based on the SPSS Output in table 4.8, the statistical value of the Wald obtained of 1.976 is smaller than the Chi-Square value of 5.677, while the significance value obtained is 0.160. Therefore, the significant value obtained exceeds 0.05, which means that the financial distress variable has no influence on the variable value and shows results that are different from the research hypothesis. Therefore H1 is rejected. This indicates that financial distress does not affect hedging with derivative instruments in manufacturing companies.

A company with a good level of financial distress is caused by the company's cash flow that is not current, high debt ratios, company losses, and higher loan interest rates. If the company has a non-current cash flow, a high debt ratio indicates that the company is categorized as unhealthy and tends to have high bankruptcy rates. This will make the company wiser in managing its funds. Besides, risk management efforts such as hedging require large enough funds so that companies with a high level of financial distress do not use hedging instruments as risk management instruments but will look for other alternatives so that the expenditure of company funds can be minimized (Wahyudi et al., 2019).

The data processing results in the study obtained the financial distress that did not affect hedging activities because the significance obtained exceeded 0.05. Research results according to Sasmita & Hartono (2019) and Hardanto (2015) research.

The results of hypothesis 2 testing show that profitability positively influences the use of derivative instruments. Therefore hedging activities in manufacturing companies, hypothesis two is not rejected. Based on the SPSS Output in table 4.8, the regression coefficient value shows a positive result of 10,940, and the wald statistical value obtained of 5,996 exceeds the Chi-Square value of 5.677 while the significance value obtained is 0.002. Therefore, the significance value obtained is 0.05 smaller so that H2 is accepted. This



condition shows that profitability positively but not significantly influences hedging activities with derivative instruments in manufacturing companies.

To determine the company's ability to optimize profits before tax and interest, it can be used by looking at the value of Basic Earning Power (BEP). If the company can maximize its profits, it will provide convenience for business expansion. When the company has an enormous expansion opportunity, the risks experienced will increase. Therefore, the company requires risk management such as hedging activities to minimize the risks that will occur as a result of increasing company expansion besides that, hedging activities will also protect manufacturing companies in the event of changes in foreign exchange rates in the future (Kassulistiyanti, 2016)

The results of the data processing in this study obtained profitability with ROA proxies had a positive but not significant influence on hedging activities, the insignificant impact of profitability variables on hedging activities (hedging) was due to the average value of profitability obtained worth 0.0400 below the standard deviation value obtained, which was worth 0.07215, indicating that the distribution of ROA data was not good. This means that ROA variations around the average cannot significantly affect hedging activities. The results of this study support the research carried out by Bodroastuti et al. (2017) and analysis by Hardanto (2015)

The results of the hypothesis 3 test prove that liquidity variables have a significant negative influence on the use of derivative instruments that are hedging activities in manufacturing companies, therefore, hypothesis 3 is accepted. Based on the SPSS Output in table 4.8, the regression coefficient value shows a negative result of -0.931, and the wald value obtained of 8.637 is greater than the Chi-Square value of 5.677 while the significance value obtained is 0.003 where the value of 0.003 is below the significant level of 0.05, then receives H3. This condition shows that liquidity on hedging activities in manufacturing companies has a significant negative influence.

The high level of liquidity indicates that the level of financial difficulties experienced by the company is low. Therefore, the company's current



liabilities will also be less risk. Its purpose is as a reference in assessing the company's potential in paying off current obligations that must be paid immediately. The high level of ratio will reduce the vulnerability of shareholders because there are still reserve funds that are still undetermined in use so that they can be used to minimize risks arising from exchange rate fluctuations (Laldin, 2012)

The data processing results in this study, namely liquidity proxied using the current ratio, significantly negatively influence hedging activities, obtaining an average current ratio of 2.2608, exceeding the standard deviation value of 1.73192. This means that variations in the current ratio around the average can significantly affect hedging activities. The results of this study are supported by research from Tri & Asandimitra (2019), Sasmita & Hartono (2019), Ariani & Sudiarta (2017), Marhaenis & Artini (2020), and research from Mahasari & Rahyuda (2020)

Conclusion

The study's results proved that several factors were obtained that affect the activity of hedging with derivative instruments. Based on three research variables (financial distress, profitability, and liquidity), it was proven that liquidity variables significantly negatively influence hedging activities with derivative instruments in manufacturing companies. In contrast, profitability has been shown to have a positive but insignificant impact on hedging activities with derivative instruments in manufacturing companies. In addition, other factors such as financial distress have not influenced hedging activities with derivative instruments in manufacturing companies.

There are several limitations in the study, namely, first, the sample of companies used is only through companies that are classified as manufacturing, not all industrial sectors in Indonesia. The two financial ratios in this study are limited to 2 ratios: Return On Asset to measure the company's profitability level and the current ratio to measure the company's liquidity level. Beyond these financial ratios is the Altman z-score model as a proxy of the financial distress variable.



Due to these limitations, it is recommended for subsequent studies to use different proxies, especially those related to financial distress, in the theory of hedging activities, thus expanding the discussion on the determinants of hedging policies in manufacturing companies in Indonesia. Furthermore, researchers can also expand the scope of research to increase the number of research samples to be studied, besides that, the following research is also expected to be able to use other indicators that have never been used before to expand the study of hedging activities. As for investors, it is recommended to consider the liquidity variable because it has a significant influence on hedging activities in the results of this study, so that it can be a reference for model growers to measure the company's achievements before carrying out investments in the company concerned.

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