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Determination of Hedging Decisions for Public Companies Registered on the Jakarta Islamic Index in 2019-2022

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Abstract
Transactions involving different currencies when companies do international trade can create financial risks caused by changes in the exchange rate of a currency. To overcome this risk, company can do hedging. The purpose of this study to examine the effect of leverage, liquidity, and profitability on hedging decisions. The data used in this study is secondary data obtained from the annual financial statements of companies listed on the Jakarta Islamic index. Sampling using purposive sampling method. The number of samples in this study were 7 companies that met the criteria. The data analysis method used is logistic regression with the SPSS application. The test results show that leverage, liquidity, and profitability have a no effect on hedging decisions.

Keyword: Hedging; Leverage; Profitability; Liquidity.

1. Introduction

International trade is carried out by the company as one of the market expansion strategies. International trade is closely related to exports and imports. Company imports to buy raw materials at low prices from other companies in other countries or exports to make sales to other countries in order to expand its business. Companies that carry out international transactions are multinational companies. There are transactions involving different currencies that can create financial risks for multinational companies caused by changes in the exchange rate of a currency. Unpredictable changes in the value of foreign exchange can cause losses because when the local currency depreciates, the company must issue more local currency for the transaction (Astyrianti & Sudiartha, 2015).

In expanding its business, the company needs funding, both foreign and domestic fund. Indonesia Stock Exchange (IDX) is a non-bank financial institution in Indonesia which operates in the Capital Market sector. IDX has two important roles, as a source of funding for companies in Indonesia and as a forum for investors. The Jakarta Islamic Index (JII) is an Islamic stock index consisting of the 30 most liquid Islamic stocks listed on the Indonesia Stock Exchange (IDX). Indonesian people's enthusiasm for the Islamic capital market in Indonesia is increasing year to year as indicated by the increase in the number of market shares of supported sharia securities by an increasing number of sharia investors. Types of instruments and transaction mechanization in capital market trading activities are the fundamental differences found in the Islamic capital market.

Companies listed on JII, there must be companies that carry out international transactions such as export-import activities. This will result in payments using foreign currency. The negative impact of changes in foreign currency can be minimized by hedging. If this risk is not anticipated, it will cause losses to a company. As is the case with corporate debt which tends to be dominated by foreign currencies, if the rupiah depreciates, the value of corporate debt that must be paid at maturity increases due to exchange differences. So it is very necessary to implement a company's hedging to minimize the risk of such fluctuations. According to (Fahmi,

2016) hedging is exchanging foreign exchange in the future with local currency to protect company assets from exchange rate fluctuations.

The results of several previous studies indicate that hedging policies can be influenced by several factors, namely: Leverage, Liquidity, and Profitability. Leverage is a ratio used by companies to find out how much the company is financed with debt. Research conducted (Astyrianti & Sudiartha, 2015), (Diah Windari & Purnawati, 2019), (Ariani & Sudiartha, 2017) states that leverage has a significant positive effect on hedging policies. However, these studies contradict the results of the research (Limbong & Hutabarat, 2020) which states that leverage has a significant negative effect on hedging policies. But (Aditya & Asandimitra, 2019) states that leverage has no significant effect on hedging decisions.

Liquidity is used to determine the company's capability to meet debts (Kasmir, 2016). Research conducted (Astyrianti & Sudiartha, 2015) which states that liquidity has a positive influence on hedging decisions. Meanwhile, according to research (Prabawati & Damayanti, 2019) , (Bodroastuti et al., 2019) gives the result that liquidity has no effect on hedging policies. According to (Diah Windari & Purnawati, 2019) liquidity has a negative effect on hedging decisions.

Profitability can show the company's performance in getting profits. The higher the level of profitability of a company means that the possibility of the company experiencing bankruptcy is getting smaller. Previous studies have shown that profitability has a negative effect on hedging policies (Ariani & Sudiartha, 2017). However, these results are contrary to the results of research conducted by (Limbong & Hutabarat, 2020) which gives the result that profitability has a positive influence on hedging policies. Meanwhile, according to research (Aristya & E Hidajah, 2020) gives the result that profitability has no effect on hedging decisions.

Research gap described above, researchers are encouraged to conduct research that aims to obtain empirical evidence regarding "Determination of Hedging Decisions for Public Companies Registered on the Jakarta Islamic Index in 2019-2022".

2. Material and Method

Trade off theory is a theory that underlies the theory of leverage exchange, where to obtain benefits from taxes that should not be paid, companies will use the debt they have. The influence of leverage on corporate hedging decisions in this research will be explained using the trade-off theory. The use of leverage is directly proportional to risk, the high level of leverage charged by the company results in increased risk. The existence of leverage that is charged makes the risk posed even higher and makes the hedging even greater. Hedging is carried out due to the use of debt that is greater than own capital , sasmita

Pecking order theory states that by implementing a policy of selling existing assets, the company will meet its funding needs (Fahmi, 2012). To finance the company's activity plan, the company's liquidity level is important because of this policy. The effect of liquidity on company hedging decisions in this research is explained using the pecking order theory. when the company's internal funds are insufficient to meet the company's short-term obligations. So that the use of debt from abroad when the exchange rate is depreciating can exacerbate existing conditions, so that companies decide to hedge.

Du Pont Theory shows how the interaction of activity ratios and profit margins determines the profitability of the company's assets. So that the du pont theory can be used to find out how effective and efficient a company is in managing its assets. The effect of profitability on company hedging decisions in this research is explained using the du pont theory. Companies with high levels of profitability have the opportunity to expand their

business activities to foreign markets. The use of foreign exchange encourages companies to hedge to minimize risk

Hedging is used as an strategy in finance to guarantee that fluctuations in foreign exchange rates will not affect foreign exchange activities in paying, or receiving, because hedging has a basic principle that is making a commitment to balance foreign currency values (Sulistyo, 2015). Hedging has several instruments including futures, forwards, money market, and currency options.

Leverage is the use of fixed costs that can increase or increase profitability. Leverage calculations can use a debt to asset ratio proxy which is used to determine the amount of debt used to fund company assets (Kasmir, 2016). Companies must be able to know the amount of assets owned and the amount of debt that will be made when deciding to take debt. This is because debt that is managed properly can be beneficial for the company, but debt that is too large without control can result in the company being in a state of financial difficulty. If a company decides to take foreign debt and has exposure denominated in foreign currency, there is a risk that if the company's home currency depreciates, the amount of debt will increase. The existence of this risk makes a company do hedging. So the high leverage ratio of a company causes the company's hedging decision to be high.

H1: Leverage influences the hedging decisions of Public Companies Registered on the Jakarta Islamic Index in 2019-2022

Liquidity is a ratio that provides an overview of how quickly an asset can be converted into cash. Measurement to find out how liquid a company is using the liquidity ratio. There are three liquidity ratios that can be used, one of which is the Current ratio which is used to determine the level of margin of safety or the security level of a company and measures the use of current assets by a company to meet its current liabilities (Kasmir, 2016). Companies with low current assets to meet their current liabilities, make companies more aware of risks that cause losses and manage their finances prudently. So that the company's low liquidity makes the company's hedging decision high (Kussulistyanti & Mahfudz, 2016).

H2 : Liquidity influences the hedging decisions of Public Companies Registered on the Jakarta Islamic Index in 2019-2022

Profitability . Profitability ratios can show the company's performance in getting profits. The higher the level of profitability of a company means that the possibility of the company experiencing bankruptcy is getting smaller. The existence of differences in exchange rates encourages companies to take hedging measures to mitigate losses that can occur at any time. So the higher the company's profitability, the higher the company's hedging decision (Hadinata & Hardianti, 2019). One of the proxies that can measure the profitability of a company is return on assets (ROA). The use of ROA can find out the causes of rising or falling company profits as seen from the company's profit margin or asset turnover.

H3 : Profitability influences the hedging decisions of Public Companies Registered on the Jakarta Islamic Index in 2019-2022

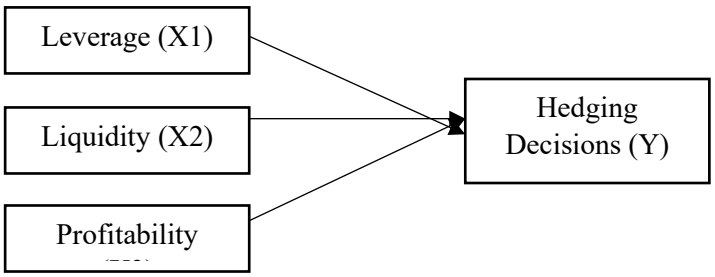

Figure 1. Research Model

This research is a quantitative research because it has the aim of testing predetermined hypotheses with a certain population and sample and research using research instruments for data collection, analyzing data in the form of quantitative and statistical and positivism philosophy which is used as the basis of the research method. Data analysis to be performed is Logistic Regression Analysis.

2.1 Design Study

Data used in this research is secondary data obtained from the official website of the Indonesia Stock Exchange, www.idx.co.id. The data is in the form of company annual financial reports from the JII for 2019-2022 which have been audited. This research uses secondary data sources, namely data that has been collected by others for purposes other than the current research objective (Sekaran & Bougie, 2016).

Population of the research is all companies listed on JII in 2019-2022, spesifically 30 companies, so the total population in this research is 90 financial reports. This research used a purposive sampling method, a sample selection technique using criteria set by the researcher (Sekaran & Bougie, 2016). The criteria used for sampling in this research are companies that present financial reports in rupiah currency, Companies that present financial reports from 2020-2022, The company has quality and consistent sharia stocks that are measured by always being listed on JII for the last 10 years. Based on the sample selection on these criteria, 7 companies with 4 years of observation were obtained that met the criteria to be used as research samples, so that the total sample used was 28 financial reports.

Variable Operational Definition

1. Hedging
   The dependent variable in this research is the hedging decision, it can be measured by a dummy proxy. If the company implements a hedging decisions, it is given a score of "1" and if the company does not implement a hedging decisions, it is given a score of "0".
2. Leverage
   Leverage is independent variable in this research. The leverage ratio in this study is proxied by the debt to asset ratio (DAR). This is to find out how much debt is used to fund the company's assets or how much influence the debt has in managing the company's assets. The debt to asset ratio formula is as follows :

$$Debt\ to\ Asset\ Ratio = \frac{Total\ Debt}{Total\ Assets}$$

3. Liquidity
   Liquidity is independent variable in this research and proxied by the current ratio. The current ratio was chosen because it can describe the overall ability of the company to pay its debts. The current ratio formula is as follows :

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities}$$

4. Profitability
   Profitability is independent variable in this research. The profitability ratio in this study is proxied by the return on assets (ROA). This is because ROA describes the effectiveness and efficiency of the use of company assets in generating profits for the company (Sudana, 2015). The return on assets formula is as follows :

$$Return\ on\ Assets = \frac{Earning\ after\ Taxes}{Total\ Assets}$$

2.2 Data Analysis

The data analysis method used in this study is logistic regression. Logistic regression does not have an assumption of normality on the independent variables, so this method does not require normality tests and classical assumption tests on the independent variables (Ghozali & Ratmono, 2013). This method is very suitable for use when the independent variables do not meet the normality requirements and the dependent variables are divided into two groups or dummy variables. The logistic regression equation model is as follows :

$$Ln \frac{p}{1-p} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots\ldots + \beta_n X_n$$

Description :
Ln = Natural logarithm
P = The probability of the dependent variable
β0 = Regression constant
β1 β1 β1 …….β1 = Regression coefficient of each independent variable
X1 X2 X3 …… Xn = Leverage , Liquidity, and profitability

3. Result

1. The Goodness of fit

Testing the goodness of the logistic regression model was assessed using Hosmer and Lemeshow's Goodness of Fit Test as measured by the Chi-square value. H0 is rejected when the value of Hosmer and Lemeshow's Goodness-of-fit test statistic is less than or equal to 0,05. Conversely, the Hosmer and Lemeshow value of more than 0,05 indicates H0 is accepted, which means that the observation value can be predicted by the model or in other words the model matches the observation data so that the model can be accepted (Ghozali & Ratmono, 2013).

Table 1. Hosmer and Lemeshow Test

Step	Chi-square	df	sig
1	0,000	4	1,000

Source : Output SPSS

Hosmer and Lemeshow significance value in table 1 at 1,00 which means greater than 0,05 so that the model can be accepted or is said to be fit because it is in accordance with the observation data.

2. Overall fit model

To assess the overall fit model can be shown by the log likelihood value (value -2LL). The trick is to compare the -2LL values at the start (block number = 0) where the model only includes constants with a value of -2LL after the model includes independent variables (block number = 1). The test results of the log-likelihood function can be concluded if the value of -2logL block number = 0 > the value of -2logL block number = 1 then it shows a good regression model.

Table 2. Overall Model Fit

Model fit test		Results
-2 Log Likelihood	-2LL Block Number 0	23,459
	-2LL Block Number 1	22,967

Source : Output SPSS

Table 2 shows that the statistical value of -2LogL with only constants without variables is 23,459 and the statistical value with constants and independent variables is leverage, liquidity and profitability is 22,967, so regression model shows a good model.

3. Coefficient of Determination

The size of R^2 in multiple regression in logistic regression is similar to using Cox and Sneel's R^2. Then this measurement is refined to the Nagelkerke R^2 which is modified from the Cox and Snell R^2. measurement to ensure that its value varies from 0 to 1. The Nagelkerke R^2 value reflects the variability of a variable.

Table 3. Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	22,967	0,560	1,000

Source : Output SPSS

The Cox and Sneel's R Square value in table 3 is 0,560 and the Negelkerke's R Square value is 1,00. Which means that the dependent variable can be explained by an independent variable of 100%.

4. Classification Determination Level

The true and false calculation of the actual observed value of the dependent variable, spesifically the company's hedging decision (1) and the company's decision not to hedge (0) is shown in the table row. The model is said to be perfect when on the diagonal there are all cases with a forecasting accuracy rate of 100%.

Table 4. Classification Table

Observed			Predicted		
			Hedging		Percentage Correct
			0	1	
Step 1	Hedging	0	4	0	100,0
		1	0	24	100,0
	Overall Percentage				100,0

Source : Output SPSS

Table 4 shows the predictive ability of logistic regression in projecting companies that have non-hedging decisions which are described in number 0 as much as 4 according to the results of observations, so that the classification accuracy is 100%. The projection for companies that have hedging decisions of 24 companies is the same as the results of observations, so that the classification accuracy is 100%. Overall the level of classification accuracy in the model is 100%.

5. Regression Coefficient Test

The level of the relationship or significance between the independent variables and the dependent variable can be seen from the SPSS output in the variable in the equation table. The independent variable has an influence on the dependent variable if sig value < 0.05. The independent variable has no effect on the dependent variable if sig value > 0.05.

Table 5. Variable in the Equation

		β	Sig.
Step 1	Leverage	0,153	1,000
	Liquidity	-0,249	0,998
	Profitability	1,005	0,999
	Constant	60,556	0,999

Source : Output SPSS

The logistic regression test shown in table 5 shows that there is not one variable that has a p-value below 0.05. This means that there is no significant independent variable on the dependent variable in this study.

4. Discussion

The Effect of Leverage on Company Hedging Decisions

The results of this study show that leverage has no effect on company hedging decisions, which means H1 is rejected. The results of this study are in accordance with the results of research conducted by (Aditya & Asandimitra, 2019), (Wahyudi et al., 2019) and (Bodroastuti et al., 2019). The results of this study do not support the trade-off theory which states that the use of debt by companies is done to reduce taxes that must be paid and increase the company's operating profit. The use of leverage is useful for reducing corporate taxes due to interest expenses. As long as the interest expense is smaller than the increase in income from

external funding, leverage does not pose a big risk (Wahyudi et al., 2019). Implicate that anticipate risks due to leverage in the company just by taking into account the company's interest expense level.

The Effect of Liquidity on Company Hedging Decisions

The results of this study show that liquidity has no effect on company hedging decisions which means H2 is rejected. The results of this study support the results of research conducted by (Prabawati & Damayanti, 2019) and (Bodroastuti et al., 2019). The results of this study do not support the pecking order theory which explains that the use of internal data is preferred by companies in funding their activities which results in high company liquidity requirements. The implication of this study is that companies in making hedging decisions do not need to pay attention to the company's liquidity level. The existence of debt denominated in foreign currencies will increase the risk of default on the company, so companies are not advised to make hedging decisions if the proportion of debt is high.

The Effect of Profitability on Company Hedging Decisions

The results of this study show that profitability has no effect on company hedging decisions which means H3 is rejected. The results of this study are in accordance with the results of research conducted by (Aristya & E Hidajah, 2020). The result of this study are not in line with the du pont theory which explains that companies with high profitability have extensive operational activities even abroad. This can happen because all companies with low or high levels of profitability also make it possible to transact internationally. When conducting transactions with foreign countries, the company will make hedging decisions. So the amount of profitability does not affect hedging decisions.

5. Conclusion, Implication, and Recommendation

Based on the results of the research, analysis and hypotheses that have been previously presented, the conclusions are as follows: Leverage has no effect on hedging decisions. Leverage will not pose a big risk as long as the interest expense is smaller than the increase in income from external funding. Liquidity has no effect on hedging decisions. Companies with low liquidity do not have sufficient reserve funds to properly meet short-term obligations. This then makes hedging not so necessary for the company. Profitability has no effect on hedging decisions. All companies with low or high levels of profitability can transact internationally and make hedging decisions. So that profitability is not a consideration for companies in carrying out hedging activities.

Recommendation that can be submitted to companies are to consider the factors that can affect hedging activities, so that they can make the right decisions in minimizing various market risks. And for investors, it is advisable to invest their funds to choose companies that are responsive in protecting their investments.

The limitation in this study is that the data in the observed research year is still short so that it can extend the observation year. For further research using a variety of other variables that might influence hedging activity to see the effect, such as managerial ownership, taxes, financial distress, and foreign sales.

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