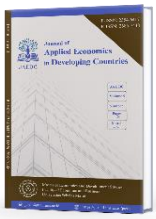

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DETERMINANTS OF FOREIGN CURRENCY HEDGING AND IT'S IMPACT ON FIRM VALUE

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ABSTRACT

Hedging through derivative instruments is a risk management action to reduce losses due to foreign exchange exposure. This research aims to examine the influence of liquidity, company size, leverage, growth opportunity, financial distress, profitability on company hedging decisions and to find out whether hedging activities have an effect on company value. The research sample consisted of 39 companies in the basic industry and chemical goods sector listed on the Indonesia Stock Exchange in 2014-2018. This research uses two stages of testing to analyze the data. The first stage uses logistic regression to test decision determinants hedging company. The second stage uses testing Independent Sample T-Test to determine the impact of activities hedging on company value and knowing which groups of companies have superior value. The research results show that leverage, company size and growth opportunity have a positive effect on the probability of a company's hedging decisions. Meanwhile, financial distress, liquidity and profitability have a negative effect on the probability of a company's hedging decisions. There is a significant difference in the average value between companies that carry out hedging activities and companies that do not carry out hedging activities.

1. INTRODUCTION

The era of globalization has caused countries to be connected to each other as if there were no boundaries. This will certainly have a positive influence on international trade. With international trade, companies can market their products to various countries through exports and also obtain raw materials through imports. Apart from that, companies can also obtain additional capital and more adequate technology. International trade activities will have an impact on increasing company cash flow (Adenle et al., 2022).

Companies that participate in international trade activities will face quite high risks. Global economic uncertainty coupled with intense competition in international business means that companies must be prepared to face various risks that could threaten the sustainability of their business. Risk refers to uncertainty regarding the occurrence of an event that could cause losses to the company (Lokobal et al., 2014).

Companies often experience exchange rate risk when participating in international trade activities. Implementation of a floating exchange rate system (floating exchange rate) in Indonesia also encourages the emergence of exchange rate risk. In this system, currency exchange rates can change at any time depending on demand and supply in the foreign exchange market. The weakness of this system is that the exchange rate fluctuates easily because it must follow market conditions (Simorangkir & Suseno, 2004).

Table 1. Movement of the Rupiah Exchange Rate against the US Dollar

Year	Rupiah exchange rate	Points
2014	Rp. 12.378,00 /US$	
2015	Rp. 13.726,00 /US$	- 1.348
2016	Rp. 13.369,00 /US$	357
2017	Rp. 13.480,00 /US$	111
2018	Rp. 14.409,00 /US$	929

Source: Bank of Indonesia, 2020

In Table 1 the Rupiah exchange rate against the US dollar during 2014-2018 continued to fluctuate and tended to decline (depreciation). Fluctuations in the rupiah exchange rate will affect the company's operational activities. When the rupiah weakens against the US dollar, the price of imported raw materials becomes more expensive, causing production costs to increase and causing an increase in the price of goods produced. Changes in exchange rates will affect the company's debts and receivables in foreign currency.

Table 2. Total Indonesian Foreign Debt (Million USD)

Year	Government Debt	Private Debt	Total Debt
2014	129.736 $	163.592 $	293.328 $
2015	142.608 $	168.123 $	310.731 $
2016	158.283 $	161.722 $	320.005 $
2017	180.622 $	171.874 $	352.469 $
2018	186.275 $	191.552 $	377.827 $

Source: Bank of Indonesia, 2020

Table 2 shows that Indonesia's foreign debt has continued to increase in the last five years and is dominated by the private sector. An increase in the amount of foreign debt will create financial risks that can endanger the company, considering that the rupiah exchange rate continues to fluctuate. At the time of the 1997/1998 monetary crisis, Indonesia's foreign debt reached $140 billion or around two-thirds of GDP (International Monetary Fund, 1998). Reflecting on this experience, Bank of Indonesian (BI) requires companies to hedge (hedging) at least 25% of the negative difference between Foreign Currency Assets minus Foreign Currency Liabilities as stated in Bank Indonesia Regulation No.16/21/PBI/2014.

Hedging As a function of financial derivatives, they can reduce losses from foreign exchange exposure, so they are often used by companies facing financial difficulties to increase their value and reduce the risk of bankruptcy (Admasu et al., 2019). Companies are faced with uncertainty regarding various prices. Hedging refers to the activities undertaken by a company to reduce the impact of this uncertainty. Finajina et al. (2014) state that exposures such as foreign sales and foreign trade are factors that encourage companies to hedge and become a reference for decision making about how much to hedge. Companies that have variability in cash flows due to foreign exchange exposure have more benefit from using hedging.

In a competitive financial environment,hedging using derivative instruments such asoptions, futures, swap, andforward increasingly used by companies to reduce risk exposure Nguyen & Faff (2002). Derivatives are contracts or securities that derive their value from underlying assets such as market indices, stocks, interest rates, foreign currencies. Derivatives are used to reduce the risks that exist in financial markets (Organ et al., 2006).

Based on previous research, activityhedging through derivative instruments carried out by the company driven by internal factors. The internal factors that will be examined in this research are liquidity,financial distress, leverage, company size, profitability andgrowth opportunity (Afsar et al., 2018; Afza & Alam, 2011; Guniarti, 2014; Vural-Yavas, 2016). Some studies also show that activity hedging will affect company (Graham & Rogers, 2002).

2. RESEARCH METHODS

Liquidity ratios determine a company's potential ability to meet its short-term obligations when they fall due. This research uses Current Ratio (CR) as a proxy for liquidity ratios. According to Kasmir (2016), CR can be formulated as follows:

$$\text{Current Ratio} = \frac{\text{Current Asset}}{\text{Current Debt}}$$

Financial distress refers to a condition where the company's cash flow is not sufficient for operational costs. This condition results in the company's failure to fulfill its financial commitments in the long term (Waqas & Md-Rus, 2018). Financial distress measured using the Altman Z-Score Ratio.Financial distress can be formulated as follows:

$$\text{Z-Score} = 1{,}2\ X1 + 1{,}4\ X2 + 3{,}3\ X3 + 0{,}6\ X4 + 0{,}99\ X5$$

Firm size can be determined from the company's total assets, sales, profits and the number of employees the company has. The size of the company will influence the company in terms of capabilities, scope, structure, regulations, behavior and decision making. According to Afsar et al. (2018) company size can be formulated as follows:

$$\text{Firm Size} = \text{Ln (Total Asset)}$$

The profitability ratio is an indicator of the company's financial condition and shows the company's effectiveness in managing assets to obtain profits (Lesakova, 2007). Return On Asset (ROA) was chosen as a proxy for the profitability ratio. According to Kasmir (2016), ROA can be formulated as follows:

$$\text{ROA} = \frac{\text{Profit After Tax}}{\text{Total Assets}}$$

Ratio Leverage shows the comparison of debt and equity used to fund the company's operational activities. Debt to Equity Ratio (DER) is chosen as a proxy for the ratioleverage in this research. According to Harahap (2007), DER can be formulated as follows:

$$\text{DER} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

Growth Opportunity is the company's ability to invest.Growth Opportunity high will provide higher income opportunities for the company. Growth opportunity calculated by the comparison ratio between Market Value of Equity (MVE) and Book Value of Equity (BVE). Growth opportunity can be formulated as follows:

$$\text{Growth Opportunity / MBV} = \frac{\text{Outstanding Shares x Closing Price}}{\text{Total Equity}}$$

Hedging using derivatives used by companies to reduce losses due to foreign exchange exposure. Ways of working hedging like insurance, which cannot eliminate risks but reduces the impact of these risks. Variable hedging in this research it is a categorical variable, where the company implements the policy hedging will be given code 1 and companies that do not implement the policy hedging will be given the code 0. Company Value shows the company's performance as reflected in the share price. The company's goal is to maximize company value for the welfare of shareholders. High company value provides a good image for society. Tobin's Q ratio is chosen as a proxy for firm value. Tobin's Q can be formulated as follows.

$$\text{Tobin's Q} : \frac{(\text{MVS} + \text{D})}{\text{Total Assets}}$$

The population in this study was 74 sector companiesbasic industry and chemical goods which was listed on the Indonesian Stock Exchange during 2014-2018. This sector is divided into several sub-sectors, namely animal feed; chemicals; cement; plastics and packaging: ceramics, glass, porcelain; metal and the like; pulp and paper; wood industry. Sector companiesBasic Industry and Chemical Goods was chosen as the research population because in running their business c ompanies in this sector are greatly influenced by changes in the rupiah exchange rate, considering that some companies use raw material components obtained from imports.

The research sample was selected using techniquespurposive sampling with the following criteria: sector companybasic industry and chemical goods 2014-2018, have complete and published financial reports, the company has foreign exchange exposure. Based on these criteria, 39 companies were obtained as research samples. The data was processed using the SPSS application.

This research uses two stages of testing to analyze the data. The first stage uses logistic regression to test decision determinantshedging company. The second stage uses testingIndependent Sample T-Test to determine the impact of activitieshedging on company value and knowing which groups of companies have superior value. The logistic regression model used in this research is as follows.

$$\text{Ln}\frac{p}{1-p} = \beta_0 + \beta_1\text{LIQ} + \beta_2\text{FD} + \beta_3\text{SIZE} + \beta_4\text{PRF} + \beta_5\text{LVR} + \beta_6\text{GRW}$$

Where as:

p	= Probability of the dependent variable
β	= Coefficient
LIQ	= Liquidity
FD	= Financial Distress
SIZE	= Firm Size
PRF	= Profitability
LVR	= Leverage
GRW	= Growth Opportunity

3. RESULTS AND DISCUSSION

Evaluate the entire model (overall fit model) is done by comparing the value of -2logL (block number = 0) and the value -2logL (block number = 1). There is a decrease in the initial -2logL value (block number = 0) with a final -2logL value (block number = 1) indicates the hypothesized model fits the data.

Table 3. Test Model Fit

Model Fit Test	Model Fit	Results
Likelihood	-2logL initial (*block number* = 0)	269,172
	-2logL akhir (*block number* = 1)	203,438
Coefficient of Determination	Cox & Snell R Square	0,286
	Nagelkerke R Square	0,382
Hosmer and Lemeshow Test	Chi-square	10,983
	Significance	0,203

Source: Processed data, 2022

In table 3, the initial -2logL value is obtained (block number = 0) of 269.172 and in table 2 the final -2logL value is obtained (block number = 1) of 203,438. Initial -2logL value (block number = 0) is greater than the final -2logL value (block number = 1) with a difference of 65.734. This decrease in the -2logL value indicates that the model fits the data. Negelkerke R Square amounting to 0.382, which means that the dependent variable can only explain 38.2% of the variation in the independent variable and the remaining 61.8% is explained by other variables outside the model. Test statistical value Hosmer and Lemeshow`s Goodness of Fit Test amounting to 10.983 with a significance probability of 0.205 which is a value greater than 0.05. So, it can be concluded that the estimated model is significantly fit.

Table 4. Classification Table

Observed	Predicted		
	Hedging		Percentage Correct
	Non hedging	Hedging	
Non hedging	71	19	78.9
Hedging	31	74	70.5
Overall Predicted			74.4

Source: Processed data, 2022

Classification Table used to determine the predictive power of the regression model in predicting the dependent variable. Overall, the accuracy of this research model was 74.4%.

Table 5. Logistic Regression Test Results

Variable	Coefficient
LIQ	-.167
FD	.097
SIZE	.591
PRF	4.339
LVR	-.352
GRW	.555
Constant	-17.077

Source: Processed data, 2022

Based on table 4 in the previous page, the logistic regression equation formed is as follows:

Decisions Hedging = -17,077 - 0,167LIQ + 0,097FD + 0,591SIZE + 4,339PRF - 0,352 LVR + 0,555GRW

The liquidity variable produces a negative coefficient value of -0.167 and a significance value of 0.243. These results prove that liquidity has an insignificant negative influence on decisions hedging company, then the first hypothesis (H1) accepted. Liquidity problems cause shareholders not to receive dividend payments on time due to a lack of cash. According to Guniarti (2014), the higher the level of liquidity indicates that the company has a good financial condition because it can fulfill its short-term obligations, so that the use of activities hedging will decrease.

Variable financial distress produces a positive coefficient value of 0.097 and a significance value of 0.527. These results prove that financial distress has an insignificant positive influence on activity hedging company, then the second hypothesis (H2) rejected. Stulz & Karolyi (1996) suggest that companies need to have a certain level of financial strength to carry outhedging. When experiencingfinancial distress, Companies become disinterested in risk reduction and have no spare capital to spend on effective risk management programs. State that companies are more likely to initiate bond purchases and stop using derivatives when experiencing financial distress (Turok & McGranahan, 2013) .

The company size variable produces a positive coefficient value of 0.591 and a significance value of 0.000. These results prove that company size has a significant positive influence on decision-making company, then the third hypothesis (H3) accepted. Large companies are better able to handle hedging costs (hedging) due to larger economies of scale (Tyllianakis & Ferrini, 2021). Large companies tend to use derivatives and their cash flows are usually more volatile than the cash flows of small companies (Stulz & Karolyi, 1996). Small companies may lack the budget, technology and expertise to perform hedging to overcome risk exposure (Ameer, 2010).

The profitability variable produces a positive coefficient value of 4.339 and a significance value of 0.157. These results prove that profitability has an insignificant positive influence on decision-making company, then the fourth hypothesis (H4) rejected. According to the use of derivatives will continue to increase when companies have high profits and rapid business expansion. This is because companies are required to reduce risk through hedging when engaging in greater international trade. Every small change in the market will cause the company to suffer losses as the company is involved in a large number of business transactions. Policy hedging What the company does is able to reduce risk exposure which will be reflected in the company's level of profitability (Xu et al., 2019)

Variable leverage produces a negative coefficient value of -0.352 and a significance value of 0.017. These results prove that that leverage has a significant negative influence on decision-making company, then the fifth hypothesis (H5) rejected. A company's use of derivatives depends on the company's financial position. Small companies are more vulnerable to bankruptcy than large companies hedging still expensive. When the company is in a high level of debt then the company will avoid entering the derivatives market if it is not necessary due to budget and capital problems According to Afza & Alam (2011), companies with levels high leverage indicates that the company is facing financial problems and therefore tends to use derivatives less.

Variable growth opportunity produces a positive coefficient value of 0.555 and a significance value of 0.025. These results prove that growth opportunity has a significant positive influence on decision-making company, then the sixth hypothesis (H6) is accepted. Companies with good investment opportunities need funding consistently. If the risk is not hedged and a loss occurs, the company must finance the loss using internal funds that were initially allocated for the investment project. In this case, the company must obtain expensive external financing so that this investment opportunity is not lost. Company with growth opportunity large companies can benefit from the use of derivatives (Allayannis & Ofek, 2001).

Table 6. Independent Sample T-Test Results

		Levene`s Test for Equality of Variances		t-test for Equality of Means		
		F	Say	t	df	Say, (2-tailed)
Firm Value	Equal variances assumed	2.458	.119	-3.000	193	.003
	Equal variances not assumed			-2.949	169.228	.004

Source: Processed data, 2022

Table 6 shows the values Say. (2-tailed) of 0.003 whose value smaller than 0.05. These results show that there are significant differences in average values for companies carrying out activities hedging and companies that do not carry out activities hedging. Hedging will increase company value by: (1) reducing taxes; (2) reducing costs associated with the reorganization of financially troubled companies; and (3) strengthening managers' incentives to invest in the future. Hedging can create higher value for the company because it minimizes financial difficulties associated with a slower economy. Hedging will increase company value by sending a signal to investors that the company's future cash flows are guaranteed and the risk of financial difficulties will be reduced (Xu et al., 2019).

4. CONCLUSION

Based on the results and discussions that have been carried out, it can be concluded that: 1) Liquidity variable has an insignificant negative effect on the decision hedging company; 2) Financial distress has an insignificant positive effect on the decision-hedging company; 3) The Firm size variable has a significant positive effect on the decision-hedging company; 4) Leverage variable has a significant negative effect on decisions hedging company; 5) Profitability variable has a positive and insignificant effect on the decision-hedging company; and 6) Growth opportunity variable has a significant positive effect on decisions hedging company.

Activity hedging significant effect on company value. Group of companies carrying out activities hedging has a company value that is superior to companies that do not carry out activities hedging. Hedging will increase company value by sending a signal to investors that the company's future cash flows are guaranteed and the risk of financial difficulties will be reduced.

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