

Factors Influencing Hedging Decisions Of Mining Sector Companies Listed On The Indonesia Stock Exchange 2014 – 2018

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Abstract

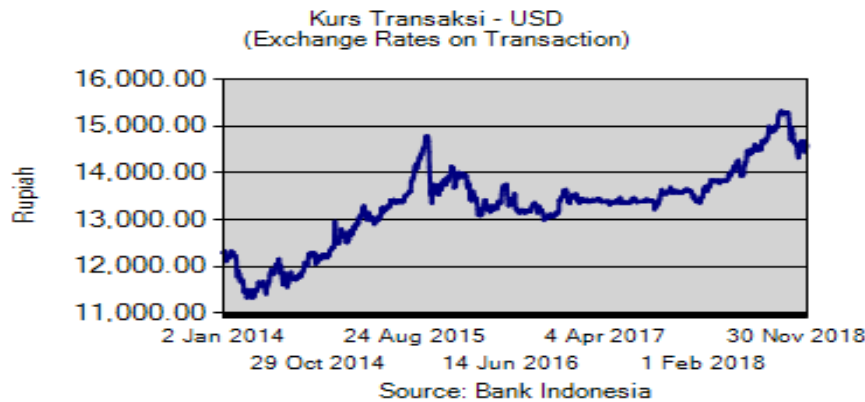
Hedging is a risk management strategy that companies use to reduce the risk of foreign exchange rate fluctuations. This study investigates the effect of liquidity (current ratio) and profitability (return on assets) on hedging decisions of mining companies listed on the Indonesia Stock Exchange (IDX) from 2014 to 2018. The study sample consisted of 35 mining companies that met the following criteria: (1) listed on the IDX during the study period, (2) had complete financial statements for the study period, and (3) were not in financial distress. Data were collected through non-participant observation of financial statement data published on the IDX website. The analysis technique used was logistic regression. The results of the hypothesis testing showed that liquidity, as proxied by current ratio, had a negative and insignificant effect on hedging decisions. Profitability, as proxied by return on assets, had a positive and significant effect on hedging decisions. These findings suggest that mining companies with higher liquidity are less likely to hedge their foreign exchange risk, while companies with higher profitability are more likely to hedge their foreign exchange risk.

Keyword: Hedging, Risk, Liquidity, Profitability

INTRODUCTION

In addition to affecting all aspects of human life, globalization is also shaping how businesses operate. One sector that is heavily influenced by globalization and technological development is the economic sector. Companies can identify risks by first measuring the exposure they face. Various threats that can arise as a result of international investment and trade include the risk of exchange rate movements, the risk

of foreign economic conditions, and political risk (Madura, 2015). The biggest risk faced by multinational companies comes from foreign exchange exposure (Paranita, 2011).



figurer 1. USD/IDR exchange rates

Source: www.bi.go.id, 2020

In Figure 1. there are significant fluctuations in the US Dollar foreign exchange rate from January 2014 to December 31, 2018. Based on the figure above, it can be seen that the foreign exchange rate of the American Dollar (USD) against the Rupiah (IDR) on January 15, 2014 was Rp. 12,137.00 which then on September 29, 2015 the IDR weakened and the USD exchange rate was at the level of Rp. 14,802.00 per one American Dollar. This shows the high risk of foreign currency fluctuations on international trade carried out by the company when conducting transactions in foreign currency.

The risk of exchange rate fluctuations can be minimized by hedging. Hedging is a risk management strategy that companies use to mitigate the risk of unexpected changes in exchange rates. Derivatives are financial contracts that allow two parties to agree on the price of an asset or instrument at a future date.

Hedging decisions are influenced by both external and internal factors. External factors include the level of interest rates and exchange rates. Internal factors include the company's liquidity, profitability, and risk appetite.

The Effect of Liquidity on Corporate Hedging Decisions

Liquidity is a measure of a company's ability to pay its short-term debts. Companies with high liquidity are less likely to hedge against exchange rate risk because they have the resources to absorb any losses caused by fluctuations in exchange rates.

This is consistent with the findings of Chaudry (2014), who found that liquidity has a significant negative effect on the use of hedging derivative instruments. Guniarti

(2014), on the other hand, found that liquidity has a negative but insignificant effect on hedging decisions.

H1 = Liquidity has a negative influence on hedging decisions.

The Effect of Profitability on Corporate Hedging Decisions

According to Sartono (2014), profitability is the company's ability to earn profits in relation to sales, total assets and own capital. High profitability tends to be less involved in hedging activities, because companies with high profitability will avoid the risk of financial distress. However, some studies have found that profitability can have a positive effect on hedging decisions. This is because when profitability increases, companies are more likely to expand their operations, which can expose them to greater foreign exchange risk.

H2 = Profitability has a significant positive effect on hedging decisions

RESEARCH METHODS

Data

The sampling technique in this study uses purposive sampling because not all samples have criteria that match those that will be processed by the author. In this study, out of a total of 51 existing mining companies, the sample used for research was 35 companies. The author chose purposive sampling technique by setting certain criteria listed below:

1. Mining Sector companies listed on the Indonesia Stock Exchange (BEI) during the 2014-2018 period.
2. Mining Sector companies that have conducted IPOs on the stock exchanges of each country consistently and have never been delisted from 2014-2018.
3. Companies that publish complete financial reports or annual reports from 2014-2018.

The data selection process is collected from annual financial statements of mining sector companies. along with its records in 2014 - 2018 through the official IDX website www.idx.co.id.

Operational Definition of Liquidity Variable

The proxy used to determine the liquidity ratio in this study is the current ratio. The liquidity ratio is used to measure the extent to which the company can settle its short-term obligations (Kasmir, 2016: 134). The current ratio formulation is as follows.

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

Operational Definition of Profitability Variable

The profitability ratio in this study is known by return on assets (ROA). The amount of ROA illustrates the effectiveness and efficiency of using the company's assets in generating profits for the company (Sudana, 2015: 25). ROA formulation is as follows.

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

This study uses an associative design, which is a study that investigates the effect of one variable on another variable. The dependent variable in this study is the effectiveness of hedging, with the independent variables being leverage, profitability, and liquidity. Hedging is expressed as a dummy variable, where companies that engage in hedging activities are marked with a 1 and given a 0 for companies that do not engage in hedging activities. Profitability is proxied by using the return on assets ratio, which is expressed in percentage units, and liquidity is measured using the current ratio, which is expressed in percentage units.

The method used in this study is non-participant observation method and uses the technique of logistic regression analysis. The study uses SPSS software version 23.0. The logistic regression equation from this study is as follows:

$$\text{Ln}\left(\frac{\rho}{1-\rho}\right) = \beta_0 + \beta_1 \cdot X_1 + \beta_2 \cdot X_2 + e \dots\dots\dots (1)$$

Iteration:

$\text{Ln}\left(\frac{\rho}{1-\rho}\right)$	: Hedging
β_0	: Constant
β_1-3	: Regression Coefficient
X_1	: Liquidity
X_2	: Profitability
E_i	: Standard Eirror

RESULTS

Descriptive statistics reveal the mean, minimum, maximum, and standard deviation of the observed data.

Table 1. Descriptive Statistics of Variable Independent

	N	Minimum	Maximum	Mean	Std. Deviation
CR	175	0,001	25,420	1,81676	2,802433
ROA	175	-393,32	45,56	-1,6060	32,65702
Valid N (listwise)	175				

Table 1 shows the descriptive statistics of the independent variables. The minimum ROA value is -393.32, the maximum value is 45.56, and the mean value is -1.60 with a standard deviation of 32.65702. The minimum CR value is 0.1, the maximum value is 2.542, and the mean value is 1.82 with a standard deviation of 2.802433.

Table 2, Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	6,840	8	0,554

Sumber: Data diolah, 2020

The Hosmer-Lemeshow test statistic is 6.840, with a p-value of 0.554. A p-value greater than 0.05 indicates that the null hypothesis cannot be rejected, meaning that the model is not significantly different from the observed data. Therefore, the Hosmer-Lemeshow test suggests that the model is not a good fit for the data, and the model's predictions should be interpreted with caution.

Table 3 -2 Log comparison likelihood

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	163,479a	0,064	0,102

The evaluation of the model fitness shows a Nagelkerke R Square value of 0.102. This value means that 10.2% of the variation in the CR and ROA variables (independent

variables) can be explained while 89.8 percentage points were explained by the variation of other variables that were not included in the regression equation model.

Table 4 Dependent variable frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	140	80	80	80
	1	35	20	20	100
	Total	175	100	100	

Source: Data processed, 2020 (appendix 2)

Table 4 shows that there are 35 observations (20%) of companies that engage in hedging, while 140 observations (80%) do not engage in hedging from a total of 175 observations.

Table 5 Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	112.035a	.279	.390

source: Data processed, 2020

A matrix is used in logistic regression to determine the correlation between independent variables. A correlation matrix with a value less than 0.8 indicates that there is no indication of severe multicollinearity between the independent variables. The correlation matrix is shown in Table 6

Table 6 Correlation Matrix

		Constant	CR	ROA
Step 1	Constant	1,000	-0,603	-0,310
	CR	-0,603	1,000	-0,023
	ROA	-0,310	-0,023	1,000

Source: Data processed, 2020

Table 6 shows that the correlation value between variables is less than 0.8, which means that there is no sign of harmful multicollinearity between the variables.

The accuracy of the prediction of the mode of regression to estimate the probability of hedging a difference is seen in the classification matrix and is expressed in terms of a percentage. Table 7 shows the classification matrix of the study.

Table 7 Classification Table

Observed		Predicted		
		Hedging	Percentage Correct	
		0	1	
Step 1	HEDGING	0	138	2
		1	33	2
	Overall Percentage			80,0

Source: Data processed, 2020

Based on the data in Table 7, it can be seen that the number of samples that do not engage in hedging is 140 companies (138+2). The regression model in this study shows a reduction of 2 samples, so the total number of samples that do not engage in hedging is 138 samples. The classification accuracy of this model to predict the likelihood of a company not engaging in hedging activities is 98.6%.

A total of 35 samples use hedging decisions. This model predicts a reduction of 2 samples, so the total number of samples predicted to use hedging policy is 33 samples. The classification accuracy of this model to predict the likelihood of a company engaging in hedging is 5.7%. Overall, the classification accuracy of this regression model is 80.0%.

Table 8. Variables in the Equation

		B	S.Ei.	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1a	CR	-0,040	0,096	0,172	1	0,679	0,961	0,796	1,160
	ROA	0,058	0,020	8,878	1	0,003	1,060	1,020	1,102
	Constant	-1,484	0,269	30,498	1	0,000	0,227		

a. Variables(s) entered on step 1: ROA,

CR. Source: Data processed, 2020

Table 8 shows the results of the logistic regression at a 5 error level. The mode that has been identified based on the parameter estimation value in Table 8 can be expressed as follows:

Based on the results of the analysis in Table 11, it can be seen that the mode of reorganization can be formulated as a result:

$$\text{Ln}\left(\frac{\rho}{1-\rho}\right) = -1,484 - 0,040 \text{ CR} + 0,058 \text{ ROA}$$

The model shows that the Liquidity variable with the Current ratio indicator has no effect on Hedging Decisions. This is indicated by the significance value of the Current ratio $-0,040 > 0.05$, which means that it has no significant effect on hedging decisions. And the profitability variable with the return on asset indicator, has a significance value of $0,058 < 0.05$, which means it has a significant effect on hedging decisions.

RESULTS

a. The effect of liquidity on *hedging decisions*

The results of the logistic regression test found that the current ratio as a proxy for liquidity had a negative but statistically insignificant effect on the dependent variable, namely the decision to hedge using derivative instruments. The results of this study are in line with the research conducted by Valasco (2014) in his study entitled Factors Influencing Derivatives Usage by Selected Listed Companies in the Philippines. In which the author tested several factors that influence hedging decisions in 74 companies from 2007-2011 concluded that the liquidity factor has a negative effect on hedging decisions. Munthe et al. (2015) also saw a non-significant negative effect of liquidity ratios on 66 samples of manufacturing companies. This is because liquid companies have sufficient cash reserves to deal with potential risks, so they do not need hedging.

The more liquid the condition of a company, the lower the probability of the company to engage in hedging activities because its short-term obligations can be met, thus avoiding the risk of default and financial difficulties, Megawati et al. (2016).

b. The effect of profitability on *hedging decisions*

The results of the logistic regression test revealed that profitability, proxied by return on assets (ROA), had a positive and significant effect on the dependent variable, namely the use of hedging decisions. Based on this test, the second hypothesis, which states that profitability has a positive and significant effect on hedging decisions, was

accepted. The results of this study mean that an increase or decrease in ROA value affects companies in making hedging decisions.

In their study, Megawati et al. (2016) found that profitability had a significant effect on hedging decisions in 114 samples of manufacturing companies on the Indonesia Stock Exchange in 2013-2014. The higher the profitability ratio of a company, the more extensive the company's activities and the higher the potential risk, thus increasing the probability of using hedging. The lower the profitability ratio of a company, the less optimal the company's activities, and the lower the risk level, which causes the probability of using hedging to be lower.

The results of this test are in line with the results of the study conducted by Shaari et al. (2013) using 826 non-financial companies in Malaysia as their research samples in 2010 and 2011, which found that profitability had a positive and significant effect on hedging decisions using derivative instruments. Aretz et al. (2007) stated that the ability of companies to generate more profits makes companies more likely to hedge, because a company with a higher profit margin is more likely to expand its business quickly. Because the international market conditions are very dynamic and the number of risks faced by mining companies that conduct international transactions, any small change that occurs can cause a major risk for the company when conducting transactions in large amounts. Therefore, companies must always reduce risk by using derivative instruments, or what is often called hedging.

CONCLUSION

Based on the discussion results that have been outlined in the previous chapter, the results of the testing of the liquidity and profitability variables on hedging policies in mining sector companies listed on the Indonesia Stock Exchange for the period 2014-2018 are as follows:

- a. The research results state that liquidity has a negative and insignificant effect on the hedging policies of mining sector companies listed on the Indonesia Stock Exchange for the period 2014-2018.
- b. The research results show that profitability has a positive and significant effect on the hedging policies of mining sector companies listed on the Indonesia Stock Exchange for the period 2014-2018.

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