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The Effect of Leverage, Liquidity and Growth Opportunity on Hedging Decision Making in Mining Companies at Indonesia Stock Exchange

Dewa Ayu Novi Jayanti[1], I PutuYadnya[2]
Faculty of Economics and Business, Udayana University (Unud), Bali, Indonesia

ABSTRACT : This study aims to explain the effect of leverage, liquidity, and growth opportunity on hedging decision making in mining companies at Indonesia Stock Exchange in the 2015-2019 period. a sample of 30 from 48 populations of mining companies are obtained using purposive sampling and analyzed using logistic regression. The results show that the debt to equity ratio as a proxy for leverage has a significant positive effect on hedging decision making. Current ratio as a proxy for liquidity has a significant negative effect on hedging decision making and MBVE as a proxy for growth opportunity has a positive but insignificant effect on hedging decision making.

Keywords *-leverage, liquidity, growth opportunity, hedging*

I. INTRODUCTION

Globalization and technological developments have a major influence in various aspects of people's lives. The economic sector is one of the largest sectors affected by technological developments and globalization (Dharmiyanti & Darmayanti, 2020). Globalization is increasingly rapidly resulting in the absence of barriers between countries in conducting international relations, thus opening opportunities for companies to conduct international trade (Ahmad et al., 2015) International trade is an activity related to buying and selling transactions carried out by countries or with parties. outside (Pyeman et al., 2019)

International trade is very important for companies because by doing international trade, companies can develop more widely than just doing business in the domestic area. International trade allows companies to improve their performance by increasing income or reducing expenses, which are aimed at obtaining high profits. The increase in international trade activities is caused by several factors, such as differences in the mastery of science and technology in processing natural and economic resources, mutually fulfilling domestic needs for goods and services, the desire to gain profits and have product advantages so that new markets are needed to market products. and there is a desire to open cooperation, political relations and support from other countries. International trade will cause an increase in competition and fluctuations in market prices, resulting in increased business risk that must be borne by companies (Jiwandhana & Triaryati, 2016)

Companies that carry out international trading activities have the potential to be exposed to the risk of interest rates, foreign exchange and commodity prices, which can have a negative impact on cash flow and firm value, thereby reducing the company's survival. The biggest risk from conducting international transactions is the risk of fluctuations in foreign exchange rates. Changes that occur in the value of foreign currencies that cannot be anticipated can have an impact on prices, exporters and importers' profits and the level of company sales. Fluctuations in foreign exchange rates also cause uncertainty in the value of assets and liabilities, and can threaten the survival of the company. Losses due to price movements (such as stock prices, exchange rates or interest rates) are categorized as market risk. This risk needs to be considered carefully because it can harm a company in the future, so that this risk must be minimized and avoided by the company(Pyeman et al., 2019)

On January 2, 2015, the transaction rate of USD against IDR was IDR 12,500 per 1.00 USD, then it weakened where on 27 October 2015 the transaction rate of USD against IDR reached IDR. 14,800 per 1.00 USD. Towards August 22, 2016, the transaction rate of USD against IDR has strengthened where previously the value of the transaction rate was IDR 14,800 per 1.00 USD and then IDR 13,700 per 1.00 USD. Approaching 13 June 2017, there was a strengthening of the currency which reached IDR 13,400 per USD 1.00. At the beginning of April 6, 2018 there was a weakening of the currency which reached IDR 13,700 per 1.00 USD. Furthermore, on February 6, 2019 there was a weakening that jumped very high, reaching IDR 15,400 per 1.00 USD. However, approaching 28 November 2019, there was a strengthening of the currency reaching IDR 14,400 per

1.00 USD. From the data shown, it can be interpreted that when a company conducts foreign exchange transactions, it will experience a risk of foreign exchange exposure. In the graph, it can be seen that there is a fluctuation in the exchange rate of USD against IDR, from 2015 to 2019. When the IDR depreciates or when the USD currency appreciates, the price of imported goods will be more expensive so that the impact on price increases will also increase. This can cause losses for companies that conduct international transactions due to differences in foreign exchange, because when the local currency depreciates, the company must spend more local currency for these transactions.

Risk management is one of the things that companies need in order to minimize the various risks that occur within the company (Mediana & Muharam, 2016). Risk management can be done in several ways, such as risk identification, risk evaluation and measurement, and risk management. The risk of foreign exchange rate fluctuations as a result of international trade can be managed using risk management with derivative instruments. According to Kurniawan & Nadia (2018), derivatives are an agreement contract between two parties to conduct transactions to sell or buy a certain number of assets (commodities or financial) at a price that has been agreed upon in the present but its use in the future. The use of derivative instruments can be useful to lock in the price of an asset or product so that the company can avoid the risk of changes in asset value in the future, where this price lock activity can also be said to be hedging. The use of hedging policies in multinational companies is expected to be able to reduce corporate risk in facing foreign exchange exposure caused by international transactions (Saraswati & Suryantini, 2019). Hedging is the act of protecting the value of assets or debts held against possible risks due to a decrease in asset value or an increase in debt through the use of derivative instruments such as forward contracts, swaps, futures, or options. In Indonesia, the type of derivative instrument that is often used is the Future contract. This is because the futures contract works in a more organized system where the flow of futures value and cash flow is adjusted daily according to changes in commodity market prices that occur every day.

Indonesia is a developing country that is trying to develop the country's economy (Saraswati & Suryantini, 2019). Of the 9 company sectors listed on the IDX, the mining sector is a sector that is considered a high risk sector because it is influenced by production, prices, costs and taxes so that a higher risk must require the return of profits (Rate of Return). Based on data from Bank Indonesia, Indonesia's foreign debt in the mining sector in January was US $ 26.07 billion, the increase in debt in the mining sector needs to be questioned because mining commodity prices such as minerals and coal are falling and are not expected to increase for the next two years.

2015 has been a bad year for mining companies. According to PricewaterhouseCoopers (PwC) annual report in the mining sector, it is seen in the 13th report of PwC's industry report series as received by Mining Magazine. The 40 largest global mining companies recorded a net loss of (US $ 27 billion). This incident was the first in history that market capitalization fell by 37%. Jock O'Callaghan, Global Mining leader at PwC said 2015 was a challenging year for the mining sector. The 25% decline in commodity prices compared to the previous year prompted mining companies to strive to increase productivity, some of which struggled to survive followed by asset disposals or business closings (PricewaterhouseCoopers (PwC), 2015). There are 2 factors that give a blow to the mining industry. First, The price of mining commodities, especially coal, has experienced a sharp decline, secondly, the lack of demand for mineral and coal exports. In the first quarter of 2017, according to the Central Statistics Agency, the mining sector experienced a decrease of 0.49%. In fact, in the third and fourth quarters of 2016, each grew by 0.29% and 1.06%. According to the Head of the Central Statistics Agency, Suhariyanto, the decline was due to a decrease in daily production of natural gas and crude oil, as well as a decrease in copper and gold production from Freeport and Newmont. According to the Central Statistics Agency, in 2018 the mining sector experienced the smallest growth of 0.74%, although the smallest growth in the mining sector began to rise from its downturn from last year's period (detik.com). Mining companies that tend to carry out debt in the form of foreign currency will experience losses due to fluctuations in foreign exchange rates, so they have to spend more local currency (Ariani & Sudiartha, 2017).

In 2015 there were 14 hedging activities, then increased until 2019 results were obtained 26 times the hedging activities carried out by mining companies to avoid foreign exchange exposures faced by mining companies. The use of hedging in mining companies is not only caused by external factors such as foreign exchange rates, it is also influenced by other factors, namely internal factors such as the company's financial performance, which determines the use of hedging in mining companies (Saraswati & Suryantini, 2019). The hedging decision is influenced by external and internal factors. There are two external factors for the company, namely the BI rate and the exchange rate (Megawati et al., 2016). Several previous researchers have examined the internal factors that influence company hedging decisions, one of which is leverage.

Leverage is a debt ratio or better known as the solvency ratio, which is the company's ability to fulfill its financial obligations in both the short and long term, or to measure the extent to which the company is funded by debt. High leverage will increase returns when business conditions are favorable, and vice versa (Ariani & Sudiartha, 2017). Hedging is very useful for companies that have a high leverage ratio because it is able to stabilize cash flow and is able to reduce costs such as financial distress costs, underinvestment problems and other costs related to cash flow. Leverage can be measured using a debt to equity ratio (DER). Debt to Equity Ratio (DER) is a ratio that describes the ratio of debt and equity in company funding and shows the company's own capital ability to fulfill all its obligations. Kinasih & Mahardika (2019) state leverage significant negative effect on hedging decisions, while research conducted by Mediana & Muharam (2016)leverage has no significant negative effect on hedging decisions. Pitangga & Puryandani (2019), Saraswati & Suryantini (2019), Jiwandhana & Triaryati (2016)stated that leverage has a positive and significant effect on hedging decisions. Research conducted by Megawati et al. (2016) show that leverage has a positive but insignificant effect on hedging decisions because most companies still use equity compared to debt. However, Kinasih & Mahardika (2019)have a negative effect on hedging decisions, while research conducted by Saraswati & Suryantini (2019)has a positive effect on hedging decisions because the companies used as objects of research are different, such as between banking companies and manufacturing companies, in addition to measuring instruments. which are used to calculate different leverages such as DAR and DER.

Liquidity is the next factor that influences hedging decisions in companies. The liquidity of a company shows the ability to pay short-term financial obligations on time (Ariani & Sudiartha, 2017). The company will always be liquid, if the available current funds have a greater value than debt. The higher the liquidity, the lower the use of derivative instruments in the company because the risk of financial distress costs that appear tends to be low and the company has sufficient reserve funds to face the risk. Hidayah & Prasetiono (2016)found that liquidity had a significant negative effect on hedging decisions, in line with research conducted by Megawati et al. (2016), Dewi & Purnawati (2016)who show that liquidity has a significant negative effect on hedging decisions. Kinasih & Mahardika (2019)state that liquidity has a significant positive effect on hedging decisions. Widyagoca & Lestari (2016)found that liquidity has a positive but insignificant effect on the company's hedging policy. The difference in the results of this study because the companies studied are different, such as conventional banking companies and manufacturing companies, besides that the measuring instruments used in calculating liquidity are different, one of which uses the LDR or the current ratio.

Growth Opportunity is something that describes the extent of investment opportunities or opportunities for companies. Wahyudi et al. (2019)stated that growth opportunity does not have a significant effect on hedging decisions Hidayah & Prasetiono (2016)found that growth opportunity has a positive and significant effect on hedging decisions. Bodroastuti et al. (2019)stated that growth opportunity has no effect on hedging activity. Buyukkara et al. (2019)stated that growth opportunity has a significant negative effect on hedging activity. The difference in the results because the companies studied are in different fields as well as different countries such as Indonesian manufacturing companies and Turkish companies. So it is possible for each company to have a different understanding of growth opportunity in hedging policies.

II. HYPOTHESIS DEVELOPMENT

Companies with high leverage (debt to equity ratio) illustrate that the company is facing the risk of financial difficulties. In that sense, the company is at risk of default when seeking more loans from creditors. A multinational company that carries out foreign debt to meet the company's financial needs. Every company that carries out foreign debt will experience a foreign currency risk where the position of the rupiah will depreciate or be appreciated by the currencies of other countries which can threaten the company to go bankrupt or go bankrupt so that hedging is a decision the company will take. The higher the debt to equity ratio, the higher the risk obtained by a company, this will further strengthen a company to make hedging decisions or hedging, this is in accordance with research conducted by Herawati & Abidin (2020), Pitangga & Puryandani (2019), Saraswati & Suryantini (2019), Mahasari & Rahyuda (2020), Abdullah & Ku Ismail (2017), Nyamweya & Ali (2016), Jiwandhana & Triaryati (2016)stated that leverage has a significant positive effect on hedging decisions.

H1: Leverage has a significant positive effect on hedging decisions

The liquidity ratio is used as a measure of a company's ability to repay its short-term loans at maturity. This ratio is a benchmark for investors and companies to see their ability to meet obligations. A high level of liquidity indicates that the company is experiencing a low level of financial difficulty. So that the risks that arise will also be reduced or smaller. Companies can reduce the likelihood of financial difficulties by having more liquid assets ensuring that funds will be available to pay debt claims. Companies with a high level of liquidity will have less need for access to expensive external financing to fund their investment programs, so the risks that arise will be small. Thus, the higher the liquidity value, the lower the hedging activity because the risk of financial difficulties is lower and vice versa. This is supported by research conducted by Augusto et al. (2017), Wahyudi et al. (2019), Hidayah & Prasetiono (2016), Iqbal (2015), Megawati et al. (2016)and Dewi & Purnawati (2016)which show that liquidity significant negative effect on hedging decisions

H2: Liquidity has a significant negative effect on hedging decisions

Growth opportunity is an opportunity and the company's ability to develop by taking advantage of investment opportunities in the future. Growth Opportunity measures how much chance the company will grow

by comparing market value to book value. The high growth opportunity can cause companies to experience an underinvestment problem. High growth opportunity will encourage companies to maintain their profits as retained earnings, besides that they will also continue to rely on their funding through larger external sources of funds. When a company is unable to fund its investment with internal funds, the company will conduct external funding with foreign currency. External funding with foreign currency has the opportunity to be exposed to the risk of increasing total debt and default due to exchange rate fluctuations. So the higher the growth opportunity for a company, the greater the possibility for the company to implement hedging decisions. This is supported by research conducted by Hidayah & Prasetiono (2016), Gewar & Suryantini (2020), Kenyatta (2017), Tanui & Karanja (2017)found influential growth opportunities. significant positive on the hedging decision.
H3: Growth opportunity has a significant positive effect on hedging decisions

III. METHODS

This study examines the effect of leverage, liquidity and growth opportunity on hedging decisions. The scope of this research is on mining companies on the Indonesia Stock Exchange (IDX) for the period 2015 - 2019. The data is obtained in the form of annual financial reports and other historical reports. The object of this research is leverage, liquidity and growth opportunity for hedging decisions in mining companies on the Indonesia Stock Exchange for the period 2015 - 2019.The reasons for choosing a mining company were based on considerations, such as mining companies often carry out foreign transactions, especially when mining companies tend to import which in the future will result in debt in the form of foreign currency which has the potential to cause losses, because they have to issue more local currency. So that this can increase the business risk that will be borne by the mining company.

The population in this study are mining companies listed on the Indonesia Stock Exchange for the period 2015-2019. The sample selection in this study is based on mining companies that meet several criteria with a purposive sampling method such as these companies are mining companies on the Indonesian Stock Exchange (IDX) and fundamentally have foreign exchange exposure arising from export and import activities or have subsidiaries. abroad and companies that submit complete data (financial reports and annual reports) during the study period 2015 - 2019. The reason for using purposive sampling technique is because in this study examining the hedging activity of companies that have foreign exchange exposure, so mining companies that do not have foreign exchange exposure and not conducting foreign transactions are not included in the sample in this study. The data obtained from the IDX website shows a total population of 48 mining companies and after selecting samples with the criteria mentioned above, a sample of 30 mining companies that meet the criteria and 18 mining companies that do not meet the criteria are obtained. The data collection method used in this study was non-participant observation. This study uses logistic regression data analysis techniques.

IV. RESULTS AND DISCUSSION

The minimum value of DER as the first variable is 1.4756 found in PT TimahTbk while the maximum value of the leverage variable is 5118 which is found in PT RatuPrabuEnergiTbk. The average of the DER variable is 228.2183. The second variable, such as the current ratio, shows a minimum value of 5,2400 found in PT Astrinso Nusantara InfrastrukturTbk, while the maximum value of the current ratio variable is 15226.4900 found in PT PerdanaKarya Perkasa. The average of the current ratio variable is 383.632573. The minimum value of the MBVE variable is -0.2700 contained in PT Bumi Resources while the maximum value of the MBVE variable is 4662.3300 which is found in PT Atlas Resources Tbk. The average MBVE variable such as 69.010062.

Hedging activities were carried out by mining companies as much as 96 times and the percentage was 64%, while there were 54 times the activities of companies which did not use hedging and the percentage was 36%. The statistical value of the Hosmer and Lemeshow Test is 15.049 with a significance probability of 0.058.The significance value shows a number of 0.058, which is greater than 0.05, this means that the model in this study is acceptable because it fits the observation data and can explain the influence of the variables. independent and dependent variables. The value at -2 Log Likelihood (block number = 0) is 196.025 and after inserting three independent variables the value of -2 Log Likelihood at the end has decreased to 165.940. The decrease that occurs at the value of -2 Log Likelihood indicates a good regression model, or in other words the hypothesized model fits the data

The predictive power of the regression model to predict the company to hedge is 91.7%. This shows that by using the regression model, there are 88 observations that are predicted to hedge from a total of 96 hedging observations. The predictive power of the regression model to predict the likelihood of companies not hedging is 33.3%. The model shows that there are 18 observations that did not hedge from a total of 54 observations that did not hedge. Overall the classification accuracy in this model is 70.7%, which means that the results of this study are quite good because they are close to 100%.The Nagelkerke R Square value is 0.249. This value means that the variations of the leverage, liquidity and MBVE variables are able to explain the variation of the hedging (dependent variable) by 24.9%, while 75.1% is explained by variations in other variables that are not included in the regression equation model.

Tabel 1. Variables in the Equation

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	DER	.004	.002	4.781	1	.029	1.004
	Curent ratio	-.005	.002	6.761	1	.009	.995
	MVBE	.004	.004	.950	1	.330	1.004
	Constant	.799	.455	3.077	1	.079	2.223

Source: Data processed, 2020

The regression model that is formed based on the estimated value of the parameters in Variable in The Equation is as follows:

$\text{Ln}\frac{p}{1-p}$ = 0,799 + 0,004 X_1 – 0,005 X_2 + 0,004 X_3 ……………………………(5)

The DER variable which is a proxy for leverage shows a regression coefficient value of 0.004 with a variable probability value movement of 0.029 which is smaller than the significance level of 0.05 (5%). This implies that H1 is accepted, and indicates that the DER variable has a significant positive effect on the hedging decisions of mining sector companies listed on the Indonesia Stock Exchange. The results of this test are in accordance with the findings of research conducted by Seng et al. (2018), Pitangga & Puryandani (2019), Saraswati & Suryantini (2019), Abdullah & Ku Ismail (2017), Nyamweya & Ali (2016), Jiwandhana & Triaryati (2016)found that leverage as measured by using the debt to equity ratio has a positive and significant effect on hedging decisions in mining sector companies in Indonesia. The positive and significant research results indicate that the higher the debt to equity ratio indicates that the company is faced with the risk of financial difficulties, which indicates the higher risk a company gets. So this is what further strengthens a company to make hedging or hedging decisions

The variable current ratio, which is a proxy for liquidity, shows a regression coefficient value of -0.005 with a variable probability value movement of 0.009 which is smaller than the significance level of 0.05 (5%). This implies that H2 is accepted, and indicates that the current ratio variable has a significant negative effect on the hedging decisions of mining sector companies listed on the Indonesia Stock Exchange. The results of this test are in accordance with the findings of the study by Wahyudi et al. (2019), Hidayah & Prasetiono (2016), Megawati et al. (2016)and Dewi & Purnawati (2016)found that liquidity is measured using current ratio has a negative and significant effect on hedging decisions in mining sector companies in Indonesia. The negative and significant results of the study indicate that the higher the current ratio indicates that the company is experiencing a low level of financial difficulty. So that the risks that arise will also be reduced or smaller. Companies with a high level of liquidity will have less need for access to expensive external financing to fund their investment programs, so the risks that arise will be small. Thus, the higher the liquidity value, the lower the hedging activity because the risk of financial difficulties will also be lower.

The MBVE variable which is a proxy for growth opportunity shows a regression coefficient value of 0.004 with a variable probability value movement of 0.33 which is greater than the significance level of 0.05 (5%). This implies that H3 is rejected because it is shown in the table that the probability value of the MBVE variable is greater than the significance of 0.05%. This shows that the MBVE variable has a positive and insignificant effect on hedging decision making at mining companies in Indonesia. The results showed that the sign corresponds to the hypothesis so that the increasing growth opportunity will indicate that the probability of hedging actions taken by the company with transaction exposure will also increase. Conversely, companies with lower growth opportunities will indicate that the probability of hedging actions taken by companies with transaction exposure will decrease. Companies that have high growth opportunities need additional capital from external parties in strong amounts to finance the company's activities. External capital can be obtained from foreign parties, so there is a risk of changes in currency exchange rates. When the local currency (rupiah) depreciates against the foreign currency (U $ dollars), it will cause the value of debt denominated in foreign currency (U $ dollars) to increase. This incident will greatly harm the company in fulfilling its debt obligations and paying interest.

Thus, companies that have high growth opportunities tend to become hedgers to protect their companies from the threat of financial distress and bankruptcy so that there is a push for hedging activities and it can be concluded that there is a positive relationship between growth opportunity and hedging action. The insignificant results on the growth opportunity variable could be due to the phenomenon of fluctuating contract data during the study period or it may take a longer period of research time so that it is hoped that the data collected can better represent the real situation.

DER, Current Ratio, and MBVE variables are indicators of financial difficulties borne by the company. The variable above shows the level of debt, the company's ability to meet its financial obligations in the short term and the size of the company's future opportunities. If the company has a high level of debt, it tends to encourage the company to hedge, this is expected to be able to protect the company from increasing debt burden that will be borne by the company. If a company has a high current ratio, it indicates that the company has been able to meet its financial obligations in the short term, indicating that the company will avoid risk, therefore the possibility of the company applying hedging will be lower. large size indicates that the company will need additional capital from outside or external parties to finance operational activities that will be carried out by the company. The required external funds can be obtained from outside as well as domestically. When obtaining from abroad, it will face the risk of exchange rate fluctuations. The company will experience losses if the local currency depreciates, so to minimize this risk the company will need hedging.

Based on the research that has been done, it can be seen that theoretically, this research supports several existing theories. Research on the Effect of Leverage, Liquidity, and Growth Opportunity on Hedging Decisions is expected to be new evidence with different results from this hypothesis for international financial management. Data processing was carried out using logistic regression with various tests used to estimate the relationship between variables that had been previously determined based on theory. The results of this study are expected to be used to enrich references related to leverage, liquidity and growth opportunity as well as hedging decisions. The results of this study are expected to be used as input for companies conducting international transactions so that later they can reduce the risks arising from exposure to fluctuations in foreign exchange rates.

V. CONCLUSION

The results show that leverage has a positive and significant effect on hedging decisions using derivative instruments, liquidity had a negative and significant effect on hedging decisions using derivative instruments and growth opportunity had a positive and insignificant effect on hedging decisions using derivative instruments. Mining companies, especially those conducting international transactions, face uncertainty as a result of foreign exchange fluctuations, they should use hedging when certain economic conditions are in order to protect the company. Investors who want to invest in mining companies need to pay attention to the growth opportunity variable because this variable affects the hedging decision so that it can be seen how the company's ability to manage risks that are being and will be faced. Further researchers are suggested to be able to further examine the factors that influence hedging decisions apart from the variables in this study such as cash flow volatility, firm size, financial distress, profitability, dividend policy and the proportion of commissioners using different sectors such as the food and beverage sector, automotive. and manufacturing

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