

DETERMINING FACTORS OF HEDGING DECISIONS IN INDONESIA STOCK EXCHANGE

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ABSTRAK

Penelitian ini bertujuan untuk menguji pengaruh leverage, likuiditas, peluang pertumbuhan, dan profitabilitas terhadap keputusan lindung nilai perusahaan pada perusahaan sektor manufaktur yang terdaftar di Bursa Efek Indonesia. Metode penentuan sampel dengan purposive sampling dengan jumlah sampel diperoleh sebanyak 99 perusahaan sektor manufaktur periode data 2015-2019. Teknik pengolahan data untuk menguji hipotesis alternatif dengan memakai Probit Model Binary Choice. Hal ini dikarenakan variabel dependen yang dipakai untuk hedging yang bersifat dummy yakni 1 (hedging) dan 0 (non hedging) serta adanya proses konversi data rasio menjadi data interval pada variabel independen. Hasil penelitian awal menunjukkan ternyata lebih banyak perusahaan manufaktur yang melakukan hedging daripada yang non hedging. Hasil tersebut berdampak pada signifikannya dua variabel bebas saat dilakukan pengujian hipotesis dengan Probit Model Binary Choice. Kedua variabel bebas yakni leverage dan profitabilitas berpengaruh positif signifikan terhadap keputusan lindung nilai perusahaan, sedangkan likuiditas dan peluang pertumbuhan tidak berpengaruh signifikan terhadap keputusan hedging. Implikasi yang didapat adalah aspek profitabilitas dan leverage harus menjadi pertimbangan utama dalam lindung nilai bagi perusahaan. Yakni saat melakukan hedging receivable (export activity) maka pertimbangan profitabilitas menjadi penting dan sebaliknya saat hedging payable (import activity) maka perusahaan harus lebih mementingkan leverage. Dengan demikian studi ini telah menemukan dua faktor penentu keputusan hedging yakni profitabilitas dan leverage yang sangat berguna bagi pelaku bisnis internasional tentunya.

Kata Kunci: Hedging, Leverage, Likuiditas, Peluang Pertumbuhan, Profitabilitas

ABSTRACT

This study aims to examine the effect of leverage, liquidity, growth opportunities, and profitability on corporate hedging decisions in manufacturing sector companies listed on the Indonesia Stock Exchange. The method of determining the sample is purposive sampling with a total sample of 99 companies in the manufacturing sector for the 2015-2019 data period. Data processing techniques to test alternative hypotheses using the Probit Binary Choice Model. This is because the dependent variable used for hedging is dummy, namely 1 (hedging) and 0 (non hedging) and the conversion process of ratio data into interval data on the independent variables. Preliminary research results show that there are more manufacturing companies that do hedging than non-hedging. These results have an impact on the significance of the two independent variables when testing the hypothesis with the Probit Binary Choice Model. The two independent variables, namely leverage and profitability, have a significant positive effect on firm hedging decisions, while liquidity and growth opportunities have no significant effect on hedging decisions. The implication is that profitability and leverage must be the main considerations in hedging for the company. That is, when hedging receivables (export activity), profitability considerations are important and vice versa when hedging is payable (import activity), the company should be more concerned with leverage. Thus, this study has found two determinants of hedging decisions, namely profitability and leverage, which are very useful for international business players of course.

Keywords: Hedging, Leverage, Liquidity, Growth Opportunity, Profitability

1. INTRODUCTION

In Indonesia, not many firms use the hedging method which has actually been offered by banks in order to counter the risks that arise due to the uncertainty of the exchange rate, in this case not only firms listed on the Stock Exchange but individual firms or those that are still not listed. According to Bessler, et.al (2019) hedging will reduce financial distress or even bankruptcy and decrease the value of the firm. While Bartram, et.al. (2009) stated that expensive external financing is the imperfection of the capital market which makes hedging a strategy to increase value. If a firm has transaction values in foreign currencies in the form of receivables or payables, the hedging method itself can be a tool to prevent the firm's value from falling due to exchange rate uncertainty.

Apart from being driven by external factors such as what has been described regarding digital currencies, internal factors also encourage hedging activities. There is research that states that firms that use derivative hedging are solely to increase the value of the firm by reducing costs related to taxes, financial distress and investment costs. (Nguyen, 2012).

One of the factors that can be used as factor determinant to hedging decision is the liquidity ratio. There are two studies that show different results on the effect of the Current Ratio (CR) on hedging decision. Firstly, according to Suprihandari et.al, (2019) if the CR of firms that do hedging is higher than firms that do not hedge thus these firms will have more debt protection than non hedging firms. In this case, the debt owned by these firm in the foreign currency will be protected from risks due to the appreciation of foreign exchange rates. Then it will impact the paid debt will own stable value at the maturity. On the contrary, Nur Prita Hayuning, et.al. (2019) find that CR is not significant with hedging decisions. The argumentation is that firms with high levels of liquidity will have less need in external financing to fund their programs, and otherwise firms with low levels of liquidity will have more needs in external financing so that the emerging risk will be the greater.

There is a ratio of profitability that is proxied by ROA (Return on Asset), in the research of Megawati, et.al (2016) which results if profitability has a significant influence on hedging decisions with higher profitability. A higher level of profitability encourages firms to develop their business more quickly, so firms tend to have a higher risk due to market risk or dynamic international market conditions. Therefore firms must always reduce their exchange rate risk by hedging evidenced as mentioned by Suprihandari, et.al. (2019). But on the contrary, the results of research from Lestari (2018) stated that if a high ROA indicates the firm is able to bring in large profits from firm assets, high profitability indicates that the firm is avoiding the risk of financial distress so that the use of hedging tends to be low, and the results from the research is if profitability shows no significant effect on hedging decisions, which means that the increase or decrease in ROA value does not affect the firm in making hedging decisions.

Firms with large growth opportunities often experience underinvestment problems. Suriawunata (2005) and Putro & Chabachib (2012) found evidence that firms with large growth opportunities are more likely to hedge. On the other hand, Bartram (2009) found evidence that growth opportunity has a negative and significant effect on hedging decisions. Hedging can be an initial solution for firms that have transactions abroad to reduce risks, especially for firms with foreign debt [Marek (2008)]. In this research, the sector that is being focused is the manufacturing sector because the manufacturing sector is still the largest contributor to the national Gross Domestic Product (GDP) with a total of 19.7% of the total GDP of Indonesia. This is a lower growth compared to 2018, which has decreased from 4.27% to 3.8%. In 2018 and 2019 the main export

destinations were still dominated by the US and China. Thus, it can be said that one of the biggest contributors to the Indonesian economy is from the manufacturing sector. This is supported by the data on the export value to the US and China which are still dominating most of the international trade. With the persisting dominance of the manufacturing sector for Indonesia's economic growth, the fluctuation of the Indonesian Rupiah (IDR) must be maintained.

Thus this research has the four objectives such as to find out how leverage influences hedging decisions, to find out how the influence of liquidity on hedging decisions, to find out how the influence of growth opportunity on hedging decisions and to find out how the effect of profitability on hedging decisions. The expected contribution is to justify whether the determinants of hedging decisions in the manufacturing sector in Indonesia, which are strongly indicated to be internal firm factors, are liquidity, growth opportunities, leverage and profitability, not external factors (macroeconomic factors) such as exchange rates and interest rates. From this contribution, it can be identified important benefits for firm management (CEO & CFO), namely that they must look at the firm's financial condition first rather than look at economic factors in making hedging decisions, referring to Suriawinata (2005), Bartram, et.al. (2009), and Bessler, et. al. (2019).

The main issue in previous hedging studies is not looking for a theoretical basis for hedging decisions but looking for the right test model. The weakness of the previous test results that still use OLS analysis needs to be overcome with a better test model as in Suriawinata (2005), Bartram, et.al. (2009), and Bessler, et. al. (2019) which already uses logistic types, both Logit, Probit and Tobit. The choice of three logistic model in this study will depend on the condition of data namely, whether it is necessary to convert the ratio data into interval data on the independent variable.

HYPOTHESIS DEVELOPMENT OF HEDGING DECISION

Leverage and Hedging Decision

The leverage ratio will show how much the firm uses debt to finance its activities. A high leverage ratio will also directly indicate that corporate financing is dominated by debt. According to Fahmi (2014), the ratio of leverage measures how much a firm is financed with debt. However, if the proportion of debt is greater than equity, the greater the risk that the firm will cover. That means the firm will automatically be in the extreme leverage category (extreme debt) where the firm is likely to experience high levels of debt.

H1: Leverage will have a positive effect on hedging decisions.

Liquidity and Hedging Decision

In its operational activities, firms certainly need to pay attention to their ability to fulfill their financial obligations. The level of the firm's liquidity can be measured by measuring the ratio of its liquidity. According to Munawir (2010) liquidity shows the ability of a firm to meet its financial obligations that must be fulfilled immediately, or the firm's ability to meet financial obligations when they are collected. Therefore, it can be said that liability is a firm's ability to fulfill its obligations, and in this case, it is the firm's short-term obligation.

H2: Liquidity will have a positive effect on hedging decisions.

Growth Opportunities and Hedging Decision

Firms that can grow or in a relatively high growth opportunities phase tend to have more opportunities to sell so that the firm will tend to carry out multinational transactions and require more financing that is large enough to support its growth (Putro & Chabachib, 2012). Previous research, such as the studies conducted by Putro & Chabachib (2012) and Suprihandari et. al. (2019), conclude that hedging with derivative instruments has more tendency to be chosen.

H3: Growth Opportunity will have a positive effect on hedging decisions.

Profitability and Hedging Decisions

Profitability is the firm's ability to generate profits. The measure of profitability that can be used is the ratio of the rate of return on ROA assets, namely by dividing net income by the value of total average assets (Dwi & Juliaty, 2008). In this case, a good performance will be assessed in firms that have high profitability. This is measured by comparing the profits that the firm receives with several estimates that become measures of the success of the firm.

H4: Profitability will have a positive effect on hedging decisions

2. RESEARCH METHOD

Data

The research method applied to this research is a descriptive method with a quantitative approach. Secondary data is obtained from the official website www.idx.co.id. The population used in this study is 184 firms from the manufacturing sector listed on the IDX from 2015 to 2019. The selection of the data period starting in 2015 is based on the condition that many firms in Indonesia have made hedging decisions since President Jokowi's end of 2014 economic policy which emphasized economic growth by activating the export-oriented real sector. This condition makes many firms begin to aggressively seek foreign financing [Suprihandari, et.al. (2019)]. For foreign financing to be controlled, it is necessary to have the right hedging.

The sampling technique used in this study is purposive sampling in which the sample selection technique is based on predetermined criteria. The sample selection criteria are as follows:

1. Firms from the manufacturing sector that have been listed on the Indonesia Stock Exchange from 2015 to 2019.
2. Firms that have published their Financial Statements until 2019.
3. Firms that use IDR in their Financial Statements.
4. Firms that have hedging exposures found in their audited financial statements.
5. Firms that have transaction exposure in terms of accounts payable and receivable using foreign currencies from 2015 to 2019.
6. If in the audited report, even though the firm has foreign currency in its accounts payable, contains information stating that if the firm does not use hedging, then the firm will be categorized as not using hedging in its sample selection.
7. Firms that have complete data to be analyzed in this research. The financial data in 2020-2021 was not using because there is a global COVID-19 pandemic.

Analysis Model

This hypothesis testing is carried out to determine whether there is an influence of the independent variable on the dependent variable. In this test, it is carried out using the Probit Model Binary Choice as following the steps specified in Sarwono (2016).

$$Z_{it} = (\beta_0 + \beta_1 DER_{it} + \beta_2 CR_{it} + \beta_3 PER_{it} + \beta_4 ROA_{it} + \varepsilon_{it}) \dots\dots\dots (1)$$

Where:

- Z_{it} = Logarithm of the probability that the firm_i does or does not hedge (H) at time t
- DER_{it} = Debt Equity Ratio of firm i at time t
- CR_{it} = Current Ratio of firm i at time t
- PER_{it} = Price Earning Ratio of firm i at time t
- ROA_{it} = Return of Assets of firm i at time t
- $\beta_0, \beta_1, \dots, \beta_4$ = Coefficient of each independent variable DER, PER and ROA
- ε_t = error term from the difference between Z_{it} (actual) and Z_{it} (forecast).

This research was conducted using the Probit Model Binary Choice because the model in the dependent variable is a variable dichotomy, which means that the variable will be given a value of 1 for firms that are hedging and a value of 0 for firms that do not hedge. Probit Model Binary Choice is a procedure in which the independent variable uses interval scale data and the dependent variable uses categorical data, namely data with only two possible values and can also be nominal (binary) scale data (Sarwono, 2016).

Before being processed, the data will enter the standard score (Z) stage. The function is to determine whether the data to be processed is of extreme value or outlier and where the outlier data itself is data that is far from the average.

3. RESULTS AND DISCUSSIONS

Descriptive Statistics

After carefully processing the data through the purposive sampling method, it was found that 99 manufacturing companies met the 7 criteria of purposive sampling. Due to the 5-year period data, 380 observations were obtained. Based on table 1 below, the average values of DER, CR, PER, ROA and H respectively are 1.1533, 241.7278, 68.0212, 8.789 and 0.5837. The standard deviation values of DER, CR, PER, ROA and H are 1.7781, 214.7573, 702.0275, 69.6219 and 0.4935 respectively.

Table 1. Descriptive Statistics

Component	DER	CR	PER	ROA	H
Mean	1.1533	241.7278	68.0212	8.789	0.5837
Std. Dev.	1.7781	214.7573	702.0275	69.6219	0.4935
Obs.	380	380	380	380	380

The conclusion of table 1 is that for two critical variables, namely DER and H, the values indicate that they will lead to the use of hedging as the result of the high DER above 1 meaning that debt is more dominant than equity. And the average value of H is 0.5837, meaning that it is above 0.5, so it is reasonable to suspect that more firms are do hedging than do not hedging. The results of the Jarque-Bera test in table 2 show that the probability for the four variables, namely DER, CR, PER, and ROA in a manufacturing firm is zero respectively. These results indicate that the data from the manufacturing firm financial performance variables are not normally distributed because the value of the probability is smaller than 0.05.

$$Z_i = (\beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \beta_3 x_{3i} + \beta_4 x_{4i} + \varepsilon_i)$$

Table 2. Normality Test

Jarque-Bera	3662.487	385.3193	636372.7	27984.70	64.22802
Probability	0.000000	0.000000	0.000000	0.000000	0.000000

The results of the normality test above will not be problematic because the analysis model used is the Probit Binary Choice Model which is not based on linearity and normality assumptions as if the Ordinary Least Square regression analysis model would be used.

Hypothesis Testing Analysis

From table 3, the value of the R-Squared processed with the Probit Binary Choice Model is 0.044132, which means the proportion of the variation in the dependent variable Y. In this case, Y is hedging, which can be explained by using the independent variable X which consists of the four variables namely DER, CR, PER, and ROA. The conclusion is that of 0.044132 the variation of the Y variable can be explained by using the X variable. Referring to the research of Suriawinata (2005), Bartram, et.al. (2009), and Bessler, et. al. (2019), hedging decision is a dummy variable that is $Y = 1$ is hedging decision, while $Y = 0$ is non hedging decision.

The value in the result of the Probit Binary Choice Model for the LR Statistics Probability is 0.000175. The value from the results of this model are used to test the significance value of testing the hypothesis. If the significance value is smaller than 0.05, it can be said that the independent variables jointly influence the dependent variable.

Table 3. Probit Binary Choice Model Test Result

Dependent Variable: H
Method: ML – Binary Probit (Newton-Raphson / Marquardt steps)
Date: 01/06/21 Time: 10:31
Sample: 2015 2395
Included observation: 380

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.734489	0.157530	4.662542	0.0000
ZDER	6.480548	2.551406	2.539991	0.0111
ZCR	0.192825	0.130084	1.482315	0.1383
ZPER	-0.278703	0.253811	-1.098073	0.2722
ZROA	1.669982	0.673537	2.479422	0.0132
McFadden R-Squared	0.044132	Mean dependent var	0.618421	
S.D dependent var	0.486415	S.E. of regression	0.473830	
Akaike info criterion	1.297299	Sum Squared resid	84.19323	
Schawrz criterion	1.349143	Log likelihood	-241.4868	
Hannan-Quinn criter.	1.317871	Deviance	482.9736	
Restr.deviance	505.2722	Restr. log likelihood	-252.6361	
LR Statistic	22.29855	Avg. log likelihood	-0.635492	
Prob(LR-statistic)	0.000175			
Obs with Dep = 0	145	Total Obs	380	
Obs with Dep = 1	235			

Result of Leverage and Hedging Decision

The probability value of leverage is 0.0111. The probability value is less than 0.05, which means that H₀ is rejected and H₁ is accepted. This means that based on the hypothesis testing, it can be concluded that the first hypothesis, namely leverage proxied by DER, has a significant effect on hedging decisions with the level of influence reaching 6.480548. This means that all manufacturing companies that are sampled when setting foreign currency debt policies will really consider the related hedging aspects.

Result of Liquidity and Hedging Decision

The probability value is greater than 0.05, which means that H₀ is accepted and H₁ is rejected. This means that based on the hypothesis test, it can be concluded that the second hypothesis, namely the liquidity ratio, which is proxied by CR, does not have a significant effect on hedging decisions with a level of influence of 0.192825.

Result of Growth Opportunity and Hedging Decision

The probability value of growth opportunity is 0.2722. The probability value is greater than 0.05, which means that H₀ is accepted and H₁ is rejected. This means that based on the hypothesis test, it can be concluded that the third hypothesis, namely growth opportunity which is proxied by PER, does not have a significant effect on hedging decisions with a level of influence of -0.278703.

Result of Profitability and Hedging Decision

The probability value of profitability is 0.0132. The probability value is less than 0.05, which means that H₀ is rejected and H₁ is accepted. This means that based on the hypothesis test, it can be concluded that the fourth hypothesis, namely profitability which is proxied by ROA, has a significant effect on hedging decisions with a level of influence that reaches 1.669982.

Discussion Result Analysis

Leverage and Hedging Decision

The result of the leverage variable that has been tested is in line with the research conducted by Nur Prita Hayuning, et.al. (2019) which has a significant effect on hedging decision. The result contradicts the research result conducted by Lestari (2018) and Kussulistiyanti & Mahfudz (2016) which shows that leverage has no significant effect on hedging decision. This means that in a firm, the higher the leverage borne by the firm, the greater the actions that need to be taken by the firm to reduce the adverse effects of existing risks.

Liquidity and Hedging Decision

The result of the liquidity variable that has been tested shows a positive and not significant result. This result is in line with Lestari's research (2018) that finds that CR is not significant. In contrast, this result also contradicts the research conducted by Suprihandari et al. (2019). This means that the firm still could pay maturing debts by using or not using hedging, even though the result using Probit Binary Choice Model shows a not significant positive relationship.

Growth Opportunity and Hedging Decision

From the result of the hypothesis testing, growth opportunity has negative and not significant result. This is in line with the research conducted by Bartram et. al. (2009) that finds that growth opportunity has a negative and not significant relationship. This means that firms that have a high growth rate will be better off using equity to finance all needs in increasing firm growth so

that agency costs do not occur between management, compared to foreign financing. This also has an impact on non-hedging decision.

Profitability and Hedging Decision

The result of the tested profitability is in line with the studies from Megawati et. al. (2016) and Suprihandari et. al. (2019) which conclude that profitability has a significant positive relationship to the decision to hedge. This result also contradicts the research conducted by Lestari (2018) which concludes that profitability has a significant negative effect. The higher the level of the firm's profitability, the more it will encourage the firm to use hedging due to the firm's ability to hedge and overcome the risks that may occur in the international market. This is also mentioned by Bartram et. al. (2009) who find that the higher level of profitability of the firm encourages the firm to further expand its business so that the firm tends to hedge to overcome the risks that may occur.

Discussion of the Analysis of Independent Variables that are not significant

Two independent variables that are not significant, namely CR and PER, occur because the standard error value is greater than the coefficient value so that the z-test value is smaller than the z-table. The condition explains that in hedging, the firm cannot link it to short-term working capital and growth policies. Hedging decisions are more inclined to long-term policies such as investment in fixed assets and capital structure. The principle of hedging that must be implemented is to use long-term debt for fixed assets and never use short-term debt for fixed assets.

4. CONCLUSION AND SUGGESTION

Conclusion

This research proves that there are indications of hedging by manufacturing firms in the IDX from 2015 to 2019. This can be seen from the larger number of manufacturing firms in the IDX that choose to do hedging than not. The manufacturing firms have been able to arrange the export sales performance of manufacturing firms when they record their trade receivables and vice versa when manufacturing firms record their trade payables that occur from import purchases. The reconciliation between trade receivables and accounts payable due to export-import activities has triggered the standard hedging mechanism. Based on testing the Probit Binary Choice Model, two factors have a strong influence on hedging decisions, namely leverage and profitability. This means that when a manufacturing firm makes export sales through trade receivables, the aspect of profitability becomes very important. When a manufacturing firm carries out import purchasing activities, usually for raw and support materials, the leverage or debt aspect becomes the main consideration.

Suggestion

This study does not include economic factors in the Probit Binary Choice Model, considering that economic data such as exchange rates and interest rates are time series data that will not allow the data intervalization process to occur, such as data on financial ratios DER, CR, ROA and PER. Exchange rate fluctuations due to the trade war between the United States and China are only descriptive and do not affect the hedging behavior of international business actors. What this means here is that they can diversify in another foreign currencies beside the US Dollar. However, economic factors can be included as moderating variables in the Probit Binary Choice Model by emphasizing the accuracy of the interaction with the independent variable, namely DER.

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