## Effect of Firm Size, Financial Distress and Debt Level on Hedging Decision on Manufacturing Companies Listed on IDX in 2016-2019

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| Article Information | Abstract |
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| | Supporting is an activity that can be taken by the company to play down the trade rate chance confronted. The reason of this inquire about is to decide the impact of firm estimate, monetary trouble and obligation level on supporting choices on fabricating companies recorded on IDX in 2016-2019. The sampling method of this study is purposive sampling and obtained 32 samples that meet the criteria of 105 companies that become observation data. Technical analysis used in this study is the analysis of logistic regression. And the testing getting results Firm Size, Financial Distress, Debt Level has no effect on hedging decisions. |

### INTRODUCTION

In the era of globalization the company is engaged in international business such as international trade and investment. Each country plays an active role in this international business. Globalization provides opportunities for companies to contribute, namely exporting imported goods, business expansion and foreign funding. In addition to providing benefits, the company will also face risks when entering into international business (Mahfudz & Kussulistyanti, 2016).

International trade will pose some considerable risks. The risk of international trade is the risk of foreign exchange. Foreign exchange risk (foreign exchange) is a risk caused by changes in foreign exchange rate in the market that are no longer in accordance with the expected, especially when converted to domestic currency (Fahmi, 2011). Companies involved in international trade take risk management measures so that the company does not experience a significant impact of exchange rate risk by hedging.

Hedging is an action to avoid or reduce the risk of losses incurred to protect the company on foreign exchange from business transactions conducted (Guniarty, 2014). In using hedging instruments that are often used by companies as a means to perform hedging is a derivative instrument. Foreign exchange derivative instruments that can be used such as forwards, options, swaps and futures contracts (Mahfudz & Kussulistyanti, 2016).

Based on previous research that the use of hedging is influenced by several factors that indicate that the size of the company, financial difficulties, debt levels (Krisdian & Badjra, 2017) and managerial ownership (Mahfudz & Kussulistyanti, 2016).

In the research Mahfudz and Kussulistyanti (2016) stated that large companies in their business will conduct overseas transactions so that it

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will face higher risks and require hedging because the company will face greater foreign exchange exposure. Companies of large size will realize the importance of hedging to protect assets and cash flow, and companies can afford to buy foreign exchange derivatives for hedging purposes. In contrast to the results of Krisdian and Badjra (2017) which obtained the results that the size of the company negatively and insignificantly influenced the decision of hedging.

The size of the company is the benchmark of a company has grown or not since the company was founded which can be seen from the total value of assets listed in the financial position statement. Large companies will act cautiously in the management of their companies and do more hedging. Large companies will have greater risk than small companies (Guniarti, 2014).

The other side, company size to be like company age and hence to family size (Graafland, 2020) but in other study by Lopes de Sousa Jabbour et al. (2011) company size was determined according the number of employee in firm. Study from Ullah et al. (2021) finds that to get higher valuation in profitability size of firm not proven but size of company only providing measurement on total assets.

Another factor affect hedging is financial distress. Financial Distress is on way to reduce the revenue and shareholder return properly, to avoid unexpected financial return, and the common strategy to get best solution in management-risk (Mo et al., 2021). Beside it was necessary, financial distress as a stage of deterioration in financial condition that occurred before the occurrence of bankruptcy or liquidity (Fahmi, 2012:158). A company will not experience sudden bankruptcy, but in the process of a long time, and it can be seen from the signs. There fore for a researcher, manager, and investor will see from various points of view different studies (Fahmi, 2012).

In Krisdian and Badjra (2017) which showed that financial distress has a positive and significant influence on hedging decisions that are toxic through Z-score. Companies experiencing financial difficulties will be careful in managing their finances so that they will hedge to reduce the risk to foreign exchange transactions. However, different results of the study with Guniarti (2014) showed financial distress results negatively influenced hedging decisions.

Financial distress the most important factor to explain the cross firm variation in hedging (Mayers & Smith, 1990). Some previous research such as Mo et al. (2021) finds that firms in deeper financial disstress are expected to hedge more, to support Mo et al. (2021) study from Mayers and Smith (1990) describes that corporate to provides an evective hedging through diversification. On the other hand Nance et al. (1993) finds opposite condition, there is firm focus on balance sheet strategy can safe the currency. Nance et al. (1993) state that financial distress not main factor in hedging practice but in secondary role.

Furthermore, another factor that influences the level of debt produced through debt ratio has a significant positive effect on hedging decisions based on research conducted by Krisdian and Badjra (2017). In its research, companies whose capital structure has high debt levels will be cautious in overseas transactions because the company does not want to increase the risk of fluctuations in foreign exchange rates so that it requires hedging activities using derivative instruments to reduce risk. The reason of this inquire about is: To discover out the impact of firm estimate, budgetary trouble and obligation level on supporting choices on fabricating companies recorded on IDX in 2016-2019.

Debt is used by companies to improve performance, such as making investments or to meet working capital needs due to the need for funds. On the other hand, debt can increase the likelihood of risks that will be faced by the company (Subagya, 2015).The risk can be a period of debt that can affect the company, excessively high debt and inability to pay the debt.

Hedging and debt are very closed (Schnabel, 2015; Vivel-búa et al., 2013). Schnabel (2015) finds in corporate hedging incidence of debt overhang can reduce by using of forward contracts the incentives to underinvest. Vivel-búa et al. (2013) also support Schnabel (2015). Vivel-búa et al. (2013) research states that debt in currency as a main mechanism of hedging currency and foreign currency debt as important tools in Latin American.

According to Guniarti (2014), hedging is an act to protect the company against the risk of foreign exchange losses as a result of business transactions and basic risk reduction for specific demand in organization (Mayers & Smith, Jr., 1990). The otherwise, Mayer and Smith (1990) describe hedging encounter financial distress by reducing in expected cost of financial distress and reducing variance of firm. But previous research from Froot et al. (1993) said that hedging can reduce by debt. But it probably in different level of debt and different situation where it's unable to pay that debt. That's why debt cannot used as a hedging in a company generally (Froot et al., 1993).

Hedging actions and decisions are usually carried out around the conditions of anticipating the occurrence of fluctuations in foreign exchange in the market. But research from Hadian and Adaoglu (2020) states that hedging can increase by taxes, financial distress cost, underinvestment, and agency cost.

Research in hedging is very interest, because; hedging literatur is non monotonic (Mo et al., 2021); an optimal dinamics strategy to hedging rely on mortality linked securities and various of hedging errors as induced by the population basis risk (Tan et al., 2021); before and after pandemic crisis worldwide economic and financial was unpredictable on the basis of that reason hedging performance must be studied (Tarchella & Dhaoui, 2021); and studied in hedging risk can reduce the energy cost (Lai et al., 2022).

This research findings are different from some the previous research because this research provide firm size, financial distress, and debt level which must be investigate under certain condition especially economic uncertainty has increased (Tarchella & Dhaoui, 2021).

**Hypotheses Development**

Large companies tend to run their businesses in a wide range of regions of the country so that it has more operational activities than small companies. Large companies will face a higher risk that will be accepted by the company. The higher risk makes the company careful in its operational activities so that it needs hedging. Hedging is used to protect companies from exchange rate fluctuations especially assets. This is in accordance with the research of Kussulistyanti and Mahfudz (2016) which stated that firm size significantly positively influenced the decision of hedging.

H1: Alleged Firm Size Influenced Hedging Decision

Companies experiencing financial difficulties will take more careful action against their companies, thus encouraging companies to focus more on managing their finances, especially in international businesses. Actions to protect the company from various risks in conducting foreign exchange transactions decided to use hedging companies. Companies that have a low Z-score will hedge to protect their assets from exchange rate fluctuations. This is in accordance with the results of research conducted by Krisdian and Badjra (2016) which the comes about of this ponder expressed budgetary trouble contains a noteworthy positive impact on supporting choices.

H2: Alleged Financial Distress Affects Hedging Decisions

Companies whose capital structure has a high level of debt will be more focused in carrying out their operational activities, especially in foreign transaction activities using foreign exchange. In addition to having to pay high interest due to high debt levels, the company also does not want to increase the risk burden due to currency exchange rate fluctuations in conducting transactions with various countries, causing companies to manage the risks they receive very carefully in order to limit and reduce the chance of vacillations in remote trade rates by conducting supporting exercises utilizing subordinate disobedient. This is in accordance with the results of research researched by Krisdian and Badjra (2016).

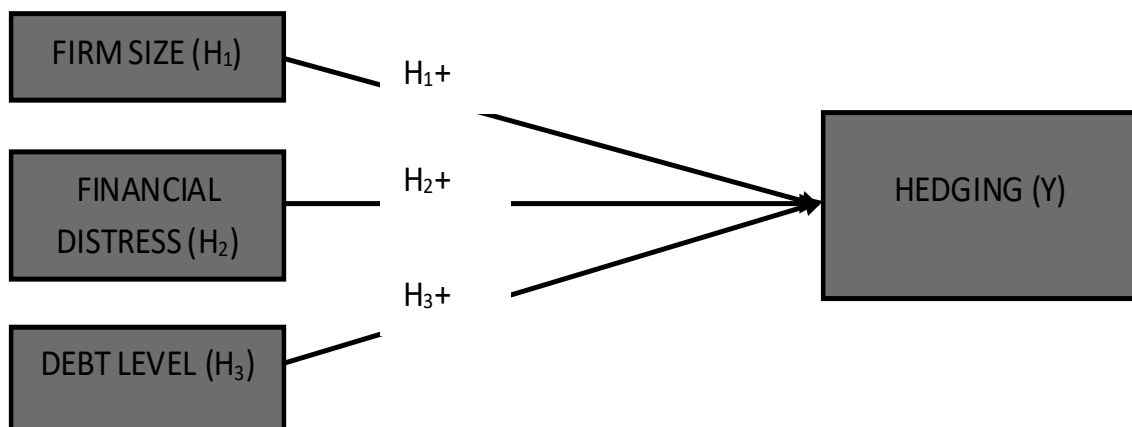H3: Alleged Debt Level Affects Hedging Decisions



**Figure 1.** Research Framework

The investigate was conducted on fabricating companies recorded on IDX for the period 2016-2019. The question of this investigate is the year-end money related articulations of each fabricating company. This consider points to decide the impact of firm measure, budgetary trouble and obligation level on supporting choices. In this study is limited by companies whose financial statements meet several criteria that will be described in the sample selection criteria.

This research method is a quantitative strategy, and the information utilized is auxiliary information that in this study uses dependent variables, namely hedging decisions made by fabricating companies recorded on IDX for the period 2016-2019. For independent variables this study includes firm size, financial distress and debt level. Information about the data used is obtained from financial statements and records of financial statements downloaded from the official website of IDX (www.idx.co.id and Bloomberg).

The populace in this consider is fabricating companies recorded on the IDX for study are:

$$HEDGING = \alpha + \beta\beta 1FS + \beta\beta 2FD + \beta\beta 3DR + e$$

Where:
Y = Headging Activity
(1 = there is hedging activity, 0 = there is no hedging activity)

$\alpha$ = Constant

$\beta$ = $\beta 1$ $\beta 2$ $\beta 3$ = Regression coefficient
FS = Firm Size
FD = Financial Distress
DR = Debt Ratio
e = Error

## RESULTS AND DISCUSSION

Clear factual test gives an outline of the mean (mean), standard deviation, maximum and minimum of the research observation data. Table 1 appears the expressive measurements of the autonomous factors:

**Table 1.** Descriptive Statistic

|  | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| FZ | 105 | 0.15 | 289.85 | 17.23 | 50.69 |
| FD | 105 | 0.27 | 7.77 | 2.04 | 1.53 |
| DR | 105 | 0.07 | 0.71 | 0.36 | 0.17 |
| Valid N (Listwise) | 105 |  |  |  |  |

the period 2016-2019, namely 165 companies. The method of determining samples in this study is purposive sampling. This study used samples from IDX in 2016-2019.
Sampling in this study uses several criteria, namely: Fabricating companies recorded on the IDX in 2016-2019 respectively; Companies that publish complete financial statement data during the period 2016-2019; Companies that show money related explanations in Rupiah; Companies that did not suffer losses during the period 2016 to 2019; Manufacturing companies that have managerial ownership during the period 2016-2019.

The number of companies that are made up of the population is 165 companies, and after the selection of samples, it obtained samples as many as 32 companies and 105 observation data.
Data Analysis Methods
The method of data analysis in this study is logistic regression analysis. Calculation of variables through Microsoft Excel and SPSS version 25 regression equation models in this

Based on table 1, there is a wide range between the minimum value of 0.15 (Lionmesh Prima Tbk) and maximum 289.85 (Astra International Tbk) of the Firm Size variable, which means that many companies have good company conditions. The average for this variable is 17.23 and the level of variation for Firm Size is quite varied with a standard deviation of 50.69.

Financial Distress has a minimum value of 0.265133 (Ultrajaya Milk Industry and Trading Company Tbk, and its Subsidiaries) and a maximum value of 7.77 (Jamu and Pharmaceutical Industry Sido Muncul Tbk and its Subsidiaries). The average for this variable is 2.04, and the standard deviation value is 1.53.

Debt Level has a minimum value of 0.07 (Jamu and Pharmacy Industry Sido Muncul Tbk and its Subsidiaries) and a maximum value of 0.704500 (Nipress Tbk and Subsidiaries). The average for this variable is 0.36 and the standard deviation value is 0.17.

**Table 2.** Frequency Dependent Variable

|  |  | Fre-quency | Percent | Valid Percent | Cumu-lative Percent |
|---|---|---|---|---|---|
|  | 0 | 165.0 | 73.9 | 73.9 | 73.9 |
| Valid | 1 | 105.0 | 26.1 | 26.1 | 100.0 |
|  | Total | 32.0 | 100.0 | 100.0 |  |

Based on table 2, it can be seen that from the 165 research samples, there were 105 companies that hedged or about 26.1% and the remaining 32 companies did not hedge or about 73.9%.

**Table 3.** Feasibility Test of Regression Model

| Step | Chi-square | df | Sig. |
|---|---|---|---|
| 1 | 22.53 | 8 | 0.17 |

The achievability test of the relapse show, the test utilizing the Hosmer and Lemeshow Test where the basis for making the decision is if the sig value is more than (>) 0.05 at that point there's no critical distinction between the anticipated and watched classifications. Based on table 3, the sig value is 0.173 where the value is more than 0.05 and it means that there is no significant difference between the predicted and observed classifications and means that the model in this study can be said to be feasible.

**Tabel 4.** Lock 0: Beginning BLOCK Iteration History

| Iteration |  | -2 Log likelihood | Coefficients |
|---|---|---|---|
|  |  |  | Constant |
| Step 0 | 1 | 105.739 | -0.957 |
|  | 2 | 105.610 | -1.040 |
|  | 3 | 105.609 | -1.041 |
|  | 4 | 105.609 | -1.041 |

**Tabel 5.** Block 1 Iteration History

| Iteration | -2 Log likeli-hood | Coefficients | | | |
|---|---|---|---|---|---|
|  |  | Constant | FZ | FD | DL |
| 1 | 84.189 | -1.386 | 0.011 | -0.076 | 1.865 |
| 2 | 78.090 | -1.071 | 0.014 | -0.232 | 2.046 |

| | | | | | |
|---|---|---|---|---|---|
|  | 3 | 73.994 | 0.043 | 0.014 | -0.438 | 1.146 |
| Step 1 | 4 | 72.357 | 0.924 | 0.013 | -0.626 | 0.555 |
|  | 5 | 72.135 | 1.227 | 0.013 | -0.703 | 0.406 |
|  | 6 | 72.129 | 1.270 | 0.013 | -0.714 | 0.389 |
|  | 7 | 72.129 | 1.271 | 0.013 | -0.714 | 0.389 |
|  | 8 | 72.129 | 1.271 | 0.013 | -0.714 | 0.389 |

This test is carried out to see whether the model used is fit with the data or not. In this test, what must be considered is the number in the -2 Log Likelihood section. If the number -2 Log Likelihood at the beginning (Table Iteration History Block Number = 0) is higher than the number 2 Log Likelihood in Iteration History Block Number = 1 then this indicates that the regression model is good or fits the data. From tables 4 and 5 which are the results of testing this research, it is found that the initial -2 Log Likelihood value (105.739) is higher than the -2 Log Likelihood value in Iteration History Block Number = 1 (84.189) which means that the hypothesized model fits the data.

**Tabel 6.** Model Summary

| Step | -2 Log like-lihood | Cox & Snell R Square | Nagelkerke R Square |
|---|---|---|---|
| 1 | 72.129[a] | 0.305 | 0.447 |

The value of Nagelkerke R Square in Table 6 Model Summary explains the relationship of the independent variable to the dependent. From the table, the number 0.447 means that the variation of the independent variables (FZ, FD and DL) is able to interpret the variance of the dependent variable (HEDG) of 44.7% while the rest is interpreted by other variables that are not included in the regression model.

The regression equation model in this study is:

HEDG = 1.271 + 0.013 FZ – 0.714 FD + 0.389 DR

This test is conducted to show how far the influence of one independent variable on the dependent variable by paying attention to the value in the Variables in the Equation table, if the sig value is less than (<) 0.05 then the regression coefficient is significant.

**Tabel 7.** Variables in the Equation

|  |  | B | S.E. | Wald | Df | Sig. | Exp(B) | 95% C.I.for EXP(B) | |
|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  | Lower | Upper |
|  | FZ | 0.013 | 0.009 | 2.150 | 1 | 0.143 | 1.013 | 0.996 | 1.031 |
|  | FD | -0.714 | 0.415 | 2.957 | 1 | 0.086 | 0.490 | 0.217 | 1.105 |
| Step 1ª | DR | 0.389 | 2.400 | 0.026 | 1 | 0.871 | 1.475 | 0.013 | 162.723 |
|  | Constant | 1.271 | 1.944 | 0.428 | 1 | 0.513 | 3.566 |  |  |

The first hypothesis in this study is that firm size is suspected to have an effect on hedging decisions. The test results show that the regression coefficient value of this variable is 0.013 and the significance result is 0.143, where the test value is greater than 0.05. So it can be seen that firm size has no effect on hedging decisions or in other words H1 is rejected.

The second hypothesis in this study is suspected that financial distress B has an effect on hedging decisions. The test results show that the regression coefficient value of this variable is -0.714 and the significance result is 0.086, where the test value is greater than 0.05. So it can be seen that financial distress has no effect on hedging decisions or in other words H2 is rejected.

The third hypothesis in this study is suspected that Debt Level has an effect on hedging decisions. The test results show that the regression coefficient value of this variable is 0.389 and the significance result is 0.871, where the test value is greater than 0.05. So it can be seen that the debt level has no effect on hedging decisions or in other words H3 is rejected.

In this ponder, firm measure is calculated by add up to resources which in this consider the comes about of the firm measure variable have no effect on hedging decisions. The results of this study are in line with Ahmad and Harris (2018) who state that firm size is not significant to hedging decisions where the study states that firm size is not always a strength or something that will encourage companies to hedge using derivative instruments. The comes about of this consider don't bolster the investigate conducted by Kussulistyanti and Mahfudz (2016) which states that firm measure features a noteworthy positive impact on supporting choices.

In this study, financial distress is calculated using the Altman Z-score. The comes about of this ponder show that financial distress has no effect on hedging decisions. The significance value for the financial distress variable is 0.086 (gre-ater than 0.05) meaning that partially financial distress has no effect on hedging decisions. This is because many companies are hedging because these companies have debt levels in foreign monetary standards whereas the money related trouble variable as measured by the Altman Z-score is an marker that measures budgetary troubles not as it were in terms of the company's obligation level, but moreover with all of the company's operational exercises.

The results of this study are in line with the research shown by Nuzul and Lautania (2015) which found that financial distress had no effect on hedging decisions. While the results of this study do not support the research conducted by Guniarty (2014).

In this study, the debt level proxied by the obligation proportion is the proportion of add up to obligation and add up to resources. The results of this study indicate that debt level has no effect on hedging decisions. The significance value for the debt level variable is 0.871 (greater than 0.05) meaning that partially the debt level has no effect on hedging decisions. A high level of debt is not an incentive for a company to hedge. The company will focus on paying off its debts rather than hedging. If action is not taken immediately, the company will experience the risk of bankruptcy. The comes about of this think about don't back the investigate conducted by Krisdian and Badjra (2016) which states that high levels of debt use hedging decisions.

**CONCLUSION AND RECOMMENDATION**

The object of this research is the budgetary explanations of fabricating companies recorded on the IDXfor the 2016-2019 period. This consider points to decide the impact of firm estimate, money related trouble and obligation level on supporting choices. The total population is 165 companies with a sample of 32 companies so that the observation data in this study are 105 data.

This study uses annual financial reports to obtain the data needed in this study.

Based on the research that has been done, the conclusions from this study are as follows: Firm size has no effect on hedging decisions in manufacturing companies listed on IDX in 2016-2019; Financial distress has no effect on hedging decisions in manufacturing companies listed on IDX in 2016-2019; Debt level has no effect on hedging decisions in manufacturing companies listed on IDX in 2016-2019.

The company should start thinking about hedging to protect the company from the risk of changes in currency values. Especially for companies that have collaborated with companies in other countries.

As for suggestions for future researchers, researchers can add other variables that may affect hedging decisions, such as profitability variables. Because in this study the variation of the independent variable can only interpret the variety of the dependent variable by 44.7%. In addition, further researchers are expected to be able to conduct research on other sectors that may do more or implement hedging. Such as the automotive or mining sector.

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