

## RELATIONSHIP BETWEEN FIRM SIZE, FINANCIAL DISTRESS, AND MANAGERIAL OWNERSHIP ON HEDGING DECISION: AN EMPIRICAL STUDY IN INDONESIA

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### Abstract

International trade transactions influence globalization of economic activities. A company's strategy to mitigate risks due to fluctuations in foreign exchange is hedging using derivative instruments. The purpose of this study is to determine the effect of company size, financial distress, and managerial ownership on hedging decision-making factors using derivative instruments in consumer goods industry manufacturers listed on the Indonesia Stock Exchange during 2015-2019. This research uses a quantitative approach and associative methodology. The set of data used in this study was 160 company-years of observation, with 32 companies registered as the sample using the purposive sampling method over a period of five years. This study uses logistic regression analysis techniques to examine the effect of the relationship between the independent variables and the dependent variable. The results of the study show that the company size and financial distress variables have an effect on hedging decision-making using derivative instruments. The financial distress variable has a positive and significant effect on hedging decision-making with derivative instruments, while managerial ownership has a negative and insignificant effect on hedging decision-making using derivative instruments. Corporate managers should consider taking formal hedging decisions given that the uncertainty of the global economy can sometimes threaten business viability and financial stability.

**Keywords:** Hedging, Firm Size, Financial Distress, Managerial Ownership

**JEL Classification Code:** G10, L25, G32, G34

### 1. Introduction

The increasing activity of international trade transactions is influencing the globalization of various facets of activities in the world, especially in the economic sector. What distinguishes international trade transactions from local domestic transactions is the difference in currency, culture, law, and resources (Saputra et al., 2021). In addition, international trade transactions are not always carried out in cash, resulting in debt and receivables in foreign currency, which can cause companies to experience losses and profits. One of the company's means or strategies to mitigate or reduce risk due to fluctuations in foreign exchange (forex)/currency exchange rates is hedging using derivative instruments. Foreign currency exchange rates play an important role in international trade transaction activities, especially companies that carry out import and export activities on a multinational scale (Kachelmeier et al., 2014). One of the biggest risks companies face are changes in foreign currency exchange rates, which fluctuate freely and unexpectedly (Atmadja et al., 2021).

The rupiah exchange rate (IDR) position against the US dollar (USD) in the 2015-2019 period tended to fluctuate weekly. At its peak, the dollar exchange rate against the rupiah hit Rp.15,200 in November 2018, so the risks posed tended to increase. In some company activities denominated in foreign currencies, foreign currency fluctuations also impact the value of debts and receivables so that, when converted into local currency, the value of debts and receivables recorded will also change. One type of companies affected by the impact are companies engaged in the manufacturing industry, especially in the consumer goods industry, where this sector is an active and productive sector that generates import and export transactions on an international scale (Utami & Sutejo, 2012). The amount of the reference interest rate required for the use of credit loans usually tends to be higher than the bank reference rate so that it has the potential to have the same risk of loss (Basuki et al., 2020). The level of the interest rate is directly proportional to the level of the interest costs that must be paid by the borrower, which results in the possibility for the company to fail to pay its debt and interest expense (Siantury & Pangestuti, 2015).

Hedging is absolutely necessary for companies that carry out transactions between countries, so that corporations need to increase their protection against the impact of foreign exchange differences when withdrawing foreign debt (N'Guilla Sow et al., 2018). It is intended to mitigate the risk of exchange rate volatility in carrying out export and import trade transaction activities, especially for companies with foreign currency debt. The value of foreign currency debt does not increase at maturity and ultimately burdens the company's performance. Companies need to have an effective hedging strategy to avoid spikes in foreign currency exchange rates. BI efforts to urge domestic corporations to hedge have been carried out since 2014. Based on BI regulation Number 16/21/PBI/2014, corporations in Indonesia must hedge a minimum of 25 percent of total foreign currency liabilities for 3-6 months before falling (Jayawarsa et al., 2021).

Exchange rate fluctuation and interest rate are external factors that determine the company in making hedging decisions (Atmadja & Saputra, 2018). Apart from external factors, internal factors are also an indicator for a company to hedge. Several studies have been conducted to determine the company's internal factors that are often considered to hedge, including firm size. The size of the company can be measured by the volume of assets it owns. Assessment of the size of a company based on the total assets it owns is considered more stable than using its market capitalization value, which is more likely to fluctuate. According to Castanheira et al. (2010), the bigger the company, the greater the risks faced, such as fluctuations in currency exchange rates due to international trade. It makes large companies often engage in hedging activities to avoid the risk of loss compared to smaller companies that do not engage in hedging activities.

The next internal factor to be considered is financial distress. The inability to pay off debts shows a negative performance, which means violating agreements with creditors that can lead to legal actions. When a company owes foreign currency, the amount of debt will be affected by the exchange rate, which has the opportunity to cause financial distress. Guniarti (2014) revealed that protection against risk by hedging could reduce the risk of financial distress that leads to bankruptcy. Fund ownership that comes from managerial ownership is another internal factor that is also being considered. According to Hidayah and Prasetiono (2019), companies with greater managerial ownership tend to hedge, because hedging is in the

interests of managers, where most of their personal portfolios are tied to the company in the form of wage income, thus the greater the ownership. With shares owned by managers, companies will be hedged to protect their incentives. In other words, the greater the percentage of managerial ownership, the higher the motivation for companies to hedge to protect their incentives.

Kussulistiyanti and Mahfudz (2016) concluded that firm size, financial distress, and managerial ownership have a positive effect on hedging decision-making. However, Agustia et al. (2019) stated that managerial ownership negatively affects hedging decision-making, while firm size and financial distress do not affect hedging decision-making. Hidayah and Prasetyono (2016) show that financial distress has a positive effect on hedging decision-making, while managerial ownership and Firm Size negatively affect hedging decision-making. Based on the explanation of the background of the problems that have been stated along with research gaps and phenomena as well as supporting data, the focus of this research is on hedging decision making in manufacturing companies in the consumer goods industry sector as research objects and variables, namely, financial distress, firm size, and managerial ownership.

## 2. Brief Literature Review

Hull (2008) states that perfect hedging eliminates all risks. However, perfect hedging is a very rare thing. The use of derivative contracts is expected to be able to get closer to the perfect hedging condition so that, in the future, it is expected that the returns obtained will be following the expected return. According to Madura (2000), hedging is an action taken to protect a company from exposure to exchange rates. Exposure to exchange rate fluctuations is the extent to which a company can be affected by exchange rate fluctuations. According to Hidayah and Prasetyono (2016), hedging is one of the company's strategies to carry out risk management activities to reduce currency exchange rate risk due to the use of foreign currency in its operational activities. According to Sianturi and Pangestuti (2015), hedging is a strategy created to reduce the emergence of unexpected business risks by predicting events that will occur in the future.

Although, in principle, derivatives are hedging tools that should decrease firm risk, pieces of anecdotal and empirical evidence show that the economic and financial reporting complexity of derivative contracts can harm information transparency (Chatzivgeri et al., 2019; Lourenço, 2015). The competing views on the informational influence of hedging on financial markets give two opposite predictions on the relation between hedging with derivatives and crash risk. First, if hedging with derivatives makes the information environment more transparent and decreases the information asymmetry between managers and investors, then it is more difficult for managers to delay bad news. Therefore, corporate hedging activities decrease crash risk. Second, if hedging with derivatives makes the information environment more opaque, which stemmed from both the complexity of derivative contracts and managerial incentives, then it becomes easier for managers to hoard bad news, thereby leading to higher crash risk (Li & Cai, 2016; Park & Park, 2020).

Hedging is very beneficial for companies or countries with businesses and often makes transactions related to interest rates or exchange rates. Suppose companies have debt in foreign currencies and floating interest rates. In that case, they will certainly be affected by the interest

rates that tend to rise and exchange rates fluctuate. Hedging is one of the economic functions of futures trading, namely the transfer of risk, so that it does not rule out the possibility that hedging will also benefit from investing. According to Guniarti (2014), the hedging is an action to avoid or reduce the risk of loss that occurs to protect companies against foreign currency from business transactions carried out. Coyle (2013) states hedging is a measurement to reduce or eliminate an exposure risk.

Information about the company's size on the market is very important for investors. Large companies have several strategies in dealing with risks, thus, they have better credit than small companies. Investors will consider it as a good prospect for the company to attract investors. According to Simanjuntak (2018), firm size is one factor considered by investors in making investment decisions. The size of the company is used as an indicator of how big the company has grown. Large companies generally have high flexibility and accessibility in terms of funding through the capital market, so that large companies have more convenience and the ability to get funds. Sianturi and Pangestuti (2015) state that company size is an indicator to see the development of a company since it was founded. The bigger a company is, the bigger its operational activities will be, so the risk to the company will also be even greater. The company's size can be seen from the number of total assets owned by the company and shows that large assets will benefit or stable company growth.

The company's size can affect the ease with which a company can obtain funding sources, both external and internal. From this definition, company size is an indicator of how a company has developed since it was founded, which can be seen through the size of its total assets. The size of a company can affect the ability and convenience of the company more in its ability to raise funds. The size of the company can be assessed from the total assets it owns. Firm size is measured by calculating the total assets owned by the company at the end of the year. Then, the total asset value is converted into a natural logarithm. Conversion to natural logarithms aims to make total asset data normally distributed. It is done to reduce the significant difference between a company size that is too large and a company size that is too small or medium.

***H1: Firm size has a positive effect on hedging decision-making with derivative instruments.***

Financial distress is a condition in which a company faces financial difficulties. According to Platt and Platt (2002), financial distress is defined as the stage of decline in financial conditions that occurs before bankruptcy or liquidation. According to Brigham and Daves (2003), financial difficulties occur due to a series of errors, inaccurate decision-making and interrelated weaknesses that can contribute directly or indirectly to management, as well as a lack of effort to supervise the company's financial condition so that its use is not following what is needed. According to Wruck (1990), financial distress is a condition in which operating cash flows are not sufficient to meet current liabilities such as trade payables or interest costs. Financial distress can mean ranging from liquidation difficulties (short term), which is the mildest financial distress, to bankruptcy statements, which is the most severe financial distress. Corporate governance studies have scant evidence on the relationship between corporate governance practices and the likelihood of financial distress and provide inconclusive results. Previous studies show that corporate governance attributes, such as ownership structure and

board structure, have an impact on the likelihood of financial distress (Donker et al., 2009; Lajili & Zéghal, 2010; Mangena & Chamisa, 2008; Manzaneque et al., 2016; Manzaneque et al., 2016; Miglani et al., 2015; Ud-Din et al., 2020; Wang & Deng, 2006).

Brigham and Houston (2009) stated that financial distress is associated with a company having decreased cash flow at the lower level expected by investors. Various studies have found how to predict company bankruptcy. One way to predict bankruptcy is to use financial ratio analysis. One of the measurement scale models that can be used in predicting financial distress is using the Altman Z-Score calculation model developed by Altman (2000) with a manufacturing company as the research object. In the Altman Z-Score prediction model, Altman has successfully identified five indicators of financial ratios that are combined to see the difference between a company that is bankrupt and not bankrupt and is the best predictor. The five financial ratios are considered to represent aspects of liquidity, profitability, solvency, and activities, including:

Z = Overall Index of Corporate Health

X1 = Working Capital/Total Assets

X2 = Retained Earnings/Total Assets

X3 = Earning Before Interest and Tax (EBIT)/Total Assets

X4 = Market Value of Equity/Book Value of Total Debt

X5 = Total Revenue/Total Assets

The Altman Z-Score calculation model is considered accurate in predicting the bankruptcy of a company. Interpretation/assessment benchmarks on the results of the Altman Z-Score calculation in Table 1 are as follows:

**TABLE 1. CUTOFF-POINT ALTMAN Z-SCORE**

<b>Z-Score</b>	<b>Indicators</b>
>1,81	The company's financial condition is not good and will go bankrupt (distress zone)
1,81 > Z-Score > 2,68	The company's financial condition is in an unstable position; between not bankrupt and potentially going bankrupt (gray zone)
>2,68	The company's financial condition is in good condition (safe zone)

**H2:** *Financial distress has a positive effect on hedging decision-making with derivative instruments*

Managerial ownership is the level of ownership the manager has in the company. Managerial ownership is an opportunity for managers to be directly involved in share ownership so that the direct involvement of managers will create an equal position with other shareholders. Thus, managers can be directly involved in the company in share ownership which can be effective in improving managers' performance, to make the company value better

and wiser. Share ownership by managers is one way to reduce agency costs where managerial ownership can align the interests of managers with those of owners. Managerial ownership is the amount of share ownership by the manager. Managerial ownership is a situation where the manager owns the company's shares, or in other words, the manager is also a shareholder of the company. Agency conflict can be reduced in this way because the policies of managers who own company shares will undoubtedly be different from managers who act purely as managers. This type of manager will try to increase the value of the company and, thus, the value of his wealth as a shareholder will increase as well; it will also try to prevent the company from potential bankruptcy that harms managers because of losing incentives and shareholders who will lose returns and the funds they invested. Managerial ownership is the separation of ownership between outsider and insider. If a company has many shareholders, a large group of individuals is unable to participate in the day-today management of the company actively (Saputra et al., 2021). Therefore, they elect the board of commissioners who choose and oversee the company's management. This structure means that the owner is different from the company manager. It gives stability to companies that are not owned by companies with owners and concurrently managers.

Ownership structures, according to Hwihanus and Yuhertiana (2019), is the percentage of share ownership in a company that can reflect the distribution of power and influence over the company's operational activities. According to Pakekong and Rate (2019), the ownership structure is a shared ownership structure, which compares the number of shares owned by insiders with the number of shares owned by investors. In other words, the share ownership structure is the proportion of institutional ownership and management ownership in the company's share. Managerial ownership is the percentage of share ownership by company's management. The company manager has concurrent positions as company management (board of directors and commissioners) and shareholders who are actively involved in decision making. Miglani et al. (2015) support the argument that greater levels of block-holder and director ownership, and the existence of a separate audit committee, are associated with lower financial distress likelihood. Managerial ownership is defined as  $\text{managerial ownership} = \frac{\text{total managerial shares}}{\text{total outstanding shares}}$ .

*H3: Managerial ownership has a positive effect on hedging decision-making with derivative instruments.*

### 3. Methodology

This study is using quantitative data coming from the financial reports of manufacturing companies in the consumer goods industry sector, which are published on the company website or through the official website of the Indonesia Stock Exchange. This study analyzes the independent variables consisting of firm size (X1), financial distress (X2), and managerial ownership (X3) as factors that influence hedging decision-making with derivative instruments as the dependent variable (Y) in manufacturing companies in the consumer goods industry sector. Sampling in this study uses a purposive sampling technique. There were 32 companies selected that met the sample criteria in the 2015–2019 period. There are two stages in the logistic regression analysis: assessing the fit model, then estimating the parameters, and

interpreting the hypothesis test results. More specifically, the test uses logistic regression with IBM SPSS Statistics.

#### 4. Results

Parameter estimation and hypothesis testing can be done after the logistic regression model produces fit results seen from the overall model fit, Hosmer and Lemeshow's goodness of fit test, Nagelkerke's R square, and the classification table have been fulfilled. All stages in the fit model assessment have been carried out and provide results that state the model is feasible. The results of hypothesis testing are shown in the Table 2:

**Table 2.** Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	X1_SIZE	0,876	0,180	23,701	1	0,000	2,402
	X2_DISTRES S	0,062	0,030	4,333	1	0,037	1,064
	X3_MO	-2,516	3,864	0,424	1	0,515	0,081
	Constant	-27,855	5,395	26,659	1	0,000	0,000

The coefficient value on the firm size variable is 0.876 with an odds ratio of 2.402 and is significant at 0.000. These results indicate that the firm size variable has a positive and significant effect on hedging decision-making with derivative instruments. The coefficient value on the financial distress variable as proxied by the Altman Z-Score is 0.062 with an odds ratio value of 1.064 and significant at 0.037. These results indicate that the financial distress variable has a positive and significant effect on hedging decision making with derivative instruments. The coefficient value on the managerial ownership variable is -2.516 with an odds ratio of 0.081 and significant at 0.515. These results indicate that the managerial ownership variable has a negative and insignificant effect on hedging decision making with derivative instruments. 4) The constant value in the regression model is -27,885 with the odds ratio or Exp (B) 0,000 and significant at 0,000. These results indicate that if the three variables do not influence the hedging decision-making with derivative instruments, then the probability is 0.

##### ***The effect of firm size on hedging decision-making with derivative instruments***

The test results show that the firm size variable has a positive and significant effect on hedging decision-making with derivative instruments. It means that the greater the size of a company's assets, the tendency to hedge with derivative instruments to protect the value of its assets, which increases by 2.402 ( $e^{0.876}$ ) if other independent variables are considered constant. It indicates that large companies have large assets and more operational activities and result in greater risk of their assets than small companies, thus encouraging companies to hedge to protect the company from the risk of losses that arise. Large companies can hedge with derivative instruments in the face of losses due to greater exchange rate risk, thereby increasing the probability. The results of this study are consistent and similar to Simanjuntak (2018);

Kussulistiyanti and Mahfudz (2016); Sianturi and Pangestuti (2015) that firm size has a positive and significant effect on hedging decision making with derivative instruments.

***The effect of financial distress on hedging decision-making with derivative instruments.***

The results of statistical testing show that the financial distress variable has a positive and significant effect on hedging decision-making with derivative instruments. Referring to the Altman Z-Score cutoff-point, companies with a Z-Score index of less than 1.81 or are in a distress zone experience financial difficulties, and the threat of bankruptcy has greater potential. Companies may reconsider making hedging decisions with derivative instruments considering that the use of derivative instruments as a hedging tool requires many costs. Meanwhile, companies in the gray and safe zones indicate that the company is safe from the threat of financial difficulties. Nonetheless, companies tend to face risks due to obligations being in an insecure position, especially those involving the use of foreign exchange and interest rates, thus encouraging companies to be more careful in managing risks. It results in a greater probability of companies hedging with derivative instruments. This study has similar results to the results of research by Simanjuntak (2018); Kussulistiyanti and Mahfudz (2016); Hidayah and Prasetyono (2016), which show that financial distress has a positive and significant effect on hedging decision making with derivative instruments. And supported by research conducted by Bodroastuti et al., (2019) supports that financial distress has a positive and insignificant effect on hedging decision-making with derivative instruments.

***The effect of managerial ownership on hedging decision-making with derivative instruments.***

These results indicate that the managerial ownership variable has a negative and insignificant effect on hedging decision making with derivative instruments. The insignificant result on the managerial ownership variable could be due to the average level of managerial ownership of the sample companies of only 3.06%, so that they were unable to influence with derivative instruments. It means that in making hedging decisions based on company management and considering other parties, including the shareholders themselves. Or in other words, management does not really play a role in the decision-making of company hedging, which results in management not feeling that they own the company because not all of the company's profits can be felt by management.

The results of this study are in line with research conducted by Hidayah and Prasetyono (2016). managerial ownership has a negative and insignificant effect on hedging decision-making with derivative instruments. And supported by research conducted by Bodroastuti et al. (2019) that managerial ownership has a negative and significant effect on hedging decision making with derivative instruments.

## **5. Conclusion**

The results of this study indicate the three factors studied (firm size, financial distress, and managerial ownership) as factors that influence hedging decision-making with derivative

instruments in the consumer goods industry sector listed on the Indonesia Stock Exchange over the 2015-2019 period. Company managers should consider taking formal hedging decisions given the uncertainty of the global economy, which at times can threaten business continuity. In addition, companies should improve their performance, especially in managing risk. The bigger the size of a company, the greater the risks it faces. If it is not properly anticipated, it will threaten financial stability and the company's survival.

Future research could add other variables such as firm financial performance, growth opportunity, dividend policy, fund ownership, interest rate fluctuation rate, and foreign currency fluctuations, and other variables not included in this study that can be used to determine the factors that influence hedging decision-making with derivative instruments. Using the same variables as in this study, other calculation models could be considered, for example, in the financial distress variable using the Grover or Springate model or firm size variable measured by market capitalization. Further research is also expected to use a wider sample or other industrial sectors to explain better the factors that influence hedging decision-making. In addition, further research is also expected to extend the observation period to explain better and describe the real situation.

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