ANALYSIS OF FACTORS AFFECTING COMPANY USING DERIVATIVES

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Abstract
This study aims to determine the factors that influence the decision of the companies in using derivatives. In this study, the factors studied were the cost of debt, foreign sales, risk management, and corporate governance on the company's decision to use derivatives. This research’s analytical method is logistic regression analysis using the Statistical Product and Services Solutions software. A total of 60 samples were used in this research, 20 companies included in the Corporate Governance Perception Index survey from 2016 to 2018. The Corporate Governance Perception Index survey is a survey conducted by the Indonesian Institute for Corporate Governance. This study indicates that the cost of debt variable and the corporate governance variable significantly affect the company's decision to use derivatives. The foreign sales and risk management variables in this study do not significantly affect the company's decision to use derivatives. In this study, there are also control variables, namely firm size and return on assets. The firm size variable does not have a significant effect on the company's decision to use derivatives. Meanwhile, the return on assets variable has a significant effect on the company's decision to use derivatives.

Keywords: derivatives, cost of debt, foreign sales, risk management, corporate governance

JEL Classification: G32, G34

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INTRODUCTION

According to Zeng (2014), there are several reasons why companies use derivatives, some of which are to hedge risks, reduce costs of financial difficulties and other agency costs, signal managerial quality, and reduce tax debt. Because of the benefits that can obtain from the use of derivatives, the use of derivatives by companies has increased in recent years. Although the use of derivatives provides benefits to the company, derivatives can also harm company management. If a derivative transaction causes losses, then the use of derivatives will cause new
problems so that management can decide not to use derivatives to overcome the risk (Mahardika, 2018).

Many studies have tried to link derivatives to firm value and firm risk and focus on the cost of equity, but still ignore the relationship between derivatives and debt cost (Deng et al., 2017). According to Deng et al. (2017) debt is one of the most widely used sources of corporate funding by companies in obtaining funding and debt has the risk of not being repaid by the company because the company may face financial difficulties in carrying out its business activities. Therefore, the use of debt as the main source of corporate funding can result in the company at risk of not fulfilling its obligations to creditors. The company may use derivatives to overcome the volatility of corporate cash flows (Deng et al., 2017).

As globalization develops, many companies expand their business activities to gain a competitive advantage (Afza & Alam, 2011). Apart from gaining increased profitability, companies face risks related to fluctuations in foreign exchange rates. Therefore, companies will try to reduce these risks, one of which is by using derivatives. The research conducted by Afza & Alam (2011) found that companies with high foreign sales will increase the likelihood of companies using derivatives to reduce the risk that company may face in the future.

The bigger the company, the more and more various risks that the company will face. Company risk management is essential for its overall business strategy (Guay & Kothari, 2003). Therefore, the company must have its own department in the company that functions to see potential risks and ways to overcome all the company’s risks. Related to business activities, companies can use derivative financial instruments to reduce risks, such as interest rates, weather, stock prices, oil prices, foreign exchange, and so on (Kieso et al., 2013). According to Guay & Kothari (2003) derivatives can be used to overcome the risks faced by companies. Besides, according to Deng et al. (2017) many companies also use derivatives as a strategy for corporate risk management, especially for banking companies. The research conducted by Bartram et al. (2011) also shows that the use of derivatives in non-financial companies aims to reduce risk.

Every time the company will always be faced with uncertainty. Therefore, companies need good corporate governance in carrying out their business activities. According to Lel (2012) companies with good corporate governance can affect the use of derivatives in three ways, namely the decision to use derivatives for hedging or speculation, the use of derivatives to design company's executive compensation policies, and the use of derivatives related to the company's financial policies by assuming there is no agency conflict. Lel (2012) provides empirical evidence that companies with good corporate governance will use derivatives to reduce the risks faced by the company, while companies with weak corporate governance tend to use derivatives for managerial interests.

This study aims to determine whether the cost of debt, foreign sales, risk management, and corporate governance affects the company's decision to use derivatives. This study contributes by providing additional empirical evidence related to the cost of debt, foreign sales, risk management, and corporate governance on corporate decisions to use derivatives.
LITERATURE REVIEW

Based on the theory of Modigliani and Miller, Afza & Alam (2011), it is stated that in perfect capital market conditions, the use of derivatives to reduce risk becomes useless. Meanwhile, according to the theory developed by Smith & Stulz (1985), there are three reasons why companies use derivatives, namely those related to taxes, the cost of financial difficulties, and managerial risk avoidance. Agency theory also plays a role in company decisions related to the use of derivatives; this is because, according to Lel (2012), companies with weak corporate governance will use derivatives for managerial interests.

According to Ikatan Akuntan Indonesia (2018), derivatives are financial instruments or other contracts that have the following characteristics: (1) the value changes according to the underlying variables, (2) does not require a net initial investment or requires a small initial net investment compared to with the amount required for other similar contracts which are expected to produce a similar effect due to changes in market factors, and (3) settled on a specific future date. Companies often use derivatives to avoid risks related to interest rates, weather, stock prices, oil prices, or foreign exchange (Kieso et al., 2013). The value of the derivative itself depends on the value of the main asset. Several types of derivatives, according to Kieso et al. (2013) are financial forwards or financial futures, options, and swaps.

Effect of Costs of Debt on the Use of Derivatives
The cost of debt is the interest rate that the company must pay (Ross et al., 2003). According to Deng et al. (2017), debt is the main source of funding for companies but has a higher risk than equity capital because it can increase the risk of default. Therefore, companies use hedging to reduce the risk of default. Previous research results related to the effect of cost of debt on derivatives have been carried out by Deng et al. (2017). The results of Deng et al. (2017) show that the cost of debt has a positive effect on derivatives.

H1: The cost of debt has a significant positive effect on the company's decision to use derivatives.

The Effect of Foreign Sales on the Use of Derivatives
Foreign sales result from sales of branches or subsidiaries outside the country where the parent company is located. According to Afza & Alam (2011), foreign sales are triggered by companies wishing to expand their business activities throughout the world to gain competitive advantages and economies of scale. Apart from gaining increased profitability, companies are also faced with risks related to fluctuations in foreign exchange rates. Therefore, companies will try to reduce these risks, one of which is by using derivatives. Previous research results related to foreign sales on derivatives have been conducted by Afza & Alam (2011). The research conducted by Afza & Alam (2011) found that companies with high foreign sales will increase the likelihood of companies using derivatives to reduce risk. Research conducted by Bartram et al. (2011) also shows that companies with high foreign sales will use derivatives to reduce risk. Research conducted by Luiz Rossi (2013) also shows that in general, companies with foreign sales affect the use of derivatives by companies; Still, companies that use hedging and companies that are classified as selective speculation show that foreign sales do not affect the use of derivatives by companies.
So it can be concluded that based on research conducted by Luiz Rossi (2013), foreign sales can have an effect on the use of derivatives and may not have an effect depending on the type of derivative user. Research conducted by Lel (2012) shows that foreign sales influence the use of derivatives in companies with strong corporate governance. Conversely, for companies with weak corporate governance, foreign sales do not affect the decision to using derivatives by the company.

H2: Foreign sales have a positive effect on the company's decision to use derivatives.

The Effect of Risk Management on the Use of Derivatives
Risk management is a method used by companies in managing the uncertainty that the company is experiencing or may be experiencing. The bigger a company, the more and more diverse the risks the company will face. Most companies already have a risk management committee in their company that functions to see potential risks and find ways to overcome all the company’s risks. Related to business activities, companies can use derivative financial instruments to reduce risks, such as interest rates, weather, stock prices, oil prices, foreign exchange, and so on (Kieso et al., 2013). The results of research conducted by Bartram et al. (2011) shows that the use of derivatives can reduce the company's total risk and systemic risk, which indicates that the company uses derivatives to hedge risk. According to Vashishtha & Kumar (2010), derivatives are a handy tool for companies in overcoming the risks they face.

H3: Risk management has a significant positive effect on the company's decision to use derivatives.

The Effect of Corporate Governance on the Use of Derivatives
According to Luiz Rossi (2013), corporate governance influences whether a company is included as a hedger or a speculator in the use of derivatives; still that have weak corporate governance tend to be active speculators. The research conducted by Luiz Rossi (2013) shows that corporate governance influences the use of derivatives by companies in general; still, for companies included in selective hedging, it shows the opposite. Lel (2012) provides empirical evidence that companies with good corporate governance will use derivatives to reduce the risks faced by the company, while companies with weak corporate governance tend to use derivatives for managerial interests.

H4: Corporate governance has a significant positive effect on the company's decision to use derivatives.

Based on the literature review described previously, it can be concluded that the cost of debt, foreign sales, risk management, and corporate governance affects the company's decision to use derivatives. The framework of this research is as follows:
Figure 1. Conceptual Framework

METHODS

Population and Sample Selection Technique
The populations in this study were all companies in Indonesia. Sampling is conducted by purposive sampling. The criteria used for sampling are companies that participated in the Corporate Governance Perception Index from 2016 to 2018, financial statements are presented in Indonesian rupiah, the company does not experience losses, and has complete and audited financial reports from 2016 to 2018. This study uses secondary data obtained from annual reports, financial reports, and the Corporate Governance Perception Index survey results from 2016 to 2018.

Variable Measurement
The dependent variable used in this study is the use of a derivative. The independent variables used are the cost of debt, foreign sales, risk management, and corporate governance. In contrast, the control variables are the firm size and return on assets.

The derivative variable shows the companies that are using derivatives. The derivative variables will be measured using dummy variables, 1 if it uses derivatives and 0 if it does not use derivatives (ÖZEK, 2016). The cost of debt variable shows the interest that comes from debt. The variable cost of debt is the ratio data and will be measured by the ratio of interest expense to total debt (Zou & Adams, 2008). The foreign sales variable shows companies that earn revenue from sales abroad. Measurement of foreign sales variable is referred to research conducted by Afza & Alam (2011), namely the logarithm of foreign sales, which is ratio data. The risk management variable shows a company that has its own risk management section. The risk management variable in this study will be measured using a dummy variable, the number 1 will be given if the company has a risk management committee and 0 if the other way around. The corporate governance variable shows a company that has corporate governance in carrying out its business activities. The corporate governance variable is the ratio data and measured using the corporate governance perception index score results, as used by Verawati (2019). The firm size
variable is a variable used to measure the size of the assets owned by the company. The firm size variable is the ratio data and measured by the natural logarithm of total assets, as Murwaningsari et al. (2015) used. The return on assets variable shows the level of return that the company receives. In this study, the return on assets variable is the ratio data and will be measured by dividing profit after interest and tax by the company's total assets, as used by Afza & Alam (2011).

In this study, the data analysis technique used is logistic regression with a statistical data processing program, namely Statistical Product and Services Solutions (SPSS). This research model used is as follows:

\[
\ln \frac{P_i}{1 - P_i} = \alpha + \beta_1 \text{COD} + \beta_2 \text{FS} + \beta_3 \text{RM} + \beta_4 \text{CG} + \beta_5 \text{CVFS} + \beta_6 \text{CVROA} + \varepsilon
\]

Where:
- \( P_i \): Probability of using derivatives
- \( \text{COD} \): Cost of debt
- \( \text{FS} \): Foreign sales
- \( \text{RM} \): Risk management
- \( \text{CG} \): Corporate governance
- \( \text{CVFS} \): Control variable firm size
- \( \text{CVROA} \): Control variable return on assets
- \( \alpha \): Constant
- \( \beta \): Regression coefficient
- \( \varepsilon \): Error

RESULTS

The sample selection in this study was carried out using purposive sampling. In 2016, 34 companies participated in the Corporate Governance Perception Index. In 2017, 38 companies participated in the Corporate Governance Perception Index. Meanwhile, in 2018, 35 companies participated in the Corporate Governance Perception Index. From 2016 to 2018, 23 companies continuously participated in the Corporate Governance Perception Index survey and their financial reports were presented in Indonesian rupiah. Of the 23 companies, two companies did not have the data needed for this research and there was one company suffered a loss. Therefore, this study uses 20 companies that participated in the Corporate Governance Perception Index research from 2016 to 2018. The results of descriptive statistical analysis of the 60 samples used, which is the total number of samples from 2016 to 2018, are shown in Table 1 as follows:

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derivatives</td>
<td>60</td>
<td>0</td>
<td>1</td>
<td>0.45</td>
<td>0.502</td>
</tr>
<tr>
<td>Cost of debt</td>
<td>60</td>
<td>0.00000</td>
<td>0.09278</td>
<td>0.0157324</td>
<td>0.02283751</td>
</tr>
<tr>
<td>Foreign sales</td>
<td>60</td>
<td>0.00000</td>
<td>13.03926</td>
<td>2.5507421</td>
<td>5.14542817</td>
</tr>
</tbody>
</table>
In table 1, we can see that the average value of the dependent derivative variable is 0.45, and the standard deviation value of the dependent variable derivative is 0.502. The maximum value of the dependent variable derivative is 1. The minimum value of the dependent variable derivative is 0, which shows that in this study, there are companies that use derivatives and companies that do not use derivatives from 2016 to 2018.

The maximum value of the independent variable cost of debt is 0.09278, the minimum value of the independent variable of debt costs is 0, the average value of the independent variable of debt costs is 0.0157324, and the standard deviation value of the independent variable cost of debt is 0.02283751. The descriptive statistics of the independent variable cost of debt show that companies use debt for corporate financing activities and companies that do not use debt for corporate funding.

The maximum value of the independent variable of foreign sales is 13.03926, the minimum value of the independent variable of foreign sales is 0, the average value of the independent variable of foreign sales is 2.5507421, and the standard deviation value of the independent variable of foreign sales is 5.14542817. The descriptive statistics of the independent variable of foreign sales show that there are companies with foreign sales in this study and companies that do not have foreign sales.

Besides, Table 1 also shows that the average value of the risk management independent variable is 0.90, and the standard deviation value of the independent variable risk management is 0.303. The maximum value of the risk management independent variable is 1, and the minimum value of the risk management independent variable is 0, which shows some companies have risk management committees. Some companies do not have risk management committees from 2016 to 2018. In general, almost all companies in this study have risk management committees from 2016 to 2018.

The maximum value of the independent variable corporate governance is 94.86, and the minimum value of the independent variable corporate governance is 71.44, showed that in this research there are companies that are included in the category of most trusted companies and trusted companies based on the Corporate Governance Perception Index from 2016 to 2018. The variable corporate governance shows that the companies included in companies with good corporate governance with an average value of 83.8238 and the standard deviation of corporate governance of the companies used as the sample in this study are 5.39541.

The descriptive statistics of the control variable firm size show that the company size in this study is between 28.26072 to 34.93922. On average, the companies sampled in this study are included in large companies with an average value of 31.4354255, and the firm size standard deviation of the companies used as samples in this research is 1.99458398.
The descriptive statistics of the control variable return on assets show that this study’s return on assets is between 0.00216 to 0.21185. On average, the companies sampled in this study are included in companies that get adequate returns with an average value of 0.036551, and the standard deviation of return on assets of the companies used as the sample in this research is 0.04001381.

Table 2. Hypothesis Testing Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Collinearity Statistics</th>
<th>Coefficients (Value B)</th>
<th>S.E.</th>
<th>P-Value</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
<td>VIF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of debt</td>
<td>0.845</td>
<td>1.183</td>
<td>64.805</td>
<td>27.036</td>
<td>0.017</td>
</tr>
<tr>
<td>Foreign sales</td>
<td>0.669</td>
<td>1.496</td>
<td>-0.118</td>
<td>0.112</td>
<td>0.296</td>
</tr>
<tr>
<td>Risk management</td>
<td>0.879</td>
<td>1.138</td>
<td>22.075</td>
<td>12900.543</td>
<td>0.999</td>
</tr>
<tr>
<td>Corporate governance</td>
<td>0.328</td>
<td>3.048</td>
<td>0.885</td>
<td>0.380</td>
<td>0.020</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.379</td>
<td>2.638</td>
<td>0.243</td>
<td>0.346</td>
<td>0.482</td>
</tr>
<tr>
<td>Return assets on</td>
<td>0.710</td>
<td>1.408</td>
<td>80.075</td>
<td>38.303</td>
<td>0.037</td>
</tr>
<tr>
<td>assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-</td>
<td>-</td>
<td>-107.663</td>
<td>12,900.578</td>
<td>0.993</td>
</tr>
<tr>
<td>Total Observations</td>
<td></td>
<td></td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td></td>
<td></td>
<td>2.123</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial -2 Log likelihood</td>
<td></td>
<td></td>
<td>82.577</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final -2 Log likelihood</td>
<td></td>
<td></td>
<td>34.854</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hosmer and Lemeshow Test</td>
<td></td>
<td></td>
<td>0.615</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerke R Square</td>
<td></td>
<td></td>
<td>0.734</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omnibus Tests of Model</td>
<td></td>
<td></td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on Table 2, the logistic regression model in this research can be formulated as follows:

\[
\ln \frac{P_i}{1 - P_i} = -107.663 + 64.805 \text{COD} - 0.118 \text{FS} + 22.075 \text{RM} + 0.885 \text{CG} + 0.243 \text{CVFS} + 80.075 \text{CVROA} + \varepsilon
\]

Where:
- \( P_i \) = Probability of using derivatives
- COD = Cost of debt
- FS = Foreign sales
- RM = Risk management
- CG = Corporate governance
- CVFS = Control variable firm size
CVROA = Control variable return on assets  
$\alpha$ = Constant  
$\beta$ = Regression coefficient  
$\varepsilon$ = Error

Table 2 shows a summary of the results of hypothesis testing in this research. Before testing the hypothesis, testing for classical assumptions has been carried out and the model used has met the classical assumptions required. In this study, the classical assumption test used was the multicollinearity test and autocorrelation test. Multicollinearity testing used the tolerance value and variance inflation factor value. Table 2 shows that the tolerance value for the cost of debt variable is 0.845. The variance inflation factor value is 1.183, the tolerance value for the foreign sales variable is 0.669, and the variance inflation factor value is 1.496, the tolerance value for the risk management variable is 0.879, and the variance inflation factor value is 1.138, the tolerance value for the corporate governance variable is 0.328, and the variance inflation factor value is 3.048, the tolerance value for the firm size variable is 0.379, and the variance inflation factor value is 2.638. The tolerance value for the return on assets variable is 0.710, and the variance inflation factor value is 1.408. Thus, there is no multicollinearity in this research because there is no tolerance value below 0.10, and none of the variance inflation factor values is above 10 (Ghozali, 2011).

The autocorrelation test used the Durbin-Watson test. In table 2, the Durbin-Watson value in this study is 2.123. Thus the Durbin-Watson value is between du and 4-du, which means no autocorrelation for this study (Priyatno, 2010).

In addition to showing the results of hypothesis testing and classical assumption testing, table 2 also shows the results of testing the goodness of fit of the logistic regression model in this research. Testing the goodness of fit of the logistic regression model was conducted using the Hosmer and Lemeshow's Goodness of Fit Test. The significance value of Hosmer and Lemeshow's Goodness of Fit Test is 0.615. Because the significance value is greater than 0.05, it can be concluded that the logistic regression model in this study can be used for further analysis (Ghozali, 2011).

Testing the whole model in this study uses the comparison of the initial -2 Log-Likelihood numbers with the final -2 Log-likelihood numbers. Table 2 shows the initial -2 Log-likelihood number is 82.577, while the final -2 Log-likelihood number is 34.854. This means a decrease in the value of -2 Log-likelihood. A decrease in the -2 Log-likelihood number indicates that the regression model is better, or the hypothesized model fits the data (Ghozali, 2011). Based on the results of testing the entire model, it can be concluded that the logistic regression model for this study can predict whether the use of derivatives by companies is influenced by the cost of debt, foreign sales, risk management, corporate governance, firm size, and return on assets.

The coefficient of determination in this study uses Nagelkerke Pseudo R Square. The result of Nagelkerke R Square value, which is shown in table 2, is 73.4%. This means that based on the Nagelkerke R Square value, the variables of cost of debt, foreign sales, risk management, corporate governance, firm size, and return on assets studied can explain the company's decision to use derivatives by 73.4%, in comparison the remaining 26.6% can be explained by other factors not included in this study.
Table 3. Classification Table

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>DERIVATIVE</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4</td>
</tr>
</tbody>
</table>

Overall Percentage 88.3

Source: Data processing (2020)

Table 3 shows the accuracy of the logistic regression model’s predictions for this study to predict company decisions to use derivatives. In table 3, it can be seen that the possibility of companies using derivatives is 88.9%. This means that of the 27 companies that use derivatives, 24 of them are predicted to use derivatives. The prediction accuracy for companies that do not use derivatives is 87.9%. This means that of the 33 companies that do not use derivatives, 29 are predicted not to use derivatives. Overall, the logistic regression model’s prediction accuracy in this study to predict the company's decision to use derivatives is 88.3%.

Based on the logistic regression testing results summarized in table 2, the regression coefficient of the variable cost of debt is 64.805. This means that if the cost of debt increases by 1 unit, the company’s possibility to use derivatives will increase by 64.805, assuming the other independent variables are constant. The regression coefficient for the foreign sales variable was -0.118. This means that if the foreign sales increase by 1 unit, the possibility of the company using derivatives will decrease by -0.118, assuming the other independent variables are constant. The regression coefficient for the risk management variable is 22.075. This means that if the risk management increases by 1 unit, the possibility of the company using derivatives will increase by 22.075, assuming other independent variables are constant. The corporate governance variable regression coefficient is 0.885. This means that if the corporate governance increases by 1 unit, the possibility of the company using derivatives will increase by 0.885, assuming the other independent variables are constant. The regression coefficient for the firm size variable is 0.243. This means that if the firm size increases by 1 unit, the possibility of the company using derivatives will increase by 0.243, assuming the other independent variables are constant. The regression coefficient for the return on assets variable is 80.075. This means that if the return on assets increases by 1 unit, the possibility of the company using derivatives will increase by 80.075, assuming the other independent variables are constant.

Based on the results of hypothesis testing in table 2, it can be concluded that overall, the variables of cost of debt, foreign sales, risk management, corporate governance, firm size, and return on assets in this study have an influence on the probability of the company's decision to use derivatives as seen from the significance value. Omnibus Tests of Model Coefficients for this study were 0,000. This can indicate that the company will pay attention to the cost of debt, foreign sales, risk management, corporate governance, firm size, and return on assets in deciding the use of derivatives.

The test results of the positive effect of cost of debt on the company's decision to use derivatives are that the cost of debt has a significant positive effect on
the probability of the company's decision to use derivatives as seen from the significance value of the cost of debt, in this study is 0.017 in table 2. This shows that if the company has debt then the likelihood that the company will use derivatives will increase.

The test results of the positive effect of foreign sales on the company's decision to use derivatives are that foreign sales do not have a significant positive effect on the probability of the company's decision to use derivatives as seen from the significance value of foreign sales in this research is 0.296 in table 2. In other words, whether the company has foreign sales or not, it will not affect the company's decision to use derivatives.

The test results of the positive influence of risk management on the company's decision to use derivatives is that risk management does not have a significant positive effect on the probability of the company's decision to use derivatives as seen from the significance value of risk management in this study is 0.999 in table 2. The existence of a risk management committee as a measure of the risk management variable for this study does not affect the company's decision to use derivatives.

The test results of the positive influence of corporate governance on the company's decision to use derivatives are that corporate governance has a significant positive effect on the probability of the company's decision to use derivatives, as seen from the significance value of corporate governance in this research is 0.020 in table 2. This shows that if the company has good corporate governance work effectively, the possibility that the company will use derivatives will increase.

The test results of the positive effect of firm size on the company's decision to use derivatives is that firm size does not have a significant positive effect on the probability of the company's decision to use derivatives, as seen from the significance value of the firm size in this study is 0.482 in table 2. In other words, large or small, the size of a company will not affect the company's decision to use derivatives.

The test results of the positive effect of return on assets on the company's decision to use derivatives is that return on assets has a significant positive effect on the probability of the company's decision to use derivatives as seen from the significance value of return on assets in this research is 0.037 in table 2. This shows that the rate of return on the assets of a company will affect its decision to use derivatives.

**DISCUSSION**

This study indicates that the cost of debt affects the company's decision to use derivatives. This study’s results are following the results of research conducted by Deng et al. (2017). This indicates that companies that use debt as a source of corporate funds will consider using derivatives to reduce possible default risk. Deng et al. (2017) also argue that debt has a higher risk than equity capital because it can increase the risk of default, so that companies use hedging to reduce the risk of default.

Foreign sales in this study do no influence the company's decision to use derivatives. This study’s results follow the results of research conducted by Lel (2012) and Luiz Rossi (2013). The foreign sales variable that does not affect can be
caused by only a few companies in this research have foreign sales. Besides, the company's risk management committee can also play a role in overcoming fluctuations in foreign exchange rates without using derivative instruments.

Risk management in this research does not affect the company's decision to use derivatives. This study’s results are different from the research result conducted by Bartram et al. (2011). According to Mahardika (2018), derivatives have the possibility of a loss of derivative transactions to create new concerns for management, which in the end, management chooses not to use derivative instruments. In this study, almost all companies sampled already have a risk management committee within the company. This indicates that the company’s risks have been properly handled by the risk management committee to not use derivatives in managing corporate risk.

Corporate governance in this study affects the company's decision to use derivatives. This study’s results are follows the results of research conducted by Lel (2012) and Luiz Rossi (2013). According to Lel (2012) and Luiz Rossi (2013), companies with strong corporate governance will use derivatives to reduce the company’s risk. In this research, all samples have strong corporate governance based on the Corporate Governance Perception Index score. Therefore, if the company will use derivatives, the use of these derivatives is intended to minimize the company’s risks.

The firm size's test results positively affect the company's decision to use derivatives because firm size does not have a significant positive effect on the probability of the company's decision to use derivatives. This result is follows the results of research conducted by Afza & Alam (2011) that shows that firm size does not effect on companies’ use of derivatives. The results of research conducted by Luiz Rossi (2013) also shows that, in general, firm size will affect the use of derivatives; Still, for companies that are included as selective hedging and active speculation, it shows the opposite result.

The test result of the positive effect of return on assets on the company’s decision to use derivatives is that return on assets has a significant positive effect on the probability of the company's decision to use derivatives. This result follows the results of previous research conducted by Afza & Alam (2011) that shows that return on assets influences the use of derivatives by companies.

CONCLUSION

This study uses 20 companies that participated in the Corporate Governance Perception Index survey from 2016 to 2018. This study uses logistic regression analysis techniques to determine the factors that affect the company’s probability of using derivatives to minimize the company’s risks. The factors examined in this study are the cost of debt, foreign sales, risk management, corporate governance, firm size, and return on assets.

The hypothesis testing result in this research indicates that the cost of debt has a significant positive effect on the probability of the company's decision to use derivatives. The foreign sales variable does not significantly affect the probability of the company's decision to use derivatives. Risk management variables do not significantly affect the probability of the company's decision to use derivatives. The corporate governance variable has a significant positive effect on the probability of
the company's decision to use derivatives. The firm size as a control variable does not significantly affect the probability of the company's decision to use derivatives. The control variable return on assets has a significant positive effect on the probability of the company's decision to use derivatives. Thus, hypothesis testing results show that hypothesis 1 and hypothesis 4 are accepted, while hypothesis 2 and hypothesis 3 are rejected.

The limitation of this study is that the sample used is only 20 companies that participated in the Corporate Governance Perception Index survey. This is because the company's participation in the survey is voluntary, so that not too many companies participate in the survey. Further research can expand this research using all companies listed on the Indonesia Stock Exchange and using the ASEAN Corporate Governance scorecard to measure corporate governance variables. In addition, further research can also compare the results of using derivatives between industries and add other variables that can influence a company's decision to use derivatives to obtain better research results.

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