THE EFFECT OF ENVIRONMENTAL DISCLOSURE EXISTENCE ON LISTED PHARMACEUTICAL FIRM VALUE ON INDONESIA STOCK EXCHANGE

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Abstract
The purpose of this study is to test and analyze the effect of environmental disclosure existence on firm value with leverage and firm size as control variable. The population of this study is from pharmaceutical firms listed on Indonesia Stock Exchange. The firms as the sample are picked up from the population by simple random sampling method. Regression model with pooled data is conducted as method of data analysis. This study summarizes three things. Firstly, environmental disclosure existence has a negative effect on firm value. Secondly, leverage does not have the impact on firm value. Finally, firm size has a positive effect on firm value.

Keywords: environmental disclosure existence, firm size, firm value

I.   Introduction

As firms listed on capital markets, it is essential for them to perform responsibility to society (Doda, 2015). It is because firms are one of components in social environment. By implementing this responsibility, firms can get benefits such as decreasing or avoiding social conflict (Kartini, 2009) so that they can create good reputation before society (Fiori, Donato & Izzo, 2015) and gain superior position in their business (Doda, 2015). To do this responsibility, naturally, the firms must own the large amount of money (Natanagara & Juniarti, 2015). This condition will definitely become the costs that they must consider (Fiori *et al*., 2015).

Despite the disclosure of environment is not mandatory (Gladia & Rahardja, 2013), firms can insert it into their published annual report (Ullah, Hossain, & Yakub, 2014) to make investors in capital market react (Xu, Zheng, & Tam, 2012). Ideally, firms with good social responsibility on environment should receive the appreciation from investors on capital market (see the study of Wahba, 2008; Setiadi, Rahmawati, Suhardjanto & Djuminah, 2017). On the contrary, investors with negative response to this disclosure are still available (see Fiori *et al*. 2015).

Based on the inconsistent results of several previous studies mentioned before, this study is done by using pharmaceutical firms listed on Indonesia Stock Exchange as the research object. These firms is used as object of this study because according to Syafrudin (2008), they tend to have possibility to pollute their environment with harmful wastes such as medicinal powder, aluminum foil paper, damaged gauze and dust collector. If these materials are recycled before they are thrown, they will become friendly to environment.

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The purpose of this study is to prove if a positive or negative impact of environmental disclosure existence on firm value will happen with leverage and firm size as the control variable. The next parts of this paper are organized into the four sections. The second section presents theoretical framework and hypothesis development. The third one describes research method. The fourth one displays results and discussion. The fifth one shows conclusion and recommendations.

II.   Conceptual Framework and Hypothesis Development

The Effect of Environmental Disclosure on Firm Value

Environmental disclosure is non-mandatory action of firms (Gladia & Rahardja, 2013). The effect of this disclosure can have two opposite sides: a positive and negative effect. The positive effect explanation comes from the stakeholder theory. According to Pirsch *et al*. (2007) in Yuliana & Juniarti (2015), this theory explains that the balance of economic and non-economic purpose is the function of the firm successfulness. By implementing activities related to social responsibility on environment, firm will be free from fine and get good reputation in front of its consumers. This reputation will cause not only increase in sales but also increase profits and market value of firm. These explanations are also confirmed by study conducted by Wahba (2008) and Setiadi *et al*. (2017) showing environmental disclosure has a positive impact on firm value. Based on information of this theory, the first hypothesis part a can be formulated as follows.

H_1a: Environmental disclosure has a positive effect on firm value.

The second side is a negative effect. The negative effect is based on cost theory assuming that activities related to environmental disclosure are luxurious because firms must pay high amount of costs (Hilman & Keim, 2001). Naturally, these costs will reduce available earnings for investors and lead to the decreasing in market value of firm (Natanagara & Juniarti, 2015). In addition, waste produced by pharmaceutical firms can pollute environment if it is not recycled yet (Syafrudin, 2008). These explanations are confirmed by the study of Fiori *et al*. (2015) showing environmental disclosure has a negative impact on firm value. Based on information of this theory, the first hypothesis part b can be formulated as follows.

H_1b: Environmental disclosure has a negative effect on firm value.

The Effect of Leverage on Firm Value

One of explanations of trade-off capital structure theory states that firm with high leverage can own high market value because of the tax shield. It is also mentioned as benefit of using debt (Fosberg, 2004). This explanation is confirmed by study of Wulandari (2006), Hermuningsih (2013) and Kaur (2015) as well as Rizal & Sahar (2015) showing leverage has a positive effect on firm value. Based on this information, the second hypothesis can be formulated as follows.

H_2. Leverage has a positive effect on firm value.

The Effect of Firm Size on Firm Value

Big firm becomes focus of investors because of it show the existence of significant development (Sujoko & Subiantoro, 2007), economic of scale (Wahba, 2008) and business stability (Hardian & Asyik, 2016). This condition, indeed, motivates investors to buy its stock with high price (Sujoko & Subiantoro, 2007; Wahba, 2008; Hardian & Asyik, 2016). These explanations are confirmed by study of Sujoko & Subiantoro (2007) and Wahba (2008) pointing out that firm size has a positive effect on firm value. Based on this information, the third hypothesis can be formulated as follows

H_3: Firm size has a positive effect on firm value.

III. Research Method

This section explains three things. The first thing is population, sample, and sampling method. The second one is research variables. Last one is method of data analysis.

a. Population, Sample and Sampling Method

Population of this study is the pharmaceutical firms listed on Indonesia Stock Exchange from 2001 to 2016. The existence of firms consistently listed during this period is essential to be available so that the sampling frame is used. Based on this requirement, number of sampling frame is 7 firms. Furthermore, the number of firms needed to be sample (n) representing the number of population (N) is calculated by Slovin formula, cited from Suliyanto (2009), with error margin (e) of 10%. This formula is able to be seen in the first equation as follows.

$$n = \frac{N}{1+Ne^2}$$ .... (Equation 1)

Based on this formula, the number of firms as samples representing the population is 6.542 ≈ 6 firms (rounded down). Moreover, the six firms are picked up from the population by simple random sampling and the names of the firms are: (1) Darya-Varia Laboratoria Tbk. (DVLA), (2) Indofarma (Persero) Tbk. (INAF), (3) Kimia Farma (Persero) Tbk. (KAEF), (4) Kalbe Farma Tbk. (KLBF), (5) Pyridam Farma Tbk. (PYFA), and (6) Tempo Scan Pacific Tbk. (TSPC).

b. Research Variables

Variables used in this study contain one dependent and three independent variables. Below is the information related to variables used:
1. Firm value (FV) becoming dependent variable is measured by stock price of the firms on the date of annual report publication.
2. The existence of environmental disclosure (ED) becomes main variable. This existence is measured by dummy variable: 1 (one) is for firms with environmental disclosure and 0 (zero) is for firms with social and/or economic disclosure.
3. Leverage and firm size become control variable and are measured by debt to equity ratio (DER) and logarithm of total assets (LOG(TA)) at the end of the year, one-to-one.

c. Method of Data Analysis

Method of data analysis of this study is regression model with combination time-series data and cross-sectional data. According to Nachrowi & Usman (2006), this regression model applies ordinary least square (OLS) as method of estimation. Regression model, moreover, can be seen in the second equation shown below.

$$FV_{it} = \beta_0 + \beta_1.ED_{it} + \beta_2.DER_{it} + \beta_3.LOG(TA)_{it} + \varepsilon_{it1}$$ .... (2)

As consequence of using OLS, this regression model must complies with a set of tests related to classical assumptions consisting of normality, multicollinearity, heteroskedasticity and autocorrelation. By referring to Ghozali (2016), Kolmogorov-Smirnov test is done to prove normality of residuals, variance inflation factor value of each independent variable is used to detect the absence of multicollinearity. Harvey test is for proving the absence of heteroskedasticity. It means impact of independent variables: ED, DER, LOG(TA), on natural logarithm of squared residuals does not exist, Run test is for proving the absence of autocorrelation. It means residual of current period does not correlate with residual of previous period.

IV. Results and Discussion

This section displays six points. The first point is the results of descriptive statistics of variables used in this study. The second one is the test results of classical assumptions of regression model. The third one is the estimation result of regression model. The fourth one is the test result of hypothesis. The fifth one is discussion. The sixth one is managerial implication.

a. The result of descriptive statistics.

Descriptive statistics are summary statistics to describe data belonging to the variables used (Hartono, 2009). Statistics used cover the number of observation (N), value of mean, maximum, minimum and standard deviation of research variables. This information, moreover, can be seen in Table 1.

Table 1. Descriptive Statistics of Research Variables

	N	Minimum	Maximum	Mean	Std. Deviation
SP	30	117	3450	1294.40	916.052
ED	30	0.00	1.00	0.5667	0.50401
DER	30	0.24	1.64	0.6010	0.37361
LOG(TA)	30	11.82	16.50	14.4839	1.39863

Source: Output IBM SPSS 20.

In this table, the number observation (N) is 30 data. Stock price (SP) as proxy of FV has minimum value of 117, maximum value of 3450 and mean value of 1294.40 with standard deviation of 916.052. It can be also seen in Table 1 that 0 is the minimum value and 1 is the maximum value of environmental disclosure (ED). ED owns mean value of 0.5667 and standard deviation of 0.50401. Then DER as proxy of leverage has minimum value of 0.24, maximum value of 1.64 and mean value of 0.6010 with standard deviation of 0.37361, LOG(TA) as proxy of firm size has minimum value of 11.82, maximum value of 16.50 and mean value of 14.4839 with standard deviation of 0.37361.

b. The test results of classical assumptions of regression model.

Table 2 displays the results of test of classical assumptions. Based on the information in this table, it can be concluded two things. Firstly, residuals follow normal distribution (see interpretation in Panel A). Secondly, multicollinearity, heteroskedasticity and autocorrelation do not exist (see interpretation in Panel B, C and D). These results support the required condition when OLS is used as the estimation method of regression model.

Table 2. Results of Classical Assumption Tests and Their Interpretation

Panel A. The Result of Normality Test by Kolmogorov-Smirnov Test		
	Residual	Interpretation
Kolmogorov-Smirnov Z	1.081	Residuals are normally distributed because
Asymp. Sig. (2-tailed)	0.193	asymp.sig. (2-tailed) value is higher than 5%
Source: Modified output of IBM SPSS 20		significance level.
Panel B. The Result of Multicollinearity Test		
Independent Variable	VIF	Interpretation
ED	1.665	The value of VIF for ED, DER and LOG(TA) is

Table 2. Results of Classical Assumption Tests and Their Interpretation

DER	1.530
LOG(TA)	1.706

1.665, 1.530 and 1.706, respectively. It means multicollinearity does not exist because all values of VIF for each independent variable are lower than 10.

Source: Modified output of IBM SPSS 20

Panel C.The Result of Heteroskedastictity Test: LRESID^2 = f[ED, DER, LOG(TA)]

Independent Variable	Probability of t-statistic	Interpretation
ED	0.4922	The probability value of ED, DER and LOG(TA) is 0.4922, 0.0790 and 0.2507, respectively. It means heteroskedasticity does not happen because probability value of ED, DER and LOG(TA) is higher than 5% significance level.
DER	0.0790	
LOG(TA)	0.2507	

Source: Modified output of E-Views 6

Panel D. The Result of Autocorrelation Test

	Residual	Interpretation
Z	-0.770	The value of asymp.sig. (2-tailed) of Z-statistic is 0.441. It means residuals have random pattern because this value is higher than 5% significance level. In other word, autocorrelation does not exist.
Asymp. Sig. (2-tailed)	0.441	

Source: Modified output of IBM SPSS 20

c.   The estimation result of regression model.

The next step after the tests of classical assumptions achieved is estimating regression model. The estimation result can be seen in Table 3.

Table 3. The Result of Regression Model Estimation

Dependent Variable: FV
Method: Least Squares
Date: 05/22/18   Time: 14:54
Sample: 1 20 26 35
Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6891.941	1514.194	-4.551557	0.0001
ED	-1085.717	279.1878	-3.888840	0.0006
DER	260.3356	361.0904	0.720971	0.4774
LOG(TA)	596.8778	101.8558	5.860026	0.0000

Source: Modified Output of E-Views 6.

d.   Test result of hypothesis

To test each hypothesis mentioned in Section II, probability value of t-statistic for ED, DER and LOG(TA) is compared with value of significance level of 5%. If probability value is lower than

the value of significance level, alternative hypothesis is accepted. If the probability value is the same as or greater than value of significance level, null hypothesis is accepted so that no effect of explanatory variable on firm value occurs.

The first hypothesis in this study states that environmental disclosure existence has a negative effect on firm value. It can be seen in Table 3, the probability value of t-statistic for environmental disclosure existence (ED) is 0.0006. This means this value is lower than 5% significance level. Therefore, the first hypothesis is accepted.

The second hypothesis in this study states leverage has a positive effect on firm value. It can be seen in Table 3, the probability value of t-statistic for leverage (DER) is 0.4774. This means this value is lower than 5% significance level so that the second hypothesis is rejected.

The third hypothesis formulated in this study states firm size has a positive effect on firm value. It can be seen in Table 3, the probability value of t-statistic for firm size (LOG_TA) is 0.0000. This means this value is lower than 5% significance level so that the third hypothesis is accepted.

e.   Discussion

This study confirms the test result of hypothesis one part b stating the existence of environmental disclosure has a negative effect on firm value. By doing environmental disclosure, firm is essential to bear costs resulted from activities related to it such as transforming waste into safety materials on environment. As consequence, investors must own willingness to receive lower earnings from firms. This condition leads to the decrease in firm value. This result is also in line with the study of Fiori *et al*. (2015) concluding environmental disclosure has a negative impact on firm value. In other word, the negative impact of the existence of environmental disclosure on firm value can be interpreted that investors are more interested in social and economic disclosure rather than environmental disclosure.

This study, unfortunately, rejects the test result of the second hypothesis. It means that *leverage* does not have the effect on firm value. This condition indicates the arbitration process among investors in capital market. According to Sartono (2008), through this arbitration process, investors are able to sell stocks of firm group having large amount debt and buy stocks of firm group having small amount of debt. In this condition, investors can increase capital gain at the similar risk. As result, price of stocks of firm group having small amount of debt will increase and vice versa. This process will stop until two firm groups have the same market price. This study result confirm the study of Gunarso (2014), Hardian & Asyik (2016), Rizal & Sahar (2015), Natanagara & Juniarti (2015) and Ariyanti, Topowijono, & Sulasmiyati (2016).

This study confirms the test result of the third hypothesis stating firm size has a positive effect on firm value. It means firm size is considered by investors when they make decision to buy stocks because of reflecting development, economic of scale, and business stability. This explanation supports the study of Sujoko & Subiantoro (2007) and Wahba (2008).

f.   Managerial Implication

The implication of this study is for two parties. The first implication is for managers of firm. Managers can maintain available profits becoming the part of investors to be constant if they want to receive the positive response of investors related to environmental disclosure. The second

implication is for investors. When they want invest their money in stocks of the pharmaceutical firms to get high market value, it is essential for them to select firms focusing on social and economic disclosure and owning big size.

V.   Conclusion and Recommendations

The purpose of this study is to investigate the impact of environmental disclosure on firm value. Based on the test on the empirical data, it can be summarized three things. Firstly, there is the negative effect of environmental disclosure on firm value. Secondly, leverage does not have the effect on firm value. Finally, firm size owns the positive effect on firm value.

This study has some limitations. This study only uses the small number of firm used as samples and few explanatory variables. Based on these two conditions, the next researchers are suggested:
1.   Enlarging the scope of population. They can use all of manufacturing or non-financial firms as their population and take the sample based on suitable probability sampling method.
2.   Adding main independent variables that are expected to have the impact on firm value such as corporate governance mechanism consisting of ownership structure, supervisory board size and its independency, the number of supervisory board meetings as well as audit committee size.
3.   Adding control variables that are expected to own the impact on firm value such as profitability and systematic risk.

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