

The Effect of Environmental Disclosure, Environmental Cost, and Profitability on Firm Value

Ratna Wulaningrum¹, Dyah Kusrihandayani²

¹Accounting Department, Samarinda State Polytechnic, Samarinda, Indonesia

²Business Administration Department, Samarinda State Polytechnic, Samarinda, Indonesia

Email address: ratna_polsam @ yahoo.com

Abstract— *The company has an important role in maintaining environmental sustainability in order to create a balance and every implementation of its activities is not only aimed at seeking profit. The company's ethical behavior can be seen from the company's concern for the environment. Disclosure of corporate responsibility for environmental sustainability is currently an important issue and can be used as an indication of company transparency in presenting the company's annual report. The purpose of this study is to analyze the effect of environmental disclosure, environmental cost, and profitability on firm value. The research samples are public companies of real estate and property industry listed on the Indonesia Stock Exchange. The criteria for determining the sample using purposive sampling method. The analytical tool used is multiple linear regression. The research result is environmental disclosure, environmental cost, and profitability simultaneously affect to the firm value of the real estate and property industry.*

Keywords— *Environmental disclosure, environmental costs, profitability, firm value, real estate and property industry.*

I. INTRODUCTION

Companies not only carry out the economic function of providing goods and services but also have a role in being responsible for the environment and the general public. Companies need to pay attention to the balance between financial performance and obligations to preserve the environment. Therefore, it is not enough that corporate responsibility is seen as an economic performance alone but also expected for companies to pay attention to environmental accounting and social responsibility.

Environmental accounting is a field that deals with the use of resources, presenting and measuring the effect of national economic costs or the influence of companies on the environment. These costs include the cost of handling or repairing a polluted environment, consequences for environmental laws and taxes, purchasing pollution prevention techniques and waste management costs. The environmental accounting system consists of 2 types of accounting, which are differentiated into conventional accounting which is differentiated from the environment and the second is ecological accounting. Environmental differentiated accounting measures the impact of the natural environment on firms in financial terms, while ecological accounting measures the impact of firms on the environment based on physical measurements [1].

The company's attention to the environment shows ethical behavior in the conduct of business activities. As an organization that utilizes natural resources in its production

activities, companies are required to contribute so that environmental conditions are maintained and not damage. Disclosure of information on a company's environmental performance can show that the company has presented a transparent and reliable annual report. This will convince users of financial statements in making decisions. If the company does not disclose environmental information, it may assume a higher level of environmental risk and costs associated with future regulation. Several studies on the effect of environmental performance and environmental cost on corporate financial performance have been conducted [2], [3], [4], [5], [6], and [7] on various business spheres of the company.

The company's ability to generate profits or profits is indicated by profitability. Investors and potential investors buy company shares in the hope of getting a return on investment in shares, which is in the form of a portion of the profits or profits that the company receives. Investors and potential investors will be interested and give a positive response to investing in the company if the company's profitability is high. So even though the performance and environmental disclosure of the company is good, if the company's profitability is low, investors and potential investors will not be so interested in investing.

The purpose of this study was to determine the effect of environmental disclosure, environmental cost and profitability on firm value in the real estate and property industry. Companies included in this sector are considered to have a high risk of environmental damage. Activities carried out in the real estate and property industry sector will have an impact on land conservation, changes in vegetation structure, disturbance of biodiversity, disturbance of forest habitats, and ecological processes and natural topography. Therefore, sampling from sector of real estate and property is expected to provide information for interested parties about the company's performance and environmental disclosure in relation to the company's business activities.

II. LITERATUR REVIEW

Various studies related to environmental performance, environmental cost, profitability and firm value have been conducted with various research models. [2] conducted research on the effect of environmental performance and environmental cost on the financial performance of manufacturing companies. The result of this research is the environmental performance has a significant effect on the

financial performance of manufacturing companies, while environmental cost have no effect on the financial performance of manufacturing companies.

The results of the study [3] show that environmental performance has a positive effect on financial performance, but environmental cost has no effect on financial performance. The research of [4] provides evidence that financial performance is positively related to environmental performance. The other research found that environmental disclosure has a significant negative effect on firm value [5]. Meanwhile, [6] shows the results of research that environmental performance ratings and environmental disclosures have a significant positive effect on company performance.

Environmental performance is the company's performance in creating a green environment [7]. It is the result obtained by the company in managing the environment through policies, tools and targets in preserving the environment which can be measured through the environmental management system.

Profit is often used as an assessment of the company's operational performance, because it can measure the success or failure of the company to achieve the goals that have been set. Investors often use earnings information to measure the success of management performance and to measure future earnings predictions. Profitability is the net result of a series of policies and decisions [8]. Profitability is the company's ability to earn profits in relation to sales, total assets and own capital [9]. Long-term investors will really need the results of a profitability analysis. Without profit, the company will not be able to attract the attention of investors and potential investor to invest their funds in the company.

The stock price approach used to determine firm value can use the Tobin's Q ration. The greater the value of Tobin's Q ratio indicates that the company has good growth prospects and greater intangible assets. Companies that have a high Tobin's Q value generally have a very strong company brand image, while companies with a low Tobin's Q value are generally in a very competitive industry or an industry that is starting weaken [10].

Based on the literature review above, the research hypotheses that can be developed are as follows:

- H₁ : Environmental disclosure has an effect on firm value
- H₂ : Environmental cost has an effect on firm value
- H₃ : Profitability has an effect on firm value
- H₄ : Environmental disclosure, environmental cost, and profitability have an effect on firm value

III. RESEARCH METHODS

The dependent variable in this study is firm value as measured by using Tobin's Q ratio. The value of Tobin's Q ratio can be calculated by using data on closing stock prices at the end of the period, number of shares outstanding at the end of the year, book value of current assets, book value of inventories, book value of total assets, book value of current debts, and book value of long-term debt. The closing stock price data for each research object is obtained from the website <http://beta.finance.yahoo.com>. Data on the number of shares outstanding at the end of the year, book value of current

assets, book value of inventories, book value of total assets, book value of current debt, and book value of long-term debt are obtained from the annual reports and financial reports of each company being the object of research.

The independent variables of this study consist of environmental disclosures, environmental cost, and profitability. Environmental disclosure is measured by providing a score on the amount of environmental disclosure information presented in the company's annual report which is the object of research based on the environmental disclosure index. Data for environmental cost and profitability are taken from annual reports obtained from the official website of the Indonesia Stock Exchange (www.idx.co.id) and the official website of each company.

The population of this study is the real estate and property industrial sub-sector companies listed on the Indonesia Stock Exchange. The research sample was taken using purposive sampling method. The sample selection criteria are determined as follows:

1. Real estate and property industry sub-sector companies listed on the IDX for the 2015-2019 period.
2. Companies that publish annual reports for the 2015-2019 period.
3. The company has complete data related to the variables used in the study.

The research model used is to answer the objectives to be achieved from this research activity, to see the effect of environmental disclosure, environmental cost, and profitability on firm value. The research model used is multiple linear regression analysis as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

where:

- Y = Firm value (Tobin's Q ratio)
- α = Regression coefficient
- β = Regression coefficient
- X₁ = Environmental disclosure
- X₂ = Environmental cost
- X₃ = Profitability
- ε = Error term

The dependent variable of this study is firm value, which is proxied by Tobin's Q ratio. The dependent variables of this study are the company's environmental disclosure index, environmental cost, and company profitability.

The dependent variable is a variable that is influenced by other variables. The dependent variable in this study is company value, which is proxied by Tobin's Q ratio. Tobin's Q is the market value of outstanding shares and company debt to the replacement cost of company assets. The Tobin's Q ratio can be calculated with the following formula:

$$Tobin's\ Q = \frac{MVE + DEBT}{TA}$$

where:

- MVE = the closing price of shares at the end of the financial year x the number of common shares outstanding
- DEBT = (current debt - current assets) + book value of inventories + long-term debt
- TA = book value of total assets

Independent variables are variables that explain or

influence other variables. The independent variables in this study include environmental disclosures, environmental cost, and profitability. Environmental disclosure source data comes from the company’s annual report. Each company has its own policy for environmental disclosure in its published reports. Based on the results of the analysis of the annual reports published by the company, the environmental information presented by the company is in a different sub-section in the annual report from one company to another. Environmental information in annual reports can usually be found in the sub-section of a occupational safety, health and environment, environmental development programs, and others. Some companies also choose to present environmental disclosure information in a separate report from annual report, stated in a sustainability report.

After environmental disclosures are assessed based on the list of environmental disclosure indexes, the final score will be calculated by the method of adding up the scores of the environmental disclosures made by the company based on the source of disclosure divided by the number of disclosure that should be made (total environmental disclosures based on the environmental disclosure index).

Final score of environmental performance disclosures

$$= \frac{\text{Total environmental disclosure at company}}{\text{Total environmental disclosures that should be done}}$$

The independent variable of environmental cost is the cost incurred by the company in relation to environmental damage caused and the protection it provides. Environmental cost can be seen in the allocation of funds for the Community Development Program which are listed in the company’s financial statements or annual reports. The environmental cost measurement techniques is as follows:

$$\text{Environmental costs} = \frac{\text{Community Development Program}}{\text{Earning after tax}}$$

The independent variable profitability is proxied by net profit margin, which measures how much net profit can be obtained from each sale made by the company. Net profit margin is calculated by the formula:

$$\text{Net Profit Margin} = \frac{\text{Net Operating Income}}{\text{Net Sales}}$$

IV. FINDINGS RESEARCH / RESULTS

The research sample is 26 companies in the real estate and property sub-sector listed on the Indonesian Stock Exchange. The research period is 2015 to 2019. Thus, the number of research data is 130 (5 years for 26 companies).

The variables of this study include environmental disclosures, environmental cost, and profitability which will be tested using descriptive statistics. Before doing the multiple linear regression test, the classical assumption test was performed. The results of the normality test using the Kolmogorov-Smirnov (K-S) are presented in the table 1.

Based on the normality statistical test in Table 1 below shows the Kolmogorov-Smirnov statistical test of 0.0807 and the significance at 0.422 is greater than 0.05, it can be concluded that the data is normally distributed. So that this research model fulfills the classic assumption of normality.

Multicollinearity test aims to test whether the regression model found is a correlation between independent variables. A good regression model should not have a correlation between te independent variables. To detect whether there is multicollinearity in the regression model, it can be done by looking at the tolerance value and variance inflation factor. If the tolerance value is > 0.10 and the VIF value is ≤, there is no multicollinearity between the independent variables [11].

TABLE 1. Normality Test Results Using Kolmogorov-Smirnov One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		130
Normal Parameters ^{a,b}	Mean	0.000000
	Std. Deviation	6.1272875
Most Extreme Differences	Absolute	0.246
	Positive	0.246
	Negative	-0.206
Test Statistic		0.807
Asymp. Sig. (2-tailed)		0.422 ^{c,d}

Source : primary data processed

The results of the multicollinearity test can be seen in the following table:

TABLE 2. Multicollinearity Test Results Using VIF

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Environmental_Disclosure	0.993	1.007
Environmental_Cost	0.950	1.053
Profitabilitas	0.947	1.056

Source : primary data processed

Based on the data in Table 2, it can be seen that the tolerance value approaches the number 1 or > 0.10 and the VIF value is around the number 1 or < 10 for each variables. The tolerance value for environmental disclosure is 0.993, environmental cost is 0.950, and profitability is 0.947. Meanwhile VIF value for environmental disclosure is 1.007, environmental cost is 1.053, and profitability is 1.056. Thus it can be concluded that all independent variables used in this study do not experience multicollinearity.

Testing to show that the data is free from heteroscedasticity through the Glejser Test. The presence or absence of heteroscedasticity can be seen from the significance value of the independent variable on the dependent variable. If the glejser test results are less than or equal to 0.05, it can be concluded that the data has heteroscedasticity and vice versa [11]. The results of the heteroscedasticity using the glejser test can be seen in the following table:

TABLE 3. Heteroscedasticity Test Results

Model	t	Sig.
1 (Constant)		
Environmental_Disclosure	4.797	0.356
Environmental_Cost	-2.222	0.208
Profitabilitas	-0.910	0.365

Source : primary data processed

Based on the data presented in Table 3, all independent variables have a significant value above 0.05. This can be seen

from the significant value of environmental disclosure is 0.208, environmental cost is 0.365, and profitability is 0.128. Thus it can be concluded that the regression equation using the glejser test does not occur heteroscedasticity.

The coefficient of determination (R^2) test is used to determine how much the ability of the dependent variable can be explained by the independent variable. The results of the determination coefficient test can be seen in the following table:

TABLE 4. Test Results of the Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.231 ^a	0.053	0.031	9.91583

Source : primary data processed

The amount of the coefficient of determination (R^2) is 0.053, which means that environmental disclosure, environmental cost, and profitability affect firm value by 5.3%. While the rest is influenced by other variables outside this regression model.

The test results for the multiple linear regression equation used in this study are presented in the following table:

TABLE 5. Multiple Linear Regression Test Results

	Model	t	Sig.
1	(Constant)	3.370	0.001
	Environmental_Disclosure	1.721	0.088
	Environmental_Cost	0.089	0.930
	Profitabilitas	0.596	0.552

Source : primary data processed

The results of the comparison of significant values with a significant level of $0.088 > 0.05$, it can be concluded that the environmental disclosure variables partially do not have significant effect on firm value, so the hypothesis is rejected. The environmental cost variable partially has no effect on firm value, it is shown the comparison of significant values with a significant level of $0.930 > 0.05$. The results of the comparison of significant values with a significance level of $0.552 > 0.05$ for the profitability variable indicate that this variable partially has no significant effect on firm value.

The F-test is used to see the suitability of the regression model. The results of the F-test can be seen in the following table:

TABLE 6. F-Test Results

ANOVA ^a						
	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	695.985	3	126.988	4.360	0.045 ^b
	Residual	1238.878	126	9.832		
	Total	1308.477	129			

Source : primary data processed

Based on the table 6, it can be concluded that environmental disclosure, environmental cost, dan profitability simultaneously affect on firm value. This can be seen from the F_{count} value of 4.360 which means greater than F_{table} of 2.68 with a significant level of 0.045 which means less than 0.05, and the value of $F_{count} > F_{table}$ is obtained by looking at the F table for degrees $df1 = k - 1$ (4-1) and $df2 = nk$ (130-4) at

alpha 0.05. Thus, it is obtained that $F_{count} > F_{table}$ (4.360 > 2.68), it can be concluded that this regression model is appropriate in this study.

Various disclosures are presented by the company to meet the minimum standards of corporate responsibility to society and the environment. This shows that the level of public concern for the environment is getting better as indicate by the development of regulations/standards regarding environmental accounting and environmental observer organizations. Company management is increasingly aware of paying more attention and disclosing non-financial aspects in the company's annual reporting, especially environmental information.

V. CONCLUSION

This study aims to examine the effect of environmental disclosure, environmental cost and profitability on firm value in the real estate and property industrial sub-sector companies listed on the Indonesia Stock Exchange. Based on the research results, it is proven that environmental disclosure, environmental cost, and profitability partially do not affect the firm value. However, the environmental disclosure, environmental cost, and profitability simultaneously have an effect of firm value.

This study has limitations that can be taken into consideration by future researchers. The first limitation is that the research samples are still limited to the real estate and property industrial sub-sector companies. The second limitation is that the source of environmental disclosure and environmental cost are taken from the company's annual report, because not all sample companies publish sustainability reports as another source of environmental disclosure.

Suggestions for future research can be developed for research with a similar theme using a more varied sampled and not limited to companies in the real estate and property industrial sub-sector companies.

ACKNOWLEDGMENT

The authors would like to thank the management of Samarinda State Polytechnic for funding this research through DIPA 2020.

REFERENCES

- [1] Zhan, Y., and Zhang, M. 2013. "Application of a Combined Sensitivity Analysis Approach on a Pesticide Environmental Risk Indicator," *Environmental Modelling and Software*, vol. 49, pp.129-140.
- [2] Camilia, Ica. 2016. "Pengaruh Kinerja Lingkungan dan Biaya Lingkungan terhadap Kinerja Keuangan Perusahaan Manufaktur", *Artikel Ilmiah*. Sekolah Tinggi Ilmu Ekonomi Perbanas Surabaya
- [3] Tunggal, Whino S.P., dan Fachrurrozie. 2014. "Pengaruh Environmental Performance terhadap Environmental Disclosure dan Economic Performance," *The Indonesian Journal of Accounting Research*, vol.10, no. 1.
- [4] Lu, Jun. 2010. "The Relations Among Environmental Disclosure, Environmental Performance and Financial Performance: an Empirical Study in China," *Working Paper Series*.
- [5] Perwita, Veronika. 2009. "Pengaruh *Environmental Disclosure* terhadap Reaksi Pasar dan Nilai Perusahaan," *Skripsi*. Fakultas Ekonomi Universitas Diponegoro, Semarang.

- [6] Qorrina, Alfien. 2010. “Pengaruh Peringkat Kinerja Lingkungan Perusahaan dan Pengungkapan Informasi Lingkungan terhadap Kinerja Ekonomi Perusahaan,” *Skripsi*. Fakultas Ekonomika dan Bisnis Universitas Gadjah Mada, Yogyakarta.
- [7] Suratno, Darsono, dan Siti Muthmainah. 2007. “Pengaruh Environmental Performance, Environmental Disclosure dan CSR Disclosure terhadap Financial Performance,” *Accounting Analysis Journal*, vol. 3, no. 1.
- [8] Brigham, Eugene F., and Houston, Joel F. 2001. *Manajemen Keuangan, Edisi Kedelapan*. Jakarta: Erlangga.
- [9] Sartono, Agus. 2001. *Manajemen Keuangan – Teori dan Aplikasi*. Yogyakarta: Badan Penerbit Fakultas Ekonomi Universitas Gadjah Mada.
- [10] Wahyudi, Johan. 2010. *Pengaruh Pengungkapan Good Corporate Governance, Ukuran Dewan Komisaris dan Tingkat Cross-Directorship Dewan terhadap Nilai Perusahaan*. *Skripsi*. Fakultas Ekonomi Universitas Diponegoro, Semarang.
- [11] Ghozali, Imam. 2013. *Aplikasi Analisis Multivariate dengan Program SPSS*, Badan Penerbit Universitas Diponegoro, Semarang.