

The Effect of PROPER Level Disclosure and CO2 Emissions Intensity on Financial Distress

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Abstract: This study aims to examine the effect of PROPER disclosure and CO2 intensity disclosure on financial distress. This study uses secondary data with documentation data collection techniques. The sample of this research is manufacturing companies listed on the Indonesia Stock Exchange from 2017-2021 and submitting their annual financial reports. The reason why this study uses the type of manufacturing company is because manufacturing companies are the largest companies listed on the Indonesia Stock Exchange, besides that manufacturing companies are one of the types of companies that contribute the most carbon emissions in Indonesia. This study uses the Common Effect Model (CEM). The results showed that PROPER disclosure and CO2 intensity disclosure did not significantly affect financial distress.

Keywords: PROPER disclosure; CO2 intensity disclosure; financial distress.

1. Introduction

The environmental issue is a widely discussed topic around the world, including in Indonesia. Indonesia is among the top five countries contributing to CO2 emissions in the world. Carbon dioxide (CO2) is correlated with global warming and climate change. At the Conference of Parties (COP) 15 in 2009, Indonesia stated its commitment to reduce greenhouse gas (GHG) emissions and strengthened through the Nationally Determined Contribution (NDC) document. The Indonesian government seeks to resolve the emission issue through the development of green industries. The government encourages industries to transform into sustainable industries that are environmentally friendly through regulations issued. The Vice President of the Republic of Indonesia in 2020 revealed that although the government tried to solve the problem with a regulatory approach, it would be effective if the community and the market also put pressure on the industry to improve its environmental performance. The government, investors, the public, and other stakeholders demand disclosure of corporate environmental responsibility. The Indonesia Stock Exchange (IDX) will launch the IDX LQ45 Low Carbon Leaders Index at the B20 Side Event. The launch of this index is an effort by the IDX to participate in the sustainable finance agenda.

The risk that can arise if the company ignores the environment is the emergence of complaints/disputes from surrounding communities / environmental activists such as the case of the Shell company in the Netherlands. Other risks that arise are reprimands/sanctions from the government (Ministry of Environment and Forestry) and even business closure, such

as the case of PT Kimu Sukses Abadi and PT Sawit Inti Prima Perkasa. Handling the above risks requires a lot of money to resolve, thus affecting the company's finances, the cost of repairing the company's reputation affects the company's profitability and causes the company to face financial pressure.

Stakeholder theory states that companies must be responsible to all company stakeholders. The mismatch of stakeholder expectations of the company has an impact on stakeholder decisions that affect company finances. Investors and creditors act to make decisions to secure their investment it can lead to corporate financial difficulties. Previous research studies focused on environmental performance as measured using the GRI index and still very rarely focused on the important role of disclosure of the PROPER level and the intensity of CO₂ emissions generated by the company. This study aims to examine the effect of disclosure of the company's PROPER level and CO₂ emission intensity on the risk of corporate financial difficulties. The urgency of this research is that environmental performance is a matter that has a great risk to companies and stakeholders but is sometimes neglected by companies. Companies can experience financial difficulties due to the high cost of problem-solving, wrong environmental investment, reputation repair costs, criminal charges and even company closure. The results of this study are expected to contribute in the form of empirical evidence to companies and decision makers and policies.

2. Literature Review

Environmental problems are still a worldwide phenomenon, especially related to carbon emissions. Even the environmental aspect became one of the main topics (energy transition) raised at the G20 held in Bali. Industry as a contributing source of carbon emissions is required to be able to manage and manage the company's environment. Reporting efforts or activities related to reducing emissions expenditure as a form of environmental performance.

Indonesia does not yet mandate that companies submit a sustainability report. Companies are only required to report on corporate social responsibility. This obligation is contained in Law of the Republic of Indonesia No.40 of 2007 concerning Limited Liability Companies Article 66 paragraph 2c states that the annual report must contain at least a report on the implementation of social and environmental responsibility. Sustainability reports are prepared by companies only voluntarily, so there are gaps in information disclosure. Some companies disclose their social responsibility through the company's annual financial statements and some companies provide detailed information related to the company's sustainability report which includes corporate social responsibility. The submission of social responsibility in the annual financial report is sometimes felt to be lacking because it seems to only fulfill regulatory demands.

The association between environmental performance and the risk of financial distress can be based on several theories such as agency theory, stakeholder theory, and legitimacy theory. Agency theory states that there are differences in interests between agents and principals. Management (agent) is obliged to optimize the benefits desired by the principal. The intended profit is not only in increasing company profits but also in mitigating the risks inherent in these profits. One way to mitigate risk is to allocate resources to environmental projects/investments. When the company decides to make an environmental investment, the company must conduct an in-depth analysis so that the investment decision, which is quite large, will not cause financial difficulties for the company. Although in the long run the costs incurred will be smaller than the company without environmental investment and the risk of incurring costs to solve environmental problems.

All decisions made by companies related to the environment and social are reported in

the annual financial statements and or sustainability reports. Disclosure of sustainable reports provides more detailed and comprehensive information. Xue et al. (2020) states that companies with good environmental performance will disclose more information as a signal of proactive strategy and good quality for stakeholders. More disclosure will reduce information asymmetry between managers and external shareholders and increase corporate financial transparency. A decrease in information asymmetry can reduce corporate risk. In addition, a decrease in information asymmetry will have an impact on reducing agency costs. Good environmental performance can avoid expenses related to the carbon emission tax that will be implemented in 2025.

Stakeholder theory states that companies must be responsible to all interested parties, not only to shareholders but also to the government, society, and others. For example, the government has a program to improve the environmental performance index. Based on EPI (Environmental Performance Index) data, Indonesia is ranked 133rd in the world regarding environmental performance, and Indonesia, far below Singapore at rank 49 and Malaysia which is ranked 75. EPI data states that Asia is at an unsatisfactory environmental performance (Huang & Xu, 2019). The environmental performance index improvement program can be achieved through a green industrial transformation so that the government issues regulations related to industrial environmental management. If the company ignores or does not comply with the rules issued by the government, the company will be subject to sanctions which will result in increased costs and damage to its reputation. This argument is also in line with legitimacy theory. Legitimacy theory states that companies try to comply with applicable regulations. Compliance aims to avoid sanctions from the government, minimize the company's financial losses and create a good image for investors as a company that complies with regulations. The results of research by Khanifah et al. (2020). show that environmental performance has a positive effect on corporate reputation. The results of research Gangi et al., (2020) show that corporate reputation affects the company's financial pressure.

There are several factors that affect environmental performance such as corporate governance (Lu & Wang, 2021), environmental ethics (Singh et al., 2019). and organizational culture (Magsi et al., 2018). Research results Bednárová et al. (2019) state that companies try to comply with applicable regulations. This aims to reduce or eliminate risks that can arise due to non-compliance with regulations. The results of research Harymawan et al. (2021) show that companies experiencing financial distress are reluctant to submit high quality environmental performance reports. Research Oktarina (2018). shows the results of sustainable report disclosure have a negative effect on financial pressure. The result of research Sembiring, (2022) show that operating cash flow negatively significantly effect of financial distress. The results of research Vasi & King (2012) show that environmental management performance has a significant negative effect on corporate risk. The results of research Jia & Li (2022) and Boubaker et al. (2020) show that improving environmental performance can reduce the risk of corporate financial pressure. The results of research Daromes et al. (2020) show that environmental performance will also affect firm value. Benlemlih & Cai (2020) states that companies with better environmental performance can reduce the cost of financial distress. Hypothesis proposed:

H1: Disclosure of PROPER rating has a significant effect on financial distress.

H2: Disclosure of the intensity of CO2 emissions released by the company has a significant effect on financial distress

3. Research Methods

The research sample is a manufacturing company that is registered from 2018-2021 and submits its annual financial statements. The reason why this study uses the type of manufacturing company is because manufacturing companies are the largest companies listed on the Indonesia Stock Exchange, besides that manufacturing companies are one of the types of companies that contribute the most carbon emissions in Indonesia.

This study uses secondary data with documentation data collection techniques. PROPER level disclosure and CO2 intensity disclosure are dichotomous variables while financial distress variables are measured by Altman Z-Score. Shahab et al. (2018) uses the score from the Z Score results to assess financial distress. The following is the model equation developed by Altman

$$Z_i = 6.56 X_1 + 3.26 X_2 + 6.72 X_3 + 1.05 X_4$$

Description:

X_1 = (Current assets-Current debt)/Total Assets

X_2 = Retained Earnings/Total Assets

X_3 = Earnings before interest and taxes/Total Assets)

X_4 = Book value of equity / Book value of total debt)

Interpretation of Z Score results:

$Z > 2.60$, the company is in a healthy condition so the possibility of bankruptcy is very small.

$1.10 > Z > 2.6$ The company is in a gray area. In this condition, the company is experiencing financial problems that must be handled in an appropriate manner.

$Z < 1.10$ Company in bankruptcy financial difficulties.

4. Results and Discussion

4.1. Descriptive Statistics

The following are the results of descriptive statistics.

Table 1. Descriptive Statistics

Variable	Minimum	Maximum	Mean	Std. Deviation	Obs
Op.cash flow	-6,25e+12	3,83e+13	8,51e+11	3,37e+12	560
Altman Z Score	-29,71	30,95	3,45	5,62	560
Company age	7	116	44,91	23,73	560
Company size	21	34	28,27	1,99	560

This study uses company age and company size as research control variables. In the table above, it is known that the amount of data used in this study is 560. The sample of this study was 140 manufacturing companies with 4 years of observation, 2018-2021. Based on the data above, it can be seen that the average value of the company's operating cash flow is Rp. 851,000,000,000 with a minimum value of - Rp. 6,250,000,000,000 and the highest of 38,300,000,000,000. There is a considerable difference in cash flow adequacy between the

minimum and maximum values. The average value of Altman Z Score is 3.45 with a minimum value of -29.71 and a maximum value of 30.96. In accordance with the Altman Z Score provisions, companies that have a score smaller than 1.1 indicate that the company is in bad condition. The average age of the observed companies is 44 years with the lowest company age being 7 years and the longest company age being 116 years. The average value of company size is 28.26 with a minimum value of 21 and a maximum of 34.

The following are the descriptive statistical results of variables that have a nominal scale. The number 0 is given to companies that do not disclose while the number 1 is given to companies that disclose. The following is a statistical description for the PROPER disclosure variable

Table 2. Descriptive Statistics

Variable	Frequency	Percent
Company does not Disclose PROPER	353	63
Company Discloses PROPER	207	37

Based on the table above, it is known that the number of manufacturing companies that do not disclose their PROPER is more than companies that disclose their PROPER. PROPER disclosure is only 207 (37%) and the absence of PROPER disclosure is 353 (63%) out of a total of 560 observations. The Indonesian government has not required all companies listed on the Indonesia Stock Exchange to participate in PROPER, only designated companies are required to become PROPER participants. If the company is not appointed, it is voluntary.

The following are descriptive statistics for the CO2 intensity disclosure variable

Table 3. Descriptive Statistics

Variable	Frequency	Percent
Company does not Disclose C02 emission intensity	229	41
Company Discloses C02 emission intensity	331	59

Based on the table above, it is known that the number of manufacturing companies that do not disclose their C02 intensity is less than companies that disclose their C02 intensity. The disclosure of C02 intensity is 331 (59%) and the absence of disclosure of C02 intensity is 229 (41%) from a total of 560 observations.

This study uses panel data regression estimation with STATA analysis tool. There are 3 panel data regression models that can be used, namely the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). However, of the three models, the most appropriate model must be selected for use. The analytical tools that can be used to choose the best model are the Chow test, Hausman test and Lagrange Multiplier test. The Chow test serves to choose between the CEM and FEM models. If the probability value is greater than 0.05, the more appropriate model is CEM. If the probability value is smaller than 0.05, the more appropriate model is FEM. The Hausman test serves to choose between the FEM and REM models. If the probability value is greater than 0.05, the more appropriate model is REM. If the probability value is smaller than 0.05, the more appropriate model is FEM. The

Lagrange Multiplier test serves to choose between the CEM and REM models. If the probability value is greater than 0.05, the more appropriate model is CEM. If the probability value is smaller than 0.05, the more appropriate model is REM.

The following are the results of the Chow test, Hausman test and Lagrange Multiplier test

Table 4. Chow test, Hausman test and Lagrange Multiplier test results

Test	Probability value	Conclusion
Chow test	0,4082	CEM model is more appropriate
Hausman test	0.1416	REM model is more appropriate
Lagrange Multiplier test	0,4756	CEM model is more appropriate

Based on the table above, it can be concluded that the most appropriate research model is the Common Effect Model (CEM). The next step is to conduct a classic assumption test.

4.2. Classical assumption test

This study uses panel data so it does not require normality test and autocorrelation test. The classic assumption tests used for this CEM model are multicollinearity and heteroscedasticity tests. To see whether the research model used is free from multicollinearity, it can be seen from the VIF value. If the VIF value is below 10 then there is no multicollinearity, here are the results of the multicollinearity test

Table 5. Multicollinearity test

Variable	VIF Value	Conclusion
PROPER	1,14	Multicollinearity free
CO2 Intensity	1,81	Multicollinearity free
Company age	1,12	Multicollinearity free
Company size	1,14	Multicollinearity free

Based on the table above, it is known that all VIF values are below 10 so that it can be concluded that there is no multicollinearity. The next classic assumption test is the heteroscedasticity test. The test tool used is the Breusch-Pagan test. If the probability value is greater than 0.05 then there is no heteroscedasticity, but if the probability value is smaller than 0.05 then heteroscedasticity occurs. Based on the Breusch-Pagan test results, it is known that the chi2 value is 621.15 with a probability of 0.0000. The probability value is smaller than 0.05 so it can be concluded that heteroscedasticity occurs.

Models that experience heteroscedasticity are improved by Robust and GLS tests. This test aims to eliminate heteroscedasticity. Robust test results can be seen in the change in the standard error value before and after the Robust test. The following is the standard error value before and after the robust test is carried out.

Table 6. Robust test

Variable	Standard error (before Robust test)	Standard error (after Robust test)	Conclusion
PROPER	935,435	1203,363	Change occur
CO2 Intensity	966,507	2631,552	Change occur
Company age	omitted	omitted	Fixed
Company size	658,138	267.308	Change occur

The next test to ensure the model is free from heteroscedasticity is the GLS test. The GLS test results show that there is no heteroscedasticity. This is indicated by the fact that the panels are homoskedastic.

4.3. Hypothesis testing

Based on the above analysis, it is known that the most appropriate model to use is the Common Effect Model (CEM). The Common Effect Model (CEM) is a basic estimation model in panel data regression using the pooled least square principle. The following are the results of the CEM model regression test

Table 7. T- test

Variable	Coefficient	Probability	Conclusion
PROPER	1277,5	0,290	Hypothesis rejected
CO2 Intensity	-274,33	0,299	Hypothesis rejected
Company age	0	omitted	Hypothesis rejected
Company size	-267,3	0,319	Hypothesis rejected

Based on the table above, it can be seen that companies that disclose the PROPER level have a higher Z-Score value of 1277.5 than companies that do not disclose the PROPER level. The higher the Z-Score value, the healthier the company. This means that the disclosure of the PROPER level is directly proportional to the health of the company, although when viewed from the probability level of 0.29. This value is greater than 0.05, which means that the disclosure of the PROPER level has no significant effect on financial distress. The first hypothesis proposed is not supported.

Companies that submit their PROPER ratings provide information for stakeholders regarding environmental performance. The government held a PROPER performance assessment aimed at increasing the role of companies in environmental management and efficient use of resources. Disclosure of PROPER ratings can have both positive and negative impacts on the company. It has a positive impact if the company gets a minimum Blue and maximum Gold rating and a negative impact if the company gets a black or red PROPER rating. Companies that get a Blue rating indicate that the company meets the regulations set. Companies that get a Green or Gold rating indicate companies that exceed the established regulations. Blue to Gold ratings will provide a positive image for the company. If the company gets a Black or Red rating, it shows a company that does not comply with regulations so that it can worsen the company's image. In addition, if the company gets a red rating twice,

it will be subject to administrative sanctions. Companies that get a black rating will be subject to environmental law enforcement sanctions in accordance with laws and regulations. This is contained in Article 17 of the Regulation of the Minister of Environment of the Republic of Indonesia No.3 of 2014 concerning the Company Performance Rating Assessment Program in Environmental Management.

The analysis shows that companies that disclose the intensity of the company's CO₂ emissions have a lower Z Score value of -2745.33 than companies that do not disclose the intensity of the company's CO₂ emissions. The lower Z-Score value indicates that the company is increasingly experiencing financial distress. This shows that the disclosure of the intensity of the company's CO₂ emissions is inversely proportional to the health of the company, although when viewed from the probability level of 0.299. This value is greater than 0.05, which means that the disclosure of CO₂ emission intensity has no significant effect on financial distress.

Companies that disclose CO₂ emissions intensity have a lower Z Score value. This shows that the disclosure of the company's CO₂ emission intensity has a negative impact on the company even though it is not significant. CO₂ emission intensity is a parameter of carbon emission efficiency in activities or products. CO₂ intensity is a comparison of the amount of emissions produced to carry out activities or produce products. The lower the carbon intensity, the better.

This study uses 2 control variables, namely company age and company size. Both variables have no significant effect on financial distress.

5. Conclusion

Based on the results of the discussion, the conclusion that can be given is that PROPER disclosure, disclosure of CO₂ emission intensity does not have a significant effect on financial distress. This can be caused by the participation of PROPER participants and the disclosure of CO₂ emission intensity is still voluntary. Voluntary disclosure can lead to information asymmetry and create a perception for stakeholders that the information is not more important than the required disclosure.

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