Environmental disclosure on agricultural and mining sector

Sukirman¹, U Yaisah¹, R Hidayah¹, D Suryandari¹, D Patrisia²

¹Faculty of Economics, Universitas Negeri Semarang, Indonesia
²Faculty of Economics, Universitas Negeri Padang, Indonesia
sukirman3002@mail.unnes.ac.id

Abstract. This study aims to understand the environmental disclosure of agricultural and mining companies. Especially the impact of independent are commissioners, leverage ratios, firm size, and liquidity ratios on environmental disclosure. The population is the agricultural and mining sector's companies in 2014-2019 with 61 companies. Sampling using purposive sampling technique and uses multiple linear regression analysis with SPSS. The results show that firm size, liquidity ratio, and leverage ratio harm environmental disclosure. However, the independent board of commissioners does not affect environmental disclosure. In conclusion, if the leverage ratio, liquidity ratio, and company size are increase, it will reduce the level of environmental disclosure. Hence, agricultural and mining companies in Indonesia have to improve environmental responsibility. Then, the government should make an effective policy for environmental disclosure.

1. Introduction

Environmental issues are a vital issue for society. The decline in environmental quality is commonly triggered by human actions, such as overpopulation, industries, pollution, deforestation, and global warming [1]. Environmental problems have caused an outpouring of society to demand company transparency on its environmental responsibilities [2]. High community demands lead the companies to prepare environmental policies with clear accountability to their stakeholders [3]. Therefore, environmental activities reports need to be disclosed [4].

An effort in preserving the environment is by conducting environmental disclosure [4,5]. Environmental disclosure means reporting specific information about how the company treats the environment [6]. The environmental disclosure report is conducted by management to satisfied stakeholders [7].

Based on the database, the pollution index in Indonesia in 2019 was 62.78, which increased 4.3 points to 67.08 in 2020. The government has established the PROPER program as a rating medium for environmental performance in companies to reduce environmental issues. According to the Ministry of the Environment data, in 2015-2018, there was a 1% decline in PROPER participants per year. An example of the company's lack of environmental disclosure is Bukit Asam Tbk, which received administrative sanctions for not carrying out water quality control and management, both at the planning and implementation stages [8]. In 2018, there was a pollution case from nickel exploration and exploitation waste from the GAG Nickel, a subsidiary of Aneka Tambang Tbk. This waste causes the waters on GAG Island to turn brown [9].

Several cases above have shown that the level of industrial activities is directly proportional to the decline in environmental quality. The companies that produce waste or whose operational activities...
influence the environment are strongly required to have good environmental performance [10]. A positive relationship is between financial performance and environmental disclosure [2,11]. [12,13] stated a positive influence between profitability and environmental disclosure, while leverage harms it [14]. Meanwhile, leverage does not affect at all [5,15]. Liquidity has a positive effect on environmental disclosure [16]. In contrast, it is in contrast who stated that there is no relationship between liquidity and environmental disclosure [11]. There is a negative effect of liquidity on environmental disclosure [6,16].

Company size has a positive influence on environmental disclosure [4,10–12,14,17–19]. However, in contrast, it is found no relationship between company size and environmental disclosure [6,15,16]. The independent commissioners have a positive influence on environmental disclosure [20]. On the other hand, independent commissioners' negative influence on environmental disclosure [13,21]. Meanwhile, that there is no significant effect of company size [17,22].

This research aims to describe and identify the effects of size, liquidity ratios, independent commissioners, and leverage ratios on environmental disclosure. The research originality is a research model consisting of four independent variables (company size, leverage ratio, independent board of commissioners, and liquidity ratios) and one dependent variable (environmental disclosure), which is different from previous research models, and the object under study is go-public companies from agriculture and mining sectors in 2014-2019.

According to the theory of legitimacy, the company not only operates for its internal interest but also must spread its benefits to the community [23]. The legitimacy can be obtained if there is a shared vision between the company and its surrounding community. All companies have contracts with the community in running their business by adjusting the values that apply to the local community [24]. Reporting other data in the financial statements is the first step in being responsible for information on the company's business activities [5]. The companies can hold environmental disclosures to gain legitimacy from the community [25]. Important information provided in the disclosure shows that the communication between companies and their stakeholders is going well. If the companies or organizations do not get public legitimacy, their management must pay attention to the values and rights of the public around them [3].

Another theory that underlies this research is the stakeholder theory, which states that the organization depends on the information and interests of the main stakeholders [26]. Stakeholder theory is used to put pressure on the company to accommodate the interests and needs of its stakeholders [27]. When the stakeholders can control important resources for the company, the company is expected to respond to requests for information from its stakeholders. This theory considers the internal and external stakeholders of the organization [28]. The information provided by the company becomes a benchmark for considering the investment decisions of its potential stakeholders. The wider the information provided by the company, the better the communication between the company and its stakeholders.

1.1 Leverage ratio

The leverage ratio determines how much the company needs to be funded from debt. When the company has high debt, management will be more focused on reducing its obligations than preparing an environmental disclosure. The environmental disclosure can increase costs and reduce profits so that the companies prefer to allocate their profits to repay their debts and improve relationships with debt holders [5]. The legitimacy theory explains that the organization must consistently respond to the community according to applicable values and norms [28]. Therefore, the companies will always try to reach community legitimacy, such as by serving the community's interests [24]. The lower the leverage ratio, the better its environmental disclosure. Referring to the study [3,14], that the leverage ratio hurts environmental disclosure, the H1 = Leverage ratio harms environmental disclosure.
1.2 Liquidity ratio
The liquidity ratio describes the correlation between the company's current assets and cash and current liabilities [6]. A high liquidity ratio generally indicates that the company is well-prepared and organized in reporting its environmental activities [16]. Based on the legitimacy theory, a company with a strong financial condition tends to share information related to the environment more widely than a weak financial foundation. The high liquidity ratio will encourage the company to disclose its financial and non-financial information [25]. It becomes a positive signal for stakeholders if the company is in good condition to hold disclosures. The higher the company's liquidity ratio, the wider its environmental disclosure. There is a positive influence between the liquidity ratio and environmental disclosure [6,16]. H2 = Liquidity ratio has a positive influence on environmental disclosure.

1.3 Company size
The company's larger size indicates that there are also more stakeholders in it, which is in line with the legitimacy theory [14]. Legitimacy theory explains that an organization seeks to be in harmony with the social system's values and norms. The company must provide feedback for running the business [4]. The companies will be more careful in providing complete environmental disclosures and incentives in their annual reports [2] because the activities of large companies are more highlighted by the community and stakeholders so that the demands and pressures they receive are getting stronger. Meanwhile, a finding states a positive influence between company size and environmental disclosure [2,4,10–12,14,17,18]. H3 = Company size has a positive influence on environmental disclosure.

1.4 Independent board of commissioners
Independent commissioners also act as the parties who serve on the board of commissioners but are not affiliated with the company's internals [13], and they have the authority to set critical corporate governance rules. The effectiveness of corporate governance requires the company to have a more independent board of commissioners [26]. The larger the proportion of the board of commissioners, the more objective and better the audit will be and the impact on environmental disclosure [20]. Stakeholder theory plays a role in explaining that the proportion of commissioners who hold many concepts, experiences, and communication among the boards supports the company's management maintenance process. There is a positive influence of independent commissioners on environmental disclosure [20,26]. H4 = Independent commissioners have a positive influence on environmental disclosure.

2. Methodology
This research uses a hypothesis testing design with a quantitative approach. The quantitative materials in this research consist of annual and sustainability reports on publicly traded agricultural and mining companies in Indonesia from 2014-2019. The sampling technique used is a purposive sample with 39 data analysis units within a six-year observation period. The sampling criteria are described in Table 1. Meanwhile, the operational description of the research variables is presented in Table 2. The researcher collects documentary data by downloading sustainability reports, annual reports, and financial statements on agricultural and mining companies listed on the Indonesia Stock Exchange (www.IDX.co.id) and/or the official website of each related company. The analytical method in this research uses descriptive statistics and multiple linear regression analysis techniques.

Table 1. Sample selection parameter.

| Parameter                                      | Elimination | Total |
|------------------------------------------------|-------------|-------|
| Agricultural and mining sector companies listed on the IDX for the period 2014-2019 | 61          |       |
Agricultural and mining sector companies that present environmental disclosure reports according to the GRI G-4 guidelines in annual reports and sustainability reports from 2014 to 2019 (48) 13
Companies in the agricultural and mining sectors that participated in PROPER from 2014 to 2019 in a row. (5) 7
Total sample (number of companies x 6 years) 42
Outlier Data (3)
Total analysis units 39

Table 2. Operational definition and measurement of variables.

| Variable                        | Operational Definition                                                                 | Measurement                                                                 |
|---------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Environmental disclosure (ED)   | Reporting information on environmental responsibility is included in the annual report [4]. | Using the GRI G4 Standard index by comparing the total items disclosed by the company with the total GRI environmental disclosures x 100% [20]. |
| Leverage Ratio (DAR)            | Ratio to explain the company’s ability to fulfill its obligations [29].                 | Total debt/total assets [18,26].                                           |
| Liquidity Ratio (CR)            | Type of ratio to determine the company’s capacity to pay off short-term debt [11].      | Current assets/current liabilities [11,16,26].                               |
| Company size (SIZE)             | a benchmark for determining the size of a company [4].                                  | Company size=Ln (total assets) [4].                                         |
| Independent Board of Commissioners (DKI) | Parties who serve on the board of commissioners from the external company [13]. | The number of independent commissioners/total board of commissioners [20]. |

3. Results and discussion

Descriptive statistics describe the lowest, highest, and mean value, and standard deviation. The research variables include environmental disclosure, leverage ratio, independent commissioners, liquidity ratio, and company size. The average value of the environmental disclosure of agricultural and mining companies is 0.4739 or 47.39%. It is because there are not yet stable rules or guidelines for conveying environmental performance, so there are still differences in policies and complexity of each company [2]. In this research, multiple linear regression analysis is used as research data analysis. The researcher examines prerequisites and classical assumptions before conducting multiple linear regression analyses.

This research conducts two normality tests to get data that are distributed normally. The first normality test is carried out with 42 units of analysis, but it does not generate the normally distributed data. The second normality test is held with 39 units of analysis using the one-sample Kolmogorov-Smirnov test resulting in a significance score of 0.200. If the significance score is higher than 0.05, it means that the data are distributed normally. The results of the linearity test show that each research variable has a sig—deviation from linearity value higher than 0.05. The autocorrelation test is conducted using the Durbin-Watson test with the Durbin-Watson value of 1.931, located between the dU and 4-dU values (1.7215<1.931>2.279). Therefore, there are no symptoms of autocorrelation. The heteroscedasticity test uses the glacier test, where all independent variables obtain sign scores higher than 0.05 (sign>0.05). It can be concluded that the regression model is free from heteroscedasticity assumptions.
Table 3. Results of descriptive statistics analysis.

| Descriptive Statistics | N | Minimum | Maximum | Mean | Std. Deviation |
|------------------------|---|---------|---------|------|---------------|
| ED                     | 39| 0.118   | 0.824   | 0.474| 0.151         |
| DAR                    | 39| 0.126   | 1.107   | 0.459| 0.244         |
| CR                     | 39| 0.099   | 4.618   | 1.735| 1.213         |
| SIZE                   | 39| 29.859  | 31.184  | 30.723| 0.395         |
| DKI                    | 39| 0.250   | 0.500   | 0.374| 0.074         |

Valid N (listwise) 39

The coefficient value of determination shows that $R^2$ is 0.387 or 38.7%. It indicates that the variables of company size, leverage ratio, independent board of commissioners, and liquidity ratios can predict environmental disclosure by 38.7%, and the other 61.3% will be explained in other aspects beyond this research. It is identified that the F-count is 6.993, and the sign value equals 0.000. Therefore, it can be concluded that the independent variables significantly influence environmental disclosure. The summary of hypothesis testing results can be seen in Table 4.

$$ED = 9.640 - 0.523DAR - 0.093CR - 0.277SIZE - 0.644DKI + e.$$

Table 4. Results of hypothesis tests.

| Statement                                      | B   | Sig.  | Conclusion |
|-----------------------------------------------|-----|-------|------------|
| $H_1$ Leverage ratio negative influences ED    | -0.48 | 0.028 | Accepted   |
| $H_2$ The liquidity ratio positively influences ED | 0.09 | 0.006 | Rejected   |
| $H_3$ Company size positively influences ED    | 0.026 | 0.002 | Rejected   |
| $H$ Independent commissioners positively influence ED | 0.555 | 0.102 | Rejected   |

Based on the study's findings, leverage ratios are detrimental to environmental disclosure. According to stakeholder theory, a company with an increased leverage ratio will prioritize its obligations to its debt holders. A company with a high leverage ratio will focus on paying off its obligations to creditors rather than preparing environmental disclosures because it will cost the company a lot [3]. On the other hand, a finding states that large companies with high profits and leverage ratios [14] and those involved in foreign businesses are more expected to carry out environmental disclosures. The companies with a high leverage ratio tend to fulfill their obligations to the debt holders rather than preparing environmental disclosures that increase their operational costs [30]. The greater the environmental disclosure, the greater its effect on the leverage ratio [31]. Thus the companies that have a high leverage ratio will be reluctant to disclose their environmental information. It is in line with the findings that the leverage ratio has a significant negative effect on environmental disclosure [3,14].

The liquidity ratio negatively and significantly influences environmental disclosure. This finding does not support the legitimacy theory where financial strength provides broad environmental disclosures than weak financial conditions [16]. Descriptive statistical data shows an average liquidity ratio of 1.74, indicating that the companies in this research are quite good, as seen from the mean value of more than one (>1). The companies with high liquidity ratios are reluctant to report environmental disclosures because they have been satisfied with their current financial performance and consider environmental disclosures to have little effect on investors [16]. In contrast, those having low liquidation levels always try to improve their environmental disclosures to attract investors. In line with the legitimacy theory, where financial performance is a tool for deciding business policies,
management uses deteriorating environmental performance to distract stakeholders from the company's environmental performance [10].

Based on the research sample, seven companies experienced changes in liquidity ratios and environmental disclosure and, changes occurred during the current 2-3 years. The environmental disclosure interferes with the public's focus in obtaining information on the companies' success so that they decide not to publish environmental disclosures, and their stakeholders can focus more on their financial information [21]. The company chooses to conduct environmental disclosure by adjusting the entity's future profits [6]. Besides, in this research, the high liquidity ratio does not influence the high environmental disclosure because it has a good financial condition and is considered sufficient to attract investors compared to the companies with a low liquidity ratio. These results are in line that the liquidity ratio harms environmental disclosure [6,16].

The company size negatively influences environmental disclosure. It does not support legitimacy theory explaining that the greater company size in foreign businesses will provide more social and environmental activities [14]. The negative influence of the company size can be viewed from seven companies that have experienced differences between existing theories with the results of sample research testing. The research findings have not succeeded in supporting stakeholder theory which states that a large company has more stakeholders, so that it must provide accurate information as best as possible to obtain the satisfaction of its stakeholders [2].

The company size does not always guarantee that the company provides more environmental disclosure responsibilities [15]. Large companies do not necessarily prepare environmental disclosure because they think the public does not care about the environmental conditions [6]. The larger company size is associated with management activities both financially and with existing resources [3]. The influence of the company size variable found in this research contradicts hypothesis [2,4,10–12,14,17,18,21].

The independent board of commissioners does not influence the environmental disclosure. The independent commissioners in Indonesian companies commonly do not actively participate in the environmental disclosure [22]. The increasing number of independent commissioners will complicate the coordination and causes an inefficient process of management control in preparing an environmental disclosure [21]. These results have not been successfully supported by the stakeholder theory, which explains that the composition of the independent board of commissioners supports effective policy-making [17]. The independent board of commissioners should encourage the company's responsibility in reporting better information as a form of responsibility to the stakeholders [13]. The establishment of the independent board of commissioners only meets the provisions of the authority, but the actual independent commissioner function might be ineffective [13]. The research findings are in line that the independent board of commissioners does not influence the environmental disclosure [7,17,21,22].

4. Conclusion
The results showed that leverage ratios, company sizes, and liquidity ratios negatively impact environmental disclosures. The higher the leverage ratio, liquidity ratio, and size of the company, the lower the level of environmental disclosure. The research focuses on only two sectors: agriculture and mining. Therefore, future researchers are encouraged to add more research objects that can generalize to all industry sectors.

References
[1] García-Sánchez I-M, Raimo N and Vitolla F 2021 Adm Sci 11 29
[2] Maulia D and Yanto H 2020 J Din Akunt 12 178–88
[3] Ardi J W and Yulianto A 2020 Account Anal J 9 123–30
[4] Ayu I, Oki P, Dewi Y and Yasa G W 2017 E-Jurnal Akunt Univ Udayana 20 2362–91
[5] Wahyuningrum I F S, Budihardjo M A, Muhammad F I, Djadjadikerta H G and Trireksani T 2020 Interprenreush Sustain Issues 8 1047–61
Verawaty, Merina C I, Jaya A K and Widianingsih Y 2020 Adv Econ Bus Manag Res 117 217–26
[Istiqomah I and Wahyuningrum IF S 2020 Account Anal J 9 22–9
Kertaradjasa B 2019 detiksumsel.com (Available from: https://www.detiksumsel.com/pt-bukit-asam-diberi-sanksi-administratif-paksaan-pemerintah/)
[Suripatty C A 2018 daerah.sindonews.com (Available from:https://daerah.sindonews.com/berita/1303837/174/viral-di-medsos-foto-foto-perairan-di-raja-ampat-diduga-tercemar-limbah-tambang)
[Solikhah B and Winarsih AM 2016 J Akunt dan Keuang Indones 13 1–22
[Singh RISCS 2017 Manag Audit J 32
[Terry KM and Asrori A 2021 J Ilm Indones 6 894–907
[Fashikhah I, Rahmawati E and Sofyan H 2018 J Akunt Indones 7 31–55
[Suhardjanto D, Purwanto, Ashardianti D and Setiany E 2018 Rev Integr Bus Econ Res 7 203–15
[Tadros H and Magnan M 2019 Sustain Accounting Manag Policy J
[Wahyuningrum IF S, Oktavilia S, Putri N, Solikhah B, Djajadikerta H and Tjahjaningsih E 2021 IOP Conf Ser Earth Environ Sci 623 012065
[Wardani DK and Haryani S 2018 Ijak 14 67–82
[Wahyuningrum IF S, Oktavilia S, Setyadharma A, Suryandari D, Netta P and Rahman A 2020 E3S Web Conf 202 1–9
[Supatminingsih S and Wicaksono M 2016 J Akunt dan Pajak 17 32–48
[Ghozali I and Chariri A 2014 Teori Akuntansi (Semarang: Badan Penerbitan Universitas Diponegoro)
[Devie D, Kamanudau J, Tarigan J and Hatane SE 2019 World Rev Sci Technol Sustain Dev 15 66–86
[Mallouh AA and Tahtamouni A 2018 Int J Manag Financ Account 10 273–300
[Alipour M, Ghanbari M, Jamshidinavid B and Taherabadi A 2019 19 580–610
[Solikhah B and Maulina U 2021 Cogent Bus Manag 8 1–18
[Chowdhury MA A, Dey M and Abedin MT 2020 Asian J Account Perspect 13 57–77
[Kasmir 2017 Analisis Laporan Keuangan (Jakarta: PT Rajawali Pers)
[Wahyuningrum F IS, Budiharjo MD A, Muhammad PF I, Djajadikerta H G and Trireksani T 2020 Interpreneursh Sustain Issues 8 1047–61
[Mutmainah M and Indrasari A 2017 Review Akunt dan Bisnis Indones 1 47–56