The Effect of Environmental, Social, Governance (ESG) Disclosure and Green Technology on Financial Performance

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Abstract. This study aims to determine the effect of implementing environmental, social, governance and green technologies on company's financial performance. This study uses a quantitative approach and panel data from 100 companies consisting of 48 companies in the consumer cyclical sector and 52 companies in the consumer non-cyclical sector listed on the Indonesia Stock Exchange for the period of 2017-2021. The data analysis technique used is multiple linear regression using SPSS 23 as a test tool. The results showed that Environmental, Social and Governance had a positive effect on financial performance. Otherwise, Green Technology had negative effect on financial performance as proxied by Return on Asset and Return on Equity. This study implies that companies must maintain indicators that have a high impact on resource use, emissions, waste reduction, product responsibility and technological innovation to achieve the company's financial performance and corporate sustainability.

Keywords: Environmental, Social, and Governance (ESG), green technology, financial performance..

1 Introduction

The emergence of the COVID-19 pandemic is one of the triggers for the crisis that affects the global economy [1]. At a macro level, COVID-19 has caused the decline of world economy due to the worldwide recession [2]. Based on the data from Statista [3], the global Gross Domestic Product (GDP) decreased by 3.4 percent in 2020. Then, the Gross Domestic Product of the Indonesian economy also decreased by 5.32 percent in the second quarter of 2020 compared to the second quarter of 2019 [4]. On the other hand, the COVID-19 pandemic has also had negative impacts on companies' financial statements, one of which is related to a decrease in revenue caused by the decrease in people's purchasing power [5] and increased competition for companies to maintain profits. Based on the data obtained from the Indonesian Stock Exchange Factbook, in 2017, there were 600 listed companies. In December 2021, there was a significant increase in listed companies to 791 companies from all business sectors. The increase in the number of companies listed on Indonesia Stock Exchange indicates the intense competition among companies. Then, due to the increasingly fierce competition, companies try to show their competitive advantages to attract the attention of investors to invest in them

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[6]. In order to determine the feasibility of investing in a company, investors can use one method, namely analyzing the company's financial performance [7].

According to Purba [8], financial performance is one of the basic assessments of a company's financial condition, which is needed to determine the economic growth potential of a company. One of the most important indicators for investors to assess a company's financial performance is the profitability ratio; the higher the value of the profitability ratio, the higher the level of profit and efficiency of a company is. In other words, profitability ratio can help investors identify the likelihood of company to earn profits and how high the rate of return investors will get [9]. In this study, the profitability ratios used are Return on Assets (ROA) and Return on Equity (ROE). ROA measures management effectiveness in generating company profits with available assets [10]. The higher the ROA of a company is, the greater the level of profit obtained by the company is [7]. Meanwhile, ROE focuses on the income generated by a company against equity [10]. In other words, ROE shows how much money a company can generate because the higher the ROE is, the more profitable a company is [11]. The explanation above shows higher ROA and ROE ratios owned by a company can make investors more interested in investing in the company.

A company's financial performance can be influenced by several factors, one of which is Environmental, Social, and Governance (ESG) disclosure [12] and Green Technology (GTI) [13]. According to MSCI [14], ESG can be defined as a form of consideration that is prioritized based on ESG factors and the presence of financial factors in investment decision making. Currently, the trend in the global investment decision-making process has changed; investors tend to require easy access to ESG information and the development of green products and environmentally friendly technology. Therefore, a company's ESG reporting is also one of the important considerations for investors when investing in the company [15]. However, in contrast, Climent [16] shows significant negative effects related to ESG disclosure on the company's financial performance. This is because companies that make high ESG disclosures tend to incur greater costs to finance the entire ESG project, causing the company's profits to decrease.

Then, GTI can also be one of the factors that affect a company's financial performance. The concept of GTI is a general term used for any technological, product, or process innovation carried out by companies to reduce the impact of environmental pollution [17]. Thus, currently, GTI generally refers to a series of environmentally friendly innovation activities to realize sustainable development for a company [13]. Of course, this is also supported by research [18], which shows the positive effects that companies that implement GTI in their production processes tend to be preferred by consumers because they have a more positive image and, of course, also show the company's commitment to supporting sustainable production processes and producing more environmentally friendly products, which in turn increases the company's financial performance both in the short and long runs along with the increasing number of sales, profits, and returns on investment of the company. Other research conducted that is not in line with Qing's research [18] is Xie's research [19], which shows the results that if the company is too focused on implementing GTI, the application of GTI to the production process will cost a considerable amount of money; in addition, concentrating too much on GTI may not be desirable from the investor's point of view because it is too risky and will reduce the amount of capital obtained by the company from the market. This, therefore, cannot improve the company's financial performance both in the short and long terms.

Then, this study also uses control variables, such as Firm Size, Liquidity, and Firm Age, because some previous studies have shown significant results on a company's financial performance [20]; [21]. Some other factors can also affect the dependent variable when these factors are not adequately controlled [22]. Therefore, researchers will use three control variables to avoid inaccurate results in this study.

The sectors used in this study are the cyclical and non-cyclical consumer sectors listed on Indonesia Stock Exchange. The reason for choosing the cyclical consumer sector is because this sector tends to be influenced by economic movements and the ongoing economic cycle [23]. Meanwhile, the non-cyclical consumer sector, although not affected by economic trends, tends to experience a decline in financial performance due to the impact of the COVID-19 pandemic [24]. Then, this research was be conducted using data obtained in the five-year period between 2017 and 2021, through the annual reports and/or sustainability reports of each company. The selection of the research years is due to the period before the COVID-19 pandemic (data from 2017–2019) and after the COVID-19 pandemic (data from 2020–2021), so that the impact on the company's overall financial performance can be seen.

Based on the inconsistency of previous research, which has positive and negative results regarding the effect of ESG and GTI disclosures on financial performance, this study was conducted to obtain data related to ESG and GTI disclosures on financial performance. This study also aimed to answer the research questions: (a) does ESG disclosure affect financial performance proxied by ROA?; (b) does ESG disclosure affect financial performance proxied by ROE?; (c) does GTI implementation affect financial performance proxied by ROA?; and (d) does GTI implementation affect financial performance proxied by ROE?

2 Literature Review

2.1 Institutional Legitimacy Theory

According to [25], institutional legitimacy theory is used to investigate the types of structures and activities that have been fully socially accepted, where this procedure will function as a basis for conducting a comprehensive evaluation of the company or organization concerned. Institutional Legitimacy Theory is used to emphasize institutional views related to the interaction between society and companies and to comply with various rules and tactics that are useful to minimize the failure of the company's overall operational processes [26]. Institutional Legitimacy Theory refers to the application of organizational practices and disclosures in companies related to social and environmental ideas to achieve sustainable companies [27]. In ESG disclosure, institutional legitimacy theory discusses corporate behavior towards the social environment in sustainable development [11]. Meanwhike, in GTI, institutional legitimacy theory refers to the company's contribution in improving social welfare by reducing environmental problems [28].

In terms of firm size, institutional legitimacy theory discusses how the size of the company tends to affect its condition, especially regarding its commitment to presenting social, environmental, and community welfare actions, where companies with larger sizes are usually considered more responsive and able to deal with various issues related to factors that can increase a company's value from the perspective of investors [29]. Furthermore, in terms of liquidity, institutional legitimacy also discusses the positive effect that occurs in a company that has high liquidity, where companies with these conditions will usually be better in order to carry out various activities that can contribute to improving the company's financial performance, especially with regard to environmental and social activities [30]. As for firm age, institutional legitimacy theory states that the age of a company will affect the company's reputation, especially from the perspective of investors in the company, where the longer the company is established, the higher the level of reputation is. Therefore, companies that have existed longer are considered capable of developing, surviving, and improving financial performance in the future, both in the long and short terms [31]. In the end, it is understood that if a company can continue to pay attention and maintain the environment and social relations with the community, then the company can increase profits, which will improve the company's financial performance [32].

2.2 Hypothesis

2.2.1 The Effect of Environmental, Social, and Governance Disclosure on Financial Performance

Environmental, Social, and Governance disclosures of companies located in developing countries tend to have a positive influence on the company's financial performance, especially in terms of ROA profitability ratio, because companies that have high ESG disclosure values tend to be able to maintain profits and have better management efficiency (33). Then, ESG disclosure also has a positive effect on a company's financial performance because companies with a strong ESG commitment will be able to present more detailed information related to the company's cash flow and have an increased ROA value [12]. Then Chen [34] shows that ESG disclosure can affect the company's financial performance because companies with high levels of ESG disclosure tend to have better ROA values compared to companies that have lower ESG disclosure values. Then, high ESG disclosure will increase the company's revenue due to increased consumer purchasing decisions, so that the company's ROA value also increases [35]. Then, according to Velte [36], companies with a high level of ESG disclosure tend to experience improved financial performance due to increased profits and ROA value. Based on several things that have been described previously, the following hypothesis can be formulated:

H1a: Environmental, Social, and Governance disclosure has a positive effect on Return on Assets

H1b: Environmental, Social, and Governance disclosure has a positive effect on Return on Equity.

2.2.2 The Effect of Green Technology on Financial Performance

Companies that use Green Technology tend to be more stable in terms of financial performance when viewed through the ROA profitability ratio because public trust and consumer loyalty increase, which also increases profits and overall company financial performance [13]. In addition, GTI can also improve a company's financial performance because the company can maximize profits so that its asset value increases [37]. Then, according to Chen [38], GTI can have a positive effect on a company's financial performance when viewed from the ROA profitability ratio because companies tend to have loyal customers, thus increasing the company's revenue and ROA. Companies that choose to use GTI will find its company's financial performance increasing, especially in terms of ROA profitability ratio, because public trust in the company increases, which in turns causes the company's revenue value also to increase [34]. Then companies with GTI tend to have a better ROA value than companies that do not use GTI [39]. Based on several things that have been described previously, the following hypothesis can be formulated:

H2a: Green Technology Implementation has a positive effect on Return on Assets
H2b: Green Technology Implementation has a positive effect on Return on Equity

3 Method

The object of this research is to identify cyclical and noncyclical consumer sector companies listed on the Indonesia Stock Exchange for the period of 2017–2021. This type of research will use quantitative methods by utilizing secondary data obtained through annual reports and/or sustainability reports available on the Indonesia Stock Exchange and the company's official website. In this study, one dependent variable will be used, namely the projection of Financial Performance with ROA and ROE. Then, the independent research variables used are ESG and GTI. This study uses multiple linear regression analysis techniques with SPSS 23 as a test tool. The type of data used in this study is panel data, which refers to the time series used in the 2017–2021 period and the cross-section of companies listed in the cyclical and non-cyclical sectors. The sample in this study uses purposive sampling criteria, namely (a) cyclical and non-cyclical consumption sector companies listed on the Indonesia Stock Exchange for the 2017–2021 period; (b) cyclical and non-cyclical consumption sector companies that have a book closing date of December 31; (c) cyclical and non-cyclical consumption sector companies that publish annual reports and/or sustainability reports in full during the 2017–2021 period; and (d) cyclical and non-cyclical consumption sector companies that present complete information related to ESG and GTI during the 2017–2021 period.

In this study we use one dependent variable, namely Financial Performance which is proxied by ROA and ROE while the measurement refers to research [12]. We also use two independent variables, namely Environmental, Social and Governance indicators that refer to research [12] and Green Technology indicators that refer to research [40]. Furthermore, this study also used three control variables that include Firm Size, Liquidity and Firm Age with measurements referring to the study [12], [20], [34].

Measurement for ESG and GTI disclosure variables used content analysis. In this term, a score of 1 was given if there was ESG and/or GTI disclosure in the company's annual report and/or sustainability report; a score of 0 was given when ESG and GTI were not found. The total number of items that have been calculated per company wasx be divided by the entire total disclosure items [6].

4 Result and Discussion

4.1 Descriptive Statistic

The result of descriptive statistics tests from 48 cyclical consumer sector companies and 52 non-cyclical sector companies during 2017–2021 period shows a comparison of variables between companies. The average value (mean) of ROA and ROE is 0.0772 and 0.0717, which is quite small because in 2019–2021, according to the data that has been collected, there was a decrease in terms of revenue, total assets, and total equity owned by the company sample. This decrease is due to the emergence of the COVID-19 pandemic, which can affect the company's financial performance [1]. One of the sectors in this study is consumer cyclicals, whose conditions are influenced by general economic trends, so this has resulted in a decrease in total assets and total equity. On the other hand, although consumer non-cyclicals are not affected by general economic trends, this sector was also affected by decreasing of consumer interest [5]. Then, ROA and ROE also have a standard deviation of 0.1505 and 0.3236.

The average (mean) owned by ESG and GTI is 0.1484 and 0.1308. These results explain the disclosure of all ESG indicators and the application of GTI by the sample companies in accordance with the data that has been collected. The results obtained from data processing and testing are quite small. This is because, based on the data collected from all sample companies, it was found that not all companies disclose ESG and GTI application completely. Where the average company mostly only discloses indicators of resource use, emissions, and waste reduction. While other indicators are still rarely disclosed. ESG and GTI both have a min value of 0.000, this is because from the research results it is known that there are several companies that do not disclose ESG and GTI indicators at all in their financial statements, annual reports, and/or sustainability reports. In addition, the max value owned by ESG and GTI is 0.8000 and 0.7500. Meanwhile, LIQ has the lowest and highest value than other variables with a minimum total value is -190.1704 and maximum total value is 53,826.4105.

4.2 Classical Assumptions Tests

According to [41]; [42], any data that passes the classical assumption test has a probability value> 0.05, which indicates that the data is normally distributed, there is no autocorrelation, and it does not experience symptoms of heteroscedasticity. Furthermore, Adrian and Sudibyo [7] state that data that passes the multicollinearity test must have a VIF value < 10 and a tolerance value > 0.1.

From the testing, all data passed the classical assumption test. The normality test results show that the Kolmogorov-Smirnov significance of 0.220 is greater than 0.05, so the data is normally distributed. Then the results of the heteroscedasticity test shows that the significance value of all variables is greater than 0.05, which are ESG = 0.111, GTI = 0.182, SIZE = 0.604, LIQ = 0.866 and AGE = 0.105 so there are no symptoms of heteroscedasticity. Then, based on the multicollinearity test, all variables have a VIF value smaller than 10 which are ESG = 2.934, GTI = 2.826, SIZE = 1.562, LIQ = 1.011 and AGE = 1.464 and a tolerance value greater than 0.1 which are ESG = 0.341, GTI = 0.354, SIZE = 0.640, LIQ = 0.990 and AGE = 0.683. Therefore, it can be concluded that there is no multicollinearity. The results of the autocorrelation test show that no autocorrelation occurs because the significance value of 0.761 is more significant than 0.05.

From testing, the results of the partial regression test (t-test) of the ESG variable have a significant positive value of 0.002 on ROA and 0.001 on ROE, smaller than 0.05, so H1a and H1b are accepted. Furthermore, the results of the partial regression test (t-test), variable GTI has a significant negative value of 0.001 on ROA and 0.012 on ROE, so H2a and H2b are rejected.

The significant probability value (F-statistic) of 0.000 is below 0.05, which means all the models in this research are fit. It also can be concluded that the independent variables of ESG and GTI disclosure simultaneously affect financial performance. Thus, the regression model in this study meets the feasibility criteria and can be used to predict financial performance. The coefficient of determination (Adjusted R Square) is 0.257 for ROA and 0.349 for ROE. This shows that the ESG and GTI variables can explain ROA and ROE by 25.7% and 34.9%, while the remaining 74.3% and 65.1% are explained by other variables not included in this study.

Based on the results of research from 500 companies in the cyclical and non-cyclical consumer sectors, it was found that ESG disclosures can help companies improve their financial performance, especially by increasing sales or profits and attracting investors. With the company's commitment to pay attention to other factors besides financial factors, of course, it can also provide added value, especially regarding the company's positive image from the stakeholder's point of view because the company does not only focus on achieving profits but also pays attention to ESG aspects as a form of corporate land to achieve sustainability. This result consistent with the studies by Climent [16] and Velte [36], which also found that there is a positive effect between the disclosure of financial performance proxied by ROA and ROE.

On the other hand, it was found that GTI has a significant negative effect on ROA and ROE because, according to the data collected, not too many companies have implemented GTI in their overall production processes. Furthermore, it is also known that the implementation of GTI in a company perceivably takes a long time to improve the company's financial performance because many cyclical and non-cyclical companies have not been able to disclose equipment renovation, equipment innovation, technology investment, and have not provided R&D expenditure to reduce air pollution intensity per unit of output. This is also in line with research by Przychodzen [43] that states that implementing GTI in the production process will cost a lot of money, and according to Duque-grisales et al. [44] it is difficult to improve financial performance because implementing GTI in companies takes a long time. Furthermore, Li et al. [45], Lorraine et al. [46], and Murray et al. [47] also found that GTI has a significant negative effect on financial performance.

5 Conclusions

The conclusion of this study, based on the results of research and analysis, shows that ESG disclosure has a significant positive effect and implementation of GTI has a significant negative effect on a company's financial performance, which is proxied through the profitability ratios of ROA and ROE.

The implication of this research is expected to be a consideration for a company to help improve the company's positive image in the perspective of stakeholders through the company's commitment to realizing the implementation of ESG disclosure, which can has an impact on the company's financial performance. On the other hand, through the results of this study, a company is also expected to continue to maintain ESG disclosure, especially in the Resource Use, Emissions, and Waste Reduction indicators.

Therefore, it is expected that a company can develop more detailed guidelines regarding ESG disclosure in the future. Then, a company is also expected to implement GTI even better because the implementation of GTI in the company is still mandatory, so it requires the company's full commitment to implement all GTI indicators. ESG disclosure and GTI implementation are certainly done so that the company can survive in the long term and achieve sustainability. Meanwhile, the limitations of this study are: (a) There are still many companies in cyclical and non-cyclical sector that do not disclose complete Annual Reports, Financial Reports, and/or Sustainability Reports on 2017 – 2021 period, so the data obtained is not optimal. (b) There is still subjectivity in conducting content analysis on independent variables (ESG and GTI) and (c) The Adjusted R Square (R2) results obtained from testing tend to be small, so need to add another type of variable.

On the other hand, researchers strongly recommend further research by (a) expanding the scope of research on other sector companies listed on the Indonesia Stock Exchange to obtain a more varied sample for research because any differences in the company sector to be studied can affect the results of the research conducted; (b) decreasing subjectivity, content analysis can use other methods by providing a scale of 1 to 7, where 1 is equal to strongly disagreeing and 7 is strongly agreeing [48]; and (c) Adding other control variables, such as leverage [49] and company growth [50] which can also affect the company's financial performance.

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