Determinants Of Economic Performance: An Analysis of Green Accounting and Environmental Performance Implementations

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Abstract. The theory of economic performance shows that better green accounting and the level of environmental protection will lead to a rise in the company's financial performance. Meanwhile, a few numbers of companies in Indonesia implement green accounting and didn't get the PROPER award for environmental performance. The objective of this research is to assess how green accounting and environmental performance impact economic performance. To accomplish this goal, a quantitative methodology is employed, specifically Panel Data Regression for data analysis. The study focuses on 6 firms operating within the Basic and Chemical Industry sector over a 5-year period from 2016 to 2020. The results of this study indicate that only the green accounting variable has a significant positive effect on economic performance in the Basic and Chemical Industry sector for the 2016-2020 period.

Keywords: Green Accounting, Environmental Performance, Economic Performance

1 Introduction

The growth of industrial sector companies has resulted in environmental degradation worldwide. Industrial companies are getting tighter every year forcing industrial companies to compete to create high-value products so that it becomes one of the advantages for the sector. Companies that only care about how a company produces high-quality products will result in a lack of concern for the environment (Rosaline & Wuryani, 2020). A company does not only prioritize owners and management but also needs to prioritize all other related parties, one of which is the environment. A corporation that conducts ecological preservation can provide advantages to both the nearby populace and the company in the foreseeable future.

A company's environmental performance pertains to its ability to establish favorable ecological conditions. It is an instrument that companies use to incorporate environmental consciousness into their dealings and procedures with stakeholders, surpassing their legal obligations (Kusumaningtias, 2013). The company utilizes its environmental performance as a tactic to enhance its business growth. Environmental performance activities can provide benefits for the

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company compared to if the company must compensate the community for social and environmental problems.

The evaluation of environmental performance can be observed through the accomplishments of the enterprise in engaging with the PROPER initiative, which is among the measures implemented by the Ministry of Environment to promote corporate responsibility in preserving the environment using informational tools. The PROPER evaluation system uses five different hues with preassigned values to determine the Performance Rating Assessment Program score. These shades include gold, which signifies a score of 5, green indicating a score of 4, blue indicating a score of 3, red indicating a score of 2, and black indicating a score of 1 (Nurkhaeriyah, Nurcahyo, & Dachyar, 2019). The color Gold denotes companies that consistently exhibit ethical and responsible behavior towards the community by engaging in environmental activities during production processes or services. Green represents companies that go beyond regulatory requirements for environmental management by implementing efficient resource usage and displaying good social responsibility. Blue is reserved for companies that comply with applicable environmental laws and regulations. Red represents companies that fail to comply with environmental management regulations. Finally, Black is used for companies that negligently cause environmental damage, violate applicable laws and regulations, or do not adhere to administrative sanctions.

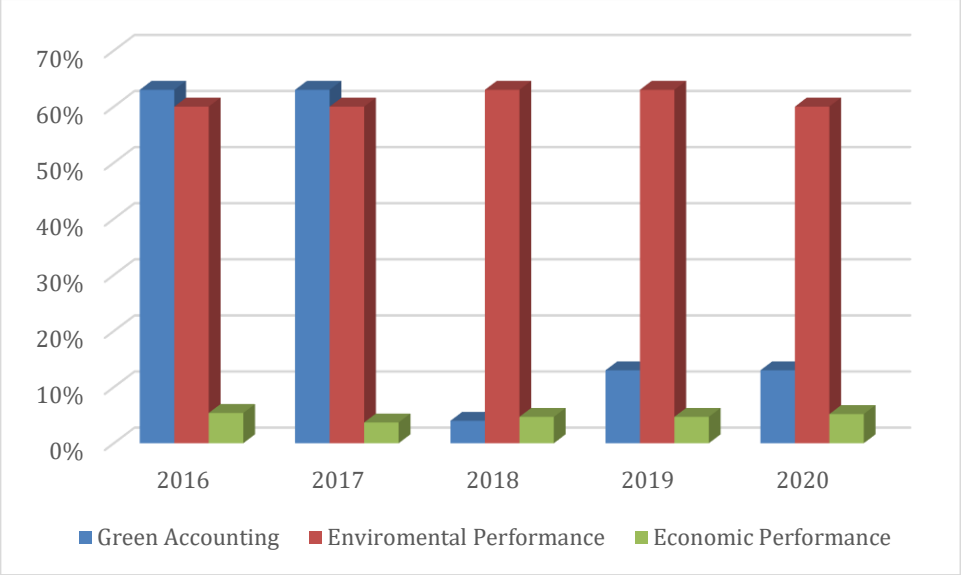
Enhancing output and efficacy within an organization may cause a decline in ecological standards, including the contamination of air and water, and the deterioration of soil activity. Manufacturing enterprises are obligated not only to handle refuse but also to be more mindful of the entire production cycle of a commodity, starting from the extraction of raw materials to the disposal of the item post-usage, to avoid harming the environment. The field of accounting has a significant role to play in the conservation of the environment, which involves the voluntary disclosure of environmental costs in financial statements. The accounting in environment demands full awareness of companies that have benefited from the environmental (Kusumaningtias, 2013). The use of environmental accounting in companies can be believed to minimize environmental problems that will occur faced and be carried out by the company not only temporarily but on an ongoing basis. Many large companies are currently implementing environmental administration by evaluating environmental operations in terms of expenses and benefits. Accounting in the environment also plays an important role in economic performance (Rohmah & Wahyudin, 2015).

The financial progress of a company fluctuates yearly within its industry, reflecting the annual return rate. This progress, known as economic performance, presents a lucid depiction of the company's accomplishments (Kusumaningtias, 2013). The annual return of the company is indicative of its performance in a comparable industry, which undergoes changes every year (Almila & Wijayanto, 2007). A method to determine the performance of a business is by examining its financial state, which is illustrated by the financial ratios of the company. So, it can be concluded that economic performance provides an encouraging indication for investors to put their money into a corporation.

In the present age of the market system, with the attainment of favorable economic conditions, it is imperative not only to generate substantial profits for the organization but also to establish ethical economic conduct. The requisites of economic performance have consequences for the execution of industrial operations as a congruous collaboration among interested parties and stockholders. The more ethical businesspeople are, the greater the accomplishment of the company's objectives on its own, and the smoother the operation of the enterprise will be. Financial ratios are indicators that reveal the accomplishments of the enterprise regarding its financial status. To gauge economic performance, Return on Investment (ROI) can be employed. ROI is a proportion that exhibits the return on the number of investments employed in the enterprise (Fauzi & Rukmini, 2018).

Ethical economic performance behavior is to realize corporate social responsibility. The execution of CSR is very important because of a lot of negative impacts that the company has on society and the environment. Therefore, accounting science has developed which studies the relationship between companies and their environment (Rizkan, Islahuddin, & Nadirsyah, 2017). The field of accounting that deals with the costs related to the environment is referred to as eco-accounting. Eco-accounting involves the identification, quantification, and presentation of expenses linked to a company's operations and their impact on the environment. Its aim is to encourage managers to minimize the environmental expenses caused by the decisions that shape the company's future sustainability (Rohmah & Wahyudin, 2015). The utilization of eco-friendly bookkeeping has been sanctioned for businesses with limited liability under Government Regulation Number 47 of 2012, where they are obliged to undertake social and environmental responsibilities concerning the utilization of natural resources in their operations. Eco-friendly bookkeeping can facilitate the evaluation of ecological performance, which is a manifestation of corporate accountability towards the environment. In Indonesia, the government has been promoting the adoption of green industry practices since 2010, as part of its efforts to encourage companies to engage in eco-friendly practices, and by conferring awards to those that comply. However, despite 160 companies participating in the assessment of green industries between 2010 and 2014, this number is still relatively small compared to the total number of industrial companies in Indonesia. This is largely due to the low awareness of industrial companies regarding the implementation of eco-friendly practices through eco-friendly bookkeeping. This is because, in general, it is a double-edged sword: while it can bring benefits to the industry, it can also lead to increased costs through environmental expenses. This is what makes not many companies implement green accounting. If the company applies green accounting for a long period of time it will provide benefits for all parties, both companies, consumers, and stakeholders (Hanifa Zulhaimi, 2015).

The mean statistics for the corporations operating in the Basic and Chemical Industry segment and enlisted on the Indonesian Sharia Stock Index from 2016 to 2020 show in Figure 1. The illustration depicts the decline of Basic and Chemical Industry firms enlisted in the Indonesian Sharia Stock Index in 2018, with a 59% reduction in eco-friendly bookkeeping. However, there has been an upsurge in economic performance, indicating that the notion of green accounting leading to better economic outcomes is not always valid. On the other hand, environmental performance has decreased by 3% in 2020, yet economic performance has risen by 0.05%. This contradicts the belief that poor environmental performance leads to lower economic performance.



Source: Annual Report of Basic and Chemical Industry Sector Companies

Fig. 1. Average of Green Accounting, Environmental Performance, and Economic Performance

Eco-friendly bookkeeping is a fresh approach in the realm of bookkeeping that proposes the accounting process should not solely concentrate on monetary dealings to generate financial statements, but also on transactions for social and environmental events so that social and environmental accounting information can also be known. Enterprises should have the capability to handle ecological expenses to transform into an eco-conscious sector. Despite the fact that utilizing sustainable bookkeeping may lead to an increase in the company's responsibility because of ecological expenses, the implementation of sustainable bookkeeping can offer advantages to the company. The profits obtained by the company will get a good image to increase profit potential, because having a good image can attract consumers to use the company's products which are characterized by increased sales figures, giving rise to the potential for increased profits (Hanifa Zulhaimi, 2015).

Green accounting reporting has not yet been fully applied by companies in Indonesia, many companies do not budget for the surrounding environment. According to the director-general of pollution control and environmental and forestry damage, he stated that the water pollution aspect was 34% followed by the 30% waste management aspect and the 18% air pollution control aspect (Lestari, Nadira, Nurleli, & Helliana, 2019). Businesses involved in logging and extraction face significant environmental hazards in Indonesia due to their close ties with the natural world and raw resources for the production process are obtained directly from nature.

Stakeholder theory estimates the powerful stakeholders who have rights in the company to manage the resources needed by the company (Rosilawati, Noviarita, Ningsih, & Prayoga, 2021). Sustainable accounting and eco-friendly accomplishments have the potential to establish a favorable corporate reputation and will attract the attention of stakeholders and users of the

annual report so that it has a good impact on economic performance (Rosaline & Wuryani, 2020). In other hand, the legitimacy theory refers to a situation where the ethical principles upheld by an organization are aligned with the moral values of the larger social environment within which the organization operates. This means that the entity is in harmony with the community it is a part of. Legitimacy theory is related to the social and environmental accounting areas and provides a point of view on voluntary recognition by the public of a company (Prena, 2021). The companies that apply green accounting or environmental performance state that the company's activities are limited by a social contract which states that the company agrees to demonstrate various corporate social activities to ensure the survival of the company.

Angelina & Nursasi Research's in 2021 showed that The utilization of eco-accounting has a negligible impact on monetary outcomes (Angelina & Nursasi, 2021), in contrast to research by Rosaline and Wuryani, 2020 that Eco-accounting does not impact financial output and investigation (Rosaline & Wuryani, 2020). Furthermore, Tisna, Diana, and Afifudin results in 2020 showed that The ecological efficiency of manufacturing companies does not impact their profitability (Tisna, Diana, & Afifudin, 2020). Based on this condition, there are several theories about green accounting with different results which show whether there is an impact of ecological accounting and eco-friendly accomplishments on the financial performance of enterprises in the Basic and Chemical Industry domain.

2 Methods

Data collection is obtained from the annual reports published by each the official website of each corporation and the Indonesia Stock Exchange website. This study's target population consists of all businesses belonging to the Basic and Chemical Industry categories that appear on the Indonesian Sharia Stock Index between 2016 and 2020. The list includes 50 corporations that operate within the basic and chemical industry sector and are listed on the Indonesia Sharia Stock Index from 2016 to 2020. Meanwhile, there are 4 companies which do not publish annual reports in 2016-2020 and 40 companies do not get a PROPER rating from 2016 to 2020. From this condition, the sample is 6 companies in 2016 to 2020.

The independent variables are green accounting and environmental performance. Green accounting is the process of recording and reporting in accounting for environmental, social, and economic information for a company that will make it easier for management to make business decisions. Green accounting measurement uses dummy variables, namely: Value 1 and Value 0. A score of 1 is assigned to corporations that incorporate expenses related to the environment, such as waste recycling, research, and development. Conversely, a score of 0 is given to companies that do not include these environmental factors in their cost calculations (Rosaline & Wuryani, 2020).

A response variable is a variable that is impacted by the explanatory variable. The response variable in this investigation is financial performance. Financial performance is an evaluation of the corporation's monetary accomplishments that are delineated in financial ratios annually. The measurement of economic performance variable is measured by ROA (Fauzi & Rukmini, 2018).

The analysis used is a quantitative research using regression, it's called the Panel Data Regression analysis. Panel data is a combination of data that has dimensions of space and time. Panel data regression analysis is used because the type of data used in this study has a lot of space and time and has the aim of knowing the impact of the predictor variable on the response variable (Nengsih & Martaliah, 2021). This analysis was developed to overcome various problems encountered when performing regression with cross-section data or time-series data separately. These problems include the adequacy of data availability, heteroscedasticity problems, and autocorrelation problems so this regression was developed with efficiency in estimating. The modeling of Panel Data Regression analysis used is:

$$\mathbf{y}_{it} = \boldsymbol{\alpha} + \mathbf{X}_{it}^{'}\boldsymbol{\beta} + \boldsymbol{\varepsilon}_{it} \quad (1)$$

where:

y = Economic performance

α = Constant

β_1 = Coefficient Green Accounting

β_2 = Coefficient Environmental Performance

X_1 = Green Accounting

X_2 = Environmental Performance

e = Error

3 Result and Discussions

Three regression models are utilized, which include the shared impact model, the established impact model, and the stochastic impact model. The chosen model must go through preliminary testing using both the Chow test and the Hausman test. The outcomes of the model selection examination are presented below:

3.1 Chow Test

The Chow test is used to find out which model is better the common effect model or the fixed effect model. The selection of the estimated common effect model or fixed effect model looks at the p-value. If the level is significant (> 0.05), the common effect model is used. Whereas if the p-value shows a significant level (<0.05) then the fixed effect model will be used, meaning that H1 is accepted and H0 is rejected (Nengsih & Martaliah, 2021).

The hypothesis of this test is:

H0 : common effect model

H1 : fixed effect model

Table 1. Chow Test Result

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.452135	(5,22)	0.0188
Cross-section Chi-square	17.375430	5	0.0038

The results of the Chow test indicate that the p-value of the cross-section F is 0.0188, it means this value < 0.05. The results indicate that H0 is rejected and H1 is accepted so the model used is a fixed effect model. From this situation, we continue the Hausman test.

3.2 Hausman Test

The Hausman test is used to find out which model is better the fixed effect model or the random effect model. The hypothesis of this test is:

H0: random effect model

H1: fixed effect model

The estimation of the random effect model or fixed-effect model is determined by the significant level of the p-value. If it shows results < 0.05, the fixed-effect model will be used. Meanwhile, if the significant level on the p-value shows results > 0.0), then H1 is rejected where the random effect model is better (Nengsih & Martaliah, 2021).

Table 2. Hausman Test Result

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.375624	2	0.8288

The results of the Hausman test in this study indicate that the p-value of the random cross-section is 0.8288 (> 0.05). The results mean the model chosen is the random effect model.

Table 3. Random Effect Model Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.

C	0.010690	0.088729	0.120484	0.9050
Green Accounting	0.021439	0.008466	2.532205	0.0175
Environmental Performance	-0.008545	0.027662	-0.308909	0.7598

Effects Specification		
	S.D.	Rho
Cross-section random	0.033153	0.4658
Idiosyncratic random	0.035503	0.5342

Weighted Statistics			
R-squared	0.202819	Mean dependent var	0.020462
Adjusted R-squared	0.143768	S.D. dependent var	0.037196
S.E. of regression	0.034418	Sum squared resid	0.031984
F-statistic	3.434664	Durbin-Watson stat	1.576198
Prob(F-statistic)	0.046884		

Based on the results of the random effect estimation model, it shows that the green accounting variable has a coefficient value of 0.021439 with a probability of p-value is 0.0175 (<0.05). This condition shows that partially the green accounting variable has a positive and significant effect on economic performance. The better the disclosure of green accounting, the higher the economic performance of a company. Stakeholder theory can influence the use of economic resources used in a company. One of them is the expenditure of environmental costs in green accounting and economic performance activities so that it can have an impact on stakeholders if a company applies green accounting. This research is in line with research conducted by Putri, Hidayati, and Amin, in 2019 which states that green accounting has a significant impact on ROE (Putri, Hidayati, & Amin, 2019). While contradictory research was conducted by Rosaline and Wuryani in 2020 who stated that green accounting has no effect on economic performance because the imposition of environmental costs will have an impact on reducing capital so that companies will prioritize increasing profits even though there are written regulations but have not yet been implemented by the company (Rosaline & Wuryani, 2020).

Furthermore, the environmental performance variable has a coefficient value of -0.008545 with a probability of p-value 0.7598 (> 0.05). This result shows that partially the environmental performance variable has no effect on economic performance. The environmental performance variable has a small effect, so it does not have a significant meaning on economic performance. Capital market players do not always pay attention to information from the PROPER rating issued by the Ministry of the Environment regarding the company's environmental performance. The capital market players still do not use PROPER rating information in making their investment decisions. This results in the absence of a significant positive relationship between environmental performance and economic performance. This study is in line with the results of research Wulandari and Hidayah in 2013 which states that environmental performance has no significant effect on economic performance (Wulandari & Hidayah, 2013). Meanwhile, research that contradicts this research is the result of research from Lestari et al. in 2019 which states that environmental performance has a significant effect on economic performance, because the better the company's environmental performance, the better the company's financial performance (Lestari et al., 2019). However, with a very small percentage of contribution to financial performance, making environmental performance results is not a factor that needs special attention from investors.

4 Conclusion

Green accounting has a positive and noteworthy influence on the financial output of corporations in the Basic and Chemical Industry domain throughout the 2016-2020 timeframe. The more comprehensive the disclosure of eco-friendly bookkeeping, the greater the financial output of a corporation. The ecological output bears no significant implication on the financial output of corporations in the Basic and Chemical Industry domain for the 2016-2020 period. The investors in the capital market do not invariably pay attention to data from the PROPER rating provided by the Ministry of the Environment concerning the environmental output of the corporation. As a result, the investors in the capital market still do not employ PROPER rating information while making their investment decisions.

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