Jurnal Ekonomi dan Bisnis
Vol. 15, No. 2, Juli 2023, pp. 90~97
e-ISSN : 2476-1483, p-ISSN : 2086-4515, DOI : https://doi.org/10.55049/jeb.v15i2.227

The Effect of Green Accounting on Economic Performance (Case Study of Mining and Chemical Industry Sector Companies)

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ARTICLE INFO

Riwayat Artikel:

Diterima 27 Mei 2023
Disetujui 24 Juni 2023
Diterbitkan 25 Juli 2023

Keywords:

Green Accounting
Economic
Performance

ABSTRAK

Abstract *:* This research is motivated by the advancement of science, especially in the field of technology which is very fast, along with competition in the increasingly tight industrial sector where companies have used sophisticated and modern equipment in carrying out their production activities. Research was conducted to examine the effect of *Green Accounting* on *Economic Performance*. The quantitative approach method used uses simple linear regression analysis data processing. *Return On Assets* (ROA) is used for measurement of research variables. The companies as samples for this study were 7 companies in the mining industry sector and the chemical industry sector listed on the IDX for the 2017-2021 period. The results showed that the *Green Accounting* variable had no positive effect on *Economic Performance*, as tested through the T-test.

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BACKGROUND

The advancement of the industrial field encourages increasingly fierce competition between industries. Many industrial companies are competing in making innovations for products that will attract the target market. The goal of these companies is to increase productivity and efficiency through various means, such as the use of machines with modern technology, cost savings, the search for more affordable resources, and even some companies conduct mergers and acquisitions. These various efforts are made in order to provide maximum *impact* for the parties concerned such as shareholders. But at this time, companies are not only required to prioritize internal management and *owner* interests, but entities are also required to consider the actors with the company such as employees, consumers, communities, and the local environment. The environment around the company is an important thing that must be prioritized by management, because currently there are not a few companies that increase their productivity and efficiency without thinking about environmental quality, this environmental quality can be in the form of water, air and soil pollution.

Problems with environmental quality can be addressed by *Environmental Accounting* or *Green Accounting*. Both terms are the same, which is related to the inclusion of all costs related to the environment into the company's accounting practices. The company's concern for its surroundings can be seen with the application of Green *Accounting*, because with *Green Accounting* companies can identify, measure, assess, present, and disclose environmental costs, where *Green Accounting* itself is useful for the benefit of decision makers and related management in business.

With the development of increasingly stringent companies, it is now common for companies, especially the industrial sector, to pay attention to environmental costs in their accounting practices. This is indicated by the 3,200 companies assessed in PROPER (Company Performance Rating Program in Environmental Management) in 2022, the number has increased by 25% in the last 2 years. Of the 3,200 companies, the assessment results from the Ministry of Environment and Forestry are as follows:

Table 1. PROPER Award Assessment Data for 2022

No.	Category	Number of Companies	Criteria
1.	Gold	51	The company has established sustainable community development initiatives and undertaken more environmental management than required.
2.	Green	70	The company has implemented environmental management that exceeds established standards and the company has various systems and practices such as biodiversity, environmental systems, 3R solid waste, 3R hazardous waste, water pollution reduction, conservation, emission reduction and energy efficiency.
3.	Blue	2.031	The entity has implemented the environmental management efforts required by the applicable rules or regulations (all requirements set by the MOE are met). The blue category is the minimum standard that must be met.
4.	Red	187	Entities have adopted practices in accordance with laws and regulations and strive to care for and protect the environment. However, only some companies have successfully implemented the statutory requirements.
5.	Black	2	Has not practiced the required steps to manage its environmental impacts, so the company has the potential to harm the surrounding environment and the MOE can close its business license.

From the data, we can conclude that environmental management has been realized by most companies. More than 872 environmental innovations have been implemented by these companies, and managed to save costs of IDR 126.28 trillion or about 23% less than in 2021. From this statement, we can interpret that an entity that practices *Environmental Accounting* or *Green Accounting indirectly* plays a role in the entity's *Economic Performance*. The economic performance of an entity is the main picture seen by investors or stakeholders, because the *Economic Performance of* a company is a description of the company's success in a certain period. *Economic Performance* can be described through financial ratios in one year.

With the development of *Green Accounting* in industrial companies, this article aims to analyze the effect of *Green Accounting* on *Economic Performance* with case studies of companies in the mining and chemical industries, because companies in these sectors have a major effect on the surrounding environment.

Problem Formulation

1. Does *Green Accounting* affect *Economic Performance* in a company?

Research Objectives

1. Knowing whether there is an influence of *Green Accounting* on *Economic Performance* in a company.

LITERATURE STUDY

Financial Management

Contained in the book by Lukas Setia Atmaja, Ph.D (2008), it is stated that financial management contains two statements, namely (1) assessment and (2) decision making. These two statements have an important value in the development of a business. Companies are required to have good judgment and decision-making for long-term profits.

In terms of budgeting, financial managers must be reliable in projecting the costs incurred for the company. The finance manager will process, manage, distribute costs and assess various risks in accordance with existing procedures.

Green Accounting

Cohen and Robbins (2011) say that "companies that implement the *Green Accounting* system are usually companies that have concern and interest in environmental sustainability in the company. *Sustainability*, *Eco Effectiveness*, *Eco Efficiency*, and implement it directly with various facilities and infrastructure in strategic management".

According to Alfan Ikhsan (2008), the concept of Green Accounting or Environmental Accounting is defined as a way to prevent, reduce and/or avoid environmental impacts, assuming several possibilities, ranging from the correction of catastrophic events to these activities.

Due to pressure from non-governmental organizations and the increasing level of public awareness of the environment, companies must now realize and implement environmental management, rather than just focusing on their business activities. The environmental impacts of business operations or other human activities can place a burden on the environment and potentially affect the maintenance of a good environment.

Environmental Performance

According to Lansoski (2000), the term environmental protection will lead to the level of environmental damage caused by company activities. Meanwhile, Trusnawati (2013) states that good environmental performance reflects the company's environmental management activities and its responsibility in using the environment in company operations.

The Ministry of Environment encourages companies to improve the level of environmental protection through the Environmental Management Performance Rating Program (PROPER). PROPER is a work program of the Ministry of Environment (KLH), which aims to improve the company's environmental management performance by providing environmental management performance accounting information to the public. Evaluation of company performance focuses on the control and management of hazardous and toxic waste and AMDAL. With the PROPER program, companies should be able to improve their environmental management and minimize negative impacts that have a high percentage rate to arise from the company's operational activities.

***Economic Performance* Theory**

The company's annual financial report includes *Economic Performance*. Through this article, it can be seen whether the company has achieved the expected progress and success, by analyzing its economic performance which can reflect a clear picture.To be able to determine the financial performance of a company precisely and accurately, there are several performance measurement techniques that have been used by shareholders or managers to successfully manage company finances. Including ways to increase the rate in investment. With the traffic of investment values increasing high, it can be said that several indications will also be spurred.

According to Suratno, (2006) financial performance is the overall economic performance of a group of companies in the industry. *Economic Performance* can be defined as a way to evaluate the efficiency and effectiveness of finance in the company, with the aim of knowing the high or low level of economic conditions in the company that describes / reflects the company's economic performance in a certain period. Investors use all the information contained in the presentation of the company's financial statements to estimate future profits and estimates of company dividends and the risks of the estimates made. Therefore, *stakeholders* evaluate all business processes and financial results of the company.

Environmental Costs

According to Hansen and Mowen (2017:405), environmental costs are costs that occur due to poor quality or poor environmental quality that may occur. Thus, environmental costs relate to the creation, detection, remediation, and prevention of environmental degradation. These costs refer to expenditures aimed at addressing the negative impacts generated by economic activities on the environment. These environmental costs may include the costs of pollution control, environmental restoration, rehabilitation, as well as conservation of natural resources. Most environmental costs are not reported in a company's financial statements because they generally do not arise in the form of clear or direct transactions. However, these costs can have a significant impact on society and the environment. To address this, *Green Accounting* is used to calculate environmental costs and integrate information about sustainability and the environment into corporate financial statements.

Return On Assets (ROA)

Is a measure of the rate of return on assets. Cashmere (2016: 201) says that "*Return On Assets* is where states the rate of return on assets". Management uses the *Return On Assets* metric to assess the effectiveness and efficiency of management in managing all company operations. The following is the formula used to calculate Return On Assets (ROA):

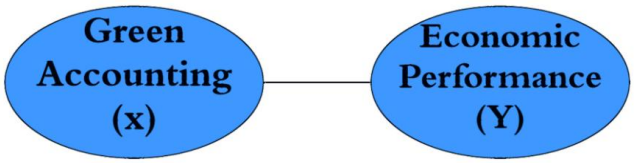
$$\textit{Return On Assets} = \frac{\text{Net Income}}{\text{Total Assets}} \times 100\%$$

The greater the ROA value of a company, the greater the ability for the company to generate profits. This will further increase investor interest in the value of the company's shares, because the higher the company's performance, the greater the opportunity for shareholders to benefit.

CONCEPTUAL FRAMEWORK

The conceptual framework of the article is designed to show whether there is an effect of *Green Accounting* on *Economic Performance* in mining and chemical industry companies for the period 2017-2021. Based on the above analysis, the conceptual framework of this article is shown in Figure 1, namely:

Figure 1. Conceptual Framework



Hypothesis:
Green Accounting has a significant effect on *Economic Performance.*

RESEARCH METHODS

Research Design

With an analytical quantitative approach method that describes the state and phenomenon of an object using statistical data through data samples.

Place and Time of Research

Downloading data on the Indonesia Stock Exchange *website* with the research implementation time in April 2023.

Quantitative Data Type

In the preparation of the article, secondary data was used as a data source to support the research.

Secondary Data Source

The data contained in this article was obtained on the official website of the Indonesia Stock Exchange (IDX), www.idx.co.id. The data is the annual report of mining and chemical industry companies on the IDX for the 2017-2021 period.

Population and Sample

The population uses companies listed on the IDX and engaged in the mining sector and the chemical industry with the publication of annual reports from 2017-2021. Sampling using purposive sampling between two criteria, namely (1) mining sector companies and the chemical industry on the IDX for the same period, and (2) the company has complete data on the variables studied. From the sample results, 7 companies were selected as detailed in Table 2.

Table 2. Sample of Mining and Chemical Industry Sector Companies for the Period 2017-2021

No.	Company Name	Code
1.	PT Adaro Minerals	ADMR
2.	PT Aneka Tambang	ANTM
3.	PT Vale Indonesia	INCO
4.	PT Wijaya Karya Beton	WTON
5.	PT Duta Pertiwi Nusantara	DPNS
6.	PT Indo Acidatama	SRSN
7.	PT Madusari Murni Indah	MOLI

Data Collection Technique
Data collection using the documentation method. This uses data collection from records, reports, and documents related to the application of *Green Accounting* in mining sector companies and the chemical industry.

Variable Definition and Operational Definition
Green Accounting is the **independent variable (X)** in this article which is measured by environmental costs with *dummy variables:*

- A score of 0 is used for companies with environmental cost components, waste recycling costs, environmental research and development costs included in their business reports.
- A score of 1 is assigned to sectors that do not include in their annual report environmental costs, waste recycling costs, environmental research and development costs.

Where *Economic Performance* is the **Dependent Variable (Y)** which is measured using the *Return On Assets* indicator for the 2017-2021 period.

Hypothesis Testing Techniques and Data Analysis
This test involves the use of the *Statistical Package for the Social Sciences* (SPSS) version 24 application. The tests carried out include (1) classical assumption testing as an initial requirement for data testing, namely tests that can determine whether the data is normally distributed and can avoid problems. The classic assumption tests in the study include the Kolmogorov-Smirnov normality test, heteroscedasticity test, and autocorrelation test. (2) Simple linear regression test is useful to test the effect of the independent variable *Green Accounting (*X) on the dependent variable *Economic Performance* (Y).

RESULTS AND DISCUSSION

Table 3. Company Data Mining and Chemical Industry Sector 2017-2021

NO.	Perusahaan	INDIKATOR GREEN ACC	INDIKATOR ECONOMIC PERFORMANCE				
		Score Dummy Method	ROA				
			2017	2018	2019	2020	2021
1	PT ADARO MINERALS	1	7,9	6,8	6	2,5	13,6
2	PT ANEKA TAMBANG	1	0,46	5,36	0,61	3,71	5,66
3	PT VALE INDONESIA	1	-0,7	2,75	2,58	3,58	6,7
4	PT WIJAYA KARYA BETON	0	4,77	5,48	4,94	1,45	0,93
5	PT DUTA PERTIWI NUSANTARA	1	6,13	8,91	9,36	4,64	4,77
6	PT INDO ACIDATAMA	0	2,71	5,64	5,5	4,87	3,09
7	PT MADUSARI MURNI INDAH	1	5,8	5,4	3,3	3,8	1,7

Score Dummy Method:
0 = no environmental costs in the annual report
1 = there are environment-related costs in the annual report

Table 4. Kolmogorov Smirnov Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		35
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	2.77736790
Most Extreme Differences	Absolute	.127
	Positive	.127
	Negative	-.087
Test Statistic		.127
Asymp. Sig. (2-tailed)		.164[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Table 3. shows the value of the results of asymp. sig. (2-tailed) obtained 0.164> 0.05, it means that the data is normally distributed. In the simple linear regression model in this article, the normality test requirements are met.

Table 5. Heteroscedasticity Test

From Table 4, the significance value of the variables included in the model is 0.211>0.05. Therefore, it can be said that there are no symptoms of heteroscedasticity or the assumptions of the heteroscedasticity test have been met. Therefore, the data can be tested using simple linear regression.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.514	.554		2.735	.010
	Green Accounting	.837	.655	.217	1.277	.211

a. Dependent Variable: ABS_RES

Table 6. Autocorrelation Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.149[a]	.022	-.007	2.81914	1.990

a. Predictors: (Constant), Green Accounting

b. Dependent Variable: Economif Performance

* DW table (35th Column to 1 = (K=1))

Table 5. has a value in *Durbin Watson* worth 1.990. The dL value comes from the DW table worth 1.4019, while the dU value is 1.5191. So that DU < DW < 4-DU = 1.5191 < 1.990 < 2.4809, it concludes that the data does not occur autocorrelation symptoms or the assumptions of the autocorrelation test have been fulfilled to perform simple linear regression.

Table 7. T-Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.938	.891		4.417	.000
	Green Accounting	.915	1.055	.149	.867	.392

a. Dependent Variable: Economif Performance

Hypothesis:

- H0 = *Green Accounting has* no significant effect on *Economic Performance*
- H1 = *Green Accounting has a* significant effect on *Economic Performance*

Basis for Decision:

- significance (more than) > 0.05 = t count < t table then H0 accepted
- significance (less than) < 0.05 = t count > t table then H0 is rejected

Table 6. shows that the calculated t value is 0.867 < t table 2.03452 with a significance value of 0.392 > 0.05, it is concluded that H0 is accepted where the *Green Accounting* variable has no positive effect on *Economic Performance.*

Table 8. Determination Coefficient Test Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.149[a]	.022	-.007	2.81914

a. Predictors: (Constant), Green Accounting

Table 7 displays a correlation or relationship value (R) of 0.149. The coefficient of determination (R Square) obtained from the output is 0.022 (2.2%), which means that the effect of Green Accounting on Economic Performance is only 2.2%, while the rest, 97.8% (100% - 2.2%), is due to other factors outside the variables being studied.

The Effect of *Green Accounting* on *Economic Performance*

Based on the simple linear regression test shows that there is no effect of *Green Accounting* on *Economic Performance*, where *Green Accounting has* no role in improving *Economic Performance*. Nevertheless, some companies in the sample still report and include environmental costs in their annual reports, as part of an effort to provide information to stakeholders. This can also enhance the company's environmental responsibility and provide added value to the business, although it does not have a direct impact on improving *Economic Performance*. Although companies are seen as environmentally responsible, the disclosure and presentation of environmental costs in their annual reports has no effect on improving *Economic Performance*. However, it can still add value to the business.

These environmental costs can reduce company profits because environmental costs definitely require tools related to environmental maintenance such as environmentally friendly production tools and other environmental conservation tools. Environmental costs incurred by companies do not always have an impact that is felt at the same time. The impact of environmental costs can occur in the coming period or further away. Where, environmental costs have no effect on *Economic Performance* in the company.

From the results obtained, there is a similarity to research conducted by Eka Mutia (2021) which states that *Green Accounting* does not have an influence on *Financial Performance*.

CONCLUSIONS

The study revealed that *Green Accounting* does not significantly affect *Economic Performance* in mining sector companies and chemical industry sector companies because environmental costs incurred by mining sector companies and the chemical sector will reduce company profits.

It is known that the results of the simple linear regression test show that Green Accounting has no positive and significant effect on Economic Performance in mining sector companies and the chemical industry sector 2017-2021. This is evidenced by the absence of a correlation between the two variables in the tests that have been carried out.

In mining sector companies and the chemical industry, charging environmental costs that will be carried out can reduce company profits, so that companies prioritize the production process and charging environmental costs is still voluntary. The results of this study are in line with the research of Verlita Dewi Rosaline and Eni Wuryani, (2020) where Green Accounting has no significant effect on Economic Performance.

ADVICE

Based on the research results, it is expected that the company will increase the level of concern for environmental costs. The company becomes better if it can improve the quality of the environment around the company which is considered by researchers to have a positive impact in the long run.

LITERATURE

Amri, N. F. (2021, July 15). *Overview of Legitimacy Theory*. Retrieved from e-accounting.com: https://www.e-akuntansi.com/teori-legitimasi/

Dita, E. A., & Ervina, D. (2021). The Effect of Green Accounting, Environmental Performance and Company Size on Financial Performance (Case Study of Mining Sector Companies Listed on the Indonesia Stock Exchange in 2017-2018). 72-84. Retrieved from https://ejournal.feunhasy.ac.id/jfas/article/view/272/212

Faizah, B. Q. (2020). Application of Green Accounting to Financial Performance. *Journal of Contemporary Accounting Research*, 94-99.

Hidayat, A. (2017, January). *Autocorrelation Test with SPSS - Durbin Watson*. Retrieved from statistikian.com:https://www.statistikian.com/2017/01/uji-autokorelasi-dengan-spss.html?amp

KumparanBISNIS. (2022, December 29). *Government Announces PROPER 2022 Award: 51 Companies Receive Gold Rating*. Retrieved from kumparanBISNIS: https://kumparan.com/kumparanbisnis/pemerintah-umumkan-anugerah-proper-2022-51-perusahaan-dapat-peringkat-emas-1zX6lB5QSvA

Kusumaningtias, R. (2013). Green Accounting, Why and How? *Profeceeding National Seminar*, 137-149.

Reza, P. A., Majid, M. N., & Nengsih, A. T. (2022). The Effect of Green Accounting Implementation and Environmental Performance on Return on Asset. *Journal of Management and Science*, 455-460.

Wuryani, E., & Rosaline, V. D. (2020). The Effect of Green Accounting Implementation and Environmental Performance on Economic Performance. *Journal of Accounting and Finance Research*, 569-578.