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## **The Influence of Environmental Performance, Green Accounting, and Profitability on Firm Value: A Study on Energy and Basic Materials Companies Listed on the IDX and Proper (2019-2023)**

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### **Abstract.**

In an increasingly competitive global environment, environmental and sustainability issues have become major concerns for corporate stakeholders. The energy and basic materials sector, which significantly impacts the environment, must prioritize not only profitability but also environmental performance and green accounting to enhance company value. This study examines the effects of environmental performance, green accounting, and profitability on firm value, with company size as a moderating variable, for companies listed on the Indonesia Stock Exchange and PROPER from the Ministry of Environment and Forestry of Indonesia between 2019 and 2023. The population included 83 energy sector companies and 106 basic materials companies, with a sample of 28 companies selected based on study criteria. Using a quantitative approach and Partial Least Square (PLS) 3 analysis, the study found that environmental performance and green accounting positively and significantly affect firm value, while profitability has no significant effect. Additionally, company size was found to strengthen the impact of environmental performance and green accounting on firm value but weaken the effect of profitability. The findings suggest that environmental practices and sustainable accounting are more critical to corporate value in these sectors than profitability alone, with company size playing a key moderating role. This research highlights the need for energy and basic materials companies to integrate sustainability and accounting practices into their core strategies to improve firm value effectively.

**Keywords:** *Environmental Performance, Green Accounting, Profitability and Value firm*

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### **INTRODUCTION**

In this era of competitive globalization, companies across various industrial sectors have undergone significant transformations, both internally and externally. Internal management focuses not only on optimizing physical resources but also on maximizing company value by considering intangible resources. Financial reports prepared by companies aim to provide information to various stakeholders, such as shareholders, investors, creditors, the board of directors, and the government (Adhitya et al., 2016; Anggraeni & Anwar, 2021; Ashilah & Suryani, 2021; Barokah et al., 2023; Saputri & Anwar, 2021).

In addition to the output produced in the form of financial reports, companies are permitted to present supplementary reports, such as sustainability reports, in accordance with Financial Accounting Standards (PSAK) Number 1. According to Suryati and Murnawingsari (2022), these supplementary reports, or sustainability reports, combine information about the company to stakeholders by integrating financial reporting, social reporting, environmental reporting, and corporate governance into one comprehensive report.

The primary goal of a company is generally to maximize profits (Reschiwati et al., 2020). The primary motivation of public companies is to maximize profits and owner wealth by increasing company value. This company value reflects the company's performance, which ultimately influences investor views and perceptions. For company owners, company value is

crucial because a high value is a primary attraction for investors in making investment decisions. Company value can be assessed through various aspects, one of which is share price (Damayanthi, 2019; Kholis et al., 2018; Pasaribu et al., 2019; Pratiwi et al., 2021; Sumira & Prihandini, 2022).

As economic growth increases in this era of globalization, companies are encouraged to expand. For some large companies, going public is a reason. Kanti & Yusnia (2020) note that the increase in the number of companies listed on the Indonesia Stock Exchange (IDX) indicates that companies require additional capital from investors to expand their businesses and increase their assets. Handayani et al. (2022) observed that from 2019 to 2023, there was an increase in the number of companies listed on the Indonesia Stock Exchange (IDX).

In this study, researchers used companies in the energy and basic materials sectors. The reason for selecting these two sectors is because they play a crucial role in the economy and exhibit significant growth potential as well as challenges. Companies in the basic materials sector include industries that produce basic materials used in various production processes and, despite fluctuations, continue to record positive growth in market capitalization. Meanwhile, companies in the energy sector have a significant impact on the environment and the economy, contributing substantially to greenhouse gas emissions while remaining a profitable sector for investors. Furthermore, the continued increase in energy consumption demonstrates the importance of this sector for economic growth.

The energy sector is a major contributor to GDP in Indonesia (Antaranews.com, 2021), facing fluctuations in stock trading and environmental challenges that impact operations and company value. Companies in the energy and basic materials sectors must adopt socially and environmentally responsible management to achieve social legitimacy. Quoting from the page <https://www.antaranews.com/>, the existence of the energy sector remains a determinant of a country's economic performance. In Indonesia, overall energy consumption continues to increase by an average of 5.6% per year. With this growth, it is estimated that by 2030, energy consumption for industry will reach 49%, followed by transportation at 29%, households at 15%, and commercial at 4%. Given these conditions, the role of energy in economic growth is crucial because energy consumption in the industrial structure is at a cumulative figure of 50-60%. Quoting from the page <https://pwyindonesia.org/>, the energy sector is one of the largest contributors to GDP in Indonesia.

Based on the background described above, this study aims to test and empirically analyze the influence of environmental performance, green accounting, and profitability on company value, with company size as a moderating variable. The benefits of this research are that it makes a theoretical contribution by enriching the literature on the determinants of corporate value, especially in the energy and basic materials sectors, as well as providing practical implications for company management in developing strategies that pay attention to environmental aspects and sustainable accounting to increase company value. In addition, the findings of this study are expected to be considered by investors and regulators in making investment decisions and formulating policies that support sustainable business practices.

## **MATERIALS AND METHOD**

This study employed quantitative research. The primary objective of this causal research was to determine the relationships between independent variables—Environmental Performance, Green Accounting, and Profitability—and the dependent variable, firm value, with firm size as a moderating variable. The data analysis used panel data regression to assess relationships and influences between variables through hypothesis testing and normality analysis before drawing conclusions.

The population included all energy and basic materials companies listed on the Indonesia Stock Exchange from 2019 to 2023. This period covered the COVID-19 pandemic impact on company activities, revenue, and firm value. Energy and basic materials companies are among the largest contributors to greenhouse gas emissions in Indonesia and include sectors with significant environmental impacts.

A purposive sampling method was applied, selecting companies based on specific criteria relevant to the study to ensure the data best met research needs.

## **RESULTS AND DISCUSSION**

### **Research Sample Description**

Indonesia is rich in natural resources. Many companies build factories to maximize profits by exploiting these natural resources. Companies are classified according to their type, sector, and industry, depending on the products and services they produce. Many Indonesian companies are listed on the Indonesia Stock Exchange (IDX). According to a report by [Republika.co.id](http://Republika.co.id) on March 10, 2022, 777 companies have listed their shares on the IDX (Zuraya, 2022). Since January 25, 2021, the Indonesia Stock Exchange (IDX) has implemented updated sector and industry classifications for companies listed on the IDX. The IDX divides these companies into 12 sectors and industries. These sectors and industries are the Energy Sector, Basic Materials Industry, Industrial Industry, Consumer Cyclical Industry, Consumer Non-Cyclical Industry, Healthcare Industry, Financials Industry, Property & Real Estate Industry, Technology Industry, Infrastructure Industry, Transportation & Logistics Industry, and Listed Investment Products.

The sectors used by the researcher in this case are the energy sector and the basic materials sector. According to [stockbit \(Awal, 2022\)](#), this energy sector includes companies that sell products and services related to energy extraction, including non-renewable energy such as oil, natural gas, and coal mining, as well as companies that provide services to support these industries. Meanwhile, the basic materials sector is companies that sell products and services used by other industries as raw materials to produce finished goods, such as chemicals, construction materials, wood products, and paper. The objects of this study are companies operating in the energy sector and the basic materials sector with different types of subsectors listed on the Indonesia Stock Exchange and received a PROPER rating from 2019 to 2023. This study used 28 companies from the energy and basic materials sectors listed on the IDX for the period 2019 to 2023. Sample selection in this study was carried out according to the following table:

**Table 1. Sampling Determination Table**

No	Sample Criteria	Sample
1	Energy and basic materials sector companies listed on the Indonesia Stock Exchange	189
2	Energy and basic materials sector companies that were inconsistent in publishing audited financial reports during the research period, namely 2019-2023	(85)
3	Energy and basic material sector companies that have not/have not received a rating in the Company Performance Rating Assessment Program in Environmental Management (PROPER) consecutively from 2019 to 2023 based on the Regulation of the Ministry of Environment and Forestry	(57)
Number of companies that can be used as samples in this study		<b>28</b>
Research Period		<b>5 years</b>
Total Lines of Research Data		<b>140</b>

Source: Research Population and Sample Working Paper (2024)

This study sampled 28 companies in the energy and basic materials sectors listed on the Indonesia Stock Exchange and awarded a PROPER rating between 2019 and 2023 (11 companies x 5 years = 140 samples).

### Research Data Description

The population of all companies in the energy and basic materials sectors listed from December 31, 2019, to December 31, 2023, totaled 189 companies, with 83 in the energy sector and 106 in the basic materials sector (IDX, 2024). Based on the criteria previously established in Chapter III, namely companies in the energy and basic materials sector listed on the Indonesia Stock Exchange (IDX) for the 2019-2023 period, companies that are profitable, companies that publish complete financial statements and Annual Reports expressed in Rupiah (IDR) and translated into Rupiah (IDR) for Dollars (USD), and complete data available in the company's financial statements related to the research variables, a sample size of 28 companies was obtained.

**Table 2. Research Sample Data**

No	Code	Company name
<i>Sector Energy</i>		
1	ADRO	Adaro Energy Tbk
2	AKRA	AKR Corporindo Tbk
3	MBAP	Mitrabara Adiperdana Tbk
4	MEDC	Medco Energi Internasional Tbk
5	PGAS	Perusahaan Gas Negara Tbk
6	PTBA	Bukit Asam Tbk
<i>Sector Basic Material</i>		
1	ADMG	Polychem Indonesia Tbk
2	ANTM	Aneka Tambang Tbk
3	BAJA	Saranacentral Bajatama Tbk
4	CTBN	Citra Tubindo Tbk
5	DKFT	Central Omega Resources Tbk
6	FPNI	Lotte Chemical Titan Tbk
7	IFII	Indonesia Fibreboard Industry
8	IFSH	Ifishdeco Tbk
9	INCI	Intanwijaya Internasional Tbk
10	INKP	Indah Kiat Pulp & Paper Tbk

No	Code	Company name
11	INTP	Indocement Tunggal Prakarsa Tbk
12	ISSP	Steel Pipe Industry of Indonesia
13	NIKL	Pelat Timah Nusantara Tbk
14	SMBR	Semen Baturaja Tbk
15	SMCB	Solusi Bangun Indonesia Tbk
16	SMGR	Semen Indonesia (Persero) Tbk
17	SPMA	Suparma Tbk
18	SRSN	Indo Acidatama Tbk
19	TINS	Timah Tbk
20	TKIM	Pabrik Kertas Tjiwi Kimia Tbk
21	TPIA	Chandra Asri Pacific Tbk
22	UNIC	Unggul Indah Cahaya Tbk

Source: Data from the IDX website, 2023 and 2024

Translation or conversion of foreign currency from Dollars (USD) to Rupiah using Bank Indonesia's middle rate as of December 31st for the five years of research data, from 2019 to 2023.

### Descriptive Statistical Analysis

The research variables used are Environmental Performance, proxied by the PROPER Criteria from the Regulation of the Minister of Environment and Forestry (PERMENLHK), Green Accounting, proxied by five (5) Costs of Production, Profitability, proxied by two measurements (Return on Assets (ROA) and Return on Equity (ROE)), Firm Value, proxied by two measurements (Price Book Value (PBV) and Tobin's Q), and Company Size, proxied by the Logarithm of Assets, as a moderating variable. This analysis aims to describe the variables used by the researcher. Descriptive statistical analysis with the following results:

**Table 3. Results of Descriptive Statistical Tests**

Variabel	Indikator	N	Min.	Max.	Mean	Stdev
a Environmental Performance (X1)	KL.1	140	0	2	1,3214	0,5381
	KL.2	140	0	2	1,3071	0,5331
	KL.3	140	0	2	1,2857	0,5514
	KL.4	140	0	2	1,3071	0,5593
	KL.5	140	0	2	1,2714	0,5457
	KL.6	140	0	2	1,2643	0,5426
	KL.7	140	0	2	1,2929	0,5542
	KL.8	140	0	2	1,3000	0,5568
<b>Average</b>					<b>1,2937</b>	<b>0,5476</b>
2 Green Accounting (X2)	GA.1	140	0	2	1,8857	0,4642
	GA.2	140	0	2	1,9071	0,3359
	GA.3	140	0	2	1,8857	0,4324
	GA.4	140	0	2	1,9429	0,3332
	GA.5	140	0	2	1,8929	0,4259
<b>Average</b>					<b>1,9029</b>	<b>0,3983</b>
3 Profitabilitas (X3)	ROA	140	-0,2344	0,5852	0,0495	0,0954
	ROE	140	-0,9511	0,9378	0,0835	0,1722
<b>Average</b>					<b>0,0721</b>	<b>0,1417</b>
4 Company Value (Y)	TQ	140	0,0662	7,0174	1,1513	0,9500
	PBV	140	0,0002	9,8452	1,3366	1,3463
<b>Average</b>					<b>8,3865</b>	<b>44,0373</b>

	Variabel	Indikator	N	Min.	Max.	Mean	Stdev
5	Company Size (Z)	TA	140	27,38	35,73	31,0946	2,1988

Source: Researcher Data Processing (2024)

The table above shows that 150 valid respondent data could be processed. The environmental performance variable had a minimum value of 0, a maximum value of 2, a mean of 1.2937, and a standard deviation of 0.5476, indicating homogeneous data. The green accounting variable had a minimum value of 0, a maximum value of 2, a mean of 1.9029, and a standard deviation of 0.3983, indicating homogeneous data. The profitability variable had a minimum value of -0.9551, a maximum value of 0.9378, a mean of 0.0721, and a standard deviation of 0.1417, indicating heterogeneous profitability data.

The dependent variable (Y), namely company value, showed a minimum value of -681.1105, a maximum value of 1065, with a mean value of 8.3865 and a standard deviation of 44.0373, indicating heterogeneous data.

The moderating variable (Z), namely company size, showed a minimum value of 27.38, a maximum value of 35.73, with a mean value of 31.0946, and a standard deviation of 2.1988, indicating homogeneous data.

## Data Analysis

This study uses secondary data sourced from company documentation. Secondary data is data obtained from existing sources and does not require the researcher to search for it themselves. The data used in this study includes secondary reports for the years 2019–2023. This data can be obtained by accessing the websites [www.idx.co.id](http://www.idx.co.id) and [www.proper.menlhk.go.id](http://www.proper.menlhk.go.id). The IDX was selected as the source of data collection because it is the largest and most representative stock exchange in Indonesia and also because it meets the PROPER criteria for the variables used in this study. Data processing in this study used SmartPLS 3, which consists of two types of models: a measurement model (Outer Model) and a structural model (Inner Model). Evaluation of the measurement model (Outer Model) is conducted to assess the validity and reliability of the model. Evaluation of the structural model (Inner Model) aims to measure the magnitude of the influence between latent variables. In other words, the measurement model can explain which indicators are more dominant in the formation of latent variables.

## CONCLUSION

This study empirically tested the influence of environmental performance, green accounting, and profitability on firm value, with firm size as a moderating variable, using data from companies listed on the Indonesia Stock Exchange and PROPER from 2019 to 2023 analyzed with SmartPLS 3. The results showed that environmental performance and green accounting significantly and positively affected firm value, while profitability had no effect. Additionally, firm size strengthened the effects of environmental performance and green accounting on firm value but weakened the effect of profitability. Future research could explore other moderating variables, such as corporate governance or market conditions, to further understand the dynamics influencing firm value.

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