

Environmental Mechanisms and Corporate Values: The Role of Size Moderation in Indonesian High-Profile Companies

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Abstract

This study aims to analyze the influence of green accounting, carbon emission disclosure, and carbon tax on company value and test the role of company size as a moderation variable in high-profile companies listed on the Indonesia Stock Exchange. The study used a quantitative approach with balanced panel data covering 10 companies in the consumer non-cyclicals, basic materials, industrials, and energy sectors during the period 2020–2024 (50 company-year observations). Company value is measured using Tobin's Q, green accounting is proxied through the ratio of environmental costs to revenue, carbon emissions disclosure through emission intensity, carbon tax through the ratio of carbon cost exposure to revenue, while company size is measured using the natural logarithm of total assets. Debt to Equity Ratio and Return on Assets are used as control variables. The analysis was carried out using the Random Effect Model on EViews 12 after going through the Chow, Hausman, and Lagrange Multiplier tests. The results of the study show that green accounting and carbon emission disclosure do not have a significant effect on the company's value at a significance level of 5%, while the carbon tax has a marginally negative effect at the level of 10%. Moderation testing shows that company size significantly moderates the relationship between green accounting, carbon emissions disclosure, and carbon taxes on company value. The entire interaction coefficient has the opposite direction to the main coefficient, indicating that the larger the size of the company, the weaker the influence of environmental information on the company's value. In addition, the Adjusted R² value increased from 9.58% to 55.15% after including the moderation variable, indicating an improvement in the model's ability to explain variations in the company's value. This study expands the environmental accounting literature by showing that company size is not just a control variable, but a contextual factor that determines how the market responds to environmental information. These findings provide implications for companies to substantively improve the quality of environmental reporting, for investors to consider company size in investment decision-making, and for regulators to develop more uniform sustainability reporting standards.

Keywords

Green Accounting; Disclosure Of Carbon Emissions; Carbon Tax; Company Values; The Size Of The Company; High-Profile Company



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INTRODUCTION

Companies operating in sectors with high environmental sensitivity face

increasing pressure from regulators, investors, and the public to transparently manage environmental impacts. The pressure is structurally greater for high-profile companies, namely companies whose operational activities have relatively high environmental sensitivities such as companies in the mining, energy, raw materials, heavy industry, and non-cyclical consumer sectors, because the environmental impact of their operational activities is easily observed by the public and becomes the consumption of esia media, environmental disclosure takes place through three conceptually different but complementary channels. First, the integration of environmental costs into the company's accounting system through the implementation of green accounting.

Green accounting identifies, measures, records, and reports costs and environmental impacts that have been external, thus integrating externality costs into the business decision framework. Second, voluntary disclosure of carbon emissions follows global frameworks such as the Task Force on Climate-related Financial Disclosures and the Carbon Disclosure Project, which communicates the amount of greenhouse gas (GHG) emissions, emission sources, reduction targets, and mitigation strategies to investors and other stakeholders. Third, the carbon price policy through the carbon tax mandated by Law Number 7 of 2021 concerning the Harmonization of Tax Regulations, with a gradual implementation of thermal coal power generation and its supporting activities in stages. Carbon taxes directly charge for emissions, thus internalizing environmental externalities into the company's cost structure (Squirrelly et al., 2022; Houten & Squirt, 2023) (Gangodawilage, 2024; Rokhmawati et al., 2024).

These three mechanisms differ substantially in terms of the function of the economy and the signals relayed to the market. Green accounting represents the substantive internalization of moving environmental costs from social bookkeeping to corporate bookkeeping, carbon emissions disclosure represents transparent communicative signaling reporting emissions to external audiences carbon taxes represent validated compliance pricing converting emissions into direct financial costs. Although all three are theoretically connected to legitimacy theory, stakeholder theory, and signal theory, all three mechanisms can convey different and even opposite signals to investors, so the market can read them differently depending on the characteristics of the company. (Bernini & La Rosa, 2024; Del Gesso & Lodhi, 2024),

Indonesia's empirical evidence provides a fragmented answer and has not yielded complete conclusions. In green accounting, positive results were reported by , in the cement subsector for the period 2021-2024, and . Mining and agricultural companies in Southeast Asia. finding a positive contribution with profitability as an intervening variable. However, in 2018-2020 manufacturing, in energy 2022-2024, in manufacturing, and found no significant influence. (Fini & Astuti, 2024) (Maulidiyah & Sularto, 2025) (Maulidiyah & Sularto, 2025) (Fernando et al., 2024) Hut (2024) Sapulette & Limba (2021) (Ramadan &

Helliana, 2026) Istiqomah - Scarlet Witch (2026) Squirting (2026)

On the disclosure of carbon emissions, the evidence is similarly heterogeneous. Positive results were reported by , in Indonesia's polluting industry, PROPER-rated manufacturing, and in the manufacturing context. Zero results are reported by , in mining 2020-2024, in mining 2020-2023, , in contextual manufacturing, and . adding that financial sustainability materially changes the strength of the relationship between carbon emissions and company value. Sari & São Paulo (2022) (Houten & Squirt, 2023) (Putri & Agustin, 2023) (Hardiyansah et al., 2021) Aeni & Murwaningsari (2023) (Syabila & Paramita, 2026) (Matalata et al., 2025a) (Maulidiyah & Sularto, 2025) (Banjari, 2023) (Gunawan, 2026) Probohudono et al. (2024)

Evidence of carbon taxes is relatively limited, especially at the level of corporate value, given the early stages of implementation in Indonesia. Through System Dynamics simulations, it is shown that higher carbon tax rates significantly increase manufacturing input costs. found that carbon taxes combined with green finance initiatives affect manufacturing profitability. explained that the initial carbon tax is small in size but becomes material at a higher rate. linking carbon taxes to corporate performance and business sustainability. Conceptually it shows that the carbon tax adds to the financial burden. Rokhmawati et al. (2024) Hakim & Sudibyo (2025) Princess & Stuttgart (2025) (Manri & Machdar, 2025; Salim & Sidiq, 2022) Gangodawilage (2024)

Crucially, the role of company size moderation is still underexplored in this integrated framework. International evidence and recent Indonesian studies suggest that firm size is likely a structural determinant of how markets value environmental information. found that the size and age of companies moderate the effects of ESG on financial value and performance in the aviation industry. Finding the size of a company plays a moderation role in the relationship of carbon emissions disclosure to financial performance. support similar findings in the Indonesian context. Reporting on the moderation of company size on the effects of green accounting. found that company size moderates the effects of environmental performance but not the direct effects of carbon emissions disclosure. and document contextual differences between size strata. Abdi et al. (2022) Bedi & Singh (2024a) Hutaaruk (2024) Hut (2024) Ardelia & Paramitas (2026) Matalata et al. (2025) (Authoritative & Khomsiyah, 2022)

Three research gaps motivated this research. First, the implications of carbon taxes for corporate value at the implementation transition stage in Indonesia have not been widely explored, with existing studies focusing on manufacturing compliance costs and competitiveness, rather than market valuations. Second, there have been no studies that integrate green accounting, carbon disclosure disclosure, and carbon taxes into a single moderated regression framework for high-profile Indonesian companies, making it difficult to separate which mechanisms are dominant in investor assessments. Third, the role of company size as a moderator

has been tested separately for one variable only, the simultaneous effects on the three environmental mechanisms are still unclear. (Hakim & Sudibyo, 2025; Rokhmawati et al., 2024)

This research aims to (i) examine the direct influence of green accounting, carbon emission disclosure, and carbon tax on company value; (ii) examine the role of company size as a moderation variable for the three relationships; and (iii) explain empirical findings using the frameworks of legitimacy theory, stakeholder theory, and signal theory. Theoretical contribution: positioning company size not as an edge moderator, but as a key contextual variable that structurally changes the way the market processes environmental information in high-profile Indonesian companies. Practical contribution: providing data-driven evidence of how environmental information is translated into corporate value to high-profile Indonesian issuers information that is useful to issuers in designing disclosure strategies, for investors in assessing environmental information, and for regulators in designing reporting policies and standards.

METHOD

This study uses a quantitative approach with an explanatory design to test the influence of *green accounting*, carbon emission disclosure, and carbon tax on company value as well as the role of company size as a moderation variable. The data used is in the form of a **balanced data panel** that combines *cross-section* and *time-series* data from 10 *high-profile* companies listed on the Indonesia Stock Exchange during the 2020–2024 period, resulting in 50 company-year observations. The research population includes 391 *high-profile* companies from *the consumer non-cyclicals, basic materials, industrials, and energy* sectors based on the IDX-IC classification. The sample was determined using **purposive sampling** techniques with the criteria of companies that were consistently registered during the study period, published annual reports and sustainability reports, disclosed complete carbon emission data, and presented environmental cost information. Based on these criteria, 10 companies that met the research requirements were obtained.

The data used is secondary data obtained from annual reports, audited financial statements, and company sustainability reports accessed through the official website of the Indonesia Stock Exchange and each issuer. Data collection was carried out using documentation techniques through the process of document identification, numerical data recording, and data compilation by company and year of observation. Dependent variables are the value of the company measured using **Tobin's Q**, while independent variables include *green accounting* which is proxied by the ratio of environmental costs to revenue, carbon emission disclosures which are proxied by the intensity of carbon emissions to revenues, and carbon taxes which are proxied through the ratio of carbon cost exposure to revenue. The size of the company is measured using the natural logarithm of total assets as a moderation variable, while **the Debt to Equity Ratio (DER)** and **Return on Assets (ROA)** are

used as the control variables. The relationship between variables was analyzed using two panel data regression models, namely the direct influence model and *the moderated regression analysis* (MRA) model which included the interaction between the size of the company and each independent variable.

Data analysis was carried out using EViews 12 software. The analysis stages include descriptive statistics, panel data model selection through the Chow test, Hausman test, and Lagrange Multiplier test, followed by classical assumption testing which includes residual normality, multicollinearity, heteroscedasticity, and autocorrelation. The best model is then estimated using the Random Effect Model to test the direct influence and moderation effect of the company's size. Hypothesis testing is carried out through the F-test to test the significance of the model simultaneously and the t-test to test the partial influence of each variable. In addition, the determination coefficient (R^2) and *Adjusted R²* were used to evaluate the model's ability to explain the variation in the company's value, with the increase in *the Adjusted R²* value between the baseline model and the moderation model used as an indicator of the contribution of interaction variables. The level of significance of the research is set at 5%, while the level of 10% is interpreted as marginal evidence and explicitly stated in the discussion of the research results.

FINDINGS AND DISCUSSION

Descriptive Statistics

Descriptive statistical analysis was conducted on 50 observations (10 companies × 5 years).

Table 1. Descriptive Statistics

Variabel	Average	Maximum	Minimum	Std.Dev	Skewness	Kurtosis
<i>Green accounting</i> (X1)	2,514935	16,72309	0,000442	4,653800	2,041072	5,946918
Carbon emissions disclosure (X2)	3,363633	30,50667	6,74E-05	6,408452	3,024207	12,24996
Carbon tax (X3)	62,98515	493,7656	0,132150	114,2218	2,385143	7,983803
Company value (Y)	1,701113	7,371670	0,580847	1,242230	2,731134	11,15423
Company size (Z)	30,03346	31,44563	27,90177	0,919400	-0,361049	2,704863
THE	0,672149	8,121550	-7,731656	2,156398	-0,525335	9,250352
LENGTH	4,181800	27,71000	-49,92000	12,38707	-2,186281	9,972993

Source: Data processed using EViews 12, 2026.

Based on the results of the descriptive statistical test, it was found that variables Y, X1, and X2 showed indications of data abnormalities that were high enough that it was necessary to perform a natural logarithm (Ln) transformation. This is based on several considerations. Judging from the skewness value, the three variables show numbers that deviate far from zero, namely Y of 2.731134, X1 of 2.041072, and X2 of 3.024207. A skewness value that is far from zero indicates that the data is not symmetrically distributed, but rather skewed to the right (*right-skewed*), where most of the data is concentrated at low values but there are some observations with much higher values. The kurtosis value of the three variables also far exceeds the number 3 which is the reference for the normal distribution, namely Y of 11.15423, X1 of 5.946918, and X2 of 12.24996. This high kurtosis value indicates that the data distribution is leptocurtic, meaning that the data has a sharper peak and a thicker distribution tail than the normal distribution, which indicates an outlier value in the data.

The results of the Jarque-Bera test for Y, X1, and X2 were 200.6829, 52.80882, and 254.4690 respectively with a probability value of 0.000000 for each variable. Since the probability value is much smaller than the significance level of 0.05, it can be concluded that H0 (normally distributed data) is rejected, so that data Y, X1, and X2 are not normally distributed. Judging from the range of minimum and maximum values, the three variables also show a very large variation (dispersion) of the data. Variable Y ranges from 0.580847 to 7.371670, X1 ranges from 0.000442 to 16.72309, and X2 ranges from 0.0000674 to 30.50667. This wide range shows a significant difference in scale between observations, which has the potential to raise heteroscedasticity problems if the data are used directly in the regression model. Based on these considerations, natural logarithmic (Ln) transformations are carried out on variables Y, X1, and X2 with the aim of normalizing data distribution, reducing the influence of extreme values, standardizing the measurement scale between variables, and meeting the normality assumptions required in panel data regression testing.

Panel Data Regression Model Selection

Table 2. Results of Selection of Panel Data Regression Model

Testing	Statistics	Probability	Verdict
Chow Test	19,154453	0,0000	<i>Fixed Effect Model</i>
Hausman Test	2,669328	0,8491	<i>Random Effect Model</i>
Uji Lagrange Multiplier	49,51026	0,0000	<i>Random Effect Model</i>

Source: Data processed using EViews 12, 2026.

The results of the Chow test show a probability of 0.0000 (< 0.05), so H_0 is rejected and *Fixed Effect Model* more suitable than *Common Effect Model*. The results of the Hausman test show a probability of 0.8491 (> 0.05), so that H_0 is not rejected and *Random Effect Model* more suitable than *Fixed Effect Model*. Test results *Lagrange Multiplier* indicates a probability of 0.0000 (< 0.05), so H_0 is rejected and *Random Effect Model* more suitable than *Common Effect Model*. Based on the three tests in order, the estimation model used is *Random Effect Model*.

Model Diagnostic Testing

Residual normality test: The Jarque-Bera value is 0.461100 with a probability of 0.794097 (> 0.05), so that the residual is normally distributed.

Multicollinearity test: The highest correlation between independent variables was 0.577563 (between *green accounting* and company size), still below the correlation threshold of 0.80. No serious indication of multicollinearity was found in the direct influence model.

Heteroscedasticity test: All variables showed a probability of > 0.05 at the level of 5%, so no evidence of heteroscedasticity was found. The carbon tax has a probability of 0.0922, which indicates a marginal indication at the level of 10%.

Table 3. Heteroscedasticity Test Results

Variabel	T-Statistics	Probability
<i>Green accounting</i>	-0,433155	0,6671
Carbon emissions disclosure	-0,879205	0,3842
Carbon tax	1,722242	0,0922
Company size	0,102752	0,9186
THE	0,202468	0,8405
LENGTH	0,101363	0,9197

Source: Data processed using EViews 12, 2026.

Autocorrelation test: The Durbin-Watson value is 1.128610. At the number of observations 50 and six explanatory variables, the lower limit is 1.2906 and the upper limit is 1.5660. The DW value is below the lower limit so it indicates a positive autocorrelation in the residual model. These findings need to be noted in the inference drawdown and are supported by autocorrelation testing designed specifically for the panel data.

Direct Influence Regression Results — Model 1

Table 4. Model Panel Data Regression Results 1

Variabel	Coeficin	Std. Error	T-Statistics	Probability
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Konstanta	11,005890	4,331505	2,540894	0,0147
Green accounting (X1)	0,042779	0,026917	1,589312	0,1193
Carbon Emissions Disclosure (X2)	0,030327	0,021877	1,386287	0,1728
Carbon tax (X3)	-0,050897	0,029500	-1,725306	0,0917
Company size (Z)	-0,353131	0,143732	-2,456882	0,0181
THE	0,022227	0,020238	1,098257	0,2782
LENGTH	0,004894	0,003951	1,238585	0,2222

Source: Data processed using EViews 12, 2026.

R-squared = 0,206496; Adjusted R-squared = 0,095774; F-statistik = 1,865003 (prob. = 0,109064); Observasi = 50.

Regression equations:

$$\text{LnY} = 11.005890 + 0.042779 \cdot \text{X1} + 0.030327 \cdot \text{LnX2} - 0.050897 \cdot \text{LnX3} - 0.353131 \cdot \text{Z} + 0.022227 \cdot \text{DER} + 0.004894 \cdot \text{ROA} + \varepsilon$$

Green accounting ($\beta = 0.042779$; $p = 0.1193$) and carbon emission disclosure ($\beta = 0.030327$; $p = 0.1728$) had no significant effect on the company's value at the 5% level. The carbon tax has a negative coefficient (-0.050897) with marginal evidence at the level of 10% ($p = 0.0917$). The size of the company had a negative and significant effect at the level of 5% ($\beta = -0.353131$; $p = 0.0181$). DER and ROA are insignificant. Adjusted R-squared 0.095774 means that Model 1 explains about 9.58% of the company's value variation; The F-statistical probability of 0.109064 shows that the overall model is not significant at the level of 5%. Based on Model 1, H1 and H2 are not supported, while H3 is only supported at a significance level of 10% as marginal evidence.

Results of Moderated Regression Analysis — Model 2

Model 2 tests the role of company size as a moderator by adding three interaction variables.

Tabel 5. Hasil Moderated Regression Analysis Model 2

Variabel	Coeficin	Std. Error	T-Statistics	Probability
Konstanta	7,670392	2,877520	2,665626	0,0110
Green accounting (X1)	3,528747	1,240369	2,844919	0,0070
Carbon Emissions Disclosure (X2)	-3,083060	0,342625	-8,998346	0,0000
Carbon tax (X3)	-1,946078	0,843700	-2,306599	0,0263
Company size (Z)	-0,247345	0,094555	-2,616053	0,0125
X1 × Z	-0,111708	0,040035	-2,790300	0,0080
LnX2 × Z	0,102293	0,011349	9,013508	0,0000

LnX3 × Z	0,063479	0,027962	2,270187	0,0287
THE	0,024983	0,012272	2,035777	0,0484
LENGTH	0,007439	0,002481	2,998614	0,0046

Source: Data processed using EViews 12, 2026.

R-squared = 0,633874; Adjusted R-squared = 0,551495; F-statistik = 7,694660 (prob. = 0,000002); Observasi = 50.

Regression equations:

$$\text{LnY} = 7.670392 + 3.528747 \cdot \text{X1} - 3.083060 \cdot \text{LnX2} - 1.946078 \cdot \text{LnX3} - 0.247345 \cdot \text{Z} - 0.111708 \cdot (\text{X1} \times \text{Z}) + 0.102293 \cdot (\text{LnX2} \times \text{Z}) + 0.063479 \cdot (\text{LnX3} \times \text{Z}) + 0.024983 \cdot \text{DER} + 0.007439 \cdot \text{ROA} + \varepsilon$$

The three interaction variables were statistically significant: X1×Z at 1% (p = 0.0080), LnX2×Z at 1% (p = 0.0000), and LnX3×Z at 5% (p = 0.0287). Thus, H4, H5, and H6 are statistically supported. The interaction coefficient sign is consistently opposite to the main coefficient sign X1 (in Model 2: $\beta_1 = 3.528747$ opposite $\beta_5 = -0.111708$), X2 ($\beta_2 = -3.083060$ opposite $\beta_6 = 0.102293$), and X3 ($\beta_3 = -1.946078$ opposite $\beta_7 = 0.063479$) — indicating that the larger the size of the company, the weaker the influence of environmental variables on the company's value.

DER and ROA that were previously insignificant in Model 1 became significant in Model 2 (p = 0.0484 and p = 0.0046). The model becomes simultaneously significant (F-statistical probability 0.000002). *Adjusted R-squared* increased from 0.095774 on Model 1 to 0.551495 on Model 2, or proportionally from 9.58% to 55.15%. This nearly six-fold increase is an indicator of the contribution of very strong interaction variables to the model's explainability capabilities.

Hypothesis Testing Summary

Table 6. Summary of Hypothesis Testing Results

Hipotesis	Tested Relationships	Coeficin	Probability	Verdict
H1	<i>Green accounting</i> → Company value	0,042779	0,1193	Not supported
H2	Disclosure of carbon emissions → Company value	0,030327	0,1728	Not supported
H3	Carbon tax → Corporate value	- 0,050897	0,0917	Marginally supported at 10%
H4	<i>Green accounting</i> × the size of the company	- 0,111708	0,0080	Supported at 1%
H5	Disclosure of carbon	0,102293	0,0000	Supported at 1%

emissions × company size				
H6	Carbon tax × company size	0,063479	0,0287	Supported at 5%

Source: Data processed using EViews 12, 2026.

Discussion

The Influence of Green Accounting on Company Value (H1)

The results of Model 1 show that *green accounting* has a positive but insignificant coefficient at the level of 5% ($p = 0.1193$), so H1 is not supported. The magnitude of the environmental costs relative to revenue has not yet been a factor that investors assess in determining the value of *high-profile* companies. Several structural factors can explain: first, the inconsistency of environmental cost classification between firms lowers the comparability of information; second, environmental costs can be perceived as an additional short-term burden when the economic benefits are not yet visible; and third, investors tend to prioritize financial information such as profitability, cash flow, and company risk.

These findings are in line with , , as well as those that did not find significant effects. These results differ from , in the cement sector, and which found a positive relationship. This result does not mean that environmental management is not valuable to the company, but rather that cost reporting alone has not been sufficiently translated by the market into an increase in the value of the company without contextual information about the results, programs, and benefits of its management. (Sapulette & Limba, 2021; Serendipity et al., 2025) (Ramadan & Helliana , 2026), (Istiqomah - StuRat (2026) (Gunawan, 2026) (Fini & Astuti, 2024) (Maulidiyah & Sularto , 2025) (Fernando et al., 2024)

Effect of Carbon Emissions Disclosure on Company Value (H2)

The carbon emission disclosure had a positive coefficient on Model 1 but was not significant ($p = 0.1728$), so H2 was not supported. These findings have not supported signal theory predictions that disclosure of credible environments will reduce information asymmetry. Several factors may explain: investors may still view emissions information as a complement to sustainability reports without integration into discounted cash flow financial valuation models; variations in measurement methods between companies lower comparability; and emissions information without measurable reduction targets will be perceived as an additional risk rather than positive transparency.

These findings are in line with , , , and . The results differ from , , , and those that find a positive influence. (Aeni & Murwaningsari , 2023) (Maulidiyah

& Sularto, 2025) (Syabila & Paramita, 2026) (Matalata et al., 2025) (Gunawan, 2026) (Shirley & São Paulo, 2022) (Hardiyansah et al., 2021) (Houten & Squirt, 2023) (Putri & Agustin, 2023)

Methodologically, the proxy for carbon emissions disclosure in this study is the ratio of total emissions to revenue, which is substantially closer to the intensity of emissions than the breadth or quality of disclosure transparency. The results of the study on H2 and H5 are more accurately read as the company's response to the intensity of reported emissions, rather than to the quality of transparency alone. The difference between the name of the construct and the measurement indicator is a methodological note that needs to be clarified in future research.

The Effect of Carbon Tax on Corporate Value (H3)

The carbon tax has a negative coefficient (-0.050897) and is marginally significant at the level of 10% ($p = 0.0917$), so H3 receives marginal support. The direction of the coefficient is consistent with the framework of signal theory and stakeholder theory. Through simulations, it is shown that higher carbon tax rates significantly increase the input costs of the manufacturing industry, although the impact depends on the efficiency and investment of low-carbon technologies. explained that the material impact occurred at higher tariffs and wider scope, in line with the fact that the implementation of carbon taxes in Indonesia in the study period was still gradual and limited-scale. added that the carbon tax policy is related to business performance and sustainability. Rokhmawati et al. (2024) Princess & Stuttgart (2025) (Manri & Machdar, 2025; Salim & Sidiq, 2022). Since significance is only found at a marginal level of 10%, these findings cannot be considered conclusive and need to be retested in the more mature implementation period of carbon taxes in Indonesia.

The Role of Company Size as a Moderator

Green Accounting Moderation (H4)

The $X1 \times Z$ interaction has a negative coefficient (-0.111708) and is significant at the level of 1% ($p = 0.0080$), so H4 is supported. The direction of the coefficient shows that the positive relationship *between green accounting* and company value is getting weaker as the size of the company increases. This is explained by the theory of legitimacy: large companies are below higher public expectations, so the implementation of *green accounting* becomes part of market expectations and does not add a meaningful positive impression. In small companies, the decision to allocate environmental costs has the character *of exceeding expectation* due to limited resources, so it is more perceived as a strong commitment and has a more real impact

on the company's value. These findings are in line with those showing that the size of a firm changes the strength of the relationship between a company's policies and performance or value. (Bedi & Singh, 2024a; Hutaauruk, 2024)

Moderation of Carbon Emission Disclosure (H5)

The $\text{LnX2} \times \text{Z}$ interaction has a positive and significant coefficient at the level of 1% ($p = 0.0000$), so H5 is supported. The main coefficient of X2 in Model 2 is negative (-3.083060), so the positive interaction coefficient indicates that the negative influence of CDR proxies on the value of the company is weakening as the size of the company increases. Large companies have stronger financial capacity, wider market access, and access to low-carbon transition technologies, so investors don't immediately revise their assessments when reading the emissions intensity of large companies. that the effect of size moderation is not always directional and depends on the type of environmental variable, so these findings show specificity in the context of carbon emission disclosure. Ardelia & Paramita (2026)

Carbon Tax Moderation (H6)

The $\text{LnX3} \times \text{Z}$ interaction had a positive and significant coefficient at the level of 5% ($p = 0.0287$), so H6 was supported. The negative X3 coefficient in Model 2 (-1.946078), so the positive interaction coefficient indicates that the negative effect of carbon taxes on the value of the company is getting weaker as the size of the company increases. Large companies have a greater ability to absorb additional costs, make investments in low-carbon technologies, and diversify portfolios, so that the exposure to carbon costs in large companies does not translate the market into a proportionate decrease in value (Gangodawilage, 2024; Rokhmawati et al., 2024).

Synthesis: The Size of the Company as a Structural Moderator

The three interaction coefficients in Model 2 ($\beta_5 = -0.111708$; $\beta_6 = 0.102293$; $\beta_7 = 0.063479$) were consistently opposite to the three main coefficients ($\beta_1, \beta_2, \beta_3$). This uniform pattern reinforces the interpretation that company size is a contextual variable that structurally changes the way the market processes environmental information in *high-profile* Indonesian companies. The strongest evidence for this interpretation is the change in the model's explainability: the *Adjusted R-squared* increased from 0.095774 in Model 1 to 0.551495 in Model 2, or proportionally from 9.58% to 55.15%. This nearly six-fold increase suggests that variations in firm values are explained more by how firm size changes market response to environmental information, rather than by the direct effects of those variables. The size of the company is not an edge moderator that only adjusts the strength of the relationship,

but rather a structural moderator that fundamentally changes the way environmental information is translated by the market into company value.

Implications

Theoretical implications

This research provides three theoretical contributions. First, re-establishing company size as a structural variable in environmental valuation research in Indonesia research has so far treated size as an edge control variable, while this study shows that company size is the dominant moderator. Second, it advances the understanding of carbon taxes as a distinct signal: while *green accounting* represents *substantive internalization* and disclosure of carbon emissions represents *communicative signaling*, carbon taxes represent *validated regulatory* pricing whose asymmetric translation to market valuation becomes evident through direct differences in significance (10%) to be supported through moderation (5%). Third, integrating all three environmental mechanisms into a single unified model, thus allowing for a separation of which mechanisms are dominant in investor valuations and how they complement each other.

Practical Implications

For companies: Disclosure of environmental costs and carbon emissions needs to be accompanied by substantive information on the program being implemented, reduction targets, achievements, efficiencies, and financial benefits. *High-profile* companies, especially larger ones, should increase the substantive credibility of disclosure rather than simply expand the breadth of its quantity. Smaller companies have the opportunity to *leverage* their relative commitment as a differentiating signal in the market. For investors: Environmental cost and carbon emission information should be read alongside strategy quality, reduction trends, target achievement, and technology transition capacity rather than a single indicator. The size of the company needs to be explicitly considered in assessing environmental information. For regulators and standard-setters: A more uniform set of guidelines for the recognition, measurement and disclosure of environmental costs and carbon emissions will improve the comparability and usefulness of information for markets. Regulatory certainty regarding the scope, tariffs, calculation mechanisms, and stages of implementing carbon taxes is needed so that companies can develop a measurable low-carbon transition strategy and investors can read carbon cost exposures consistently.

CONCLUSION

This study examines the influence of *green accounting*, carbon emission disclosure, and carbon tax on company value with company size as a moderation

variable in 10 *high-profile* companies listed on the Indonesia Stock Exchange during the period 2020–2024 (50 company-year observations). The results showed that *green accounting* ($p = 0.1193$) and carbon emission disclosure ($p = 0.1728$) did not have a significant effect on company value at a significance level of 5%, while carbon tax showed a marginal negative influence at a significance level of 10% ($p = 0.0917$). Conversely, the entire interaction between company size and *green accounting* ($p = 0.0080$), carbon emission disclosure ($p = 0.0000$), and carbon tax ($p = 0.0287$) proved significant, suggesting that company size plays a moderator role in the relationship between these three environmental variables and company value. In addition, the *Adjusted R²* value increased substantially from 9.58% to 55.15% after including the moderation variable, which indicates an improvement in the model's ability to explain the variation in the company's value. The interaction coefficient in the opposite direction to the main coefficient shows that the larger the size of the company, the weaker the influence of environmental variables on the company's value.

These findings make a theoretical contribution by placing firm size not just as a control variable, but as a structural moderator that influences how markets interpret environmental information in the company's valuation process. Practically, the results indicate that the economic benefits of environmental practices are not only determined by the amount of environmental investment, but also by the company's ability to communicate the strategies, targets, achievements, and financial benefits of environmental management to investors. Therefore, companies are advised to improve the quality of environmental reporting more comprehensively, investors need to consider the size of the company when evaluating environmental information, and regulators are expected to develop standards for reporting environmental costs, carbon emissions, and the implementation of carbon taxes that are more uniform and measurable.

This study has several limitations, including the relatively small number of samples that limit the generalization of results, the use of carbon emission disclosure proxies that reflect more of the intensity of emissions than the quality of transparency, and the measurement of carbon taxes that still use carbon cost exposure because the implementation of policies in Indonesia is still progressing gradually. In addition, differences in industrial sector characteristics, potential autocorrelation, the lack of *mean-centering* on interaction variables, and the limitations of control variables also have the potential to affect the results of the study. Therefore, further research is recommended to expand the scope of samples and observation periods, conduct analyses per industrial sector, use a more comprehensive carbon emission disclosure index, apply more robust panel data estimation methods, complement moderation analysis with *simple slope* or *marginal effect*, as well as adding other control variables such as company growth, governance, institutional ownership, environmental performance, and macroeconomic factors to obtain stronger results and have higher generalization power.

REFERENCES

- Abdi, Y., Li, X., & Càmara-Turull, X. (2022). Exploring the impact of sustainability (ESG) disclosure on firm value and financial performance (FP) in airline industry: the moderating role of size and age. *Environment, Development and Sustainability*, 24(4), 5052–5079. <https://doi.org/10.1007/s10668-021-01649-w>
- Aeni, N. A. N. N., & Murwaningsari, E. (2023). Pengaruh pengungkapan emisi karbon dan investasi hijau terhadap nilai perusahaan. *Jurnal Ekonomi Trisakti*, 3(2), 3135–3148. <https://doi.org/10.25105/jet.v3i2.17890>
- Alexander, N. (2023). Green Accounting and Firm Value. *GATR Accounting and Finance Review*, 7.
- Anggita, W., Nugroho, A. A., & Suhaidar. (2022). Carbon Emission Disclosure and Green Accounting Practices on The Firm Value. *Jurnal Akuntansi*, 26(3), 464–481. <https://doi.org/10.24912/ja.v26i3.1052>
- Ardelia, R., & Paramita, V. S. (2026). Leveraging Sustainability: How Firm Size Shapes the Value-Creating Effects of Carbon Emission Disclosure and Environmental Performance on Firm Value. *Summa: Journal of Accounting and Tax*, 4(1), 64–84. <https://doi.org/10.61978/summa.v4i1.1347>
- Banjari, N. R. Al. (2023). Pengaruh Green Accounting Dan Carbon Emission Disclosure terhadap Nilai Perusahaan Melalui Maqashid Syariah. *Jurnal Riset Akuntansi Politala*, 6 No.2, 386–403.
- Bedi, A., & Singh, B. (2024). Exploring the impact of carbon emission disclosure on firm financial performance: moderating role of firm size. *Management Research Review*, 47(11), 1705–1721. <https://doi.org/10.1108/MRR-01-2023-0015>
- Bernini, F., & La Rosa, F. (2024). Research in the greenwashing field: concepts, theories, and potential impacts on economic and social value. *Journal of Management and Governance*, 28(2), 405–444. <https://doi.org/10.1007/s10997-023-09686-5>
- Del Gesso, C., & Lodhi, R. N. (2024). *Theories underlying environmental, social and governance disclosure: A systematic review of accounting studies*. . <https://hdl.handle.net/2434/1022978>
- Dowling, J., & Pfeffer, J. (1975). Organizational Legitimacy: Social Values and Organizational Behavior. In *Source: The Pacific Sociological Review* (Vol. 18, Number 1). <https://www.jstor.org/stable/1388226?seq=1&cid=pdf->
- Fernando, K., Jocelyn, H., Frista, F., & Kurniawan, B. (2024). The Effect of Green Accounting Disclosure on the Firm Value of Listed Mining and Agriculture Companies in Southeast Asia Countries. *International Journal of Energy Economics*

- and Policy*, 14(1), 377–382. <https://doi.org/10.32479/ijeep.15151>
- Fini, S., & Astuti, C. D. (2024a). Pengaruh Green Accounting Terhadap Nilai Perusahaan. *Journal of Economic, Bussines and Accounting (COSTING)*, 7(3), 5751–5766. <https://doi.org/10.31539/costing.v7i3.9130>
- Freeman, R. E., & Phillips, R. A. (2002). *STAKEHOLDER THEORY: A LIBERTARIAN DEFENSE*. <https://about.jstor.org/terms>
- Gangodawilage, D. (2024). Navigating Carbon Pricing: The Economic and Strategic Implications for Industrial Enterprises. *Sinergi International Journal of Accounting and Taxation*, 2(2), 44–57. <https://doi.org/10.61194/ijat.v2i2.489>
- Gray, Rob., Owen, Dave., & Adams, Carol. (1996). *Accounting & accountability: changes and challenges in corporate social and environmental reporting*. Financial Times/Prentice Hall.
- Gunawan, B. (2026). The Effect of Green Accounting, Carbon Emission Disclosure, and Environmental Performance on Company Value. *International Journal of Management and Economics Invention*, 12(01). <https://doi.org/10.47191/ijmei/v12i1.12>
- Hakim, G. S., & Sudibyo, Y. A. (2025). The Effect of Carbon Tax Application and Green Financial Initiatives on The Profitability of Manufacturing Companies on The IDX. *The International Conference on Sustainable Economics Management and Accounting Proceeding*, 1, 1960–1969. <https://doi.org/10.32424/icsema.1.1.227>
- Hardiyansah, M., Agustini, A. T., & Purnamawati, I. (2021). The Effect of Carbon Emission Disclosure on Firm Value: Environmental Performance and Industrial Type. *Journal of Asian Finance, Economics and Business*, 8(1), 123–133. <https://doi.org/10.13106/jafeb.2021.vol8.no1.123>
- Houten, E. S., & Wedari, L. K. (2023). Carbon Disclosure, Carbon Performance, and Market Value: Evidence from Indonesia Polluting Industries. *International Journal of Sustainable Development and Planning*, 18(6), 1973–1981. <https://doi.org/10.18280/ijstdp.180634>
- Hutabarat, F. (2024b). Effect of Green Accounting, Leverage, Firm Size on Firm Value with Profitability as Intervening Variable. *International Journal of Professional Business Review*, 9(4), e04612. <https://doi.org/10.26668/businessreview/2024.v9i4.4612>
- Hutauruk, M. R. (2024). The effect of R&D expenditures on firm value with firm size moderation in an Indonesia palm oil company. *Cogent Business and Management*, 11(1). <https://doi.org/10.1080/23311975.2024.2317448>
- Istiqomah, C., & Winarsih, W. (2026). Pengaruh Green Accounting dan Profitabilitas

- Terhadap Nilai Perusahaan pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia. *Jurnal Akuntansi Indonesia*, 13(2), 129. <https://doi.org/10.30659/jai.13.2.129-146>
- Jauhari, N. A., & Segarawasesa, F. S. (2021). Determinan Pengungkapan Corporate Social Responsibility: Studi Empiris pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia. *Jurnal REKSA: Rekayasa Keuangan, Syariah Dan Audit*, 8(2), 100. <https://doi.org/10.12928/j.reksa.v8i2.4378>
- Kurniati, H. (2017). Pengaruh Board Size, Leverage, dan Kualitas Audit terhadap Nilai Perusahaan. *Jurnal Keuangan Dan Perbankan*, 12(2), 110. <https://doi.org/10.35384/jkp.v12i2.22>
- Manri, E. T., & Machdar, N. M. (2025). Peran Kepemilikan Institusional dalam Memoderasi Pengaruh Kebijakan Pajak Karbon, Sustainability Report. Green Investment terhadap Kinerja Perusahaan yang Terdaftar di Bursa Efek Indonesia (Vol. 01, Number 04).
- Matalata, W. P., Pirmaningsih, L., & Purwitasari, F. (2025). Pengaruh Carbon Emission Disclosure, Ukuran Perusahaan Dan Kinerja Lingkungan Terhadap Nilai Perusahaan Pada Perusahaan Sektor Pertambangan Yang Terdaftar Di Bursa Efek Indonesia Periode 2020-2023. *Jurnal Ilmiah Akuntansi*, 2(4), 96–103. <https://doi.org/10.69714/f0z7w077>
- Maulidiyah, N. A., & Sularto, L. (2025b). The Effect of Green Accounting Implementation, Carbon Emission Disclosure and Environmental Performance on Company Value in Basic and Chemical Industry - Cement Sub-Sector Companies Listed on The IDX In The 2021-2024 Period. *UG Economic Faculty International Conference 2025*, 8(1), 13. <https://doi.org/10.35760/ugefic.v8i1.98>
- Milia, R., & Sari, S. P. (2024). Tinjauan Tentang Firm Size, Environmental Performance, dan Voluntary Disclosure Terhadap Nilai Perusahaan: Studi Kasus Pada Perusahaan IDX-IC Sektor Energi. *Jurnal Akuntansi STIE Muhammadiyah Palopo*, 10(2), 152. <https://doi.org/10.35906/jurakun.v10i2.2048>
- Nianty, D. A., Rachma, N., Susanti, A., & Nurfaulia. (2023). Green Accounting Terhadap Kinerja Keuangan Dengan Environmental Performance Sebagai Variabel Intervening. *Jurnal Manajemen STIE Muhammadiyah Palopo*, 9(2), 205–219.
- Pawitradewi, A. A. I., & Wirakusuma, M. G. (2020). Pengaruh Kinerja Lingkungan, Umur Perusahaan dan Proporsi Dewan Komisaris Independen pada Pengungkapan Informasi Lingkungan. *E-Jurnal Akuntansi*, 30(3), 598.

- <https://doi.org/10.24843/EJA.2020.v30.i03.p04>
- Probohudono, A. N., Sangka, K. B., Kurniawati, E. M., & Putra, A. A. (2024). Carbon Emission and Firms' Value: Moderating Role of Financial Sustainability. *International Journal of Sustainable Development and Planning*, 19(10), 3979–3987. <https://doi.org/10.18280/ijstdp.191026>
- Putri, B. S., & Manurung, E. T. (2025). Dampak Pajak Karbon terhadap Laporan Keuangan dan Strategi Bisnis Perusahaan Manufaktur. *Jurnal Ekonomi, Manajemen Pariwisata Dan Perhotelan*, 5(1), 523–531. <https://doi.org/10.55606/jempper.v5i1.5957>
- Putri, H. D., & Agustin, H. (2023). Apakah Inovasi Hijau Dan Pengungkapan Emisi Karbon Dapat Mempengaruhi Nilai Perusahaan Pada Perusahaan Manufaktur? *Jurnal Akademi Akuntansi*, 6(1), 107–124. <https://doi.org/10.22219/jaa.v6i1.22814>
- Ramadhan, F. K., & Helliana. (2026). Pengaruh Green Accounting dan Tingkat Profitabilitas terhadap Nilai Perusahaan Energi yang Terdaftar di BEI Periode 2022–2024. *Bandung Conference Series: Accountancy*, 6(1), 233–242. <https://doi.org/10.29313/bcsa.v6i1.23305>
- Riyadh, H. A., Al-Shmam, M. A., Huang, H. H., Gunawan, B., & Alfaiza, S. A. (2020). The Analysis of Green Accounting Cost Impact on Corporations Financial Performance. *International Journal of Energy Economics and Policy*, 10(6), 421–426. <https://doi.org/10.32479/ijeep.9238>
- Rokhmawati, A., Sarasi, V., Aulia, A., Berampu, L., & Maulida, Y. (2024). Simulation of Carbon Tax Impact on the Competitiveness of the Manufacturing Industry in Indonesia Using a System Dynamics Approach. *International Journal of Energy Economics and Policy*, 15(1), 90–102. <https://doi.org/10.32479/ijeep.17514>
- Salim, A., & Sidiq, M. (2022). Dampak Pajak Karbon terhadap Kelangsungan Bisnis. *Remittance: Jurnal Akuntansi Keuangan Dan Perbankan*, 3(1), 74–81. <https://doi.org/10.56486/remittance.vol3no1.223>
- Sapulette, S. G., & Limba, F. B. (2021). Pengaruh Penerapan Green Accounting dan Kinerja Lingkungan terhadap Nilai Perusahaan Manufaktur yang terdaftar di BEI tahun 2018-2020. *Kupna Akuntansi: Kumpulan Artikel Akuntansi*, 2(1), 31–43. <https://doi.org/10.30598/kupna.v2.i1.p31-43>
- Sari, K. H. V., & Budiasih, G. A. N. (2022). Carbon Emission Disclosure dan Nilai Perusahaan. *E-Jurnal Akuntansi*, 32(1), 3535–3541.
- Setianingsih, N. A., Asmoro, W. K., Putranti, E., & Andari, A. T. (2025). Pengaruh Profitabilitas, Carbon Emission Disclosure, dan Green Accounting terhadap Nilai Perusahaan. *Gorontalo Accounting Journal*, 8(2), 435–441.

- <https://doi.org/10.32662/gaj.v8i2.4473>
- Spence, M. (1973). Job Market Signaling. *Journal Of Economics*, 87(3), 355–374.
<http://www.jstor.org/stable/1882010>
- Syabila, J. P., & Paramita, V. S. (2026). When Environmental Transparency Meets Profitability: The Impact of Carbon Emission Disclosure and Green Investment on Firm Value in Mining Companies. *Moneta: Journal of Economics and Finance*, 4(1), 72–91. <https://doi.org/10.61978/moneta.v4i1.1310>
- Syamsuddin, F. R., & Mas'ud, M. (2021). Effect of Solvency, Profitability and Liquidity on Company Value (Study of Property and Real Estate Companies Listed on the Indonesia Stock Exchange for the Period 2015-2018). *Jurnal Ilmu Manajemen Profitability*, 5(1), 98–136.
<https://doi.org/10.26618/profitability.v5i1.4859>
- Wenni Anggita, Ari Agung Nugroho, & Suhaidar. (2022). Carbon Emission Disclosure and Green Accounting Practices on The Firm Value. *Jurnal Akuntansi*, 26(3), 464–481. <https://doi.org/10.24912/ja.v26i3.1052>
- Wibawa, D. S., & Khomsiyah, K. (2022). Pengaruh Lingkungan Yang Dimoderasi Oleh Ukuran Perusahaan Terhadap Nilai Perusahaan Pada Pandemi Covid-19. *Owner*, 6(4), 3501–3509. <https://doi.org/10.33395/owner.v6i4.1189>