



## Determinants of Firm Value in the Basic Materials Sector: The Role of Green Accounting, Environmental Costs, Profitability, and Leverage (2022–2024)

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### Article Info

**Keywords:**

- Green Accounting,
- Environmental Costs,
- Profitability,
- Leverage,
- Firm Value

### Article History

Received: 29 – 12 - 2025

Accepted: 03 - 12 - 2025

Published: 30 – 09 – 2025

### Abstract

**Purpose** - This study aims to provide empirical evidence on the effects of Green Accounting, Environmental Costs, Profitability, and Leverage on Firm Value in the Basic Materials Sector.

**Design/methodology/approach** - This study employs a quantitative research design using secondary data from 44 basic materials companies listed on the Indonesia Stock Exchange during the 2022–2024 period, resulting in 132 firm-year observations selected through purposive sampling. Panel data regression analysis is applied using the Fixed Effect Model (FEM), as determined by the Chow and Hausman tests, with data processed using EViews 9.

**Findings** - The results indicate that Green Accounting has a negative but statistically insignificant effect on firm value, while Environmental Costs, Profitability, and Leverage exhibit positive but statistically insignificant effects. These findings suggest that the Indonesian capital market, particularly in the basic materials sector, has not yet fully incorporated sustainability-related disclosures and financial structure indicators into firm valuation. The results imply that investors continue to prioritize short-term financial stability over long-term environmental and sustainability signal.

**Originality/value** - This study contributes to the literature by providing sector-specific empirical evidence from the Indonesian basic materials industry during a period of intensified industrial expansion and sustainability pressure. The findings highlight the current market perception of environmental accountability as a cost burden rather than a value-enhancing signal, offering important insights for managers and policymakers regarding the strategic communication of sustainability practices.



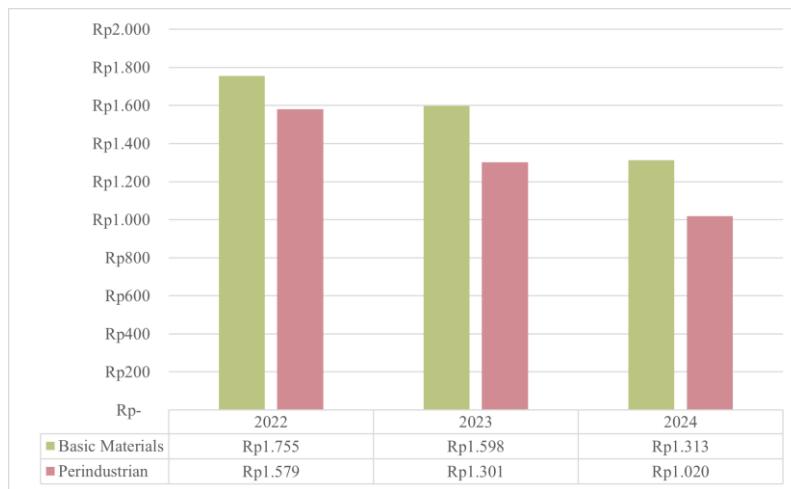
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## INTRODUCTION

The basic materials sector plays a crucial role in supporting industrial growth and infrastructure development in Indonesia because it encompasses cement, steel, metals, chemicals, and building materials, which are the backbone of the national economy.

Government support through infrastructure investment, downstreaming projects, energy transition, and the implementation of Law No. 3 of 2020 concerning Mineral and Coal Mining strengthens the sector's contribution to long-term economic growth and sustainable resource management. However, this sector faces various challenges such as fluctuations in global commodity prices, high energy costs, dependence on raw material imports, and demands for sustainable industrial practices. Therefore, the performance of the basic materials sector is not only measured by profitability, but also by a company's ability to balance efficiency, social responsibility, and environmental concern (Putra et al., 2025).

During the 2022–2024 period, the basic materials sector on the IDX experienced significant fluctuations due to changes in global demand, trade policies, geopolitical tensions, and technological developments. Despite facing these dynamics, the sector remains strategically positioned compared to others because it is the main foundation of economic activity and national industrialization. Unlike the service or technology sectors, which rely on digital innovation, the basic materials sector provides vital raw materials for almost all production and construction activities. Therefore, this sector plays an important role in job creation, strengthening economic resilience, increasing exports, and improving the competitiveness of Indonesian industry (Shafitri, 2025).



**Figure 1. Stock Price Development  
(Basic Materials vs Industrial Sectors in 2022-2024)**

Based on Figure 1, which shows the development of stock prices in the Basic Materials sector versus the Industrial sector from 2022 to 2024, it can be seen that both sectors experienced a year-over-year downward trend in stock prices. In 2022, the Basic Materials sector recorded the highest stock price at Rp1,755, while the Industrial sector was slightly lower at Rp1,579. However, in 2023, the stock prices of both sectors decreased, with Basic Materials dropping to Rp1,598 and Industrials falling to Rp1,301. This decline continued into 2024, with Basic Materials only reaching Rp1,313 and Industrials dropping even further to Rp1,020. The downward trend in stock prices in both sectors reflects market performance pressure and unstable economic conditions over the past three years. Nevertheless, the Basic Materials sector still outperformed the Industrials sector, indicating that companies in this sector are relatively more resilient to economic fluctuations and changes in basic commodity



prices.

Previous empirical studies have shown inconsistent results regarding the effect of green accounting and environmental costs factors on firm value. A number of studies state that the application of green accounting and the allocation of environmental costs can increase firm value through improved company reputation, stakeholder trust, and signals of commitment to long-term sustainability (Anggriani & Syaipudin, 2024; Fauzia, 2023; Mufliah & Pamungkas, 2024; Yuliani & Prijanto, 2022). These findings indicate that companies that integrate environmental aspects into their accounting practices tend to be perceived more positively by investors and the public, thereby increasing firm value.

However, several other studies show different results, where green accounting practices and environmental cost expenditures do not always have a significant effect on firm value, especially when these costs are seen as a burden that can reduce short-term profitability (Butar & Rahmayanti, 2025; Fitria & Lestari, 2025; Gunawan & Berliyanda, 2024; Pasaribu et al., 2023; Y. F. U. Putri et al., 2024; Ramdhani & Prijanto, 2024; Yusman & Syahbannuddin, 2024). These differences in results may be due to industry characteristics, company size, the level of regulatory pressure, and the extent of environmental disclosure. Under certain conditions, investors still tend to place more emphasis on financial performance than on environmental initiatives, so that the influence of environmental variables on firm value becomes relatively weak.

On the other hand, profitability in general has been shown to have a positive relationship with firm value because it reflects the company's ability to generate profits and manage resources efficiently, as found in (Aulia & Avriyanti, 2024; Kusumaningrum & Iswara, 2022; Yusman & Syahbannuddin, 2024). However, findings (Mufliah & Pamungkas, 2024; Utami & Widati, 2022) show that this effect can weaken in unstable economic conditions.

Leverage also shows mixed results, where in study (Aziz & Widati, 2023; Heliani et al., 2023; Kusumaningrum & Iswara, 2022) the use of debt can increase firm value through a leverage effect, but in study (Muhammad & Hakim, 2021; Nopianti et al., 2023) it states that at a certain level it actually increases financial risk and lowers market perception. The differences in these research results indicate that firm value is influenced by the interaction of various financial and non-financial factors. Therefore, a more comprehensive study is needed to understand how green accounting, environmental costs, profitability, and leverage affect firm value, especially in the context of companies facing increasingly complex sustainability demands and market pressures.

This study contributes to the literature by examining firm value determinants during Indonesia's post-pandemic economic transition and the implementation of strengthened environmental and industrial policies, including Law No. 3 of 2020 on Mineral and Coal Mining. The basic materials sector is particularly relevant as it plays a strategic role in downstream industrialization, infrastructure development, and environmental risk exposure. Unlike prior studies, this research highlights that sustainability-related information has not yet been fully incorporated into investor valuation decisions, revealing structural short-termism in the Indonesian capital market.

## LITERATURE REVIEW



## Agency theory

Agency theory explains the conflict of interest between managers (agents) and shareholders (principals). Managers may engage in environmental initiatives and disclosures to enhance corporate legitimacy or reputation, while shareholders remain concerned about potential increases in costs and reductions in short-term returns. In the context of this study, Agency Theory provides a theoretical foundation to explain why sustainability-related expenditures may not be positively valued by investors when the economic benefits are not immediately observable. In this context, according to (Amanda et al., 2025) the practice of green accounting can serve as an environmental information disclosure mechanism that enhances managerial accountability and helps reduce information asymmetry between management and company owners.

## Stakeholder theory

Stakeholder theory emphasizes that companies do not only operate for internal profits, but also have a responsibility to provide benefits to stakeholders. Therefore, the sustainability of a company is greatly influenced by the support of its stakeholders. According to (Yusri, 2020), stakeholder theory explains that every stakeholder has the right to obtain relevant information about company activities that may affect their decisions.

## Signaling theory

Signaling theory explains that corporate management provides signals through financial performance such as profitability and capital structure (leverage) to investors to indicate the company's future prospects. According to (Pratiwi & Hendayana, 2024) positive signals such as high profitability and efficient use of leverage can be perceived by investors as an indication of a healthy and growing company, thereby increasing the company's value in the market. Thus, the relationship between signaling theory, profitability, leverage, and firm value shows that the quality of earnings and the company's financing policies can influence investors' perceptions and assessments of the company's value in the long run.

## Green accounting

Green accounting is an approach in accounting systems that takes into account the impact of economic activities on the environment. This approach not only focuses on recording conventional financial transactions, but also integrates environmental information into the measurement and reporting of an entity's finances (Ompusunggu et al., 2025).

## Environmental costs

Environmental costs are costs incurred due to poor environmental conditions or the possibility of poor environmental quality (Adnyana, 2019). Thus, environmental costs are related to the creation, detection, remediation, and prevention of environmental degradation.

## Profitability

According to (Kusumaningrum & Iswara, 2022), profitability is a reflection of management's performance in managing a company, which shows the company's ability to



earn profits or the effectiveness of management. A company's profitability is its ability to earn and generate profits during a certain period, which is measured in terms of sales, assets, and specific share capital.

### **Leverage**

Leverage is a ratio used to measure the amount of debt or external funds relative to equity (Supiyanto et al., 2023). Leverage shows how much a company relies on external financing compared to its own capital. The higher the leverage, the greater the profit opportunity, but the financial risk also increases.

### **Firm Value**

A company is an entity that collects and manages various resources to provide goods and services for marketing. The value of a company is a condition that has been possessed by an entity as a symbol of public trust in the entity after years of operation, from the time the entity was established until now (Yeni et al., 2024).

### **Hypotheses development**

The implementation of green accounting reflects a company's commitment to meeting the interests of various stakeholders, such as investors, the community, the government, and the environment, through responsibility for the social and environmental impacts of its operational activities. Consistent implementation of green accounting increases the transparency of environmental information while strengthening the company's relationship with key stakeholders. This encourages increased stakeholder trust and support, particularly from investors, which has a positive impact on firm value. In line with this, research by (Mufliah & Pamungkas, 2024), proves that the implementation of green accounting has a positive effect on firm value because it reflects a commitment to environmental sustainability and business continuity.

H<sub>1</sub>: Green Accounting has a positive effect on Firm Value.

Environmental costs are a manifestation of a company's responsibility to its stakeholders, which includes expenditures for waste management, land reclamation, pollution control, and environmental conservation programs. The allocation of environmental costs demonstrates a company's commitment to minimizing the negative impact of its operations on the surrounding environment. Research by (Pasaribu et al., 2023) found that environmental costs have a positive effect on firm value, indicating a direct relationship between the two variables. Environmental costs incurred for activities to prevent and detect environmental damage indirectly improve product quality and drive increased sales, thereby having a positive impact on firm value.

H<sub>2</sub>: Environmental Costs has a positive effect on Firm Value.

High profitability sends a positive signal to investors that the company has good prospects and stable financial conditions, thereby increasing investment interest and firm value. Research by (Yusman & Syahbannuddin, 2024) shows that profitability has a positive effect on firm value because high profits reflect operational efficiency and good management quality. Stable and increasing profits also indicate that the company has a

strong business model and the ability to provide optimal returns to shareholders. Therefore, increasing profitability is an important factor in creating firm value and maintaining long-term value for shareholders.

H<sub>3</sub>: Profitability has a positive effect on Firm Value.

Leverage acts as a disciplinary mechanism that encourages managers to manage company finances more efficiently and responsibly. The level of debt also reflects the company's financial performance, where an optimal capital structure can increase returns for shareholders while maintaining financial stability. Research by (Aziz & Widati, 2023; Kusumaningrum & Iswara, 2022) shows that leverage has a positive effect on firm value because high debt usage is seen as a signal of management's confidence in the company's future prospects. In addition, investors assess companies with well-managed leverage as having greater opportunities for expansion and business development, thereby potentially increasing profits and attracting investment interest.

H<sub>4</sub>: Leverage has a positive effect on Firm Value.

## RESEARCH METHOD

This study aims to determine the possibility of a relationship between the independent variables of Green Accounting, Environmental Costs, Profitability, and Leverage and the dependent variable of Firm Value. The purpose of this study is to test hypotheses that explain the relationship between two or more factors in a given situation. This study will examine various factors in a natural situation with daily activities continuing as usual. The unit of analysis used during the data analysis stage is the organization. The sample design in this study is non-probability sampling using purposive sampling techniques. For the implementation time, panel data is used, which is a combination of cross-section and time series using hypothesis testing data analysis.

### Population

Population is defined as an event, group of individuals, or interesting thing from which researchers want to draw conclusions based on statistical samples. This study uses non-probability sampling with purposive sampling techniques, as explained by Sekaran & Bougie (2013).

### Sample

According to Sekaran (2006), a sample is a part of a population. A sample consists of a number of members selected from the population. In other words, some, but not all, elements of the population will form the sample. The population was determined using purposive sampling techniques, while the criteria for inclusion in the sample for this study were as follows:

1. Companies in the Basic Materials sector listed on the Indonesia Stock Exchange from 2022 to 2024.
2. Companies in the Basic Materials sector that have submitted annual financial reports for 2022-2024 containing data and information that can be used in this study.
3. Companies in the Basic Materials sector that have submitted annual sustainability



reports for 2022-2024 containing data and information that can be used in this study.

- Companies in the Basic Materials sector that reported profits for the years 2022-2024.

Based on the predetermined criteria, 44 companies were included in the sample. This study employs secondary data from companies in the basic materials sector over a three-year period (2022-2024), resulting in a total of 132 firm-year observations. The data were obtained from audited annual and sustainability reports of companies listed on the Indonesia Stock Exchange, accessed through the official IDX website ([www.idx.co.id/id](http://www.idx.co.id/id)) and the respective corporate websites. To support the research framework and variable measurement, relevant literature was reviewed, including prior empirical studies, academic journals, and reference books related to firm value, environmental accounting, and financial performance. This approach ensures the reliability of the data sources and provides a solid theoretical foundation for the analysis.

## Green Accounting

Green accounting is a type of accounting that includes the indirect costs and benefits of economic activities, such as the environmental impact and health consequences of business planning and decisions ((Almunawwaroh et al., 2022). Green accounting in this study was measured using a dummy variable, with the following criteria:

- Value 1: If the company discloses information related to environmental costs, waste recycling, and environmental research and development in its business report.
- Value 0: If the company does not disclose information related to environmental costs, waste recycling, and environmental research and development in its business reports

## Environmental Costs

Environmental costs refer to expenditures incurred as a result of environmental impacts arising from a company's operational activities (Husnatarina, 2024). In this study, environmental costs are measured as the ratio of total environmental expenditure to total assets, as disclosed in the company's annual and sustainability reports, with the following formula:

$$\text{Environmental Cost} = \frac{\text{Environmental Cost}}{\text{Net Profit After Tax}}$$

## Profitability

Profitability is a company's ability to generate profits through a number of policies established by company management (Aulia & Avriyanti, 2024). In this study, profitability is measured using Return on Assets (ROA):

$$\text{ROA} = \frac{\text{Earning After Tax}}{\text{Total Asset}}$$

## Leverage

Leverage is the ability to use borrowed funds or debt to increase the potential return on investment (Mahmudi & Khaerunnisa, 2024). In this study, leverage is measured using

$$\text{DER} = \frac{\text{Total Liabilities}}{\text{Total Equity}}$$

the debt to equity ratio (DER):

## Firm Value

Enterprise value is an important parameter that describes the performance and growth potential of a business entity (Muchlis et al., 2024). In this study, enterprise value is measured using Tobin's Q formula:

$$\text{Tobin's Q} = \frac{\text{Total Market Value} + \text{Total Book Value of Liabilities}}{\text{Total Book Value of Assets}}$$

## RESULTS

### Descriptive Analysis

Descriptive statistical analysis of these research variables aims to explain the characteristics of the independent and dependent variables used. The independent variables in this study include Green Accounting, Environmental Costs, Profitability, and Leverage. Meanwhile, the dependent variable studied is Firm Value.

Table 1. Descriptive Statistics

	GA	BL	PB	LV	NP
Mean	0.871212	0.053356	0.737962	0.075773	1.079348
Median	1.000000	0.011000	0.447500	0.058000	0.895000
Maximum	1.000000	1.087000	12.87700	0.648000	4.081000
Minimum	0.000000	0.000000	0.042000	0.003000	0.335000
Std. Dev.	0.336241	0.150578	1.296358	0.078249	0.645940
Skewness	-2.216423	5.269418	6.953253	3.692559	2.022184
Kurtosis	5.912532	32.05896	61.37196	24.15820	7.607064
Jarque-Bera	154.7313	5255.195	19803.72	2762.151	206.7007
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	115.0000	7.043000	97.41100	10.00200	142.4740
Sum Sq. Dev.	14.81061	2.970260	220.1512	0.802093	54.65823
Observations	132	132	132	132	132

GA = Green Accounting, BL = Environmental Costs, PB = Profitability, LV = Leverage, NP = Firm value

The table above shows that there were 132 observations (balanced) during the research period of 2022–2024. Based on the descriptive statistics table, the descriptive statistics explanation of the above data is as follows:

1. The green accounting variable in basic materials sector companies has a value range from a minimum of 0.000 to a maximum of 1.000, with an average value of 0.871 and a standard deviation of 0.336. This average indicates that most companies have disclosed around 87.1% of the assessed green accounting elements. There are companies that do not disclose anything at all, while others show a full level of disclosure. The variation in the figures is moderate, indicating that there are clear differences in disclosure practices between companies.



2. The environmental cost variable, the value range is from a minimum of 0.000 to a maximum of 1.087, with an average value of 0.053 and a standard deviation of 0.150. The very small average value indicates that most companies only incur relatively low environmental costs. The value of 0 indicates that some companies do not allocate any environmental costs at all. Surya Esa Perkasa tbk. Recorded the highest disclosure level of 1.087.
3. The profitability variable has a range of values from a low of 0.042 to a high of 12.877, with an average value of 0.737 and a standard deviation of 1.296. This average indicates that the level of profitability of companies is generally in the low to moderate range. The large maximum range shows that there are companies with very high profitability compared to other companies. The large standard deviation indicates wide variations in profitability between companies. The highest profitability value was found in Ancora Indonesia Resources Tbk, while the lowest profitability value was found in Cita Mineral Investindo Tbk.
4. The leverage variable in basic materials sector companies has a lowest value range of 0.003 and a highest value range of 0.648, with an average of 0.075 and a standard deviation of 0.078. The low average value indicates that most companies have a low level of dependence on debt. The difference in leverage values between companies is moderate, as seen from the standard deviation that is almost equal to the average value. The lowest leverage value was found in Barito Pasific Tbk, while the highest leverage value was found in Betonjaya Manunggal Tbk.
5. The firm value variable in the basic materials sector companies has a lowest value range of 0.335 and a highest value range of 4.081, with an average of 1.079 and a standard deviation of 0.645. This average indicates that firm values are generally in the low to moderate range. The considerable variation reflects a significant gap in firm value between companies. The highest firm value variable was found in Panca Budi Idaman Tbk, while the lowest firm value was found in Intanwijaya Internasional Tbk.

**Table 2. Uji Chow**

Effects Test	Statistic	d.f.	Prob.
Cross-section F	6.126703	(43,84)	0.0000
Cross-section Chi-square	187.413451	43	0.0000

Based on the Chow Test results using Eviews 9, the Cross Section F probability value is 0.00. This result shows that the value is less than the significance level ( $\alpha = 0.05$ ). Thus, the best model to use is the Fixed Effect Model (FEM). Therefore, a Hausman Test is needed to select the best model between the Fixed Effect Model and the Random Effect Model.

**Table 3. Hausman Test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	12.434205	4	0.0144

Based on the Hausman test results, the probability value is 0.0144. This result is smaller



than the significance level ( $\alpha = 0.05$ ). Thus, the best model to use is the Fixed Effect Model (FEM).

## Coefficient of Determination

**Table 4. Testing the Coefficient of Determination**

R-squared	0.779191	Mean dependent var	1.079348
Adjusted R-squared	0.655644	S.D. dependent var	0.645940
S.E. of regression	0.379050	Akaike info criterion	1.172989
Sum squared resid	12.06901	Schwarz criterion	2.221280
Log likelihood	-29.41725	Hannan-Quinn criter.	1.598966
F-statistic	6.306808	Durbin-Watson stat	1.990005
Prob(F-statistic)	0.000000		

Based on Table 4, the Adjusted R-Square value of 0.655644 indicates that 65.56% of the variation in the variables of Green Accounting, Environmental Costs, Profitability, and Leverage. Meanwhile, the remaining 34.44% is influenced by other factors not included in this model, such as Carbon Emission, Environmental Performance, Financial Performance, Corporate Social Responsibility, Return on Assets, Firm Size, Managerial, Liquidity, Firm Age, and Company Growth. Although the coefficient of determination ( $R^2$ ) is relatively high at 77.9%, none of the independent variables are individually significant based on the t-test results. This condition may indicate the presence of multicollinearity among the explanatory variables, which can inflate  $R^2$  while weakening partial statistical significance. High correlations between financial and sustainability-related variables may reduce the precision of individual coefficient estimates, causing statistically insignificant results despite strong overall explanatory power.

Hypothesis testing conducted using the Eviews 9 application produced the following partial test results (t-test) in this study:

**Table 5. Partial Test**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.284913	0.244571	5.253742	0.0000
GA	-0.274106	0.268086	-1.022456	0.3095
BL	0.284927	0.369504	0.771107	0.4428
PB	0.020022	0.042791	0.467887	0.6411
LV	0.043061	0.599260	0.071856	0.9429

## DISCUSSIONS

### The Influence of Green Accounting on Firm Value

The first hypothesis proposed in this study states that green accounting has a positive effect on firm value. However, the regression results show a negative coefficient of -0.274106, indicating that green accounting tends to reduce firm value, contrary to the initial hypothesis. Furthermore, the t-test results indicate that the Green Accounting variable is



statistically insignificant, with a t-count value of  $-1.022456 < t\text{-table } 1.65694$  ( $\alpha = 0.05$ ) and a one-tailed probability value of 0.1547, which exceeds the 5% significance level. Statistically, this result leads to the acceptance of  $H_0$  and the rejection of  $H_a$ , indicating that green accounting does not have a significant effect on firm value in the basic materials sector during the 2022–2024 period. Although the effect is statistically insignificant, the negative coefficient of Green Accounting suggests that environmental disclosures in Indonesia are still perceived by investors as an additional cost rather than a value-enhancing signal. This negative direction suggests that environmental disclosures in Indonesia are still perceived by investors as an additional cost rather than a value-enhancing signal. Since environmental reporting remains largely voluntary, investors – particularly in the basic materials sector – tend to prioritize short-term profitability and cash dividends over long-term sustainability initiatives. As a result, expenditures related to green accounting are often interpreted as reducing distributable earnings rather than strengthening future firm value. This finding reflects the current characteristics of the Indonesian capital market, where sustainability information has not yet been fully internalized into valuation decisions. The negative direction suggests that investors may perceive green accounting practices not as value-enhancing activities, but rather as additional costs that potentially reduce current earnings. This perception is particularly relevant in Indonesia, where environmental disclosure remains largely voluntary and is not yet fully standardized or enforced. As a result, sustainability disclosures are often interpreted as discretionary expenditures rather than strategic investments that generate measurable economic benefits. In the context of the Indonesian stock exchange, many investors – especially in capital-intensive sectors such as basic materials – tend to prioritize immediate cash flows and dividend distributions over long-term sustainability considerations. Environmental expenditures disclosed under green accounting practices may be viewed as reducing distributable profits, thereby lowering dividend potential. Consequently, instead of signaling long-term competitiveness or operational resilience, green accounting may trigger concerns regarding lower short-term returns, leading to a negative or neutral market response. This finding does not imply that environmental issues are irrelevant, but rather highlights a credibility and valuation gap between sustainability disclosure and investor expectations. When environmental information is not clearly linked to cost efficiency, risk mitigation, or future cash flow generation, investors may discount its relevance in firm valuation. From the perspective of agency theory, this finding indicates a misalignment between managerial objectives and shareholder expectations, where managers may engage in environmental initiatives for legitimacy or reputational purposes, while investors remain cautious due to concerns about increased operational costs. Consistent with prior studies, the results suggest that green accounting has not yet been translated into economic value that is directly reflected in market valuation. Therefore, the insignificance – and negative direction – of Green Accounting reflects a structural limitation of the Indonesian capital market, where sustainability information is not yet fully trusted or strategically assessed by investors. The results of this study are consistent with prior empirical evidence (Gunawan & Berliyanda, 2024; Yusman & Syahbannuddin, 2024), which indicates that green accounting has not yet been translated into economic value that is directly reflected in market valuation. Moreover, (Anggriani & Syaipudin, 2024) argue that high environmental expenditures may be



perceived as a financial burden in markets where the long-term benefits of sustainability practices are not fully internalized. Therefore, the negative but insignificant impact found in this study reflects a structural characteristic of the Indonesian capital market, where sustainability disclosures are still viewed with skepticism and assessed primarily through a short-term financial lens (Z. V. Putri & Wardhani, 2025). Overall, this study demonstrates that the insignificance—and negative direction—of green accounting is itself a critical finding. It reveals that investors in the basic materials sector continue to prioritize short-term financial performance and dividend prospects over long-term environmental signals. Accordingly, corporate managers must ensure that green accounting disclosures are not merely symbolic or compliance-driven, but are strategically communicated, transparent, and explicitly linked to financial performance and future cash flow generation, so that they can be perceived as value-enhancing rather than as a reduction in profitability.

## The Influence of Environmental Costs on Firm Value

The second hypothesis proposed in this study states that environmental costs have a positive effect on firm value. The regression results show a coefficient of 0.284927, indicating a positive relationship consistent with the initial hypothesis, meaning that an increase in environmental cost expenditure theoretically has the potential to increase firm value. However, the t-test result produces a t-statistic of 0.771107, which is lower than the critical t-value of 1.65694 ( $\alpha = 0.05$ ), and the one-tailed probability value of 0.2214 exceeds the significance level of 0.05, indicating that the effect is not statistically significant. Therefore,  $H_0$  is accepted and  $H_a$  is rejected. Although statistically insignificant, this finding is substantively important and provides meaningful insight into investor behavior in the Indonesian capital market, particularly in the basic materials sector. The empirical findings show that environmental costs do not significantly affect firm value during the research period. This result indicates that investors may perceive environmental expenditures primarily as operational costs that reduce short-term profitability, rather than as strategic investments that generate future economic benefits. As a consequence, environmental costs fail to function as a positive signal in market valuation. The significance of this finding lies in its implication that environmental spending alone is insufficient to influence firm value unless it is accompanied by clear evidence of financial returns or efficiency gains. If environmental costs are not transparently associated with risk mitigation, productivity improvement, or regulatory advantages, they may be interpreted as a reduction in net income rather than a source of long-term value. This highlights the importance for corporate managers to communicate the strategic purpose and economic outcomes of environmental investments more effectively to the capital market. This condition aligns with stakeholder theory Freeman (1984), which emphasizes that firms are responsible not only to shareholders but also to broader stakeholder groups; however, legitimacy and trust from stakeholders can only be achieved when environmental initiatives are credibly communicated and integrated into corporate strategy. Consistent with prior studies (Butar & Rahmayanti, 2025; Y. F. U. Putri et al., 2024) environmental costs reflect a company's commitment to sustainability and responsible business practices. Nevertheless, this study reveals that such commitments have not yet been fully rewarded by the market. Thus, the significance of this research lies not in the rejection of the hypothesis per se, but in its contribution to understanding the gap between sustainability practices and investor



valuation in Indonesia's basic materials sector, highlighting the need for more effective signaling of environmental investments to support long-term firm value creation.

### The Influence of Profitability on Firm Value

The third hypothesis of this study posits that profitability has a positive effect on firm value. The regression results show a positive coefficient of 0.020022, indicating that the direction of the relationship is consistent with the proposed hypothesis, suggesting that higher profitability theoretically leads to higher firm value. However, the t-test result reveals that the calculated t-value of 0.467887 is lower than the critical t-value of 1.65694 at a 5 percent significance level, indicating that the effect is statistically insignificant. Using a one-tailed test, the adjusted probability value of 0.3205 remains far above the significance threshold, leading to the acceptance of  $H_0$  and the rejection of  $H_a$ , which implies that profitability does not significantly affect firm value during the research period. Importantly, this statistically insignificant result should not be interpreted as an absence of meaning, but rather as a reflection of investor behavior in the Indonesian capital market, particularly in the basic materials sector. In contrast to environmental variables, profitability demonstrates a stronger and more consistent relationship with firm value. This result confirms that profitability remains the primary financial signal used by investors to assess firm performance and future prospects in the basic materials sector. High profitability signals operational efficiency, effective resource utilization, and the firm's ability to generate sustainable returns. The dominance of profitability in influencing firm value indicates that financial performance continues to outweigh non-financial disclosures in investor decision-making. This finding reinforces traditional finance theory, which posits that earnings-based indicators are central to valuation. Consequently, profitability serves as a benchmark through which investors interpret other corporate signals, including environmental initiatives, making it a crucial variable in strengthening firm value. In line with signaling theory, profitability should function as a positive signal of managerial quality and operational efficiency. However, the findings of this study suggest that such signals are not yet fully effective unless they are supported by transparent, strategic, and credible disclosures – particularly regarding environmental management. For corporate managers, this result highlights that profitability must be communicated alongside long-term sustainability strategies to gain investor trust, rather than being perceived merely as short-term profit that could be eroded by environmental and regulatory risks. This interpretation aligns with prior studies (Aulia & Avriyanti, 2024; Kusumaningrum & Iswara, 2022), which emphasize that profitability contributes to firm value only when investors perceive it as sustainable and supported by sound governance and long-term strategic orientation.

### The Influence of Leverage on Firm Value

The fourth hypothesis in this study states that leverage has a positive effect on firm value. The regression analysis results show a coefficient value of 0.043061, which means the direction of the influence is positive and consistent with the initial hypothesis. This suggests that theoretically, increased leverage can signal to investors the company's funding strategy for expansion or productive activities, potentially increasing the company's value. However, the t-test results showed that the calculated t-value of 0.071556 is less than the critical t-value of 1.65694 ( $\alpha = 0.05$ ), indicating that the effect is not statistically significant. Because this

study uses a one-tailed hypothesis, the probability value is divided by two, resulting in  $0.9429/2 = 0.4714$ , which is much larger than the significance level of 0.05. Therefore, statistically, the leverage variable is not proven to influence firm value. Based on these results, it can be concluded that there is insufficient empirical evidence to state that Leverage affects Firm Value, therefore  $H_0$  is accepted and  $H_a$  is rejected. The regression results indicate that leverage has a positive but statistically insignificant effect on firm value. Although leverage theoretically functions as a signal of growth strategy and management confidence, investors in the basic materials sector do not appear to interpret debt usage as a value-enhancing mechanism. Instead, leverage is more likely perceived as a source of financial risk, particularly in capital-intensive industries. The significance of this insignificant result lies in its indication that the Indonesian capital market, especially in the raw materials sector, remains myopic and short-term oriented. Investors tend to prioritize immediate financial stability over long-term strategic financing decisions, limiting the signaling effectiveness of leverage. This finding is highly relevant given Indonesia's emphasis on downstream industrialization and infrastructure development, which require long-term financing. Therefore, leverage will only contribute to firm value if supported by transparent communication, disciplined debt management, and credible long-term growth strategies. From the perspective of signaling theory, the use of debt is intended to signal management's confidence in future cash flows and its ability to meet financial obligations. In theory, controlled and well-managed leverage should enhance investor confidence and contribute positively to firm value. Nevertheless, the findings of this study indicate that such signals are not yet effectively recognized by investors in the basic materials sector. This suggests that the credibility of leverage as a signal depends not only on the level of debt itself, but also on how transparently and strategically it is communicated to the market. Therefore, the findings carry important managerial implications. Corporate managers should recognize that increasing leverage alone is insufficient to enhance firm value if investors perceive it merely as a risk factor. Instead, leverage must be accompanied by clear strategic communication, strong governance, and transparent disclosure regarding the purpose and expected returns of debt-financed activities. Without these supporting elements, leverage may fail to build investor trust and may even weaken market perception. Overall, the insignificant effect of leverage on firm value does not indicate that leverage is irrelevant, but rather highlights the limitations of market interpretation in the current investment environment. This study contributes to the literature by demonstrating that in the Indonesian basic materials sector, leverage has not yet evolved into an effective long-term signal for value creation. These findings are consistent with prior empirical studies (Heliani et al., 2023; Kusumaningrum & Iswara, 2022), which emphasize that leverage can enhance firm value only when it is managed efficiently and perceived by investors as part of a credible long-term growth strategy.

## CONCLUSIONS

Based on the analysis and discussion results explained in the previous chapter, the conclusions of this study are as follows:

1. Green Accounting has a negative and insignificant effect on firm value in basic materials sector companies listed on the Indonesia Stock Exchange during the 2022–2024 period.



This finding indicates that the integration of environmental aspects into accounting is still perceived as a short-term cost burden by investors, thus failing to contribute optimally to increasing firm value.

2. Environmental costs have a positive but not significant effect on firm value for basic materials sector companies listed on the Indonesia Stock Exchange from 2022–2024. This indicates that increasing environmental cost allocation can strengthen investor reputation and trust in the company's sustainability, although the impact on firm value has not been fully and optimally reflected in the market.
3. Profitability has a positive but not significant effect on firm value for basic materials sector companies listed on the Indonesia Stock Exchange during the 2022–2024 period. This indicates that although the level of profitability reflects the company's ability to manage operations, maintain financial health, and reduce investor risk perception, this factor is not strong enough to significantly increase firm value in the short term.
4. Leverage has a positive but not significant effect on firm value in the basic materials sector on the Indonesia Stock Exchange during the period 2022–2024. This indicates that the use of debt tends to increase firm value, but the effect is not yet statistically strong enough.

## Suggestions and Limitations

Future research is recommended to incorporate environmental performance indicators, such as the PROPER rating, and corporate governance variables to improve the robustness of sustainability–firm value analysis. The inclusion of governance mechanisms may help explain how institutional quality moderates the market's response to sustainability practices. Future studies may also employ alternative measurement proxies for firm value and independent variables to enhance result consistency. This study is limited by the availability and completeness of financial, annual, and sustainability reports in the basic materials sector during the 2022–2024 period, which restricted the sample size. In addition, limited quantitative disclosure of green accounting and environmental cost data required interpretative adjustments that may affect measurement accuracy. Expanding future research to other sectors, such as information technology and tourism, is expected to enrich generalizability and research novelty.

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