



## The effect of profitability, carbon emissions disclosure, sustainability reporting, and green accounting on the firm value of Indonesia energy companies

Moh Frisal Al Gamar, Astrini Aning Widoretno\*

Universitas Pembangunan Nasional "Veteran" Jawa Timur, Indonesia

### Autors' email:

frisalgamar@gmail.com

astrini.widoretno.ak@upnjatim.ac.id\*

\*)Corresponding Author

### Article Info

*Article history:*

*Received:* 2024-05-26

*Accepted:* 2024-07-22

*Published:* 2024-07-31

Keywords: Carbon Emissions, Firm Value, Sustainability Disclosure

### Abstract

This study examines the effects of profitability, carbon emissions disclosure, sustainability reporting, and green accounting on the firm value of energy sector businesses listed on the Indonesian Stock Exchange (IDX). We employed linear regression analysis with panel data from 16 different companies. These samples were selected using a purposive sampling approach, and 80 were evaluated. The findings indicate that the disclosure of sustainability reports and green accounting notably impact firm value. However, disclosure of carbon emissions does not affect firm value. Firm value is significantly determined by profitability. The study's findings emphasize the importance of openness and social accountability through sustainability reports and green accounting, offering valuable stakeholder insights.

### Abstrak

Penelitian ini menelaah pengaruh pengungkapan emisi karbon, pengungkapan laporan keberlanjutan, akuntansi hijau, dan profitabilitas terhadap nilai perusahaan untuk bisnis sektor energi yang terdaftar antara tahun 2020 dan 2023 di Bursa Efek Indonesia (BEI). Penelitian ini menggunakan metode regresi data panel. Sampel terdiri dari 16 perusahaan yang dipilih melalui pendekatan purposive sampling, dengan total 80 sampel. Hasil penelitian menunjukkan bahwa pengungkapan laporan keberlanjutan dan green accounting berdampak signifikan kepada nilai perusahaan, akan tetapi pengungkapan emisi karbon tidak berdampak yang sama. Nilai perusahaan secara signifikan dipengaruhi oleh profitabilitas. Temuan penelitian ini menunjukkan pentingnya keterbukaan dan tanggung jawab sosial melalui laporan keberlanjutan dan green accounting, yang menawarkan informasi penting bagi stakeholder.

### How to cite item (APA Style) :

Gamar, M.F.A., & Widoretno, A.A. (2024). The effect of profitability, carbon emissions disclosure, sustainability reporting, and green accounting on the firm value of Indonesia energy companies. *Keberlanjutan: Jurnal Manajemen dan Jurnal Akuntansi*, 9(1), 1-14  
doi: <http://dx.doi.org/10.32493/keberlanjutan.v9i1.y2024.p1-12>

## Introduction

Globally, climate change remains a prominent and much-debated problem (Alfayerds and Setiawan, 2021). The Conference of the Parties (COP), occasionally called the United Nations Climate Change Conference, is a forum for discussion on climate change hosted by the United Nations (UN). The COP occurred in Berlin in 1995 and will persist until COP28 in Dubai in 2023 (UN Climate Change, 2023a). The COP is responsible for overseeing the execution of the agreement by participating nations and evaluating and determining the regulations necessary for the effective functioning of the treaty (UN Climate Change, 2023a). As many as 196 countries approved the Paris Agreement during the 2015 United Nations Climate Change Conference (COP21) in Paris, which aims to prevent global temperatures from exceeding two °C and endeavor to restrict the rise to 1.5°C. The goal of keeping global warming to 1.5°C by the end of the century is currently highly prioritized by world leaders (UN Climate Change, 2023b).

In 2023, according to Climate Action Tracker, Indonesia's climate policies and commitments were downgraded from "highly insufficient" to "critically deficient." The decrease can be attributed to a 28% rise in emissions in 2022 (Gütschow and Pflüger, 2023) and the inclusion of emissions from off-grid coal-fired power plants in the energy sector (Climate Action Tracker, 2023). Indonesia's climate policy is inconsistent regarding the 1.5°C maximum agreed upon in the Paris Agreement. Additionally, greenhouse gas (GHG) emissions are expected to keep increasing, leading to a temperature rise of over four °C, as the Climate Action Tracker forecasted in 2023.

The energy sector is the dominant sector that produces CO<sub>2</sub>, among other sectors. CO<sub>2</sub> emissions from the world's energy sector amounted to 33.75gt, contributing 92.64% of total CO<sub>2</sub> emissions (Liu and Zhang, 2022). In addition, the Intergovernmental Panel on Climate Change (IPCC) reported that the level of greenhouse gas emissions since the mid-20th century caused global warming to reach 1.5°C above pre-industrial levels between 2030-2050 (Altunbas et al., 2022). These conditions will significantly impact the agriculture, fisheries, energy, tourism, and construction sectors and have direct consequences for the economy nationally and internationally if not addressed immediately.

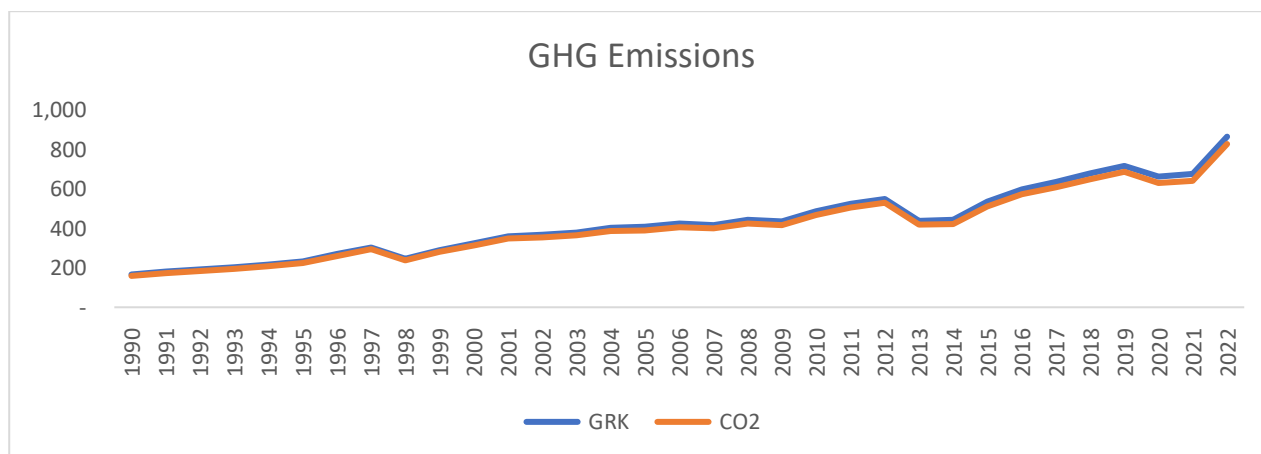


Figure 1: GHG Emission 1990 – 2022  
Sources: Gütschow and Pflüger (2023)

According to the graph above, Indonesia's greenhouse gas emissions have increased over the past thirty years and peaked in 2022 at 865 MtCO<sub>2</sub>e/year (Megaton Carbon Dioxide Equivalent, a unit of measurement for greenhouse gas emissions). According to the data provided by Gütschow and Pflüger (2023), Indonesia experienced a significant growth of 420% in its greenhouse gas (GHG) emissions between 1990 and 2022. Carbon dioxide (CO<sub>2</sub>) gas is GHG emissions' primary and most important cause. This assertion is substantiated by empirical

evidence provided by Gütschow and Pflüger (2023), indicating that CO<sub>2</sub> gas makes up 95% of the overall GHG emissions, while the remaining emissions are attributed to other gases.

Maharani (2021) states that most factors contributing to climate change are the GHG emissions produced by company operations. According to Climate Transparency (2022), the energy sector is the primary source of CO<sub>2</sub> gas emissions. The Climate Transparency Report 2022 data validates that the sector is responsible for 43% of CO<sub>2</sub> emissions, significantly contributing to GHG emissions. Centre for research on energy and clean air (CREA) mentioned that steam power plants are responsible for the highest number of deaths, causing 1,470 yearly fatalities.

The Indonesian government issued Presidential Regulation (PERPRES) Number 98 of 2021 in response to the climate change phenomena. This rule mandates the Nationally Determined Contribution (NDC) as a domestic pledge to decrease GHG emissions by 29% to 41% by the year 2030, relative to the baseline emissions of 2,869 million tons of CO<sub>2</sub>e (PERPRES Number 98 of 2021). One of the objectives outlined in PERPRES Number 98 of 2021 is to develop and enforce policies, measures, and actions that support the government's pledge to reduce greenhouse gas emissions. The target is to reduce emissions by 29% through domestic efforts and up to 41% with international assistance by 2030. This reduction is in comparison to the GHG Emissions Baseline of 2,869 million tons of carbon dioxide equivalent (CO<sub>2</sub>e).

Furthermore, Indonesia's Financial Services Authority (OJK) has issued Financial Services Authority Regulation (POJK) 51 of 2017 about sustainable finance. This regulation mandates publicly listed firms to provide sustainability reports, which were previously optional. This study encompasses economic, social, and environmental factors to promote sustainable growth that aligns with the objectives of the economy, society, and the environment (ojk.co.id). Multiple phenomena and events compel different entities, such as society, government, and stakeholders, to require firms to report their carbon emissions (Trimuliani and Febrianto, 2023).

As shown by its market value or the value of its shares, firm value is a significant factor in attracting investment (Dewi and Narayana, 2020; Rizki et al., 2019). An increase in share value signifies a corresponding rise in the firm's worth, indicating the company's overall state (Sari and Budiasih, 2022). Disclosing sustainability reports can enhance a company's value (Pujiningsih, 2020). Companies with a sustainability report represent their endeavors in implementing sustainable practices. Sustainability reports disclose the firm's obligations in terms of social (people), economic (profit), and environmental (planet) concerns (Rizki et al., 2019). Companies that release sustainability reports might be seen as aligning with the government's dedication to decreasing GHG emissions.

Sustainability reports provide stakeholders with detailed information about the company's regular operations, including its economic, environmental, social, and governance performance (Farhana and Adelina, 2019). Companies that release sustainability reports demonstrate a definitive effort to manage social and environmental concerns (Kurniawan et al., 2018). Multiple studies indicate that sustainability reports have an advantageous consequence on the firm value (Damayanthi, 2019; Dewi and Narayana, 2020; Farhana and Adelina, 2019; Kurniawan et al., 2018; Pujiningsih, 2020). The study's findings indicate that sustainability reports appeal to stakeholders, especially investors, by focusing on economic, social, and environmental factors. Contrarily, a study conducted by Rizki et al. (2019) found no relationship between sustainability report disclosure and business value because of the supplementary expenses associated with producing sustainability reports and disclosures, which are currently optional.

According to a study conducted by Noor and Ginting in 2022, an essential component is details on the company's carbon footprint and its commitment to fulfilling its social and environmental obligations, which can enhance the value of a firm. Companies can cultivate a

favorable perception among stakeholders by openly revealing their carbon emissions (Sari and Budiasih, 2022). Trimuliani and Febrianto (2023) highlighted the importance of carbon emissions transparency as a sign of effective business management and its potential to enhance firm value. Firm value is influenced by green accounting, which involves incorporating the expenses associated with environmental preservation, sometimes known as environmental costs, into a company's financial records (Dewi and Narayana, 2020). Green accounting incurs additional expenses from financial and non-financial aspects, which are necessary to cover the expenditures associated with company activities that affect the environment (Erlangga et al., 2021). Green accounting encompasses the expenses of preventing and addressing the environmental and community consequences of a company's operations and production activities (Rahmadhani et al., 2021).

Companies strive to enhance their profits without regard for the environmental degradation they cause (Rizki et al., 2019). Profitability is essential to assessing a business's financial success and can significantly influence its firm value. The enhanced financial statements demonstrate a boost in corporate performance and an expansion in shareholder wealth (Rivandi and Septiano, 2021). For a firm to be viable, profitability is a crucial indicator (Ramdhonah et al., 2019). One of the essential ratios in profitability is Return on Equity (ROE). ROE quantifies a company's capacity to produce profits and distribute dividends to its shareholders (Sari and Sanjaya, 2019).

## Literature Review

We employ signaling theory to predict the effect of profitability, carbon emissions disclosure, sustainability reporting disclosure, and green accounting on firm value. Ross (1977) established the initial version of the signaling theory. According to Ross's signaling theory, an executive must educate potential investors about the firm's solid standing to pique their interest in purchasing company stock (Ross, 1977). According to Wolk et al. (2000), signaling theory posits that firms can enhance their value by mitigating information asymmetry. This involves supplying dependable information to external parties, reducing uncertainty regarding the company's future. According to Zuhrufiyah and Anggraeni (2019), company data can also be utilized as a signal to assess how well different organizations are performing concerning one another.

As defined by Indrarini (2019), firm value refers to an investor's perception of the effectiveness of management in utilizing corporate resources. The significance of this value is in its ability to offer investors insights when assessing a firm's performance (Zuhrufiyah and Anggraeni, 2019). The stock market value reflects the value of a firm, and growth in this value helps the stakeholders, especially shareholders (Anggita et al., 2022). The better the firm value, the more prosperous the firm (Rivandi and Septiano, 2021).

According to Indrarini (2019), a company's worth can be assessed by examining its valuation or market ratios. The valuation ratio is a comprehensive metric to assess a company's value. The valuation ratio known as Tobin's Q is frequently employed to assess the value of a business (Indrarini, 2019). Chung and Pruitt (1994) state that A metric used to compare the market worth of a business with the expense of replacing its assets is called Tobin's Q ratio. Clarifying the organization's financial dynamics requires an understanding of this ratio. Tobin's Q reflects the market's assessment of whether more investment is worthwhile (Rizki et al., 2019).

According to Fuadah et al. (2018), sustainability reports are crucial for communicating a company's economic, environmental, social, and governance performance. These reports provide a comprehensive overview of the different positive and negative consequences that the company faces in these areas. Sustainability reports are categorized as non-financial reports distinct from financial reports (Gray and Bebbington, 2001). Sutopo et al. (2018) define



sustainability reporting as how organizations disclose information about their operational operations' economic, environmental, and social effects. Sustainability reporting is a modern approach to disclosing information that emphasizes creating future value through business strategies (Buallay, 2019).

On the other hand, carbon emission disclosure refers to the release of quantitative and qualitative data regarding the amount of carbon emissions released and its projected future emissions (Zuhrufiyah and Anggraeni, 2019). The public disclosure of carbon emissions reveals the company's extent of accountability for environmental changes, including its influence on climate change. (Bahriansyah and Ginting, 2022). This disclosure serves as a means for the company to demonstrate transparency to its stakeholders (Noor and Ginting, 2022).

The company's carbon emissions disclosure can be found in the annual or sustainability reports (Alfayerds and Setiawan, 2021). Accurate data on carbon emissions within a corporation is crucial as it is required by stakeholders (Anggita et al., 2022). The individuals intend to comprehend the potential ecological hazards that may emerge from the company's operation. Additionally, They are interested in acquiring information regarding the specific measures implemented by the company regarding sustainable development and environmental conservation endeavors (Sudiby, 2018).

Furthermore, according to Lako (2018), green accounting is a comprehensive process involving identifying, measuring, documenting, summarizing, reporting, and disclosing the monetary value of financial, environmental, and social objects, transactions, or events. Bell and Lehman (1999) define green accounting as incorporating environmental factors into the accounting process. Bell and Lehman (1999) state that green accounting encompasses providing information to stakeholders regarding a company's environmental performance. This field is regarded as a burgeoning area of interest in accounting. The data can be obtained through financial statements, yearly reports, and sustainability reports (Noor and Ginting, 2022). Green accounting is a systematic approach to accounting that includes financial, environmental, and social aspects in a coherent, unified, and relevant manner. This approach helps users manage and make decisions considering financial and non-financial factors (Lako, 2018).

Profitability is also predicted to be one of the firm value determinants. In this context, the profitability ratio as a numerical metric used to evaluate a company's financial performance by quantifying its capacity to generate gains within a designated period. When a company attains a significant degree of profitability, it becomes a vital factor for investors to consider when considering whether to invest in it (Susila and Prena, 2019). Several measures are available to assess a company's profitability, and one is connected to the company's profits, total assets, and equity (Herispon, 2016). Hery (2017) suggests that a company's profitability may be assessed using the Return on Equity (ROE) ratio. ROE is a financial indicator that assesses a company's profitability by demonstrating its effectiveness in using its equity to earn net income. The specified ratio measures a company's capacity to use its assets and capital effectively to earn profits (Rizki et al., 2019).

## Method

This study uses descriptive quantitative research methods. This method follows scientific principles such as concrete, objective, measurable, empirical, systematic, and rational (Sugiyono, 2019). The object of research is the sustainability and annual reports of companies operating in the energy industry listed on the Indonesia Stock Exchange (IDX) between 2019 and 2023. The research population comprises 66 energy sector companies listed on the IDX. The research sample was obtained by implementing a purposive sampling technique, specifically selecting companies that have published both sustainability and annual reports within 2019-2023. Out of the 66 organizations, only 16 satisfied the requirements, resulting in a total sample size of 80 over five years. The data is derived from secondary sources, including annual report

documents and corporate sustainability reports released between 2019 and 2023. These sources were accessible through the IDX website and the various companies. The data collection method involved gathering information from the IDX website and affiliated companies through documentation.

## Results and Discussion

We describe our database as follows:

Table 1. Descriptive Statistic Analysis

Variables	N	Min	Max	Mean	Std. Dev
Sustainability Report Disclosure	80	0.170	0.930	0.600	0.190
Carbon Emission Disclosure	80	0.280	0.940	0.670	0.160
Green Accounting	80	0.000	1.000	0.960	0.190
Profitability	80	-2.540	0.610	0.100	0.340
Firm Value	80	0.490	1.790	0.990	0.290

The table above displays the outcomes of a descriptive statistical analysis of each variable. The table indicates 80 data points in the whole data sample. According to the analysis, the sustainability report disclosure variable had a minimum value of 0.17, a maximum value of 0.93, an average value of 0.60, and a standard deviation of 0.19. The disclosure of carbon emissions has a minimum value of 0.28, a maximum value of 0.94, an average value of 0.67, and a standard deviation of 0.16. The green accounting variable has a mean value of 0.96 and a standard deviation of 0.19. The min and max values are 0 and 1, respectively. With an average value of 0.10 and a standard deviation of 0.34, the profitability variable shows a minimum value of -2.54 and a maximum value of 0.61. The firm value variable, in summary, has a minimum value of 0.49, a maximum value of 1.79, an average value of 0.99, and a standard deviation of 0.29 measurements.

## Ordinary Least Square (OLS) Panel Data Analysis

We employ the OLS estimator to estimate the model. The results are as follows:

Table 2. Multiple Linear Regression Analysis

	Coeff	Std. Error	t-statistic	p-value
(Constant)	0.634	0.048	13.295	0.000
Sustainability Report Disclosure	0.354	0.059	5.969	0.000
Carbon Emission Disclosure	0.057	0.073	0.787	0.434
Green Accounting	0.096	0.048	2.019	0.047
Profitability	0.118	0.025	4.658	0.000

The table that has been provided shows the beta value associated with each independent variable. Using the data in the table above, we can create the following regression equation.

$$\text{Firm Value} = 0,634 + 0,059X1 + 0,073X2 + 0,048X3 + 0,025X4 + e$$

The table above displays each independent variable's p-value and t-statistic. According to the analysis, the significant value for the sustainability report disclosure variable is 0.000. We may assume that the alternative hypothesis ( $H_a$ ) is accepted since the significance value of 0.000 is less than 0.05. This suggests that the process of releasing sustainability reports affects a company's firm value significantly. The Sig value of 0.787 is shown in the t-test findings for the carbon emission disclosure variable on the company's firm value for the carbon emission disclosure variable. The second hypothesis was rejected, as the results indicate that the p-value is  $0.787 > 0.05$ . Therefore, there is little effect of carbon emission disclosure on the company's

value.

The t-test findings for the green accounting variable on firm value indicate a Sig value of 0.047. Based on the findings, with a Sig value of  $0.047 < 0.05$ , it can be inferred that  $H_3$  is approved or that green accounting substantially impacts the company's firm value. Lastly, the t-test findings for the profitability variable on firm value indicate a p-value of 0.000. Given the values of  $0.000 < 0.05$ ,  $H_4$  is accepted, indicating that profitability significantly affects company value. Thus, our model has adequate goodness of fit because the resulting adjusted R square value is 0.624 (output is not shown for brevity). This value shows that the independent variables explain 62.4% of the observed variability in the dependent variable. The outstanding 37.6% can be ascribed to supplementary factors not encompassed in this investigation.

Because our estimator is OLS, we must check the model's normality, multicollinearity, autocorrelation, and heteroscedasticity. We used the Kolmogorov-Smirnov test for the normality test with an asymptotic significance value of 0.20. If the probability is higher than 0.05, then the data is considered to be normally distributed, according to the test foundation. With this knowledge, the data may follow a normal distribution, as indicated by the significance value (Sig value) of 0.20 being more significant than 0.05. Meanwhile, the multicollinearity test is as follows:

Table 3. Multicollinearity Test

Variables	Tolerance	VIF
Sustainability Report Disclosure	0,55	1,81
Carbon Emission Disclosure	0,51	1,94
Green Accounting	0,84	1,20
Profitability	0,93	1,07

Each independent variable's variance inflation factor (VIF) and tolerance values are shown in the table above. The VIF is 1.81, and the tolerance value is 0.55 for the sustainability report disclosure variable. VIF is 1.94, and the tolerance value is 0.51 for the carbon emission disclosure variable. Profitability has a tolerance value of 0.93 and a VIF of 1.07, whereas the green accounting variable has a tolerance value of 0.84 and a VIF of 1.20. Multicollinearity is recommended if both the VIF and the tolerance value are greater than 10 and less than 0.1. No multicollinearity exists among the independent variables as they all have tolerance values more than 0.1 and VIF values smaller than 10.

Table 1. Autocorrelation Test

Durbin-Watson	du	4-du	du < d < 4-du
2,192	1,743	2,257	$1,743 < 2,192 < 2,257$

The table above shows the Durbin-Watson or d value of 2.192. The du and 4-du values are 1.743 and 2.257, respectively. The du value is derived from the Durbin-Watson table using several independent variables of 4 and the number of samples 80 (4;80). The basis for determining autocorrelation is if  $du < d < 4-du$ . Based on the determination of autocorrelation, it is obtained at  $1.743 < 2.192 < 2.257$ . So, there is no autocorrelation in our model. Furthermore, we employ a heteroscedasticity t-test as follows:

Table 5. Heteroscedasticity Test

Variables	t-paired	Sig.
Sustainability Report Disclosure	1,021	0,310
Carbon Emission Disclosure	-1,407	0,164
Green Accounting	1,709	0,092
Profitability	-0,252	0,802

According to the table above, the significance value (Sig) for the sustainability report disclosure variable is 0.310, and for the carbon emissions disclosure variable, it is 0.164. The significance values for the profitability and green accounting variables are 0.802 and 0.092, respectively. Heteroscedasticity is indicated if the significance value is less than 0.05. Since all variables have significance values above 0.05, there is no evidence of heteroscedasticity.

## Discussion

### The Effects of Sustainability Reporting Disclosure on Firm Value

Signaling theory emphasizes that the sustainability report serves as a signal to investors, indicating that the company upholds economic, environmental, and social responsibilities. Companies undertaking these responsibilities signaled investors to inform their investment decisions. Indirectly, companies signal that they have a long-term commitment to sustainability, which can be considered a sign of quality management and good corporate governance. Consequently, the study's findings do support signaling theory.

The findings of this investigation are consistent with those of studies conducted by Pujiningsih (2020) and Farhana and Adelina (2019), which claim that releasing sustainability reports affects a company's valuation. The study found a favorable relationship between the company's worth and the disclosure level of sustainability reports. The study's results, however, contradict those of Rizki et al.'s (2019) research, which contends that a company's value is unaffected by the release of sustainability reports. According to the study, stakeholders typically do not react well to or evaluate companies that publish sustainability reports.

### The Effects of Carbon Emission Disclosure on Firm Value

Carbon emission disclosure does not significantly affect firm value. The findings are inconsistent with signaling theory, highlighting the significance of the interaction between firms and stakeholders. Revealing carbon emissions is seen as a company's way of reducing the environmental consequences of its activities. Nevertheless, in some cases, carbon emissions disclosure may not be adequate as a signal because not all investors perceive it as an indicator of management quality or potential company performance. Investors may focus more on traditional financial indicators such as revenue, profit, and growth.

Additionally, this research supports the conclusions of Anggita et al. (2022), which suggest that the company's value is unaffected by the disclosure of carbon emissions. According to the study, publicizing carbon emissions does not increase a firm's worth. Nevertheless, this analysis contradicts the findings of Sari and Budiasih (2022) and Zuhrufiyah and Anggraeni (2019), who assert that carbon emission disclosure does consequences firm value. The study revealed that stakeholders' focus is mainly directed towards the effects generated by the company.

### The Effects of Green Accounting on Firm Value

Comprehensive environmental information disclosure through green accounting can reduce information asymmetry between companies and investors. Investors get a more complete picture of the risks and opportunities associated with the company's environmental costs. Green



accounting showcases the company's dedication to efficiently managing the environmental consequences of its activities. Green accounting signals that the company has good management and can manage environmental risks. This can increase investor confidence and reduce uncertainty in investment decisions, increasing the company's value.

Furthermore, the research conducted by Anggita et al. (2022), Dewi and Narayana (2020), and Erlangga et al. (2021) supports the notion that green accounting has substantial consequences on firm value. According to that study, there is a positive correlation between the extent to which green accounting is implemented and the value of a firm. In other words, as the level of green accounting increases, so does the firm's value. Nevertheless, the study done by Noor and Ginting (2022) contradicts the findings of this study. The study concludes that green accounting does not affect a firm's value. The study revealed that a limited number of organizations now adopt green accounting, which consequently hinders the positive influence of green accounting on firm value.

### **The Effects of Profitability on Firm Value**

High profitability signals that the company has good financial performance, which means the company can generate significant profits from the equity shareholders invest. This provides a positive signal to investors about the company's operational efficiency and profitability. Strong profitability also reflects management's ability to manage the company's resources efficiently, increasing investor confidence in management's ability, which can increase the company's value.

The findings of this study align with the studies done by Pasaribu et al. (2019) and Susila and Prena (2019), which indicate that profitability affects a firm's value. According to the study, profitability and firm value have a significant influence. Contrary to the findings of Bagaskara et al. (2021), this research does not support the notion that profitability consequences a firm's value. The study revealed that profitability, as assessed by the return on equity (ROE), may be perceived as less appealing to stakeholders, particularly investors, when considering the capital perspective. When a company's profits and capital are both substantial, investors' returns are generally low with their invested capital.

### **Conclusion**

After analyzing the research findings and discussions regarding the consequences of disclosing sustainability reports, carbon emissions, green accounting, and profitability on the firm value of energy sector companies listed on the IDX between 2020 and 2022, numerous conclusions can be drawn. Disclosing sustainability reports beneficially influences the firm's value, suggesting that the company sends a clear signal to investors about their long commitment to economic, social, and environmental responsibilities. Furthermore, the disclosure of carbon emissions has no consequences on the firm's value because the effectiveness of disclosure of carbon emissions as a signaling mechanism may be limited. Not all investors view it as reflecting management quality or the company's performance potential. Instead, investors prioritize traditional financial metrics such as revenue, profit, and growth.

Moreover, the practicality of green accounting has beneficial consequences for a firm's value. Green accounting signals investors of effective management practices and the company's capability to mitigate environmental risks. This enhances investor confidence, reduces uncertainty in investment decisions, and ultimately increases the firm's value. Lastly, profitability has significantly affected the company's firm value as high profitability indicates strong financial performance and efficient resource management, boosting investor confidence in management and potentially increasing the company's value.

According to the findings, extending the research duration is recommended better to understand the link between the variables under investigation. Furthermore, broadening the

research scope to encompass diverse industrial sectors would yield a more comprehensive comprehension of the interplay between the factors under investigation. Additionally, future studies should incorporate additional independent variables that could elucidate or consequences the value of a corporation.

## References

- Alfayerds, W. D., & Setiawan, M. A. (2021). Pengaruh Pengungkapan Emisi Karbon dan Annual Report Readability terhadap Nilai Perusahaan. *Jurnal Eksplorasi Akuntansi*, 3(2), 349–363. <https://doi.org/10.24036/jea.v3i2.363>
- Altunbas, Y., Gambacorta, L., Reghezza, A., & Velliscig, G. (2022). Does gender diversity in the workplace mitigate climate change? *Journal of Corporate Finance*, 77, 102303. <https://doi.org/10.1016/j.jcorpfin.2022.102303>
- 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>
- Bagaskara, R. S., Titisari, K. H., & Dewi, R. R. (2021). Pengaruh profitabilitas , leverage , ukuran perusahaan dan kepemilikan manajerial terhadap nilai perusahaan. *Forum Ekonomi*, 23(1), 29–38.
- Bahriansyah, R. I., & Ginting, Y. L. (2022). Pengungkapan Emisi Karbon Terhadap Nilai Perusahaan dengan Media Exposure Sebagai Variabel Moderasi. *Jurnal Riset Akuntansi & Perpajakan (JRAP)*, 9(02), 249–260. <https://doi.org/10.35838/jrap.2022.009.02.21>
- Bell, F., & Lehman, G. (1999). Recent trends in environment accounting: how green are your accounts? *Accounting Forum*, 23(2), 175–192. <https://doi.org/10.1111/1467-6303.00010>
- Buallay, A. (2019). Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector. *Management of Environmental Quality: An International Journal*, 30(1), 98–115. <https://doi.org/10.1108/MEQ-12-2017-0149>
- Chung, K. H., & Pruitt, S. W. (1994). A Simple Approximation of Tobin's Q. *Financial Management*, 23(3), 1–5.
- Climate Action Tracker. (2023). *Climate Action Tracker Country Assessments*.
- Climate Transparency. (2022). *Climate Transparency Report: Comparing G20 Climate Action*.
- Damayanthi, I. G. A. E. (2019). Fenomena Faktor yang Mempengaruhi Nilai Perusahaan. *Jurnal Ilmiah Akuntansi Dan Bisnis*, 208. <https://doi.org/10.24843/JIAB.2019.v14.i02.p06>
- Dewi, P. P., & Narayana, I. P. (2020). Implementasi Green Accounting, Profitabilitas dan Corporate Social Responsibility pada Nilai Perusahaan. *E-Jurnal Akuntansi*, 30(12), 3252. <https://doi.org/10.24843/EJA.2020.v30.i12.p20>
- Erlangga, C. M., Fauzi, A., & Sumiati, A. (2021). Penerapan Green Accounting dan Corporate Social Responsibility Disclosure Terhadap Nilai Perusahaan Melalui Profitabilitas. *Akuntabilitas*, 14(1), 61–78. <https://doi.org/10.15408/akt.v14i1.20749>
- Farhana, S., & Adelina, Y. E. (2019). Relevansi Nilai Laporan Keberlanjutan Di Indonesia. *Jurnal Akuntansi Multiparadigma*, 10(3), 615–628. <https://doi.org/10.21776/ub.jamal.2019.10.3.36>
- Fuadah, L. L., Yuliani, & Safitri, R. H. (2018). *Pengungkapan Sustainability Reporting di Indonesia* (1st ed.). Citrabooks Indonesia.
- Gray, R., & Bebbington, J. (2001). *Accounting for the Environment*. SAGE Publications Ltd. <https://doi.org/10.4135/9781446220849>
- Gütschow, J., & Pflüger, M. (2023). The PRIMAP-hist national historical emissions time series (1750-2022) v2.5. *Zenodo*. <https://doi.org/10.5281/zenodo.10006301>.
- Herispon. (2016). *Analisis Laporan Keuangan*. Sekolah Tinggi Ilmu Ekonomi Riau.
- Hery. (2017). *Analisis Laporan Keuangan*. PT Grasindo.
- Indrarini, S. (2019). *Nilai perusahaan melalui kualitas laba (Good governance dan kebijakan*

perusahaan). Scopindo.

- Kurniawan, T., Sofyani, H., & Rahmawati, E. (2018). Pengungkapan Sustainability Report dan Nilai Perusahaan: Studi Empiris di Indonesia dan Singapura. *Kompartemen: Jurnal Ilmiah Akuntansi*, 16(1), 1–20. <https://doi.org/10.30595/kompartemen.v16i1.2100>
- Lako, A. (2018). *Akuntansi Hijau: Isu, Teori, dan Aplikasi*. Salemba Empat.
- Liu, Z., & Zhang, C. (2022). Quality evaluation of carbon information disclosure of public companies in China's electric power sector based on ANP-Cloud model. *Environmental Impact Assessment Review*, 96, 106818. <https://doi.org/10.1016/j.eiar.2022.106818>
- Maharani, P. (2021). Pengaruh Green Accounting pada Nilai Perusahaan Sektor Pertambangan. *Edumaspul: Jurnal Pendidikan*, 5(1), 220–231. <https://doi.org/https://doi.org/10.33487/edumaspul.v5i1.1141>
- Noor, A., & Ginting, Y. L. (2022). Influence Of Carbon Emission Disclosure On Firm Value Of Industrial Firms In Indonesia. *International Journal of Contemporary Accounting*, 4(2), 151–168. <https://doi.org/10.25105/ijca.v4i2.15247>
- OJK. (2016). *Keuangan berkelanjutan*.
- Pasaribu, U. R., Nuryartono, N., & Andati, T. (2019). Pengaruh Faktor Internal Dan Eksternal Perusahaan Terhadap Nilai Perusahaan. *Jurnal Aplikasi Bisnis Dan Manajemen*, 5(3), 441–454. <https://doi.org/10.17358/jabm.5.3.441>
- Peraturan Presiden (PERPRES) Nomor 98 Tahun 2021 Tentang Penyelenggaraan Nilai Ekonomi Karbon Untuk Pencapaian Target Kontribusi Yang Ditetapkan Secara Nasional Dan Pengendalian Emisi Gas Rumah Kaca Dalam Pembangunan Nasional, Pub. L. No. 98, 1 (2021).
- Pujiningsih, V. (2020). Pengaruh Sustainability Report Terhadap Nilai Perusahaan dengan Good Corporate Governance sebagai Variabel Pemoderasi. *Jurnal Riset Akuntansi Dan Keuangan*, 8(3), 579–594. <https://doi.org/10.17509/jrak.v8i3.22841>
- Rahmadhani, I. W., Suhartini, D., & Widoretno, A. A. (2021). Pengaruh Green Accounting dan Kepemilikan Saham Publik terhadap Kinerja Keuangan dengan Pengungkapan CSR Sebagai Variabel Intervening pada .... *Jurnal Ilmiah Akuntansi Dan Keuangan*, 4(1), 132–146.
- Ramdhonah, Z., Solikin, I., & Sari, M. (2019). Pengaruh Struktur Modal, Ukuran Perusahaan, Pertumbuhan Perusahaan, Dan Profitabilitas Terhadap Nilai Perusahaan (Studi Empiris Pada Perusahaan Sektor Pertambangan Yang Terdaftar Di Bursa Efek Indonesia Tahun 2011-2017). *Jurnal Riset Akuntansi Dan Keuangan*, 7(1), 67–82. <https://doi.org/https://doi.org/10.17509/jrak.v7i1.15117>
- Rivandi, M., & Septiano, R. (2021). Pengaruh Intellectual Capital Disclosure Dan Profitabilitas Terhadap Nilai Perusahaan. *Jurnal Akuntansi Trisakti*, 8(1), 123–136. <https://doi.org/10.25105/jat.v8i1.7631>
- Rizki, M. K., Agriyanto, R., & Farida, D. N. (2019). The Effect of Sustainability Report and Profitability on Company Value: Evidence from Indonesian Sharia Shares. *Economica: Jurnal Ekonomi Islam*, 10(1), 117–140. <https://doi.org/10.21580/economica.2019.10.1.3747>
- Ross, S. A. (1977). The Determination of Financial Structure: The Incentive-Signalling Approach. *The Bell Journal of Economics*, 8(1), 23–40.
- Sari, D., & Sanjaya, R. (2019). Pengaruh Good Corporate Governance, Dan Karakteristik Perusahaan Terhadap Nilai Perusahaan. *Jurnal Bisnis Dan Akuntansi*, 20(1), 21–32. <https://doi.org/10.34208/jba.v20i1.404>
- Sari, K. H. V., & Budiasih, I. G. A. N. (2022). Carbon Emission Disclosure dan Nilai Perusahaan. *E-Jurnal Akuntansi*, 32(1), 3535. <https://doi.org/10.24843/EJA.2022.v32.i01.p16>
- Sudibyo, Y. A. (2018). Carbon emission disclosure: does it matter. *IOP Conference Series: Earth and Environmental Science*, 106(1), 012036. <https://doi.org/10.1088/1755-1315/106/1/012036>

- Sugiyono. (2019). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Alfabeta.
- Susila, M. P., & Prena, G. Das. (2019). Pengaruh Keputusan Pendanaan, Kebijakan Dividen, Profitabilitas Dan Corporate Social Responsibility Terhadap Nilai Perusahaan. *Jurnal Akuntansi : Kajian Ilmiah Akuntansi (JAK)*, 6(1), 80. <https://doi.org/10.30656/jak.v6i1.941>
- Sutopo, B., Kot, S., Adiati, A., & Ardila, L. (2018). Sustainability Reporting and Value Relevance of Financial Statements. *Sustainability*, 10(3), 678. <https://doi.org/10.3390/su10030678>
- Trimuliani, D., & Febrianto, R. (2023). Pengungkapan Emisi Karbon dan Kinerja Karbon terhadap Nilai Perusahaan: Moderasi Kepemilikan Negara. *Jurnal Informatika Ekonomi Bisnis*, 5, 900–906. <https://doi.org/10.37034/infeb.v5i3.681>
- UN Climate Change. (2023a). *Conference of the Parties (COP)*.
- UN Climate Change. (2023b). *The Paris Agreement*.
- Zuhrufiyah, D., & Anggraeni, D. Y. (2019). Pengungkapan Emisi Karbon dan Nilai Perusahaan (Studi Kasus pada Perusahaan di Kawasan Asia Tenggara). *Jurnal Manajemen Teknologi*, 18(2), 80–106. <https://doi.org/10.12695/jmt.2019.18.2.1>