

The Influence Of ESG Factors On Profit Growth Of Energy Sector Companies Listed On The Indonesia Stock Exchange

Angela Merici¹, Isni Andriana², Kemas Muhammad Husni Thamrin³, Taufik⁴

^{1,2,3,4}Management Study Program, Faculty of Economics, University of Sriwijaya

Correspondence : ¹mericiangela814@gmail.com, ²isniandriana@fe.unsri.ac.id ,
³kemasmuhammadhusnithamrin@fe.unsri.ac.id, ⁴taufik@fe.unsri.ac.id

Abstract

This study aims to analyze the influence of ESG factors on profit growth in energy sector companies listed on the Indonesia Stock Exchange. ESG factors are proxied by carbon emissions and CSR funds. Profit growth is proxied by profit growth for each annual period. Data were obtained from company sustainability reports with a total of 85 observations and analyzed using panel data regression with E-views 12 software. The results show that carbon emissions and Corporate Social Responsibility (CSR) funds have a partial significant effect on profit growth. The control variable, firm size (SIZE), does not have a significant effect on profit growth.

Keyword : ESG, Carbon Emissions, Corporate Social Responsibility (CSR) Funds, Firm Size, Profit Growth

INTRODUCTION

The ESG concept is the foundation for companies to build sustainability, business continuity, and investment strategies with three main pillars, namely environmental, social, and corporate governance (Setiani et al., 2024). The term ESG was first officially published in 2004 by the United Nations Global Impact Report, in collaboration with global financial institutions. The report outlined the steps for implementing ESG factors in company operations, breaking them down into three main pillars: environmental, social, and governance. Over the following decades, various additional principles and frameworks emerged, providing more detailed guidance for companies in adopting and reporting ESG factors (Taddeo et al., 2024).

1875

IJEBIR, Volume 05 Issue 04, 2026



Copyright at authors some right reserved this work is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).

Carbon emissions are a crucial ESG indicator because they reflect a company's negative environmental impact. Carbon emissions can contribute to global warming, triggering extreme weather, disasters such as floods and droughts, and ecosystem damage. Energy companies have a significant environmental impact, as their production processes generate carbon emissions. Therefore, they need to manage their operational activities responsibly. According to the Ministry of National Development Planning, the energy sector is one of the largest contributors to greenhouse gas emissions globally. High carbon emissions have the potential to create reputational risks, increase environmental compliance costs, and reduce investor confidence, which can impact a company's financial performance and profit growth.

Nowadays, society has increased awareness regarding environmental and social problems caused by companies, so investors and stakeholders are increasingly paying attention to companies that implement Environmental, Social, and Governance (ESG) (Febriantoko et al., 2025).

Chart 1. Number of Energy Sector Companies Publishing Sustainability Reports



Source: Processed by Researchers

Previous studies have often examined the influence of ESG factors, such as carbon emissions and CSR, on financial performance or company value. However, research specifically examining the influence of carbon emissions and CSR funds on profit growth in energy sector companies in Indonesia is still relatively limited. Therefore, this study was conducted to provide empirical evidence regarding the extent to which



ESG factors, specifically carbon emissions and CSR funds, influence profit growth in energy sector companies listed on the Indonesia Stock Exchange.

LITERATURE REVIEW

Theory in ESG

Stakeholder theory is a theory put forward by Robert Edward Freeman in 1984 through the book *Strategic Management: A Stakeholder Approach*. Stakeholder theory emphasizes that companies not only manage good relationships with shareholders, but also manage good relationships with various stakeholders such as customers, employees, the community, regulators, and investors (Wang & Wu, 2025). Companies will have better finances if they manage their relationships with all stakeholders well (Prayitno et al., 2024).

Legitimacy theory was developed by Guthrie & Parker in 1990. Legitimacy theory states that companies strive to obtain and maintain legitimacy or acceptance from society by carrying out activities that are in accordance with the values and norms of society (Azizah & Cahyaningtyas, 2022). A company's failure to meet societal expectations can trigger a legitimacy crisis through reputational damage, regulatory scrutiny, or stakeholder withdrawal (Dewi, 2025).

The Triple Bottom Line (TBL) was first introduced by John Elkington in 1994. The triple bottom line (TBL) framework emphasizes the interconnectedness of people, planet, and profit to achieve long-term sustainability (Andriana et al., 2025). The triple bottom line concept encompasses the use of 3Ps (profit, planet, people) to achieve economic sustainability across various sectors. The triple bottom line theory suggests that companies, regardless of their industry, must consider three key variables during their business operations: ESG considerations and sustainability (Faizulayev, 2025). Companies that implement sustainability strategies in the form of ESG are able to create long-term benefits (profit) by paying attention to the social impact on society (people) and minimizing the negative impacts that the company has on the environment (planet) (Fuadah et al., 2018).

Environmental, Social, and Governance (ESG)

Environmental, Social, and Governance (ESG) is a standard for evaluating a company's commitment to sustainability (Sari et al., 2026). The ESG concept is the foundation for companies to build sustainability, business continuity, and investment



strategies with three main pillars, namely environmental, social, and corporate governance (Setiani et al., 2024).

Profit Growth

Profit growth is one of the benchmarks for an entity's financial performance that measures the increase or decrease in the entity's/company's net profit from the previous period to the following period (Tyas & Prastiwi, 2025). Profit growth can be measured as the percentage change in the company's net profit from year t to year $t-1$.

Firm Size

Firm size is generally measured based on the total assets owned by the company, where it is assumed that the larger the firm size, the greater the company's ability to manage various financial and business strategies, such as managing the company's carbon emissions and preparing a CSR budget (Habib et al., 2025). The use of firm size as a control variable helps measure and evaluate the extent of the relationship between carbon emissions and CSR with company profit growth, where this variable ensures that the research results can describe a clear relationship between carbon emissions, CSR funds, and profit growth without being affected by the impact of firm size.

Hypothesis

High carbon emissions can be perceived as a negative image reflecting operational inefficiency, high future regulatory risks, and reputational vulnerability as global concerns regarding climate change increase (Velte et al., 2020). Research by Setiani et al. (2024) states that low carbon emissions have a significant effect on increasing profits as proxied by ROA.

H_1 : Carbon Emissions Significantly Impact Corporate Profit Growth

Corporate Social Responsibility (CSR) activities contribute to increasing company profits because they are able to strengthen the company's image (Azizah & Cahyaningtyas, 2022). Research conducted by Kholmi & Nafiza (2022) and Zvarikova et al. (2024) stated that CSR has a significant effect on company profitability and net profit.

H_2 : CSR Funds Have a Significant Impact on Company Profit Growth

RESEARCH METHODS

This study focuses on corporate profit growth, which is influenced by the company's carbon emission performance and CSR funds. In this study, carbon emission

1878

IJEBIR, Volume 05 Issue 04, 2026



Copyright at authors some right reserved this work is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).

performance and CSR funds are the independent variables, while corporate profit growth is the dependent variable. Firm size is used as a control variable. Data, information, and samples come from the research object, a total of 91 energy sector companies listed on the Indonesia Stock Exchange (IDX) for six years, from 2019 to 2024.

This study uses secondary data, namely quantitative data from the sustainability reports of energy sector companies from 2019 to 2024, sourced from the official websites of the companies concerned. The population in this study was 91 energy sector companies listed on the Indonesia Stock Exchange (IDX) from 2019 to 2024. The sample in this study used a non-probability sampling method with a purposive sampling technique. The criteria used in this sample are as follows:

1. Energy sector companies listed on the IDX for the 2019-2024 period
2. Companies that regularly publish sustainability reports during the 2019-2024 period
3. Company sustainability reports that include carbon emissions in tons of CO₂
4. Company sustainability reports that include Corporate Social Responsibility (CSR) funds
5. Company sustainability reports that include net profit

In accordance with the above criteria, this study obtained 17 company samples.

This study applies regression analysis to panel data, which is a statistical technique that allows the combination of time series data with cross-entity data (cross-sectional) simultaneously (Luthfillah et al., 2024). The regression equation in this study is as follows:

$$\text{Profit Growth}_{i,t} = \alpha + \beta_1 \text{CarbonEmission}_{i,t} + \beta_2 \text{CSRFund}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \varepsilon_{i,t}$$

Table 1. Operational Definition and Measurement of Variables

Variables	Concept	Indicator	Scale
Carbon Emissions	The level of carbon dioxide (CO ₂) and other greenhouse gases emitted by a company's operational activities. Carbon emissions can be	$\frac{\text{Carbon Emissions}_t - \text{CarbonEmissions}_{t-1}}{\text{Carbon Emissions}_{t-1}} \times 100\%$	Ratio



	expressed in tons of CO ₂ (Gunawan & Berliyanda, 2024).		
CSR Funds	The budget funds spent by the company to implement the Corporate Social Responsibility (CSR) program as a form of social responsibility (Al-Matari et al., 2026)	$\text{CSR Funds} = \frac{\text{CSR Funds } t - \text{CSR Funds } t-1}{\text{CSR Funds } t-1} \times 100\%$	Ratio
Profit Growth	Changes in a company's net profit from one period to the next, which reflects the company's ability to increase profitability (Pramudena, 2025).	$\text{Profit Growth} = \frac{\text{Net profit } t - \text{Net profit } t-1}{\text{Net profit } t-1} \times 100\%$	Ratio
Firm Size	Firm size is generally measured based on the total assets owned by the company, where it is assumed that the larger the firm size, the greater the company's ability to implement sustainability initiatives such as managing the	$\text{Firm Size} = \ln (\text{Total Assets})$	Ratio



	company's carbon emissions and preparing a CSR budget (Habib et al., 2025).		
--	---	--	--

Source: Various Previous Research Literature

RESULT

Descriptive Test

Table 2. Descriptive Test Results

Variable	Obs	Mean	Std.dev	Min	Max
EK	85	2.028094	8.401054	-0.975	51.881
CSR	85	0.161494	0.698828	-0.998	2.916
PG	85	-0.354224	6.677644	-54.524	10.291
SIZE	85	21.65973	2.671476	18.504	31.446

Source: Data processed by researchers through Eviews 12, 2026

Based on Table 2, the average carbon emission value of 2.028 indicates that the average energy sector company resulted in an increase in carbon emissions of 2.028. The average CSR fund value of 0.161494 indicates an increase in CSR funds of 0.1614. The average profit growth value of -0.354224 indicates that the average company experienced a decrease in net profit. The average firm size value of 21.65973 indicates that the energy sector companies in the study are classified as large.

Panel Data Regression Analysis

Table 3. Chow Test

Effects Test	Prob.
Cross-section Chi-square	0.5114

Source: Data processed by researchers through Eviews 12, 2026

Based on Table 3, the results of the Chow test show a p-value of 0.5114, which is > 0.05 . Therefore, it can be concluded that the Common Effects model is more appropriate to use.

1881



Table 4. Hausman Test

Test Summary	Prob.
Cross-section random	0.7641

Source: Data processed by researchers through Eviews 12, 2026

Based on Table 4, the results of the Hausman test show a p-value of 0.7641, where this value is > 0.05 so that the Random Effects Model is more appropriate to use.

Table 5. Lagrange Multiplier Test

Lagrange Multiplier Test	P-Value
Breusch-Pagan Cross-section	0.4478

Source: Data processed by researchers through Eviews 12, 2026

Based on Table 5, the results of the Lagrange Multiplier test show a p-value of 0.4478, which is > 0.05 . Therefore, it can be concluded that the Common Effects Model is more appropriate to use.

Classical Assumption Test

Table 6. Normality Test

Normality Test	Prob.
Jarque Bera	0.322511

Source: Data processed by researchers through Eviews 12, 2026

Based on Table 6, the significance value / p-value obtained is 0.322511, where the significance value is > 0.05 . Therefore, it can be concluded that the residual data value is normally distributed.



Table 7. Multicollinearity Test

Variable	EK	CSR	SIZE
EK	1	-0.113020	-0.037816
CSR	-0.113020	1	-0.075490
SIZE	-0.037816	-0.075490	1

Source: Data processed by researchers through Eviews 12, 2026

Based on Table 7, the correlation coefficient value of X1 Carbon Emissions with X2 CSR Funds is -0.113020. The correlation coefficient value of X1 Carbon Emissions with the control variable Size is -0.037816, and the correlation coefficient value of X2 CSR Funds with the control variable is -0.075490. All three correlation coefficients are < 0.9 , so the regression model passes the multicollinearity test.

Table 8. Autocorrelation Test

Weighted Statistics	Value
Durbin-Watson	2.235575

Source: Data processed by researchers through Eviews 12, 2026

Based on Table 8, the Durbin-Watson value is 2.235575. The upper limit value (du) is 1.6957 and the lower limit value (dl) is 1.5995 obtained from the Durbin-Watson table. The Durbin-Watson value of 2.235575 is lower than $(4-du)$ of 2.3043 and higher than the (du) value of 1.6957. Therefore, it can be concluded that the regression model does not experience autocorrelation.

Table 9. Heteroscedasticity Test

Variable	Prob.
EK	0.5851
CSR	0.5411
SIZE	0.7532

Source: Data processed by researchers through Eviews 12, 2026



The significance value of X1 is $0.5851 > 0.05$, X2 is $0.5411 > 0.05$, and the significance value of the control variable (Z) is $0.7532 > 0.05$. Therefore, it can be concluded that there are no symptoms of heteroscedasticity.

Hypothesis Test

Table 10. Partial Test (T)

Variable	Coefficient	Prob.
EK	-0.010494	0.0002
CSR	0.439011	0.0287
SIZE	0.034769	0.3506

Source: Data processed by researchers through Eviews 12, 2026

Based on Table 10, the significance value of X1 is 0.0002 (p-value < 0.05), so X1, namely carbon emissions, has a significant effect on profit growth. The significance value of X2, namely CSR funds, is 0.0287 (p-value < 0.05), so CSR funds also have a significant effect on profit growth. The significance value of the control variable Z (size) is 0.356 (p-value > 0.05), so size does not have a significant effect on profit growth. These results indicate that firm size is not a major factor influencing profit growth, so it can be seen that the significant influence of carbon emissions and CSR funds on profit growth is not influenced by differences in firm size.

Tabel 11. Simultaneous Test (F)

Weighted Statistics	P-Value
Prob (F-statistic)	0.062638

Source: Data processed by researchers through Eviews 12, 2026

Based on Table 11, the significance value is $0.062638 > 0.05$, so the independent variables and control variable simultaneously do not have a significant effect on profit growth.



Tabel 12. Coefficient of Determination Test

Weighted Statistics	P-Value
Adjusted R-squared	0.051939

Source: Data processed by researchers through Eviews 12, 2026

Based on Table 12, the independent variables of carbon emissions, CSR funds, and the control variable of firm size on profit growth are 5.2%, the remaining 94.8% is influenced by other factors.

DISCUSSION

The Impact of Carbon Emissions on Profit Growth

The results of the research analysis indicate that carbon emissions have a significant influence on profit growth in energy sector companies listed on the Indonesia Stock Exchange. This is proven by testing profit growth, which shows a significance of 0.0002 (t-significance <0.05) and a coefficient value of -0.010494. The results of testing carbon emissions on profit growth show a negative coefficient value, which means that the higher the level of carbon emissions, the lower the profit growth. This study found that carbon emissions have a significant effect on profit growth in energy sector companies listed on the Indonesia Stock Exchange (IDX), so H_1 is accepted.

The results of this study align with research conducted by Setiani et al. (2024), which stated that low carbon emissions significantly influence profit growth, as measured by ROA. This is because companies with low carbon emissions tend to be more efficient in managing environmental risks by reducing reliance on fossil fuels, thereby helping to reduce operational costs in the long term. Research conducted by Dewi (2025) also shows that carbon emissions significantly influence firm value.

The Impact of CSR Funds on Profit Growth

The results of the research analysis indicate that CSR funds have a significant effect on profit growth. This result is proven in the test of CSR funds on profit growth with a significance value of 0.0287 (t significance <0.05) and a coefficient value of 0.439011. The test results show a coefficient value with a positive direction which can be interpreted that greater CSR funds can lead to an increase in profit growth. This study found that CSR funds have a significant effect on profit growth in energy sector companies listed on the Indonesia Stock Exchange (IDX) so that H_2 is accepted.

1885



The results of this study align with research conducted by Zvarikova et al. (2024), which found that CSR significantly impacts a company's net profit because the public perceives companies that undertake CSR initiatives as responsible, thus encouraging them to purchase their products. Research by Kholmi & Nafiza (2022) states that CSR significantly impacts a company's profit, as measured by ROE.

CONCLUSIONS

Based on the research findings, the following conclusions were obtained:

1. Carbon emissions have a negative and significant impact on the profit growth of energy sector companies listed on the Indonesia Stock Exchange.
2. CSR funds have a positive and significant impact on the profit growth of energy sector companies listed on the Indonesia Stock Exchange.

REFERENCES

- Al-Matari, E. M., Alnor, N. H. A., Misbah, H. M., Eltahir, I. A. E., Mohammed, O. A. A., Omer, A. M., & Esawi, K. A. M. (2026). The influence of corporate social responsibility on earnings management among Saudi Arabia listed companies. *Discover Sustainability*, 7(1). <https://doi.org/10.1007/s43621-025-02530-w>
- Andriana, I., Ahmad Maulana, A. M., Badia Perizade, B. P., Umi Kalsum, U. K., Thamrin, K., & Rifanka, N. (2025). Environmental Governance, Local Wisdom, and Financial Sustainability: Empowering Women Entrepreneurs in South Sumatera. *Jurnal Riset Akuntansi Kontemporer*, 17(2), 108–126. <https://doi.org/10.23969/jrak.v17i2.22164>
- Azizah, N., & Cahyaningtyas, F. (2022). Pengaruh CSR, Kinerja Lingkungan, dan Biaya Lingkungan Terhadap Profitabilitas (Studi Empiris Perusahaan Industri Dasar dan Bahan Kimia). *Jurnal Ilmiah Bisnis Dan Ekonomi Asia*, 17(2), 212–225. <https://doi.org/10.32812/jibeka.v17i2.1557>
- Dewi, G. A. K. R. S. (2025). Carbon Emission Disclosure, Environmental Performance, and Firm Value: The Role of Financial Performance. *JIA (Jurnal Ilmiah Akuntansi)*, 10(1), 70–85. <https://doi.org/10.23887/jia.v10i1.55>
- Faizulayev, A. (2025). Empirical examination of ESG and fintech factors on financial sustainability: a comparative study of Islamic vs conventional banks in Islamic finance-oriented countries. *Asian Journal of Accounting Research*, 11(1), 2–21. <https://doi.org/10.1108/AJAR-09-2024-0382>



- Febriantoko, J., Sari, K. R., & Armaini, R. (2025). Peran Pengungkapan ESG dalam Meningkatkan Nilai Perusahaan dan Kinerja Keuangan di Sektor Perhotelan Indonesia: Moderasi Ukuran dan Usia Perusahaan. *Owner*, 9(2). <https://doi.org/10.33395/owner.v9i2.2580>
- Fuadah, L. L., Yuliani, & Safitri, R. H. (2018). *Pengungkapan Sustainability Reporting di Indonesia* (1st ed.).
- Gunawan, B., & Berliyanda, K. L. (2024). Pengaruh Green Accounting, Pengungkapan Emisi Karbon, dan Kinerja Lingkungan Terhadap Nilai Perusahaan. *Reviu Akuntansi Dan Bisnis Indonesia*, 8(1), 33–50. <https://doi.org/10.18196/rabin.v8i1.22027>
- Habib, A., Oláh, J., Khan, M. H., & Luboš, S. (2025). Does integration of ESG disclosure and green financing improve firm performance: Practical applications of stakeholders theory. *Heliyon*, 11(4). <https://doi.org/10.1016/j.heliyon.2025.e41996>
- Kholmi, M., & Nafiza, S. A. (2022). Pengaruh Penerapan Green Accounting dan Corporate Social Responsibility Terhadap Profitabilitas (Studi Pada Perusahaan Manufaktur Yang Terdaftar di BEI Tahun 2018-2019). *Reviu Akuntansi Dan Bisnis Indonesia*, 6(1), 143–155. <https://doi.org/10.18196/rabin.v6i1.12998>
- Luthfillah, M. T., Andriana, I., & Bashir, A. (2024). The Impact of Environmental Management Accounting and Good Corporate Governance on Financial Performance. *COSTING : Journal of Economic, Business and Accounting*, 7(5), 3534–3545.
- Pramudena, S. M. (2025). Analysis of Profitability and CSR on ESG with GCG as a Moderation Variable. *KnE Social Sciences*, 10(21), 127–137. <https://doi.org/10.18502/kss.v10i21.19698>
- Prayitno, E., Adam, M., Widiyanti, M., & Fuadah, L. (2024). The Impact of ESG Disclosure on Financial Performance with Leverage as an Intervening Variable in Mining Companies Listed on the Indonesia Stock Exchange. *International Journal of Business, Economics & Management*, 7(2), 81–87. <https://doi.org/10.21744/ijbem.v7n2.2285>
- Sari, H. G. I., Karlinah, Lady, Sugondo, L. Y., & Ananta, A. (2026). Kinerja ESG, Independensi Komite Audit, dan Biaya Modal: Bukti Moderasi dari Perusahaan Bursa Efek Indonesia. *Owner*, 10(1), 259–271. <https://doi.org/10.33395/owner.v10i1.3021>
- Setiani, E. P., Dewanti, P. W., & Cortez, E. (2024). ESG Scores, Financial Performance, and Carbon Emissions: Evidence from Southeast Asian Companies. *Nominal*:



- Barometer Riset Akuntansi Dan Manajemen, 13(2), 227–238.
<https://doi.org/10.21831/nominal.v13i2.76302>
- Taddeo, S., Agnese, P., & Busato, F. (2024). Rethinking the effect of ESG practices on profitability through cross-dimensional substitutability. *Journal of Environmental Management*, 352. <https://doi.org/10.1016/j.jenvman.2024.120115>
- Tyas, C. D. N., & Prastiwi, A. (2025). Pengaruh Profitabilitas Terhadap Nilai Perusahaan Dengan ESG Performance Sebagai Variabel Moderasi. *Owner*, 9(2). <https://doi.org/10.33395/owner.v9i2.2624>
- Velte, P., Stawinoga, M., & Lueg, R. (2020). Carbon performance and disclosure: A systematic review of governance-related determinants and financial consequences. In *Journal of Cleaner Production* (Vol. 254). Elsevier Ltd. <https://doi.org/10.1016/j.jclepro.2020.120063>
- Wang, C. M., & Wu, T. P. (2025). Non-Linear Dynamics: ESG Investment and Financial Performance Heterogeneity in the Tourism Industry. *Sustainability (Switzerland)*, 17(24). <https://doi.org/10.3390/su172411010>
- Zvarikova, K., Gajanova, L., & Horak, J. (2024). Exploring CSR performance as a proxy for competitive advantage across sectors in the Central European countries. *Oeconomia Copernicana*, 15(3), 991–1020. <https://doi.org/10.24136/oc.3247>

