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Foreign directors, foreign ownership, and carbon emission disclosure: Evidence from Indonesia environmentally sensitive companies

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ABSTRACT

Business organizations were increasingly being held accountable for their social and environmental impacts. Disclosure of carbon emissions is an issue that is starting to develop in various countries, including Indonesia, related to climate change's effects on organizations' sustainability. National governments and non-governmental organizations (NGOs) needed to take action to urge companies to reduce carbon emissions, one of which is full disclosure of their carbon emissions. This study aimed to see whether knowing the presence of foreign directors, foreign commissioners, and foreign ownership affects the disclosure of carbon emissions. This study also used three control variables: Company Size, ROA, and DER. The samples of this research were companies listed on the IDX that are sensitive to the environment from 2019 to 2021, which issued a Sustainability Report resulting in a total of 41 companies. The test was carried out by performing multiple regression tests. The results showed that foreign commissioners, company size, and DER significantly influenced the disclosure of carbon emissions. Therefore, managers should consider balancing between foreign and local commissioners to benefit from a rich, heterogeneous resource encompassing the various merits of both types of directors, with particular emphasis on foreign commissioners' international exposure and experience.

Keywords: Foreign directors, foreign ownership, carbon emission disclosure, company size, debt of equity

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INTRODUCTION

Increased heatwaves, droughts, and floods already exceed plants' and animals' tolerance thresholds, driving mass mortalities in species such as trees and corals. These weather extremes are co-occurring, causing cascading impacts that are increasingly difficult to manage (IPCC, 2022).

According to Lindsey and Dahlan (2022), Earth's temperature has risen by 0.14° Fahrenheit (0.08° Celsius) per decade since 1880, but the rate of warming since 1981 is more than twice that: 0.32° F (0.18° C) per decade. That extra heat is driving regional and seasonal temperature extremes, reducing snow cover and sea ice, intensifying heavy rainfall, and changing habitat ranges for plants and animals—expanding some and shrinking others.

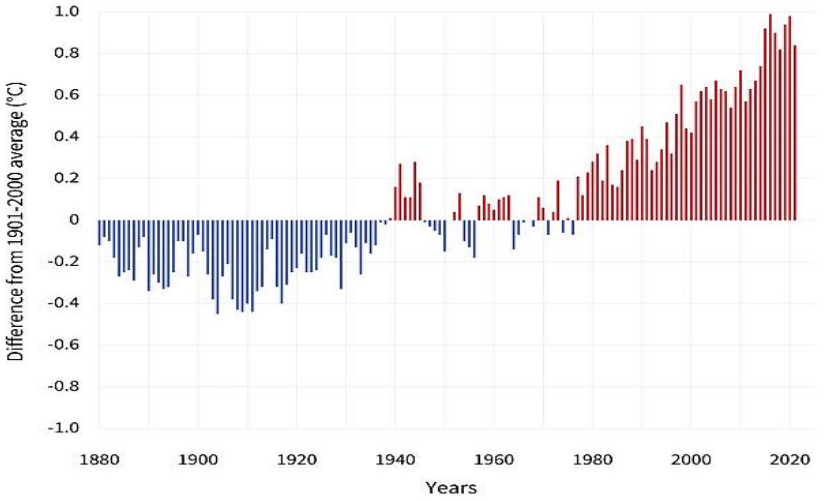

FIGURE 1. Temperature increasing Through the Years

Providing the scientific proof to back up that damning assessment, the IPCC report written by hundreds of leading scientists and agreed by 195 countries noted that greenhouse gas emissions generated by human activity, have increased since 2010 across all major sectors globally (Un, 2022).

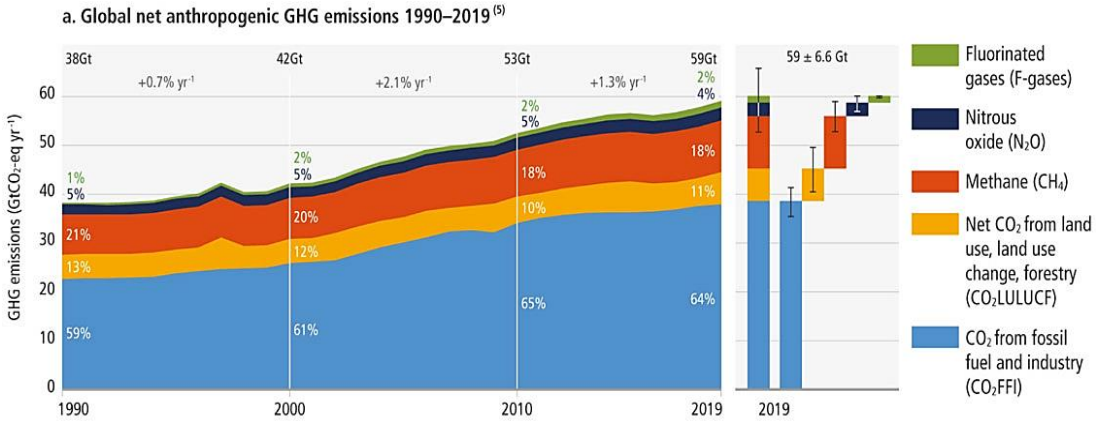

FIGURE 2. Increase of GSG Emissions in the World

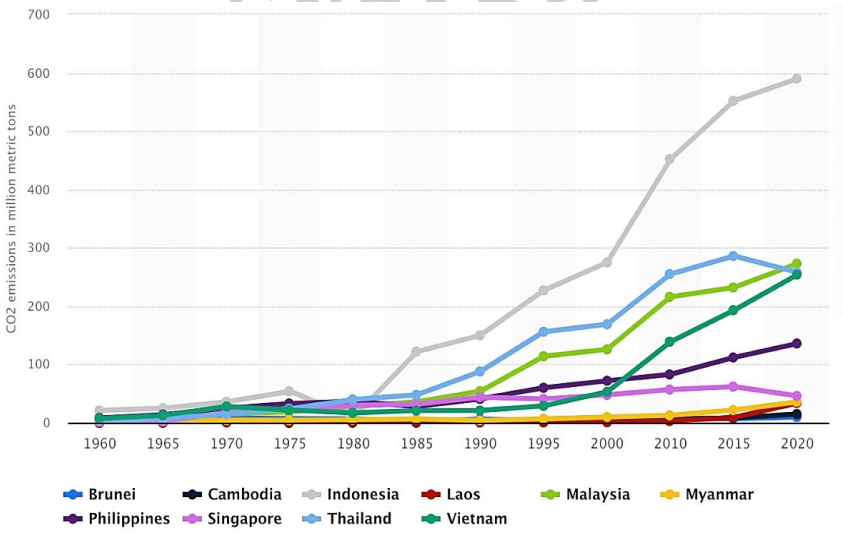

FIGURE 3. CO2 emissions ASEAN 1960-2020

Other data shows that at about 590 million metric tons, Indonesia accounted for the biggest emissions in SEA, making the country one of the five largest CO2 emitters in the Asia-Pacific region (Kameke, 2022).

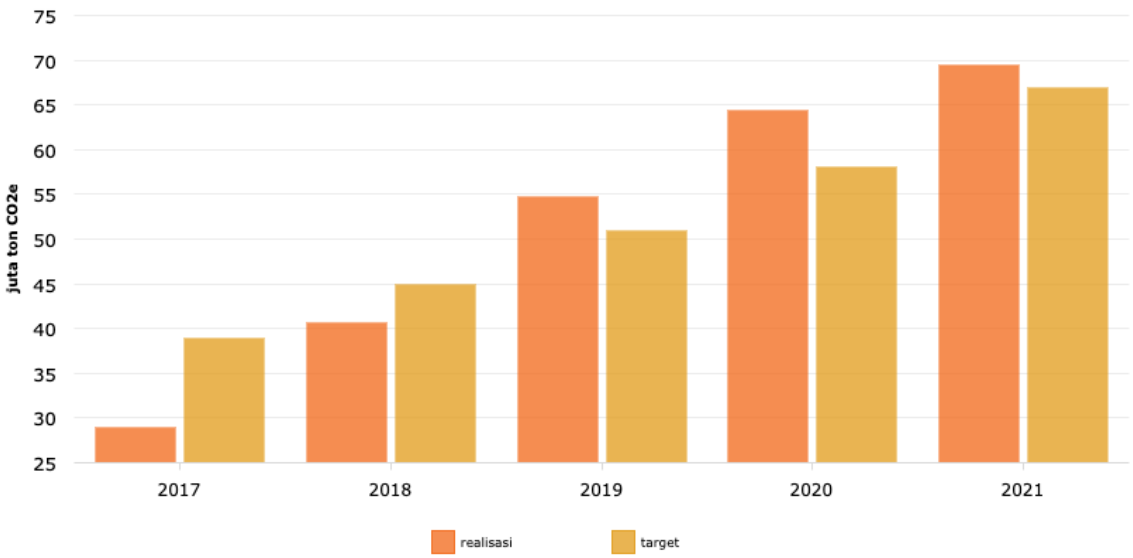

FIGURE 4. Realization and Target of Reducing Indonesia's Carbon Emissions 2017 - 2021

Indonesia, on 2021, has reduced carbon emissions by 69.5 million tons of CO2 equivalent (CO2e), according to data from the Ministry of Energy and Mineral Resources (ESDM). This emission reduction exceeds the target of 67 million tons of CO2e. in 2019, Indonesia managed to reduce 54.8 million tons of CO2e, exceeding the set target of 51 million tons of CO2e. The same thing happened in 2020. Indonesia reduced 64.4 million tons of CO2e, exceeding the 58 million tons of CO2e target. of course, this result should be appreciated considering that in 2017 and 2018, Indonesia failed to meet the set target (Pahlevi, 2022). in the end, global warming and climate change have become increasingly growing problems that threaten the world's future. This condition affects human life, especially for business entities directly related to the environment in their operations. Firms would voluntarily disclose carbon information to gain legitimacy and meet stakeholders' demands or signal their genuine carbon reduction commitment to outsiders to differentiate themselves from their counterparts (Luo et al., 2013) It is hoped that there will be grown community sensitivity based on raising awareness of the scope of the problems caused by global warming, which can lead to more environmentally responsible decisions (Hapsari and Prasetyo, 2020).

Business organizations are considered accountable for their social and environmental impact. National governments and non-governmental organizations (NGOs) have urged firms to reduce carbon emissions (Luo et al., 2013). Previously, with increasing awareness of this, many parties pressured entities and organizations to be open and transparent in disclosing their environmental performance (Kılıç and Kuzey, 2019). Starting from CSR disclosure (Ali et al., 2017; Lu and Wang, 2021; Muttakin et al., 2015), environmental disclosure (Agyemang et al., 2020; Ezhilarasi, 2020; and Maso, 2016), greenhouse gas (GHG) emissions disclosure (Al-Qahtani and Elgharbawy, 2020), to Carbon disclosure (Pradini, 2013; Abdullah et al., 2020; Ganda, 2018). According to Hermawan et al., (2018), Carbon emission disclosure is an issue that began to develop in various countries related to the impact of climate change on organizational survival; Indonesia is no exception. However, several factors make companies reluctant to disclose carbon emissions. First, no regulation requires companies to publish sustainability reports, especially disclosures related to carbon emissions. Second, the sustainability report requires an additional cost for the company (Trilestari and Murwanto, 2022). Environmental exposure is still voluntary in the annual report, so whether this disclosure in a company's annual report depends on each company itself. Financial accounting standards in Indonesia do not require all companies to disclose environmental information; Thus, many companies do not disclose ecological details (Abdullah et al., 2020). Another host of theories suggests that an international board (board with foreign directors) helps a firm go greener (Usman et al., 2020). The board of directors is the backbone of the corporate governance structure and is responsible for protecting the interests of the stakeholders of the corporation through directing its operations and supporting its decision-making. They also determine the corporate policies of corporations, decide on corporate issues, and assure corporate profitability and return on stakeholders' investments (Gardazi et al., 2020). Maintaining a high level of CG practices could protect stakeholders' rights and guarantee social responsibility. Suitable governance structures make firms more likely to voluntarily disclose information to the public, such as CSR and environmental data, thereby attracting more investors by disclosing corporate achievements (Muttakin et al., 2015; Al-Qahtani and Elgharbawy, 2020).

The appointment of foreign directors improves the quality of the board's decision-making and information disclosure (Agyemang et al., 2020). in this sense, environmental disclosure practices vary among foreign countries due to the differences in local legislation, norms, and values (Jeswani et al., 2008). Given the trend of pro-CSR and climate-friendly initiatives, foreign directors' international exposure leads to more proactive initiatives and corporate disclosure practices (Jaaffar et al., 2019). According to Hussain et al., (2019), directors' foreign experience has a significant positive impact on environmental information disclosure. Because of their different backgrounds, foreign members can add valuable and diverse expertise that domestic members do not possess (Lee and Farh, 2004). in addition to foreign directors, Chen et al., (2004) also stated that foreign institutions mitigate agency problems and information asymmetry by improving corporate governance and financial transparency. Extensive literature on foreign institutions suggests that they play a more significant role than local investors in strengthening corporate governance worldwide. foreign investment has played an essential role in the transition toward a stronger outward orientation in many emerging economies (Dong et al., 2022; Tarigan et al., 2019).

There is still little research that has not directly discussed the relationship between the composition of foreign directors and foreign ownership and their influence on carbon disclosure in Indonesia, which is the main background of this research. Many previous studies discussed the company's financial performance and its relationship with carbon disclosure (Ganda, 2018; Trilestari and Murwanto, 2022; Alsaifi et al., 2020). There were also previous studies that discussed the relationship between industry type and carbon disclosure (Trilestari and Murwanto, 2022; Apriliana, 2019; Hardiansyah et al., 2021), previous research also discussed the relationship between media exposure and carbon disclosure (Abdullah et al., 2020; Cahya, 2016), but it is still rare to examine the influence of the presence of foreign directors directly on carbon disclosure in Indonesia. Long et al., (2020) stated that foreign ownership has a positive impact on local carbon productivity. The same result was also obtained by Rustam et al., (2019) who noted that foreign ownership effectively improves the sustainability governance mechanism. Research conducted by Jung and Kim (2020) and Kim et al., (2021) in South Korea shows that foreign investors motivate firms to improve the environment to prepare for future environmental risks. foreign investors will likely exert pressure on management to implement CDP participation, justifying the firm's approaches to corporate environmental activities and efforts to cope with carbon regulation. Meanwhile, according to Saini and Singhania (2019), the interaction between foreign ownership and environmental disclosure represents a negative association, implying that foreign ownership is incubating more on profit-making rather than environmental protection initiatives. However, no research discusses the relationship between foreign ownership and its effect on carbon disclosure in Indonesia which is the main background of this research.

The same condition also applies to foreign directors. Previous research that directly discusses the influence of foreign directors on carbon disclosure has also not been widely carried out in other countries and Indonesia. However, there have been many previous studies that have discussed the effect of director diversity (gender, age, board tenure, education) on carbon disclosure as has been done by He et al., (2021); Khalid et al., (2022); Li et al., (2018) in China, Kılıç and Kuzey (2019) in Turkey, Hollindale et al., (2019) and Choi et al., (2013) in Australia, Al-Qahtani and Elgharbawy (2020); Haque (2017); Liao et al., (2015) in England, Konadu (2017) in America, Jung and Kim (2020); Jung et al., (2021); Jung et al., (2022) in South Korea. With the lack of literacy that directly discusses the influence of foreign directors and foreign ownership on carbon disclosure in Indonesia, the researchers intend to research the impact of foreign boards and foreign ownership on the practice of carbon disclosure in Indonesia.

METHODS

The sample used in this study is an IDX-listed company sensitive to the environment that issued an annual report during the year 2019 until 2021. The results of the research sampling were 41 companies with three years of observation periods, so there were 123 objects of observation in this study. The source of data in this study is secondary data. The data is obtained from the Sustainability Report, which is downloaded from each company's website that is the sample in this study. Data analysis was performed using multiple regression analysis using a model that has passed the classical assumption test (normality, heteroscedasticity, autocorrelation, and multicollinearity

RESULTS AND DISCUSSION

Result

Statistic Descriptive

Based on the descriptive statistics obtained above, the minimum, maximum, mean, and std values are obtained. The results show that for the ROA and DER variables, from all the companies sampled in this study, the average value of the ROA and DER variables was already above the industry average Kasmir (2011), namely 0.02 and 0.09. Based on the results of this descriptive statistic, it is also known that the company with the smallest size in this sample is tower Bersama infrastructure Tbk., while the most significant company size is Perusahaan Gas

Negara (Persero) Tbk. The value of 0.00 in the minimum column for the foreign Ownership variable, foreign directors, and foreign commissioners' states that several companies do not have foreign Ownership and foreign directors. Usually, these companies are state-owned, not private companies. A total of 27 companies do not have a foreign board of commissioners, while 28 do not have a foreign board of directors. in this study, it was also found that the issuers of Holcim Indonesia Tbk. It has no foreign Ownership at all, which shows that local parties only own the company's shares. The average value of the carbon emission disclosure variable shows a value of 0.47, indicating that the average company sampled in this study discloses their carbon emissions by eight indicators of the 18 indicators used. The company with the most significant disclosure in this research sample is Medco Energy international Tbk. in 2021 with an exposure of 16 indicators, the company that discloses the lowest carbon emissions in this research sample is Darma Henwa Tbk. in 2019, only one indicator was disclosed.

TABLE 1. Statistic Descriptive Result

	N	Minimum	Maximum	Mean	Std. Deviation
CED	123	0.06	0.89	0.47	0.18
foreign Director	123	0.00	0.80	0.12	0.20
foreign Commissioners	123	0.00	0.80	0.15	0.23
foreign Ownership	123	0.00	1.45	0.41	0.33
ROA	123	-58.03	140.20	5.75	19.77
DER	123	-1082.61	1132.43	67.45	188.88
SIZE	123	1.79	22.74	15.32	3.53

Classic Assumption

Normality

Based on the results of the normality test using the Kormogorov Smirnov test, the Asymp value was obtained. Sig. (2-tailed) of 0.200. This significance value is above the alpha value of 5%, so it can be said that the data used in this study was normally distributed.

TABLE 2. Normality Test Result

		Unstandardized Residual
N		123
Normal Parameters[a,b]	Mean	0.00
	Std. Deviation	0.17
Most Extreme Differences	Absolute	0.067
	Positive	0.050
	Negative	-0.067
Test Statistic		0.067
Asymp. Sig. (2-tailed)		0.200

Heteroskedasticity

Based on the heteroscedasticity test conducted using the glacier test, the results showed the significance of each variable used in this study was above 0.05. This shows that the data used in this study does not have symptoms of heteroscedasticity.

TABLE 3. Heteroscedasticity Test Result

Model	Sig.
(Constant)	0.352
foreign Director	0.847
foreign Commisioners	0.270
foreign Ownership	0.221
ROA	0.462
DER	0.637
SIZE	0.077

Autocorrelation

Based on the autocorrelation test using the Lagrange Multiplier test, it can be concluded that the data used in this study does not have autocorrelation symptoms. This is because the Chi Square Count value of 8.81 is smaller than the Chi Square Table value of 11.07.

TABLE 4. Autocorrelation Test Result

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.46	0.21	0.18	0.16

Multicollinearity

The multicollinearity test used in this study is a test using the Variance inflation Factor (VIF) and tolerance value. The research model contains multicollinearity if the VIF value is 10. The multicollinearity test can only be carried out on research models with two or more independent variables or predictors. Suppose the VIF value of foreign Ownership, foreign Directors, foreign Commissioners, ROA, DER, and SIZE disclosures is smaller or less than ten, and the tolerance value is more excellent or more than 0.1. in that case, there is no correlation between the independent variables. So that for all independent variables used in this study, there were no symptoms of multicollinearity.

TABLE 5. Multicollinearity Test Result

Model	Collinearity Statistics	
	tolerance	VIF
foreign Director	0.561	1.784
foreign Commissioners	0.521	1.918
foreign Ownership	0.880	1.137
ROA	0.865	1.157
DER	0.839	1.192
SIZE	0.825	1.212

Hypothesis Test

Coefficient Determination

The results of the coefficient of determination test show that the value of R or the coefficient of determination is 3.9%, indicating that the relationship between variables is within the very low criteria (Sugiyono, 2007). The R-Square value in this study of 0.15% indicates that the independent variables, namely foreign Ownership, foreign Directors, foreign Commissioners, ROA, DER, and SIZE affect CED by 15%. The remaining 85% is explained by other predictors not studied.

TABLE 6. Coefficient Determination Test Result

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.039	0.15	0.11	0.17

F Test

The results of the F test in this study show a value of 0.00, which means that the independent variables in this study are foreign Ownership, foreign Directors, foreign Commissioners, ROA, DER, and SIZE significantly affect CED together.

TABLE 7. F-test Result

Model	Sig.
Regression	0.00
Residual	
total	

T Test

The last test that was carried out was to see the partial effect of each independent and control variable on the dependent variable which was carried out through the t test. The results show that the variables DER, SIZE, and foreign Commissioner have a significant influence on CED. While other variables, namely ROA, foreign Ownership, and foreign Directors do not have a significant effect on CED. After multiple regression analysis is performed, the following regression equation is obtained:

$$\mathbf{CED = a - 0.043FD + 0.210FC - 0.009FO + 0.000ROA - 0.010DER + 0.012SIZE}$$

TABLE 8. T-test Result

Model	Unstandardized Coefficients (B)	Sig.
(Constant)	0.729	0.000
foreign Director	-0.043	0.516
foreign Commissioners	0.210	0.008
foreign Ownership	-0.009	0.846
ROA	0.000	0.843
DER	-0.010	0.008
SIZE	0.012	0.016

Discussion

The Influence of Foreign Directors on Carbon Emission Disclosure

Based on the results of hypothesis testing that has been done, foreign directors do not have a significant influence on carbon emission disclosures. This is shown from the results of the t-test, which offers a significant value of 0.516 that exceeds the value of 0.05, so the hypothesis is not supported. This hypothesis is not supported due to the small number of companies sampled in the study that have foreign directors. A total of 28 companies out of 41 that were tested in the study did not have foreign directors; this caused the lack of data that could be used. These results are supported by research conducted by Agyemang et al., (2020), Jung et al., (2022), Ummah and Setiawan (2021). Based on research Agyemang et al., (2020) conducted on energy sector companies in China to look at the board characteristics on environmental disclosures, we also found the same thing, which is that foreign directors did not have a significant influence on carbon emission disclosures. This is because many companies are State-Owned Enterprises (BUMN), so almost all their directors are local citizens. According to Jung et al., (2022) conducted in South Korea, foreign investors in Korea are closer to the short-term seeking investors. So, they focus more on the company's financial performance. Further research supporting this study's results is conducted by Ummah and Setiawan (2021), which state that both Indonesian and non-Indonesian do not affect increasing or decreasing carbon emissions disclosures. Citizenship was not a guarantee of increased exposure to carbon emissions. The government in Indonesia has made policies regarding climate change. Moreover, the assumption (Hadya and Susanto, 2018), which states that, in general, foreigners who work in companies that are not their birthplace have a salary orientation, while the element of loyalty does not necessarily exist.

The Influence of Foreign Commissioners on Carbon Emission Disclosure

Based on the results of hypothesis testing that has been carried out, foreign commissioners significantly influence carbon emission disclosures. This is shown from the results of the t-test, which offers a significant value of 0.008, more diminutive than 0.05, so the hypothesis is supported. These results imply that foreign commissioners in the sample companies in this study succeeded in affecting increasing carbon emissions disclosure. This is because foreign commissioners tend to be more sensitive to financial performance than only focusing on financial performance. These results align with research conducted by Usman et al., (2020); Beji et al., (2020), Mardini and Lahyani (2021) having foreign directors has a significant positive impact on carbon emissions disclosure. According to Beji et al., (2020), this condition is caused by the ability of foreign members to bring new ideas and perspectives on specific areas, such as preventing pollution and ineffective transportation and increasing biodiversity. Also, they seem to be concerned about local social development and philanthropic contributions. Mardini and Lahyani (2021) stated that foreign directors are a critical resource that enhances CE strategic decisions. The same thing was said by Usman et al., (2020), who stated that foreign directors carry traits that positively affect environmental performance. Human capital refers to one's qualities of intelligence, positive attitude, creativity, and business savvy (David, 2000). Resource dependence theory also supports foreign directors' role in helping firms access essential resources from outside, assisting firms to go greener.

The Influence of Foreign Ownership on Carbon Emission Disclosure

Based on the results of hypothesis testing that has been done, foreign ownership does not have a significant effect on carbon emission disclosures. This is shown from the results of the t test which shows a significant value of 0.846, which is above the value of 0.05 so that the hypothesis is not supported. These results imply that foreign ownership in the sample companies in this study has not influenced increasing carbon emissions disclosure. This is because most of the shares traded in the public in the research sampled in this study are owned by local investors. These results are in line with research conducted by Saini and Singhania (2019); Ika et al., (2022) which states that having foreign ownership has no significant impact on carbon emissions disclosure. Ika et al., (2022) stated that according to legitimacy theory, multinational corporations share more details about their social and environmental activities than domestic corporations, while most of the samples of this study are domestic companies so they do not have high international shareholdings and owners The minority international shares have not been able to influence the disclosure of carbon disclosure. In another study conducted by Saini and

Singhania (2019), the interaction between foreign ownership and environmental disclosure represents a negative association, implying that foreign ownership is incubating more on profit-making rather than environmental protection initiatives.

The Influence of ROA, DER, and SIZE on Carbon Emission Disclosure

ROA, DER, and SIZE are the three control variables used in this study, and this is because these three variables also influence the carbon emission disclosure. The results show that DER and SIZE significantly affect carbon emission disclosures in the sample companies in this study, with a significance value of 0.008 and 0.016, which are below 0.05. These results align with research conducted by Abdullah et al., (2020); Hapsoro and Falih (2020); Zanra et al., (2020). DER is a leverage ratio that shows a more outstanding obligation to pay debt and interest of the company. The effect of DER on-carbon emission disclosures shows that the greater the leverage, the lower the Carbon Emission Disclosure, and vice versa, the lower the leverage, the companies will tend to carry out Carbon Emission Disclosure. This shows that foreign commissioners can have implications for a company's finances. More outstanding obligations to pay debt and interest will limit the company's ability to carry out carbon reduction strategies and disclosures (Zanra et al., 2020). Companies with high leverage will be more careful in considering expenditures, including carbon prevention and reduction measures. Furthermore, it reduces the tendency of companies to make social and environmental disclosures such as Carbon Emission Disclosure Hapsoro and Falih (2020). Abdullah et al. (2020) stated that the company's size substantially and positively impacted the carbon emission disclosure, meaning that firms would disclose their carbon emission linear to the size of the firms. Small firms would not directly make them reveal their carbon emissions.

CONCLUSIONS AND SUGGESTION

Conclusions

This study examines the influence of foreign directors, foreign commissioners, and foreign ownership on carbon emission disclosures. Based on the results of research that has been carried out on environmentally sensitive companies listed on the IDX from 2019 to 2021, the test results show that foreign commissioners have a positive influence on carbon emission disclosures, while foreign directors and foreign Ownership do not have a significant impact on carbon emission disclosures. Therefore, managers should consider balancing between foreign and local commissioners to benefit from a rich, heterogeneous resource encompassing the various merits of both types of directors, with particular emphasis on foreign commissioners' international exposure and experience. Another finding shows that DER and SIZE, the samples in this study, significantly affect carbon emission disclosures. This shows the implication that with the existence of a high debt value in the company, the company will be more careful in the use of its capital so that it will reduce costs outside the company's operations, including environmental costs and disclosure costs. Another implication is that companies with larger asset values tend to disclose their carbon emissions better than companies with smaller sizes.

Suggestion

While the study found no significant influence from foreign directors and ownership, companies are encouraged to recognize the potential value of these roles beyond their direct impact on disclosure. Moreover, organizations with higher debt values may benefit from exercising caution in capital utilization, leading to potential reductions in environmental and disclosure costs. Additionally, the findings suggest that smaller companies can improve their disclosure practices by emulating the transparency observed in larger counterparts. Therefore, it is recommended that companies, irrespective of size, strategically align disclosure practices with their financial structures and leverage the unique strengths brought by a globally diverse board.

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