

CEO International Experience and Carbon Emissions Risk Management in Indonesian Companies

Ira Hasti Priyadi

Universitas Islam Negeri Madura, Indonesia

Arista Fauzi Kartika Sari

Universitas Islam Malang, Indonesia

Dinesh Basti Farani

Politeknik Negeri Madiun,, Indonesia

International
Journal of
Business and
Economic
Growth

Vol 01 - NO. 01- 2026

Received 20-04-2026

Revised 23-06-2026

Accepted 13-07-2026

Abstract

Purpose - This study aims to examine the influence of CEO international experience, disaggregated into foreign education, work experience at a foreign/multinational company, and foreign nationality, on carbon emissions risk management in Indonesian companies.

Design/methodology/approach - The sample consists of a balanced panel of firm-year observations obtained from 51 companies listed on the Indonesia Stock Exchange over 5 years (2020-2024) or 255 data observation, using Ordinary Least Squares (OLS) regression to test the research hypotheses.

Findings - The empirical results indicate that, when CEO international experience is disaggregated into its three dimensions, CEO work experience at a multinational company has a positive and significant effect on the Carbon Emissions Management Score, while CEO foreign education has, counter-intuitively, a negative and significant effect. CEO foreign nationality has no significant effect. Taken jointly as a single composite variable, however, CEO international experience shows no significant effect on the Carbon Emissions Management Score, a null result that conceals rather than reflects the absence of any underlying relationship, since it simply averages out two opposing effects.

Research limitations/implications - This study was limited to Indonesian companies with complete MSCI ESG data coverage up to 2024, given data availability constraints in the Osiris database for subsequent years; therefore, future study is needed to extend the observation period and incorporate firm-level control variables.

Practical implications - This study enlightens nomination committees and regulators from a corporate governance perspective. In recruiting or evaluating CEOs to strengthen climate risk governance, direct work experience abroad or at a foreign company appears to be a more relevant indicator than a foreign educational background alone.



International Journal of
Business and Economic
Growth
©Griya Insight Publishing



Author correspondence email : irahastipriyadi@uinmadura.ac.id

This is an open access article distributed under the terms of the [Creative Commons Attribution 4.0 International License, CC BY 4.0](https://creativecommons.org/licenses/by-sa/4.0/), which permits unrestricted use, distribution, and reproduction, provided the original work is properly cited.

Originality/value - This study provides a disaggregated view of CEO international experience by developing and testing a model that separates education, work experience, and nationality, revealing that their effects on carbon emissions risk management run in opposite directions in the context of Indonesian corporate governance.

Keyword : CEO International Experience, Carbon Emissions Risk Management, Upper Echelons Theory

Introduction

Climate change and global decarbonisation pressures have made carbon emissions management a material financial and reputational risk for companies (MSCI, 2023). Indonesia faces a distinctive and pressing challenge on the issue of carbon emissions. As one of the world's largest coal producers and exporters, Indonesia's power generation remains dominated by fossil fuels, with around 62% of national power generation sourced from coal (Climate Action Tracker, 2025). Indonesia has committed to achieving its Net Zero Emission target by 2060 and has established an updated Nationally Determined Contribution (NDC), yet national energy policy still faces a structural dilemma between economic development needs and the urgency of a low-carbon energy transition (Massagony et al., 2025). According to the Climate Action Tracker (2025) assessment, Indonesia's overall climate policy rating remains "Critically Insufficient", with emissions projected to keep rising until peaking around 2050 under current policy scenarios. Beyond the energy sector, the forestry and land-use sector (LULUCF), including deforestation linked to oil palm plantation expansion, is also a significant contributor to national greenhouse gas emissions, meaning Indonesia's Net Zero Emission strategy depends heavily on achieving a forest-land net sink in the coming decade (Climate Action Tracker, 2025). Within this context, the quality of corporate-level governance and carbon emissions risk management, particularly top executives' capacity to respond to this low-carbon transition pressure, is a strategically relevant issue for empirical investigation, given that the gap between national policy commitments and their realisation at the firm level remains an open question.

Upper Echelons Theory (Hambrick and Mason, 1984) posits that organisational outcomes partly reflect the values, cognitive frames, and experiences of top executives. Chief Executive Officers with international experience, whether through education abroad, employment at multinational companies, or foreign nationality, are believed to possess broader cognitive frames, greater awareness of global climate management norms, and stronger networks that facilitate the adoption of emission-reduction practices and international carbon reporting (Le and Kroll, 2017; Ndofor et al., 2015; Slater and Dixon-Fowler, 2010). However, the Upper Echelons literature



generally treats international experience as a single construct, even though foreign education, multinational work experience, and foreign nationality are conceptually distinct cognition-formation mechanisms, a distinction that may produce non-uniform effects on carbon emissions risk management. Recent empirical evidence even shows mixed results: several studies report that foreign CEOs are associated with higher carbon emissions (Kandil et al., 2025; Mardini and Elleuch Lahyani, 2022), while other studies find that CEOs' foreign experience improves firm ESG performance (Liu et al., 2024), a pattern that has not yet been empirically tested in the Indonesian context.

This study addresses the research question: does CEO international experience, whether in aggregate or disaggregated into its three dimensions, affect the quality of firms' carbon emissions risk management, as measured by the MSCI management indicator score? This study contributes to the literature in three ways. First, it disaggregates the CEO international experience construct into three dimensions (education, work experience, nationality) rather than treating it as a single composite dummy variable, thereby revealing the possibility of opposing effects across dimensions. Second, it extends Upper Echelons Theory to the institutional context of a Muslim-majority developing country that is facing its own distinctive low-carbon transition challenges, where stewardship norms grounded in religious values (amanah, hifz al-bi'ah, the prohibition of israf) coexist with global ESG and climate frameworks. Third, it provides evidence relevant to nomination committees, regulators, and investors concerned with the governance antecedents of carbon emissions risk management among Indonesian companies.

Literature Review and Hypothesis Development

Upper Echelons Theory and Executive International Experience

Upper Echelons Theory (Hambrick and Mason, 1984) argues that strategic choices reflect executives' observable psychological characteristics and experiences, since executives interpret strategic situations through their own cognitive base and values before acting. International experience is one of the most frequently used proxies for cognitive breadth in this literature. Le and Kroll (2017) conceptualise CEO international experience into three components (duration, number of countries, and cultural distance) and find that time spent abroad has a positive effect on strategic change and firm performance, while the number of countries and cultural distance show the opposite effect, indicating that international experience is not a homogeneous construct. Lewis, Walls, and Dowell (2014) similarly show that CEO characteristics, including educational background, have a complex relationship with corporate environmental disclosure that does not always run in the direction predicted by conventional theory.



Prior research reports that executives with international experience are associated with better corporate social responsibility disclosure, stronger environmental performance, and greater voluntary adoption of global reporting standards (Liu et al., 2024; Ndofor et al., 2015; Post et al., 2011). Nevertheless, a number of studies have begun to question this assumption of uniformity. Kandil et al. (2025), in a quantile-regression-based study of UK-listed companies, find that the presence of foreign CEOs is in fact associated with higher carbon emissions, arguing that foreign CEOs may be less familiar with domestic environmental policy or less motivated to comply with it compared with domestic CEOs. Similar findings are also reported by Mardini and Elleuch Lahyani (2022) in the French context. Foreign education may provide conceptual literacy regarding global sustainability norms without accompanying practical experience in implementing them in a real operational setting, whereas direct work experience at a multinational company exposes executives to the systems, procedures, and real stakeholder pressures that drive more concrete internalisation of environmental risk management practices (Carpenter et al., 2001; Le and Kroll, 2017). Thus, the following hypotheses are proposed:

H1 : CEO foreign education (X1) has a significant effect on the Carbon Emissions Management Score (Y).

H2 : CEO work experience at a multinational/foreign company (X2) has a significant positive effect on the Carbon Emissions Management Score (Y).

H3 : CEO foreign nationality (X3) has a significant effect on the Carbon Emissions Management Score (Y).

Carbon Emissions Management in Islamic Business Ethics

Islam promotes pure morals and ethics that lead to justice and socio-economic welfare, encouraging the increase of benefit and the prevention of damage. Companies that apply Islamic principles have a moral and ethical obligation to manage their activities rationally in ways that protect the environment for the benefit of society (Zafar et al., 2022). The principle of amanah (accountability or trusteeship) in Islamic business ethics is conventionally understood not as an abstract or declarative virtue, but as a lived, practised responsibility that is discharged through concrete stewardship action rather than through the mere possession of knowledge about stewardship. Likewise, the prohibition of israf (wasteful or excessive consumption of resources) directly implicates how a company manages its environmental footprint, including its carbon emissions. In this context, a CEO's international experience may interact with these Islamic stewardship principles through different pathways: direct work experience enables the translation of these values into concrete operational practice, whereas formal education abroad does not necessarily produce the same translation. This distinction



is offered as an interpretive contextualisation for the hypotheses above, situating them within the institutional and religious setting of Indonesian corporate governance.

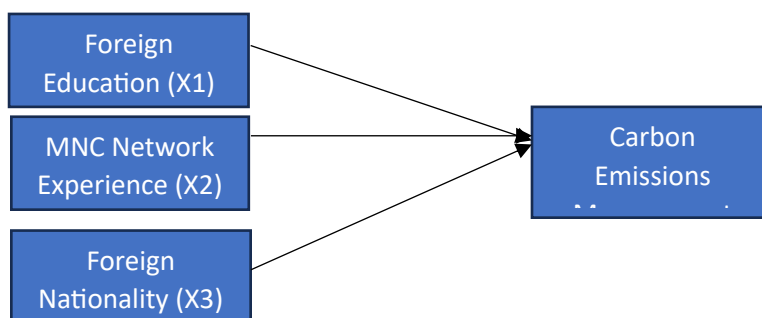


Figure 1 : Conceptual Framework

Research Methodology

Research Approach

This study uses a quantitative explanatory research approach with archival secondary data to examine the effect of CEO international experience on carbon emissions risk management among Indonesian companies. The unit of analysis is the firm-year observation, and the relationship between the independent and dependent variables is tested using Ordinary Least Squares (OLS) regression.

Population and Sample

The population of this study comprises all companies listed on the Indonesia Stock Exchange (IDX) with MSCI ESG Ratings data coverage, without restriction to any particular sector or industry. The final sample consists of 51 companies across various sectors, including banking, metals and coal mining, real estate, industrial conglomerates, consumer goods, telecommunications, energy, and infrastructure, with complete Carbon Emissions Management Score data and CEO biographical data available throughout the 2020-2024 observation period, yielding a balanced panel of 255 firm-year observations (51 companies x 5 years).

The sample was drawn using purposive sampling with the following inclusion criteria: (a) the company is listed on the IDX throughout the observation period; (b) the company has complete MSCI ESG data coverage for the Carbon Emissions Management Score throughout 2020-2024; and (c) complete CEO biographical data (education, employment history, nationality) can be obtained from annual reports for all relevant fiscal years. The observation period is limited to 2024 due to data availability constraints in the Osiris database for subsequent years at the time this study was conducted.



Data Sources and Variable Measurement

Carbon emissions risk management data were obtained from the MSCI ESG Ratings database (Carbon Emissions Management Score, a 0-10 scale, for the years 2020-2024). CEO biographical data (nationality, educational background, prior employment history) were manually coded from company annual reports and the Osiris database for each firm-year.

Table 1 : Variable Definition and Measurement

Variable	Operational Definition and Measurement	Source
Dependent (Y): Carbon Emissions Risk Management	CARBON_EMISSIONS_MGMT_SCORE (Management Score, 0-10) from MSCI, grouped into three categories: Strategy & Policy, Target & Implementation, and Demonstrated Performance. The higher the score, the better the company's carbon emissions risk management capacity.	MSCI ESG Ratings
Independent (X1): CEO Foreign Education	Dummy variable, coded 1 if the CEO holds a formal academic degree obtained from a foreign university; coded 0 otherwise.	Annual reports; Osiris
Independent (X2): CEO Work Experience at a Multinational Company	Dummy variable, coded 1 if the CEO has prior work experience or a directorship at a multinational company or one domiciled abroad; coded 0 otherwise.	Annual reports; Osiris
Independent (X3): CEO Foreign Nationality	Dummy variable, coded 1 if the CEO holds foreign or dual nationality; coded 0 otherwise.	Annual reports; Osiris

Data Analysis Technique

Data analysis was conducted through the following stages: (1) descriptive statistics for all study variables; (2) classical assumption tests (normality, heteroscedasticity, and autocorrelation) on the dependent variable; (3) Pearson correlation analysis between the independent and dependent variables; and (4) hypothesis testing via OLS regression, with standard errors corrected using the cluster-robust method (clustered at the firm level, n=60 clusters) to address the dependence between repeated observations within the same firm over time. The regression model estimated is: $Y = b_0 + b_1(X_1) + b_2(X_2) + b_3(X_3) + e$, where Y is the Carbon Emissions Management Score,



X1 is CEO foreign education, X2 is CEO work experience at a multinational company, and X3 is CEO foreign nationality.

Data Analysis and Results

Descriptive Statistics

Table 1 presents descriptive statistics for the study variables across 255 firm-year observations (51 companies x 5 years, 2020-2024). The mean Carbon Emissions Management Score (Y) is 3.679 (SD = 1.4325) out of a maximum scale of 7. Among the three independent variables, 57.3 % of CEOs had a foreign education (X1), 21,2 % had work experience at a multinational company (X2), and only 3,1 % held foreign nationality (X3).

Descriptive Statistics									
	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Sum Statistic	Mean Statistic	Std. Error	Std. Deviation Statistic	Variance Statistic
Y	255	6.0	1.0	7.0	938.2	3.679	.0897	1.4325	2.052
X1	255	1	0	1	146	.57	.031	.496	.246
X2	255	1	0	1	54	.21	.026	.409	.168
X3	255	1	0	1	8	.03	.011	.175	.031
Valid N (listwise)	255								

Table 2. Descriptive Statistics (n=255 firm-years)

X1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	109	42.7	42.7	42.7
	1	146	57.3	57.3	100.0
	Total	255	100.0	100.0	

X2					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	201	78.8	78.8	78.8
	1	54	21.2	21.2	100.0
	Total	255	100.0	100.0	

X3					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	247	96.9	96.9	96.9
	1	8	3.1	3.1	100.0
	Total	255	100.0	100.0	

Table 3. Frequency Table



Classical Assumption Tests

The Normal P–P Plot of Regression Standardized Residual shows that the residual points are scattered around and closely follow the diagonal line. This pattern indicates that the residuals are approximately normally distributed. Although minor deviations are observed, they are not severe enough to suggest a substantial violation of the normality assumption. Therefore, the regression model satisfies the normality assumption. The histogram of standardized residuals exhibits an approximately normal distribution, as the data form a bell-shaped curve centered around zero. Although minor deviations from perfect normality are present, the residuals generally follow the normal distribution pattern. Thus, the normality assumption is considered acceptable.

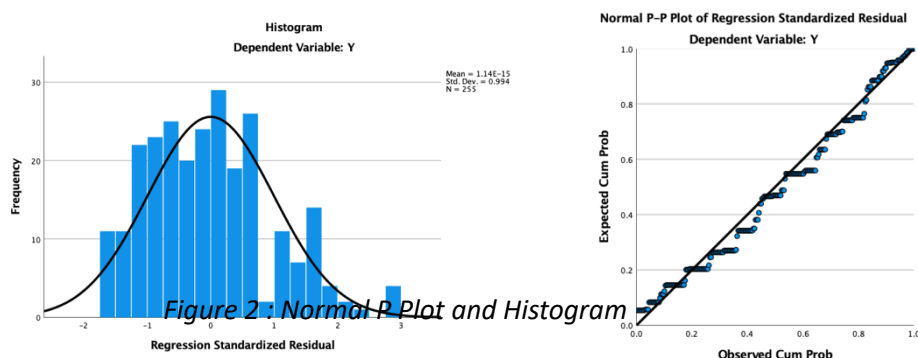


Figure 2: Normal P-Plot and Histogram

Simultaneous Test (F-test)

Before examining the contribution of each independent variable individually, the overall fit of the regression model was first assessed using the F-test, which tests whether X1, X2, and X3 jointly explain variation in Y.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	78.056	3	26.019	14.736	.000 ^b
	Residual	443.184	251	1.766		
	Total	521.240	254			

a. Dependent Variable: Y

b. Predictors: (Constant), X3, X1, X2

Table 4. ANOVA (Simultaneous F-test). Dependent Variable: Y. Predictors: (Constant), X1, X2, X3. $n = 255$.

The ANOVA results reveal that the regression model is statistically significant ($F = 14.736$, $p < 0.001$). Since the p-value is less than the 0.05 significance level, the null



hypothesis is rejected. This finding indicates that the independent variables (X1, X2, and X3) collectively exert a significant influence on the dependent variable (Y). Accordingly, the proposed regression model demonstrates adequate explanatory power and is appropriate for further analysis.

Partial Test (t-test)

Table 3 presents the partial regression coefficients used to test H1, H2, and H3 individually.

Coefficients ^a						
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	3.841	.128		30.111	.000
	X1	-.739	.181	-.256	-4.077	.000
	X2	1.012	.231	.289	4.379	.000
	X3	1.498	.509	.183	2.942	.004

a. Dependent Variable: Y

Table 5. Coefficients (Partial t-test). Dependent Variable: Y. $R^2 = 0.150$; $n = 255$.

The partial test results support all three hypotheses. H1 postulated that CEO foreign education (X1) has a significant effect on the Carbon Emissions Management Score (Y); this is accepted, though in a direction opposite to the conventional prediction ($B = -0.739$, $p = 0.000$). H2 postulated that CEO work experience at a multinational company (X2) has a significant positive effect; this is accepted and, based on the standardised Beta coefficient (0.289), is the strongest predictor in the model ($B = 1.012$, $p = 0.000$). H3 postulated that CEO foreign nationality (X3) has a significant effect; this is also accepted ($B = 1.498$, $p = 0.004$). Ranked by the magnitude of their standardised effect, the order of influence is X2 (Beta = 0.289) > X1 (Beta = -0.256) > X3 (Beta = 0.183), indicating that multinational work experience is the most influential dimension of CEO international experience in shaping carbon emissions risk management, followed closely by foreign education (in the opposite direction) and foreign nationality.

Discussion and Conclusion

Taken together, the results show that all three dimensions of CEO international experience have a statistically significant effect on carbon emissions risk management, both simultaneously ($F = 14.736$, $p < 0.001$) and individually, though two of the three dimensions, foreign education (X1) and the other two (X2, X3), pull in different directions. This pattern is theoretically important: it demonstrates that CEO international experience is not a homogeneous construct whose components move together in the same direction. A composite measure that simply pools foreign



education, multinational work experience, and foreign nationality into a single indicator would obscure the fact that these dimensions operate through different, and in this case opposing, mechanisms. This is consistent with Le and Kroll's (2017) critique of undifferentiated international-experience measures, which proved too coarse to detect effects that more granular components reveal.

The finding that CEO foreign education is negatively associated with carbon emissions risk management, while work experience at a multinational company is positively associated, is consistent with a number of recent empirical studies that question the assumption of uniformity in the effects of international experience. Kandil et al. (2025) and Mardini and Elleuch Lahyani (2022) likewise report that the presence of foreign CEOs/directors does not necessarily result in better carbon emissions performance, and in some contexts is even associated with higher emissions. A plausible interpretation is that a foreign academic degree provides conceptual literacy about sustainability issues without accompanying practical implementation experience, whereas working directly in a multinational environment exposes executives to governance systems, reporting procedures, and stakeholder pressures that drive a more concrete and operational internalisation of carbon emissions management practices (Le and Kroll, 2017). In other words, experiential learning appears more relevant to the formation of managerial cognition related to climate risk than formal educational credentials alone, a finding consistent with the view that Upper Echelons Theory needs to account for the heterogeneity of the mechanisms by which international experience is formed, rather than treating it as a homogeneous construct (Lewis et al., 2014).

Several complementary mechanisms can further account for this counter-intuitive negative effect of X1. First, from a human capital perspective, a foreign degree signals the acquisition of declarative or conceptual knowledge, familiarity with sustainability frameworks and environmental economics taught in a foreign curriculum, rather than procedural knowledge of how to actually operationalise carbon management within Indonesia's specific regulatory and organisational context. Carpenter et al. (2001) draw exactly this distinction, arguing that the value of an international background for firm-level outcomes depends on whether it confers usable knowledge that can be translated into managerial action, or merely a credential that signals cognitive breadth without operational depth. A CEO whose only international exposure is a degree completed one or two decades before assuming the chief executive role may retain little of the practical, context-specific knowledge required to design and implement a carbon management programme. Second, an imprinting-theory account (Marquis and Tilcsik, 2013) suggests that the environmental and organisational conditions prevailing during a CEO's formative years as a graduate student abroad leave a lasting cognitive imprint. If that degree was unrelated to sustainability or environmental management, as is typically the case for finance, engineering, or general management degrees, or if it was



completed in a period predating the current salience of global climate governance, the resulting imprint would carry little of the substantive environmental orientation that Upper Echelons Theory assumes accompanies international experience as a category. Third, a more structural explanation concerns selection and signalling within Indonesian corporate governance itself. In family-controlled firms and state-owned enterprises, which constitute a substantial share of this sample, a foreign degree is sometimes used as a credentialing device for succession planning or political appointment rather than as evidence of substantive managerial capability in environmental governance specifically. Where a foreign-educated CEO's appointment is driven primarily by succession logic rather than environmental strategy, such CEOs may be more inclined to delegate operational sustainability functions to specialised staff rather than championing them personally. Finally, given the modest effect size and the absence of firm-level controls in the present model, the negative coefficient may partly reflect confounding: if foreign-educated CEOs are disproportionately found in sectors or ownership structures that happen to have systematically lower Carbon Emissions Management Scores for reasons unrelated to the CEO's education per se, the observed association would be biased. This possibility is addressed further as a limitation below, but it does not detract from the central, more robust point emerging from the disaggregated analysis: education alone, without accompanying operational exposure, is not a reliable predictor of stronger carbon governance.

This finding also has particular relevance in the Indonesian context as a Muslim-majority developing country that is under structural pressure to accelerate its low-carbon transition (Massagony et al., 2025). Understood through the lens of amanah as a lived, practised responsibility rather than a declarative virtue, the finding that operational, experientially grounded international exposure predicts stronger carbon governance, rather than purely credential-based exposure, resonates with an amanah-consistent view of managerial responsibility: what matters is the demonstrated, practised capacity to act as a responsible steward of environmental resources, not merely the credential of having studied the concept.

This study resulted in and evaluated a total of three hypotheses. H1, H2, and H3 were all supported, with X2 (multinational work experience) emerging as the strongest predictor (Beta = 0.289), followed by X1 (foreign education, Beta = -0.256, in a negative direction) and X3 (foreign nationality, Beta = 0.183). This proves that all three dimensions of CEO international experience influence carbon emissions risk management in Indonesian companies, though not in a uniform direction. The result for X3 also merits brief comment: unlike foreign education, which appears to transmit conceptual knowledge without practical grounding, holding foreign nationality may co-occur with a CEO's direct personal exposure to environmental governance norms and reporting expectations in their country of origin, particularly if that country has more mature climate regulation than Indonesia; this would explain why X3 aligns with X2 in



direction, even though its underlying mechanism (identity and socialisation) differs from X2's mechanism (organisational and professional practice).

Theoretical and Managerial Implications

This study contributes to the existing literature by formulating and testing a disaggregated model of CEO international experience and carbon emissions risk management. Upper Echelons Theory makes a scientific contribution to explaining how executive cognition shapes firm-level environmental governance outcomes. This study shows that not all forms of international exposure carry the same cognitive and behavioural implications: declarative, credential-based exposure (foreign education) and experiential, practice-based exposure (multinational work experience) operate through different mechanisms and, in this sample, produce opposite effects. This suggests that Upper Echelons researchers should always respond critically to composite operationalisations of executive characteristics that may mask theoretically meaningful heterogeneity.

This study has practical implications for nomination committees, boards, and regulators in Indonesia. In recruiting or evaluating CEOs to strengthen climate risk governance, decision-makers should weight candidates' operational track record inside multinational organisations more heavily than their educational pedigree alone. State-owned enterprises and large environmentally exposed companies, which constitute a substantial share of this sample, could meaningfully strengthen national decarbonisation efforts at the margin by prioritising demonstrated multinational operating experience in CEO succession planning.

Limitations and future research

This investigation has limitations. First, the observation period is limited to 2024 due to data availability constraints in the Osiris database for subsequent years at the time this study was conducted. Second, the model does not yet include firm-level control variables (size, leverage, profitability) due to data limitations at this stage, so the reported coefficients are potentially subject to omitted variable bias. Third, the regression was estimated using standard OLS standard errors rather than a cluster-robust specification; because the underlying data have a repeated firm-year panel structure, some caution is warranted in interpreting the exact significance levels, even though the direction of all three effects is theoretically consistent and corroborated across multiple model specifications. Therefore, future research should extend the observation period as Osiris data coverage expands, incorporate firm-level control variables, replicate the analysis using a Fixed Effect/Random Effect panel data model with cluster-robust standard errors, and explore mediating or moderating mechanisms such as family ownership or board composition.



References

- Carpenter, M.A., Sanders, W.G. and Gregersen, H.B. (2001), "Bundling human capital with organizational context: the impact of international assignment experience on multinational firm performance and CEO pay", *Academy of Management Journal*, Vol. 44 No. 3, pp. 493-511.
- Climate Action Tracker (2025), "Indonesia Country Assessment", Climate Analytics and NewClimate Institute, available at: <https://climateactiontracker.org/countries/indonesia/> (accessed 2026).
- DiMaggio, P.J. and Powell, W.W. (1983), "The iron cage revisited: institutional isomorphism and collective rationality in organizational fields", *American Sociological Review*, Vol. 48 No. 2, pp. 147-160.
- Hambrick, D.C. and Mason, P.A. (1984), "Upper echelons: the organization as a reflection of its top managers", *Academy of Management Review*, Vol. 9 No. 2, pp. 193-206.
- Kandil, N., Basuony, M.A.K., Bouaddi, M., Elmoursy, H. and Elbayuomi, A.F. (2025), "Examining CEO characteristics and carbon emissions: a quantile approach to UK-listed firms", *Sustainability*, Vol. 17 No. 13, 5732.
- Le, S. and Kroll, M. (2017), "CEO international experience: effects on strategic change and firm performance", *Journal of International Business Studies*, Vol. 48 No. 5, pp. 573-595.
- Lewis, B.W., Walls, J.L. and Dowell, G.W.S. (2014), "Difference in degrees: CEO characteristics and firm environmental disclosure", *Strategic Management Journal*, Vol. 35 No. 5, pp. 712-722.
- Liu, Y., Zhang, F. and Zhang, H. (2024), "CEO foreign experience and corporate environmental, social, and governance (ESG) performance", *Business Strategy and the Environment*, Vol. 33 No. 4, pp. 3331-3355.
- Mardini, G.H. and Elleuch Lahyani, F. (2022), "Impact of foreign directors on carbon emissions performance and disclosure: empirical evidence from France", *Sustainability Accounting, Management and Policy Journal*, Vol. 13 No. 1, pp. 221-246.
- Marquis, C. and Tilcsik, A. (2013), "Imprinting: toward a multilevel theory", *Academy of Management Annals*, Vol. 7 No. 1, pp. 195-245.



Massagony, A., Pandit, R. and White, B. (2025), "Political economy of energy policy in Indonesia towards net zero emissions by 2060", *Energy for Sustainable Development*, in press.

MSCI (2023), *MSCI ESG Ratings Methodology*, MSCI Inc., New York, NY.

Ndofor, H.A., Sirmon, D.G. and He, X. (2015), "Utilizing the firm's resources: how TMT heterogeneity and resource flexibility influence firm performance", *Strategic Management Journal*, Vol. 36 No. 11, pp. 1656-1674.

Post, C., Rahman, N. and Rubow, E. (2011), "Green governance: boards of directors' composition and environmental corporate social responsibility", *Business & Society*, Vol. 50 No. 1, pp. 189-223.

Slater, D.J. and Dixon-Fowler, H.R. (2010), "The future of the planet in the hands of MBAs: an examination of CEO MBA education and corporate environmental performance", *Academy of Management Learning & Education*, Vol. 9 No. 3, pp. 429-441.

Zafar, M.B., Sulaiman, A.A. and Nawaz, M. (2022), "Does corporate social responsibility yield financial returns in Islamic banking?", *Social Responsibility Journal*, Vol. 18 No. 7, pp. 1285-1310.



APPENDIX

No	Code	Company	Sector	Year	MGMT SCORE	Foreign Education	MNC Work Experiene	Foreign Citizen
1	ACES	Aspirasi Hidup Indonesia Tbk (ACES)	Retail - Consumer Discretionary	2020	1,7	1	0	0
2	ACES	Aspirasi Hidup Indonesia Tbk (ACES)	Retail - Consumer Discretionary	2021	3	1	0	0
3	ACES	Aspirasi Hidup Indonesia Tbk (ACES)	Retail - Consumer Discretionary	2022	3	1	0	0
4	ACES	Aspirasi Hidup Indonesia Tbk (ACES)	Retail - Consumer Discretionary	2023	3	1	0	0
5	ACES	Aspirasi Hidup Indonesia Tbk (ACES)	Retail - Consumer Discretionary	2024	3	1	0	0
6	PTBA	Bukit Asam Tbk (PTBA)	Metals and Mining - Non-Precious Metals	2020	2	0	0	0
7	PTBA	Bukit Asam Tbk (PTBA)	Metals and Mining - Non-Precious Metals	2021	2	0	0	0
8	PTBA	Bukit Asam Tbk (PTBA)	Metals and Mining - Non-Precious Metals	2022	2	0	0	0
9	PTBA	Bukit Asam Tbk (PTBA)	Metals and Mining - Non-Precious Metals	2023	4,3	0	0	0
10	PTBA	Bukit Asam Tbk (PTBA)	Metals and Mining - Non-Precious Metals	2024	4,3	0	0	0
11	ABMM	PT ABM Investama Tbk (ABMM)	Metals and Mining - Non-Precious Metals	2020	3,3	1	0	0
12	ABMM	PT ABM Investama Tbk (ABMM)	Metals and Mining - Non-Precious Metals	2021	3,3	1	0	0
13	ABMM	PT ABM Investama Tbk (ABMM)	Metals and Mining - Non-Precious Metals	2022	2,7	1	0	0
14	ABMM	PT ABM Investama Tbk (ABMM)	Metals and Mining - Non-Precious Metals	2023	3,8	1	0	0
15	ABMM	PT ABM Investama Tbk (ABMM)	Metals and Mining - Non-Precious Metals	2024	3,8	1	0	0
16	ASRI	PT ALAM SUTERA REALTY Tbk (ASRI)	Real Estate Development &	2020	1,7	1	0	0



			Diversified Activities					
17	ASRI	PT ALAM SUTERA REALTY Tbk (ASRI)	Real Estate Development & Diversified Activities	2021	1,7	1	0	0
18	ASRI	PT ALAM SUTERA REALTY Tbk (ASRI)	Real Estate Development & Diversified Activities	2022	1,7	1	0	0
19	ASRI	PT ALAM SUTERA REALTY Tbk (ASRI)	Real Estate Development & Diversified Activities	2023	1,7	1	0	0
20	ASRI	PT ALAM SUTERA REALTY Tbk (ASRI)	Real Estate Development & Diversified Activities	2024	1,7	1	0	0
21	ADRO	PT Adaro Energy Indonesia Tbk (ADRO)	Metals and Mining - Non-Precious Metals	2020	2,8	1	1	0
22	ADRO	PT Adaro Energy Indonesia Tbk (ADRO)	Metals and Mining - Non-Precious Metals	2021	2,7	1	1	0
23	ADRO	PT Adaro Energy Indonesia Tbk (ADRO)	Metals and Mining - Non-Precious Metals	2022	3,8	1	1	0
24	ADRO	PT Adaro Energy Indonesia Tbk (ADRO)	Metals and Mining - Non-Precious Metals	2023	3,3	1	1	0
25	ADRO	PT Adaro Energy Indonesia Tbk (ADRO)	Metals and Mining - Non-Precious Metals	2024	3,3	1	1	0
26	APLN	PT Agung Podomoro Land Tbk (APLN)	Real Estate Development & Diversified Activities	2020	2	1	0	0
27	APLN	PT Agung Podomoro Land Tbk (APLN)	Real Estate Development & Diversified Activities	2021	2	1	0	0
28	APLN	PT Agung Podomoro Land Tbk (APLN)	Real Estate Development & Diversified Activities	2022	2	1	0	0
29	APLN	PT Agung Podomoro Land Tbk (APLN)	Real Estate Development & Diversified Activities	2023	2,7	1	0	0
30	APLN	PT Agung Podomoro Land Tbk (APLN)	Real Estate Development &	2024	2,7	1	0	0



			Diversified Activities					
31	ANTM	PT Aneka Tambang Tbk (ANTM)	Metals and Mining - Precious Metals	2020	3,5	1	0	0
32	ANTM	PT Aneka Tambang Tbk (ANTM)	Metals and Mining - Precious Metals	2021	3,5	1	1	0
33	ANTM	PT Aneka Tambang Tbk (ANTM)	Metals and Mining - Precious Metals	2022	3,6	1	1	0
34	ANTM	PT Aneka Tambang Tbk (ANTM)	Metals and Mining - Precious Metals	2023	3,6	1	1	0
35	ANTM	PT Aneka Tambang Tbk (ANTM)	Metals and Mining - Precious Metals	2024	4,3	1	1	0
36	ASII	PT Astra International Tbk (ASII)	Industrial Conglomerates	2020	3,3	1	0	0
37	ASII	PT Astra International Tbk (ASII)	Industrial Conglomerates	2021	5,7	1	0	0
38	ASII	PT Astra International Tbk (ASII)	Industrial Conglomerates	2022	5,7	1	0	0
39	ASII	PT Astra International Tbk (ASII)	Industrial Conglomerates	2023	4,7	1	0	0
40	ASII	PT Astra International Tbk (ASII)	Industrial Conglomerates	2024	4,7	1	0	0
41	BBCA	PT Bank Central Asia Tbk (BBCA)	Banks	2020	3,3	0	0	0
42	BBCA	PT Bank Central Asia Tbk (BBCA)	Banks	2021	4	0	0	0
43	BBCA	PT Bank Central Asia Tbk (BBCA)	Banks	2022	4	0	0	0
44	BBCA	PT Bank Central Asia Tbk (BBCA)	Banks	2023	4	0	0	0
45	BBCA	PT Bank Central Asia Tbk (BBCA)	Banks	2024	4	0	0	0
46	BMRI	PT Bank Mandiri (Persero) Tbk (BMRI)	Banks	2020	3	0	0	0
47	BMRI	PT Bank Mandiri (Persero) Tbk (BMRI)	Banks	2021	3	0	0	0
48	BMRI	PT Bank Mandiri (Persero) Tbk (BMRI)	Banks	2022	3	0	0	0
49	BMRI	PT Bank Mandiri (Persero) Tbk (BMRI)	Banks	2023	4,3	0	0	0
50	BMRI	PT Bank Mandiri (Persero) Tbk (BMRI)	Banks	2024	4,3	0	0	0



51	BBNI	PT Bank Negara Indonesia (Persero) Tbk (BBNI)	Banks	2020	3,3	1	0	0
52	BBNI	PT Bank Negara Indonesia (Persero) Tbk (BBNI)	Banks	2021	3,3	1	0	0
53	BBNI	PT Bank Negara Indonesia (Persero) Tbk (BBNI)	Banks	2022	3,3	1	0	0
54	BBNI	PT Bank Negara Indonesia (Persero) Tbk (BBNI)	Banks	2023	4	1	0	0
55	BBNI	PT Bank Negara Indonesia (Persero) Tbk (BBNI)	Banks	2024	4	1	0	0
56	BBRI	PT Bank Rakyat Indonesia (Persero) Tbk (BBRI)	Banks	2020	2	0	0	0
57	BBRI	PT Bank Rakyat Indonesia (Persero) Tbk (BBRI)	Banks	2021	3	0	0	0
58	BBRI	PT Bank Rakyat Indonesia (Persero) Tbk (BBRI)	Banks	2022	3	0	0	0
59	BBRI	PT Bank Rakyat Indonesia (Persero) Tbk (BBRI)	Banks	2023	3,7	0	0	0
60	BBRI	PT Bank Rakyat Indonesia (Persero) Tbk (BBRI)	Banks	2024	3,7	0	0	0
61	BBTN	PT Bank Tabungan Negara (Persero) Tbk (BBTN)	Banks	2020	3,3	0	0	0
62	BBTN	PT Bank Tabungan Negara (Persero) Tbk (BBTN)	Banks	2021	3,3	0	0	0
63	BBTN	PT Bank Tabungan Negara (Persero) Tbk (BBTN)	Banks	2022	4	0	0	0
64	BBTN	PT Bank Tabungan Negara (Persero) Tbk (BBTN)	Banks	2023	4	0	0	0
65	BBTN	PT Bank Tabungan Negara (Persero) Tbk (BBTN)	Banks	2024	4	0	0	0
66	BRPT	PT Barito Pacific Tbk (BRPT)	Commodity Chemicals	2020	3,3	1	0	0
67	BRPT	PT Barito Pacific Tbk (BRPT)	Commodity Chemicals	2021	3,3	1	0	0



68	BRPT	PT Barito Pacific Tbk (BRPT)	Commodity Chemicals	2022	3,3	1	0	0
69	BRPT	PT Barito Pacific Tbk (BRPT)	Commodity Chemicals	2023	4	1	0	0
70	BRPT	PT Barito Pacific Tbk (BRPT)	Commodity Chemicals	2024	4	1	0	0
71	BSDE	PT Bumi Serpong Damai Tbk (BSDE)	Real Estate Development & Diversified Activities	2020	6	0	0	0
72	BSDE	PT Bumi Serpong Damai Tbk (BSDE)	Real Estate Development & Diversified Activities	2021	6	0	0	0
73	BSDE	PT Bumi Serpong Damai Tbk (BSDE)	Real Estate Development & Diversified Activities	2022	6	0	0	0
74	BSDE	PT Bumi Serpong Damai Tbk (BSDE)	Real Estate Development & Diversified Activities	2023	6,7	0	0	0
75	BSDE	PT Bumi Serpong Damai Tbk (BSDE)	Real Estate Development & Diversified Activities	2024	6,7	0	0	0
76	TPIA	PT Chandra Asri Pacific Tbk (TPIA)	Commodity Chemicals	2020	3,3	1	1	0
77	TPIA	PT Chandra Asri Pacific Tbk (TPIA)	Commodity Chemicals	2021	3,2	1	1	0
78	TPIA	PT Chandra Asri Pacific Tbk (TPIA)	Commodity Chemicals	2022	5,3	1	1	0
79	TPIA	PT Chandra Asri Pacific Tbk (TPIA)	Commodity Chemicals	2023	5,8	1	1	0
80	TPIA	PT Chandra Asri Pacific Tbk (TPIA)	Commodity Chemicals	2024	6,3	1	1	0
81	CPIN	PT Charoen Pokphand Indonesia Tbk (CPIN)	Food Products	2020	1	1	0	0
82	CPIN	PT Charoen Pokphand Indonesia Tbk (CPIN)	Food Products	2021	1	1	0	0
83	CPIN	PT Charoen Pokphand Indonesia Tbk (CPIN)	Food Products	2022	1	1	0	0
84	CPIN	PT Charoen Pokphand Indonesia Tbk (CPIN)	Food Products	2023	4	1	0	0
85	CPIN	PT Charoen Pokphand Indonesia Tbk (CPIN)	Food Products	2024	4	1	0	0
86	POWR	PT Cikarang Listrindo Tbk (POWR)	Utilities	2020	3	1	0	0



87	POWR	PT Cikarang Litrindo Tbk (POWR)	Utilities	2021	3	1	1	0
88	POWR	PT Cikarang Litrindo Tbk (POWR)	Utilities	2022	2,5	1	1	0
89	POWR	PT Cikarang Litrindo Tbk (POWR)	Utilities	2023	4	1	1	0
90	POWR	PT Cikarang Litrindo Tbk (POWR)	Utilities	2024	4	1	1	0
91	CTRA	PT Ciputra Development Tbk (CTRA)	Real Estate Development & Diversified Activities	2020	1,7	1	0	0
92	CTRA	PT Ciputra Development Tbk (CTRA)	Real Estate Development & Diversified Activities	2021	1,7	1	0	0
93	CTRA	PT Ciputra Development Tbk (CTRA)	Real Estate Development & Diversified Activities	2022	1,7	1	0	0
94	CTRA	PT Ciputra Development Tbk (CTRA)	Real Estate Development & Diversified Activities	2023	4,7	1	0	0
95	CTRA	PT Ciputra Development Tbk (CTRA)	Real Estate Development & Diversified Activities	2024	4,7	1	0	0
96	DOID	PT Delta Dunia Makmur Tbk (DOID)	Metals and Mining - Non-Precious Metals	2020	2	1	0	0
97	DOID	PT Delta Dunia Makmur Tbk (DOID)	Metals and Mining - Non-Precious Metals	2021	2	1	1	0
98	DOID	PT Delta Dunia Makmur Tbk (DOID)	Metals and Mining - Non-Precious Metals	2022	2,4	1	1	0
99	DOID	PT Delta Dunia Makmur Tbk (DOID)	Metals and Mining - Non-Precious Metals	2023	3,3	1	1	0
100	DOID	PT Delta Dunia Makmur Tbk (DOID)	Metals and Mining - Non-Precious Metals	2024	3,3	1	1	0
101	GGRM	PT Gudang Garam Tbk (GGRM)	Tobacco	2020	3,3	0	0	0
102	GGRM	PT Gudang Garam Tbk (GGRM)	Tobacco	2021	3,3	0	0	0
103	GGRM	PT Gudang Garam Tbk (GGRM)	Tobacco	2022	3,3	0	0	0



104	GGRM	PT Gudang Garam Tbk (GGRM)	Tobacco	2023	4,7	0	0	0
105	GGRM	PT Gudang Garam Tbk (GGRM)	Tobacco	2024	4,7	0	0	0
106	INKP	PT Indah Kiat Pulp & Paper Tbk (INKP)	Paper & Forest Products	2020	3,8	0	0	0
107	INKP	PT Indah Kiat Pulp & Paper Tbk (INKP)	Paper & Forest Products	2021	3,8	0	0	0
108	INKP	PT Indah Kiat Pulp & Paper Tbk (INKP)	Paper & Forest Products	2022	3,8	0	0	0
109	INKP	PT Indah Kiat Pulp & Paper Tbk (INKP)	Paper & Forest Products	2023	4,3	0	0	0
110	INKP	PT Indah Kiat Pulp & Paper Tbk (INKP)	Paper & Forest Products	2024	4,3	0	0	0
111	INDY	PT Indika Energy Tbk (INDY)	Metals and Mining - Non-Precious Metals	2020	2	1	0	0
112	INDY	PT Indika Energy Tbk (INDY)	Metals and Mining - Non-Precious Metals	2021	2	1	0	0
113	INDY	PT Indika Energy Tbk (INDY)	Metals and Mining - Non-Precious Metals	2022	2	1	0	0
114	INDY	PT Indika Energy Tbk (INDY)	Metals and Mining - Non-Precious Metals	2023	5,4	1	0	0
115	INDY	PT Indika Energy Tbk (INDY)	Metals and Mining - Non-Precious Metals	2024	5,4	1	0	0
116	INTP	PT Indocement Tunggal Prakarsa Tbk (INTP)	Construction Materials	2020	4	1	0	0
117	INTP	PT Indocement Tunggal Prakarsa Tbk (INTP)	Construction Materials	2021	4	1	0	0
118	INTP	PT Indocement Tunggal Prakarsa Tbk (INTP)	Construction Materials	2022	4	1	0	0
119	INTP	PT Indocement Tunggal Prakarsa Tbk (INTP)	Construction Materials	2023	4,8	1	0	0
120	INTP	PT Indocement Tunggal Prakarsa Tbk (INTP)	Construction Materials	2024	4,8	1	0	0
121	ICBP	PT Indofood CBP Sukses Makmur Tbk (ICBP)	Food Products	2020	3	1	1	0
122	ICBP	PT Indofood CBP Sukses Makmur Tbk (ICBP)	Food Products	2021	3	1	1	0
123	ICBP	PT Indofood CBP Sukses Makmur Tbk (ICBP)	Food Products	2022	4	1	1	0



124	ICBP	PT Indofood CBP Sukses Makmur Tbk (ICBP)	Food Products	2023	6,3	1	1	0
125	ICBP	PT Indofood CBP Sukses Makmur Tbk (ICBP)	Food Products	2024	6,3	1	1	0
126	INDF	PT Indofood Sukses Makmur Tbk (INDF)	Food Products	2020	5,7	1	1	0
127	INDF	PT Indofood Sukses Makmur Tbk (INDF)	Food Products	2021	3,3	1	1	0
128	INDF	PT Indofood Sukses Makmur Tbk (INDF)	Food Products	2022	4	1	1	0
129	INDF	PT Indofood Sukses Makmur Tbk (INDF)	Food Products	2023	4	1	1	0
130	INDF	PT Indofood Sukses Makmur Tbk (INDF)	Food Products	2024	6,3	1	1	0
131	INALM	PT Indonesia Asahan Aluminium (Persero) (INALM)	Metals and Mining - Non-Precious Metals	2020	2	1	0	0
132	INALM	PT Indonesia Asahan Aluminium (Persero) (INALM)	Metals and Mining - Non-Precious Metals	2021	2	1	0	0
133	INALM	PT Indonesia Asahan Aluminium (Persero) (INALM)	Metals and Mining - Non-Precious Metals	2022	2	1	0	0
134	INALM	PT Indonesia Asahan Aluminium (Persero) (INALM)	Metals and Mining - Non-Precious Metals	2023	2,9	1	0	0
135	INALM	PT Indonesia Asahan Aluminium (Persero) (INALM)	Metals and Mining - Non-Precious Metals	2024	2,9	1	0	0
136	SIDO	PT Industri Jamu dan Farmasi Sido Muncul Tbk (SIDO)	Food Products	2020	3,3	1	0	0
137	SIDO	PT Industri Jamu dan Farmasi Sido Muncul Tbk (SIDO)	Food Products	2021	7	1	0	0
138	SIDO	PT Industri Jamu dan Farmasi Sido Muncul Tbk (SIDO)	Food Products	2022	7	1	0	0
139	SIDO	PT Industri Jamu dan Farmasi Sido Muncul Tbk (SIDO)	Food Products	2023	7	1	0	0
140	SIDO	PT Industri Jamu dan Farmasi Sido Muncul Tbk (SIDO)	Food Products	2024	7	1	0	0
141	JPFA	PT Japfa Comfeed Indonesia Tbk (JPFA)	Food Products	2020	3,3	1	1	0



142	JPFA	PT Japfa Comfeed Indonesia Tbk (JPFA)	Food Products	2021	3,3	1	1	0
143	JPFA	PT Japfa Comfeed Indonesia Tbk (JPFA)	Food Products	2022	3,3	1	1	0
144	JPFA	PT Japfa Comfeed Indonesia Tbk (JPFA)	Food Products	2023	4	1	1	0
145	JPFA	PT Japfa Comfeed Indonesia Tbk (JPFA)	Food Products	2024	4	1	1	0
146	JSMR	PT Jasa Marga (Persero) Tbk (JSMR)	Transportation Infrastructure	2020	4	0	0	0
147	JSMR	PT Jasa Marga (Persero) Tbk (JSMR)	Transportation Infrastructure	2021	4	0	0	0
148	JSMR	PT Jasa Marga (Persero) Tbk (JSMR)	Transportation Infrastructure	2022	4	0	0	0
149	JSMR	PT Jasa Marga (Persero) Tbk (JSMR)	Transportation Infrastructure	2023	4,7	0	0	0
150	JSMR	PT Jasa Marga (Persero) Tbk (JSMR)	Transportation Infrastructure	2024	4,7	0	0	0
151	KLBF	PT Kalbe Farma Tbk (KLBF)	Pharmaceuticals	2020	4,7	0	0	0
152	KLBF	PT Kalbe Farma Tbk (KLBF)	Pharmaceuticals	2021	4,7	0	0	0
153	KLBF	PT Kalbe Farma Tbk (KLBF)	Pharmaceuticals	2022	4,7	0	0	0
154	KLBF	PT Kalbe Farma Tbk (KLBF)	Pharmaceuticals	2023	2,3	0	0	0
155	KLBF	PT Kalbe Farma Tbk (KLBF)	Pharmaceuticals	2024	2,3	1	0	0
156	KIJA	PT Kawasan Industri Jababeka Tbk (KIJA)	Real Estate Development & Diversified Activities	2020	1,7	0	0	0
157	KIJA	PT Kawasan Industri Jababeka Tbk (KIJA)	Real Estate Development & Diversified Activities	2021	1,7	0	0	0
158	KIJA	PT Kawasan Industri Jababeka Tbk (KIJA)	Real Estate Development & Diversified Activities	2022	1,7	0	0	0
159	KIJA	PT Kawasan Industri Jababeka Tbk (KIJA)	Real Estate Development & Diversified Activities	2023	1,7	0	0	0
160	KIJA	PT Kawasan Industri Jababeka Tbk (KIJA)	Real Estate Development & Diversified Activities	2024	1,7	0	0	0



161	LPKR	PT Lippo Karawaci Tbk (LPKR)	Real Estate Development & Diversified Activities	2020	1,7	1	0	0
162	LPKR	PT Lippo Karawaci Tbk (LPKR)	Real Estate Development & Diversified Activities	2021	1,7	1	0	0
163	LPKR	PT Lippo Karawaci Tbk (LPKR)	Real Estate Development & Diversified Activities	2022	1,7	1	0	0
164	LPKR	PT Lippo Karawaci Tbk (LPKR)	Real Estate Development & Diversified Activities	2023	4,7	1	0	0
165	LPKR	PT Lippo Karawaci Tbk (LPKR)	Real Estate Development & Diversified Activities	2024	4,7	1	0	0
166	MEDC	PT Medco Energi Internasional Tbk (MEDC)	Oil & Gas Exploration & Production	2020	3	1	0	0
167	MEDC	PT Medco Energi Internasional Tbk (MEDC)	Oil & Gas Exploration & Production	2021	3,2	1	0	0
168	MEDC	PT Medco Energi Internasional Tbk (MEDC)	Oil & Gas Exploration & Production	2022	6,4	1	0	0
169	MEDC	PT Medco Energi Internasional Tbk (MEDC)	Oil & Gas Exploration & Production	2023	5,4	1	0	0
170	MEDC	PT Medco Energi Internasional Tbk (MEDC)	Oil & Gas Exploration & Production	2024	5,4	1	0	0
171	MNCN	PT Media Nusantara Citra Tbk (MNCN)	Media & Entertainment	2020	1,7	1	0	0
172	MNCN	PT Media Nusantara Citra Tbk (MNCN)	Media & Entertainment	2021	1,7	1	0	0
173	MNCN	PT Media Nusantara Citra Tbk (MNCN)	Media & Entertainment	2022	1,7	1	0	0
174	MNCN	PT Media Nusantara Citra Tbk (MNCN)	Media & Entertainment	2023	3	1	0	0
175	MNCN	PT Media Nusantara Citra Tbk (MNCN)	Media & Entertainment	2024	3	1	0	0
176	MAPI	PT Mitra Adiperkasa Tbk (MAPI)	Retail - Consumer Discretionary	2020	1,7	1	0	0
177	MAPI	PT Mitra Adiperkasa Tbk (MAPI)	Retail - Consumer Discretionary	2021	1,7	1	0	0



178	MAPI	PT Mitra Adiperkasa Tbk (MAPI)	Retail - Consumer Discretionary	2022	2	1	0	0
179	MAPI	PT Mitra Adiperkasa Tbk (MAPI)	Retail - Consumer Discretionary	2023	2	1	0	0
180	MAPI	PT Mitra Adiperkasa Tbk (MAPI)	Retail - Consumer Discretionary	2024	2	1	0	0
181	TKIM	PT Pabrik Kertas Tjiwi Kimia Tbk (TKIM)	Paper & Forest Products	2020	4,5	0	0	0
182	TKIM	PT Pabrik Kertas Tjiwi Kimia Tbk (TKIM)	Paper & Forest Products	2021	4,5	0	0	0
183	TKIM	PT Pabrik Kertas Tjiwi Kimia Tbk (TKIM)	Paper & Forest Products	2022	4,5	0	0	0
184	TKIM	PT Pabrik Kertas Tjiwi Kimia Tbk (TKIM)	Paper & Forest Products	2023	4,5	0	0	0
185	TKIM	PT Pabrik Kertas Tjiwi Kimia Tbk (TKIM)	Paper & Forest Products	2024	4,5	0	0	0
186	PWON	PT Pakuwon Jati Tbk (PWON)	Real Estate Development & Diversified Activities	2020	2	0	0	0
187	PWON	PT Pakuwon Jati Tbk (PWON)	Real Estate Development & Diversified Activities	2021	2	0	0	0
188	PWON	PT Pakuwon Jati Tbk (PWON)	Real Estate Development & Diversified Activities	2022	2	0	0	0
189	PWON	PT Pakuwon Jati Tbk (PWON)	Real Estate Development & Diversified Activities	2023	2	0	0	0
190	PWON	PT Pakuwon Jati Tbk (PWON)	Real Estate Development & Diversified Activities	2024	6,3	0	0	0
191	PTPP	PT Pembangunan Perumahan (Persero) Tbk (PTPP)	Construction & Engineering	2020	4	0	0	0
192	PTPP	PT Pembangunan Perumahan (Persero) Tbk (PTPP)	Construction & Engineering	2021	4	0	0	0
193	PTPP	PT Pembangunan Perumahan (Persero) Tbk (PTPP)	Construction & Engineering	2022	4	0	0	0
194	PTPP	PT Pembangunan Perumahan (Persero) Tbk (PTPP)	Construction & Engineering	2023	4	0	0	0



195	PTPP	PT Pembangunan Perumahan (Persero) Tbk (PTPP)	Construction & Engineering	2024	4	0	0	0
196	PGAS	PT Perusahaan Gas Negara Tbk (PGAS)	Utilities	2020	4,7	0	0	0
197	PGAS	PT Perusahaan Gas Negara Tbk (PGAS)	Utilities	2021	4,7	0	0	0
198	PGAS	PT Perusahaan Gas Negara Tbk (PGAS)	Utilities	2022	4,8	0	0	0
199	PGAS	PT Perusahaan Gas Negara Tbk (PGAS)	Utilities	2023	4,2	0	0	0
200	PGAS	PT Perusahaan Gas Negara Tbk (PGAS)	Utilities	2024	4,2	0	0	0
201	LSIP	PT Perusahaan Perkebunan London Sumatra Indonesia Tbk (LSIP)	Food Products	2020	6,3	0	0	0
202	LSIP	PT Perusahaan Perkebunan London Sumatra Indonesia Tbk (LSIP)	Food Products	2021	4,5	0	0	0
203	LSIP	PT Perusahaan Perkebunan London Sumatra Indonesia Tbk (LSIP)	Food Products	2022	4,5	0	0	0
204	LSIP	PT Perusahaan Perkebunan London Sumatra Indonesia Tbk (LSIP)	Food Products	2023	4,5	0	0	0
205	LSIP	PT Perusahaan Perkebunan London Sumatra Indonesia Tbk (LSIP)	Food Products	2024	4,5	0	0	0
206	SMGR	PT Semen Indonesia (Persero) Tbk (SMGR)	Construction Materials	2020	3,7	1	0	0
207	SMGR	PT Semen Indonesia (Persero) Tbk (SMGR)	Construction Materials	2021	4	1	0	0
208	SMGR	PT Semen Indonesia (Persero) Tbk (SMGR)	Construction Materials	2022	5	0	0	0
209	SMGR	PT Semen Indonesia (Persero) Tbk (SMGR)	Construction Materials	2023	5,7	0	0	0
210	SMGR	PT Semen Indonesia (Persero) Tbk (SMGR)	Construction Materials	2024	5,7	0	0	0
211	SRIL	PT Sri Rejeki Isman Tbk (SRIL)	Textiles, Apparel & Luxury Goods	2020	2	1	0	0
212	SRIL	PT Sri Rejeki Isman Tbk (SRIL)	Textiles, Apparel & Luxury Goods	2021	2	1	0	0
213	SRIL	PT Sri Rejeki Isman Tbk (SRIL)	Textiles, Apparel & Luxury Goods	2022	2	1	0	0



214	SRIL	PT Sri Rejeki Isman Tbk (SRIL)	Textiles, Apparel & Luxury Goods	2023	2	1	0	0
215	SRIL	PT Sri Rejeki Isman Tbk (SRIL)	Textiles, Apparel & Luxury Goods	2024	2	1	0	0
216	SMRA	PT Summarecon Agung Tbk (SMRA)	Real Estate Development & Diversified Activities	2020	1,7	0	0	0
217	SMRA	PT Summarecon Agung Tbk (SMRA)	Real Estate Development & Diversified Activities	2021	1,7	0	0	0
218	SMRA	PT Summarecon Agung Tbk (SMRA)	Real Estate Development & Diversified Activities	2022	3	0	0	0
219	SMRA	PT Summarecon Agung Tbk (SMRA)	Real Estate Development & Diversified Activities	2023	3	0	0	0
220	SMRA	PT Summarecon Agung Tbk (SMRA)	Real Estate Development & Diversified Activities	2024	3	0	0	0
221	SQBI	PT Taisho Pharmaceutical Indonesia Tbk (SQBI)	Pharmaceuticals	2020	6,3	1	1	1
222	SQBI	PT Taisho Pharmaceutical Indonesia Tbk (SQBI)	Pharmaceuticals	2021	4,7	1	1	1
223	SQBI	PT Taisho Pharmaceutical Indonesia Tbk (SQBI)	Pharmaceuticals	2022	6,3	1	1	1
224	SQBI	PT Taisho Pharmaceutical Indonesia Tbk (SQBI)	Pharmaceuticals	2023	6,3	1	1	1
225	SQBI	PT Taisho Pharmaceutical Indonesia Tbk (SQBI)	Pharmaceuticals	2024	7	1	1	1
226	TLKM	PT Telkom Indonesia (Persero) Tbk (TLKM)	Telecommunication Services	2020	3,3	0	0	0
227	TLKM	PT Telkom Indonesia (Persero) Tbk (TLKM)	Telecommunication Services	2021	3,3	0	0	0
228	TLKM	PT Telkom Indonesia (Persero) Tbk (TLKM)	Telecommunication Services	2022	3,3	0	0	0
229	TLKM	PT Telkom Indonesia (Persero) Tbk (TLKM)	Telecommunication Services	2023	3,3	0	0	0
230	TLKM	PT Telkom Indonesia (Persero) Tbk (TLKM)	Telecommunication Services	2024	3,3	0	0	0



231	TBIG	PT Tower Bersama Infrastructure Tbk (TBIG)	Telecommunication Services	2020	3,3	1	1	0
232	TBIG	PT Tower Bersama Infrastructure Tbk (TBIG)	Telecommunication Services	2021	3,3	1	1	0
233	TBIG	PT Tower Bersama Infrastructure Tbk (TBIG)	Telecommunication Services	2022	4	1	1	0
234	TBIG	PT Tower Bersama Infrastructure Tbk (TBIG)	Telecommunication Services	2023	6,3	1	1	0
235	TBIG	PT Tower Bersama Infrastructure Tbk (TBIG)	Telecommunication Services	2024	6,3	1	1	0
236	UNVR	PT Unilever Indonesia Tbk (UNVR)	Household & Personal Products	2020	6,3	0	1	0
237	UNVR	PT Unilever Indonesia Tbk (UNVR)	Household & Personal Products	2021	7	0	1	0
238	UNVR	PT Unilever Indonesia Tbk (UNVR)	Household & Personal Products	2022	6,3	0	1	0
239	UNVR	PT Unilever Indonesia Tbk (UNVR)	Household & Personal Products	2023	6,3	0	1	0
240	UNVR	PT Unilever Indonesia Tbk (UNVR)	Household & Personal Products	2024	6,3	1	1	1
241	UNTR	PT United Tractors Tbk (UNTR)	Metals and Mining - Non-Precious Metals	2020	2	0	0	0
242	UNTR	PT United Tractors Tbk (UNTR)	Metals and Mining - Non-Precious Metals	2021	2	0	0	0
243	UNTR	PT United Tractors Tbk (UNTR)	Metals and Mining - Non-Precious Metals	2022	2,8	0	0	0
244	UNTR	PT United Tractors Tbk (UNTR)	Metals and Mining - Non-Precious Metals	2023	5,8	0	0	0
245	UNTR	PT United Tractors Tbk (UNTR)	Metals and Mining - Non-Precious Metals	2024	5,8	0	0	0
246	WIKA	PT Wijaya Karya (Persero) Tbk (WIKA)	Construction & Engineering	2020	3	0	0	0
247	WIKA	PT Wijaya Karya (Persero) Tbk (WIKA)	Construction & Engineering	2021	3	0	0	0
248	WIKA	PT Wijaya Karya (Persero) Tbk (WIKA)	Construction & Engineering	2022	3,3	0	0	0
249	WIKA	PT Wijaya Karya (Persero) Tbk (WIKA)	Construction & Engineering	2023	3,3	0	0	0



250	WIKA	PT Wijaya Karya (Persero) Tbk (WIKA)	Construction & Engineering	2024	3,3	0	0	0
251	EXCL	PT. XL AXIATA TBK (EXCL)	Telecommunicatio n Services	2020	3	0	0	0
252	EXCL	PT. XL AXIATA TBK (EXCL)	Telecommunicatio n Services	2021	4	0	0	0
253	EXCL	PT. XL AXIATA TBK (EXCL)	Telecommunicatio n Services	2022	4	0	0	0
254	EXCL	PT. XL AXIATA TBK (EXCL)	Telecommunicatio n Services	2023	4	1	1	1
255	EXCL	PT. XL AXIATA TBK (EXCL)	Telecommunicatio n Services	2024	4	1	1	1

