



RESEARCH ARTICLE

The Role of Tax Policy in Moderating Factors Influencing Green Investment Strategies in Indonesia

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ARTICLE INFO	ABSTRACT
Received: May 19, 2024 Accepted: Aug 23, 2024	This study investigates the determinants of green investment among LQ45 companies, a leading stock index in Indonesia. Grounded in the resource-based view and stakeholder theory, we hypothesize that firm-specific resources and the pressure from stakeholders will influence green investment. Employing panel data from 2018 to 2023, we utilize a random effects model to analyze the impact of firm size, profitability, leverage, and asset turnover on green investment, while examining the moderating role of tax policy. Our findings support the hypotheses, indicating that larger, more profitable firms with higher asset turnover are more likely to engage in green investments. Furthermore, tax incentives significantly enhance the positive relationship between firm characteristics and green investment. These results highlight the importance of both internal firm capabilities and external pressures in driving sustainable practices. Policymakers should consider implementing targeted tax incentives, providing access to green finance, and fostering a supportive regulatory environment to encourage greater green investment among Indonesian firms.
Keywords Green investment strategy Leverage and profitability Moderating tax policy Sustainability in companies Tax incentives impact	
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INTRODUCTION

Climate change has become one of the greatest challenges of this century, drawing attention from various sectors including governments, communities, and businesses (Riyadh et al., 2020). In this context, companies worldwide, including in Indonesia, face pressure to adopt green investment strategies as part of their social responsibility and efforts to mitigate environmental impacts (J. Yang et al., 2023). This research focuses on analyzing the influence of company size, profitability, leverage, and return on assets on green investment strategies, with tax policy as a moderating variable, in companies listed in the LQ 45 index on the Indonesia Stock Exchange (IDX LQ-45) for the period 2018-2023.

Background on Climate Change and the Urgency of Green Investment

Climate change has resulted in global temperature increases, changes in extreme weather patterns, and rising sea levels, impacting environmental sustainability and human life (Phan, 2024). In Indonesia, the effects of climate change are evident through natural disasters such as floods, landslides, and forest (Manurung et al., 2022). These phenomena demand that companies not only focus on financial profits but also consider the environmental impacts of their business activities (Y. Zhang, 2023). Therefore, green investment becomes crucial as a mitigation and adaptation effort to climate change, and a strategic step to ensure long-term sustainability (Khan et al., 2024).

Table 1. Sector Contributions to Greenhouse Gas Emission Reductions in 2020

Sector	Emissions (mTCO ₂ e) (BAU)	GHG Emission Reduction	GHG Emission Reduction against BAU (%)
Forestry and Peatlands	1,344	672	50%
Energy and Transportation	1,000	38	3.8%
Agriculture	221	40	18%
Industry	134	2	1.8%
Waste	250	15	5.9%
Total	2,950	767	26%
Sector	Emissions (mTCO ₂ e) (BAU)	GHG Emission Reduction	GHG Emission Reduction against BAU (%)
Forestry and Peatlands	1,344	672	50%

Source: Authors' elaboration.

Table 1 explains the contributions of various sectors in achieving the target reduction of greenhouse gas (GHG) emissions in Indonesia in 2020. The data is presented in million tonnes of carbon dioxide equivalent (mTCO₂e), where 1,000,000 tonnes of methane (CH₄) contribute to global warming equivalent to 25,000 tonnes of CO₂ (Sadiq et al., 2024). The forestry and peatlands sector provided the largest contribution with an emission reduction of 672 mTCO₂e, or 50% of the total Business as Usual (BAU) emissions (Yuliani and Prijanto, 2022). The energy and transportation sector contributed a reduction of 38 mTCO₂e, or 3.8%, while the agriculture sector contributed 40 mTCO₂e, or 18%. The industry sector showed the smallest emission reduction with only 2 mTCO₂e, or 1.8%, and the waste sector contributed 15 mTCO₂e, or 5.9%. Overall, the total contribution from all sectors achieved an emission reduction of 767 mTCO₂e from a total BAU emission of 2,950 mTCO₂e, reflecting a total emission reduction of 26%. This data demonstrates significant collective efforts from various sectors in reducing GHG emissions as part of climate change mitigation strategies in Indonesia (Anser et al., 2023).

Social Pressure and Government Regulation

With the rising public awareness of the importance of environmental protection, companies face social pressure to implement environmentally friendly business practices. Society and consumers now prefer products and services from companies that demonstrate a commitment to sustainability (Pantow et al., 2023; Abbas et al., 2024). Furthermore, the Indonesian government has implemented a range of policies and tax incentives aimed at promoting corporate investments in green technology and renewable energy (Cahyaningsih and Lestari, 2021; Tambunan et al., 2022). These tax policies serve as moderating variables, influencing the strength and direction of the relationship between internal company factors and their green investment strategies (K. Wang et al., 2023).

Market Dynamics and Business Competition

In a competitive business environment, companies must continuously innovate to remain relevant and superior (Tarba et al., 2021). Green investments boost a company's reputation while also contributing to operational efficiency and long-term cost savings (Maizer, 2022). Company size often correlates with the ability to implement green projects. Larger companies with adequate resources can allocate more towards green investments (Xu, 2023). On the other hand, a company's profitability and leverage also influence its ability to invest in green initiatives. Companies with high profitability and low leverage are more flexible in making strategic decisions regarding green investments (Rahadian and Nurfitriani, 2022).

This research uses data from LQ 45 companies on the Indonesia Stock Exchange (IDX) during the period 2018-2023. The IDX is Indonesia's primary stock exchange where public companies list and trade their shares. The LQ 45 is a stock index comprising 45 companies with high liquidity and large market capitalization, selected based on specific criteria by the IDX (Yunita et al., 2018). This index aims to provide deeper insights into the factors influencing green investment strategies. By understanding these dynamics, the research findings are expected to assist company managers in making more informed decisions and support policymakers in formulating effective policies to encourage green investments in Indonesia (Harymawan et al., 2022).

Climate change is not only an environmental issue but also a crucial economic issue. Its impact is felt across various sectors, particularly the business sector, which significantly affects greenhouse gas emissions (Roziq et al., 2020). In recent decades, awareness of corporate environmental responsibility has significantly increased. Companies are now evaluated not only on their financial performance but also on how they contribute to environmental sustainability (Atichasari et al., 2023).

In the Indonesian capital market context, IDX LQ-45 have a greater responsibility to lead the transformation towards more sustainable business practices. With large market capitalization and significant influence on the national economy, the green investment strategies adopted by these companies can be major drivers in Indonesia's climate change mitigation efforts (Najicha et al., 2023).

This study is not only important in terms of academic contribution but also has broad practical implications. Tax policy as a moderating variable in this research offers new insights into how fiscal incentives can influence green investment decisions (Barreto, 2020; Hidayat and Zuhroh, 2023). Well-designed taxes can be an effective tool to encourage companies to adopt more environmentally friendly business practices (Firmansyah et al., 2022). Therefore, this research can provide valuable recommendations for policymakers in designing tax policies that support sustainability.

The world is increasingly active in combating climate change and promoting sustainable investments. One instrument that can be utilized to invest in companies committed to environmental stewardship is the LQ45 Low Carbon Leaders Index (Sosilawaty et al., 2023). This index tracks the performance of stocks of IDX LQ-45 that are committed to reducing carbon emissions. Let's look at the performance of this index over the last two years, from December 2021 to December 2023, through the following graph.

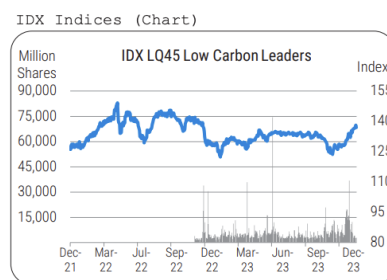


Figure 1. Trend of the LQ45 Low Carbon Leaders Index during the 2021-2023 Period
Source: Indonesia Stock Exchange Data Services Division, 2023.

Figure 1 illustrates the positive performance of the LQ45 Low Carbon Leaders Index over the past two years. From December 2021 to December 2023, the index value rose from 125 to 150. This increase indicates that investments in companies committed to low carbon emissions can provide returns for investors. Although showing a positive trend, the movement of the LQ45 Low Carbon Leaders Index was not always smooth. The index experienced its highest increase from December 2021 to June 2022, with a rise of 25 points. However, periods of decline also occurred, especially from September 2022 to March 2023, with a decrease of 15 points.

Overall, the positive trend of the LQ45 Low Carbon Leaders Index indicates that investing in companies committed to low carbon emissions has potential benefits (Islami and Rio, 2019). However, investors need to conduct more in-depth analysis before making investment decisions. Factors such as index value fluctuations and other factors that can affect investment performance need to be considered (Yunita et al., 2018).

As previously explained, the LQ45 Low Carbon Leaders Index shows potential benefits for investors interested in companies committed to low carbon emissions (Aziz, 2022). However, in selecting these companies, investors need to conduct an analysis that considers ESG scores (Harymawan et al., 2021).

In the context of the Indonesian capital market, IDX LQ-45 have a greater responsibility to lead the transformation towards more sustainable business practices (Surayya et al., 2023; Setiarini et al., 2023). With large market capitalization and significant influence on the national economy, the green investment strategies adopted by these companies can be major drivers in Indonesia's climate change mitigation efforts (Khalimova, 2023).

This study is important not only in terms of academic contribution but also for its broad practical implications. Tax policy as a moderating variable in this research offers new insights into how fiscal incentives can influence green investment decisions (Diamond and Saez, 2011). Well-designed tax policies can be effective tools to encourage companies to adopt more environmentally friendly business practices. Therefore, this research can provide valuable recommendations for policymakers in designing tax policies that support sustainability (Ngwaba and Azizi, 2020).

Based on the explanation above, this study has nine main objectives:

Analyze the influence of company size on green investment strategies.

Identify the impact of profitability on green investment strategies.

Evaluate the relationship between leverage and green investment strategies.

Examine the influence of asset profitability on green investment strategies.

Assess the role of tax policy as a moderating variable in the relationship between company size and green investment strategies.

Evaluate the moderation of tax policy in the relationship between profitability and green investment strategies.

Investigate the moderation of tax policy in the relationship between leverage and green investment strategies.

Explore the moderation of tax policy in the relationship between asset profitability and green investment strategies.

Provide practical recommendations for companies and policymakers in developing effective and sustainable green investment strategies in Indonesia.

Thus, this research aims not only to expand academic knowledge but also to provide practical guidance that can be applied by companies and policymakers in addressing the challenges of climate change through sustainable green investment strategies. Green investment refers to investments directed to support activities or projects that have a positive impact on the environment, such as renewable energy, energy efficiency, and waste management. The implications of green investment research in the context of tax regulations can vary widely, depending on the tax policies in force in a country or region. The results of research on green investment can help identify tax policies that support green investment as part of a broader strategy to achieve carbon emission reduction targets or other sustainability goals. In addition, it can identify how tax policies affect the competitiveness of

certain industries, as well as their impact on corporate investment decisions. Overall, green investment research in the context of tax regulations can provide valuable insights to design more effective policies, encourage greater investment in environmentally friendly projects, and ensure that the benefits of tax incentives are felt widely and fairly. For future research, this research is expected to add empirical evidence theoretically so that it is useful for expanding future research

CONCEPTUAL FRAMEWORK

This conceptual framework is based on a series of reasoning that integrates relevant theories with the research problem (Santamouris, 2020). First, the concept of green investment in the context of LQ-45 companies on the Indonesia Stock Exchange is introduced (Baranowski, 2023). Next, this framework incorporates theories regarding the influence of profitability, company size, leverage, and Return on Assets on green investment decisions (Li et al., 2024; Salim and Kristanti, 2024). These theories are supported by previous empirical findings that highlight the relationships between these variables and sustainability practices (Chapman et al., 2009). The diagram of this conceptual framework visually illustrates how these variables are interconnected and how their interactions can influence companies' decisions regarding green investments. Through this approach, construct hypotheses that reflect the relationships between these variables are generated, providing preliminary conclusions that support the research objective of exploring the factors influencing the adoption of green investment strategies by LQ-45 companies during the 2018-2023 period.

This study aims to understand how the developments in profitability, company size, leverage, and Return on Assets affect LQ-45 companies' decisions to adopt green investment strategies during this period (Ye and Dela, 2023). It is essential to see whether these factors significantly influence companies' decisions regarding green investments (El Hafdaoui et al., 2024). This study also evaluates the direct influence of each factor—company size, profitability, leverage, and Return on Assets—on companies' tendencies to adopt sustainable practices, particularly green investment strategies (Putri, 2023). This will help assess the extent to which these factors contribute to forming corporate policies related to green investments. Large companies generally have greater financial resources, allowing them to make large investments in green technologies, sustainable infrastructure, and environmentally friendly projects. They can also more easily access government funds or incentives for green investments (Fu et al., 2023). Small and medium-sized companies may have more limited budgets for green investments. They often face constraints in allocating funds to green technologies or sustainable projects that require significant upfront investment (Ye and Dela, 2023). This is what drives researchers to explore company size and its influence on green investment strategies

Additionally, this study will specifically examine the influence of profitability on companies' decisions to adopt green investment strategies. This is crucial because profitability is a key factor in determining a company's ability to allocate resources to environmental initiatives (Khan et al., 2024). Furthermore, this study will explore the influence of leverage (debt ratio) on companies' decisions to implement green investment strategies (Izzalqurny et al., 2019). By considering the financial structure of companies, we can understand how debt levels can affect their ability to make green investments (Pu and Syu, 2023). Digging deeper into the profitability of companies in adapting green investment strategies is not only important to ensure that green investments are financially viable, but also to ensure that they can provide long-term benefits (Taswin et al., 2023). Prudent profitability analysis allows companies to plan, implement and manage green investments more effectively, while maximizing profits and reducing risks (Martini, 2021).

Debt to Equity Ratio (DER) is a financial metric that measures the proportion of a company's debt compared to its shareholders' equity (Nukala and Prasada Rao, 2021). DER is calculated by dividing a company's total debt by its total equity (Rinaldy et al., 2023). This ratio is important in a company's decision to adopt green investment strategies because it affects the company's capacity to finance

the investment (Brühl, 2023). DER plays a critical role in a company's decision to adopt a green investment strategy (Mudalige, 2023). Companies need to evaluate their debt-to-equity ratio to understand how much additional debt they can take on to finance green investments without jeopardizing their financial stability. DER analysis helps companies plan appropriate financing, manage risks, and determine the best way to integrate green strategies into their business model in a sustainable manner (Fischer et al., 2023).

This study will also evaluate the impact of Return on Assets on companies' decisions to adopt green investment strategies. By considering overall financial health and investment strategies, we can understand the extent to which Return on Assets affects green investment decisions (Rahadian and Nurfitriani, 2022). Moreover, this study will explore the combined influence of company size, profitability, leverage, and Return on Assets on LQ-45 companies' decisions to implement green investment strategies. This will provide a more comprehensive understanding of how these factors interact in the context of green investments (Andleeb and Hassan, 2023). ROA is an important indicator that influences a company's decision to adopt a green investment strategy (L. Liu, 2023). Companies should consider how green investments will affect their ROA, both in the short and long term (Xia et al., 2023). Careful evaluation of the financial impact of green investments helps ensure that the decision will improve efficiency, reduce costs, and support sustainability without sacrificing the company's profitability (Ekins and Zenghelis, 2021).

Tax policy is chosen as a moderating variable due to its potential influence in shaping tax incentives or burdens that affect companies' decisions regarding green investments. The research narrative will explore how tax policy can mediate the relationship between independent variables and green investment strategies (Sadiq et al., 2024). For instance, tax policies that provide incentives for green investments may encourage companies to allocate more resources to environmental initiatives. Conversely, high tax burdens may pose barriers for companies to make green investments. Tax policy can also include imposing taxes on environmentally damaging activities, such as carbon taxes or emissions taxes (Telatar and Birinci, 2022). Such taxes can encourage companies to reduce their carbon footprint and invest in cleaner, more efficient technologies. Tax policy can serve as a tool to ensure compliance with environmental regulations. For example, companies that do not meet certain environmental standards may face fines or additional taxes, while those that exceed them may receive incentives. By integrating tax policy into green investment strategies, governments can create a more supportive environment for sustainable investment and promote more environmentally friendly business practices (Sarpong et al., 2023).

Based on the previous explanation of the relationships between the independent and dependent variables, the schematic diagram can be presented as follows.

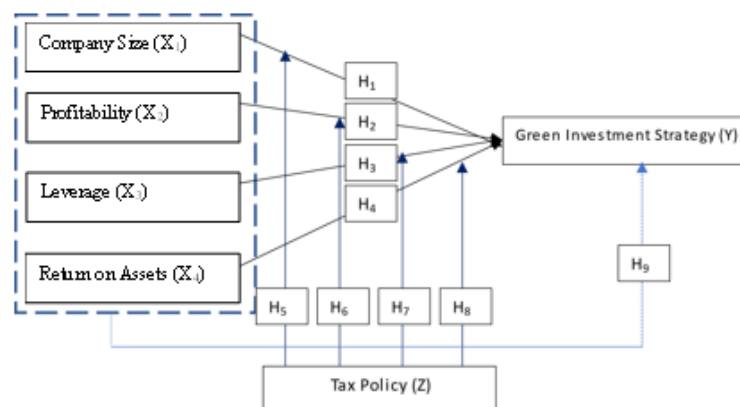


Figure 2. Frame of Thought
Source: Authors' elaboration.

This research examines the factors influencing companies' decisions to adopt green investment strategies (Y) by analyzing their relationship with several variables, namely company size (X_1), profitability (X_2), leverage (X_3), return on assets (X_4), and tax policy (Z). The selection of these variables is based on specific reasons. Firstly, company size (X_1) is often used as an indicator of a company's resources and capabilities, where larger companies are more likely to invest in sustainable practices due to their abundant resources. Secondly, profitability (X_2) reflects a company's financial health, making profitable companies more likely to have funds for investing in sustainable practices. Thirdly, leverage (X_3) measures a company's debt level, with highly leveraged companies possibly being reluctant to invest due to higher financial risks. Fourthly, asset profitability (X_4) indicates a company's efficiency in utilizing its assets, with companies having high asset profitability more inclined to invest due to better management. The tax policy (Z) acts as a moderating variable that can strengthen or weaken the relationship between independent variables (company size, profitability, leverage, asset profitability) and the dependent variable (green investment strategy). The moderation mechanism includes providing tax incentives, reducing green investment costs, and lowering risks. The signalling theory, norm compliance, and institutionalism support the role of tax policy as a moderator. However, the effectiveness of this moderation is influenced by the type of tax policy, company characteristics, and market context.

By analyzing the relationships among these variables, this study aims to provide a better understanding of the factors driving companies to adopt green investment strategies and contribute to the existing literature on this topic. This study proposes seven hypotheses that cover various aspects of the factors influencing companies' decisions to adopt green investment strategies. These hypotheses are designed to be empirically tested to verify their validity and provide a deeper understanding of the dynamics behind the decision-making processes of LQ-45 companies in the context of green investments during the 2018-2023 period. The hypotheses in this study are as follows:

H₁: Company size significantly affects the likelihood of adopting sustainable practices, particularly green investment strategies.

H₂: Profitability significantly impacts the decisions to implement sustainable practices, particularly green investment strategies.

H₃: Leverage (debt ratio) significantly influences the decisions to adopt sustainable practices, particularly green investment strategies.

H₄: Return on assets has a significant effect on the decisions to embrace sustainable practices, particularly green investment strategies.

H₅: Tax policy moderates the effect of company size on the likelihood of adopting sustainable practices, particularly green investment strategies.

H₆: Tax policy moderates the effect of profitability on the decisions to implement sustainable practices, particularly green investment strategies.

H₇: Tax policy moderates the effect of leverage (debt ratio) on the decisions to adopt sustainable practices, particularly green investment strategies.

H₈: Tax policy moderates the effect of return on assets on the decisions to embrace sustainable practices, particularly green investment strategies.

H₉: Company size, profitability, leverage, and return on assets collectively have a significant impact on the decisions to adopt sustainable practices, particularly green investment strategies.

BRIEF LITERATURE OVERVIEW

Environmental Economics Theory

Environmental Economics Theory studies the interaction between human economic activities and the natural environment, emphasizing the importance of wise and sustainable management of natural resources (Sujono and Aryani, 2022). Developed by Harold Hotelling in 1931, this theory states that the price of natural resources increases as their availability decreases (Rice, 2023). Economists such as Nicholas Georgescu-Roegen and Herman Daly emphasize the need for a more sustainable economic paradigm (Khalimova, 2023). The relevance of this theory in modern economic policy is increasingly significant in the context of climate change and sustainable development (Sun et al., 2024).

Green Finance Theory

Green Finance Theory integrates environmental, social, and governance (ESG) factors into investment decision-making (Yunita et al., 2022; Beny et al., 2023). George Serafeim from Harvard Business School is one of the key figures in developing this theory (Weerasinghe et al., 2023). By considering ESG factors, this theory promotes sustainable and responsible investment portfolios, creating pressure on companies to improve their sustainability and transparency performance (Ye and Dela, 2023).

Sustainability Portfolio Theory

Sustainable Portfolio Theory emphasizes the importance of ESG aspects in forming investment portfolios (Miranda et al., 2023). The "Triple Bottom Line" concept by John Elkington combines the evaluation of company performance based on financial, social, and environmental criteria (Atahau et al., 2023). Using this approach, investors can support companies committed to sustainability principles, encouraging positive changes in business behavior (Syahrini et al., 2023).

Green Investment Strategy

A green investment strategy involves allocating funds to environmentally and socially friendly projects or companies, using ESG assessments as the main metric (Harymawan et al., 2021). ESG encompasses criteria related to sustainable practices, environmental impact, and corporate governance (Firmansyah et al., 2022). By integrating available ESG data from various sources, including the Indonesia Stock Exchange (IDX), investors can make more sustainable and responsible decisions, supporting environmentally and socially friendly economic development (Sutikno et al., 2023).

This study illustrates how these theories establish a robust conceptual framework for green investment strategies that integrate environmental, social, and governance factors into the investment decisions of IDX LQ-45 companies (Harymawan et al., 2022). By understanding and implementing these theories, we can promote more sustainable business practices and positively contribute to the environment and society.

The Refinitiv ESG score, based on their specific methodology, assesses a company's environmental, social, and governance (ESG) performance. It is derived from three core pillars and ten categories, using standardized, industry-specific weights, with scores ranging from 0 to 100. This score is then translated into a grading system from A+ (the highest) to D- (the lowest) to represent ESG performance. The process includes collecting data from Thomson Reuters Eikon, evaluating the company's performance across the ESG pillars, calculating the scores, and converting them to the grading scale. The following equation model is used to calculate the ESG score (Chasiotis et al., 2023).

The Role of Taxation in Moderating Green Investment Strategies

Tax policy plays a crucial role in moderating the influence of various factors such as company size, profitability, leverage, and return on assets on green investment strategies. Taxes can influence company decisions by providing incentives or disincentives that drive companies to commit more to sustainable business practices (Sadiq et al., 2023). In the context of company size, tax policies that offer incentives such as tax reductions for companies adopting green technologies or sustainable projects can increase the financial capacity of companies for green investments. Thus, large companies with high annual revenues will be more encouraged to allocate their resources toward green investments.

Company profitability is also influenced by tax policy (Niandari and Handayani, 2023). Tax incentives can increase a company's net profit by reducing tax burdens, thereby providing more room for companies to invest their profits in sustainable projects. Additionally, taxes can moderate the influence of leverage by providing incentives for companies that reduce their debt through investments in sustainable practices (R. C. D. Yulianti et al., 2023). For example, debt tax reductions or interest deductions can encourage companies to consider using equity for green investments rather than relying on debt (Beny et al., 2023). Finally, regarding return on assets, tax policies supporting investments in energy efficiency technologies or projects that improve asset efficiency can enhance return on assets (ROA) (Y. Yulianti and Sitorus, 2019). Thus, companies will be more motivated to maximize the use of their assets in supporting green investment strategies (Aslam and Ghouse, 2023). Overall, well-designed tax policies can play a significant moderating role in encouraging companies to adopt and expand sustainable business practices, thereby supporting broader environmental and economic goals (Li et al., 2024).

METHODOLOGY

This research is a quantitative study with an associative causal approach, consistent with the characteristics of causal (explanatory/predictive) research. It employs a case study approach aimed at explaining the cause-and-effect relationship between variables that influence the adoption of green investment strategies by companies listed on the Indonesia Stock Exchange. In this context, the paradigm used is positivism, which emphasizes the repeatability and objectivity of data tested empirically (Chapman et al., 2009). This study adopts a deductive approach, allowing for the formulation of hypotheses based on existing theories, which are then tested through data collection and analysis (Erlina, 2011). The research method used is quantitative, where data is collected and analyzed numerically using statistical analysis techniques (Sudaryono, 2019).

The objective of this study is to test hypotheses using descriptive research. Descriptive research aims to systematically compile descriptions or portrayals and has the nature of relationships between the phenomena being studied (Putri, 2023). Through descriptive research, the characteristics of research variables can be identified (Hidayat and Zuhroh, 2023). Based on the research period, the researcher uses cross-sectional and time-series approaches, as this study is conducted on LQ-45 companies listed on the IDX over six years. Time-series data is collected multiple times over relatively equal intervals. The research setting is non-contrived, meaning the research environment is naturally formed (Danila et al., 2023).

This quantitative study employs an associative causal approach to investigate the cause-and-effect relationship influencing the adoption of green investment strategies by companies listed on the Indonesia Stock Exchange (Sudaryono, 2019). The research methodology follows a case study design within the positivism paradigm, emphasizing data repeatability and objectivity (Herman and Sufiyati, 2023). By adopting a deductive approach, hypotheses are formulated based on existing theories and tested through numerical data analysis techniques. The study aims to conduct descriptive research to systematically compile descriptions of the phenomena studied, identifying the characteristics of research variables using cross-sectional and time-series approaches over a six-year period (Syahrini et al., 2023).

The research setting is non-contrived, reflecting a naturally formed environment for data collection and analysis. This approach allows for a comprehensive understanding of the factors influencing companies' decisions to adopt green investment strategies, aligning with the research objectives and contributing to the existing literature on this topic (Chapman et al., 2009).

This study uses observation as a data collection method through literature review and documentation, seeking information related to the research topic from articles, books, and previous studies. The sampling technique used in this study is purposive sampling. Purposive sampling is a technique for selecting data sources with specific criteria and characteristics relevant to the research.

Table 2. Operational Variables

Variable	Indicator	Scale
Green Investment Strategy	ESG Score (Abdul Aziz, 2022)	Ratio
Company Size	Total Annual Revenue (Wairooy, 2019)	Ratio
Profitability	Net Profit Margin NPM = (Net Profit) / (Total Revenue) x 100% (Nawangsari & Nugroho, 2019)	Ratio
Leverage	Debt to Equity Ratio DER = (Total Debt) / (Total Shareholders' Equity) x 100% (Christian et al., 2018)	Ratio
Return on Assets (ROA)	ROA = (Net Profit) / (Total Assets) x 100% (Rahadian & Nurfitriani, 2022)	Ratio
Tax Policy	Corporate Tax Turn-Over Ratio (CTTOR) CTTOR = (Income Tax) / (Revenue) x 100% (Rosadi, 2015)	Ratio

Source: Authors' elaboration.

The ESG assessment is an integral part of evaluating sustainability and ethics in investment decision-making. In this framework, the IDX partners with Morningstar Sustainalytics for ESG assessments (Sutikno et al., 2023). This assessment includes Environmental, Social, and Governance factors, which are key indicators in evaluating ESG practices in companies (Herman and Sufiyati, 2023). The IDX displays the assessment results conducted by the evaluation institution, reaffirming the commitment to promoting sustainable investment and improving ESG practices in the Indonesian capital market (Harymawan et al., 2022).

The sample selected for this study consists of 50 LQ-45 companies listed on the Indonesia Stock Exchange (IDX) from 2018-2023 and possessing ESG scores (Environmental, Social, and Governance). The use of purposive sampling ensures that this sample represents companies committed to sustainability and good governance, providing a strong basis for identifying relationships between relevant variables in the context of green investment (Qoyum et al., 2022). The sample includes companies that meet the inclusion criteria, excluding those without ESG scores and those listed after 2018. With a total of 300 observational data points over six years of research, this study aims to observe and analyze the influence of variables such as company size, profitability, leverage, return on assets, and tax policy on green investment decisions in these companies.

This model is used to evaluate the direct relationship between independent variables (company size, profitability, leverage, and return on assets) and the dependent variable (green investment decisions), while considering the role of the moderating variable (tax policy) as a mediator. In this model, linear regression or logistic regression may be used to measure the influence of independent variables on the dependent variable, accounting for the mediating effect of tax policy. The model equation is formulated as follows:

$$Y = \beta_0 + \beta_1 \text{Size} + \beta_2 \text{Profitability} + \beta_3 \text{Leverage} + \beta_4 \text{ROA} + \varepsilon$$

Where:

Y = Dependent variable (Green Investment Decision) which indicates the level of adoption of green investment strategies by IDX LQ-45.

β_0 = Intercept or constant value

$\beta_1, \beta_2, \beta_3, \beta_4$ = Parameters to be estimated

ε = Random error

Descriptive statistical analysis is conducted to provide a comprehensive overview of the characteristics of the data used in this study (Erlina, 2011). Descriptive statistics generate information about the mean, median, standard deviation, as well as the minimum and maximum values of each observed variable.

In this model, the study explains how the moderating variable is measured or represented in the analysis and how its measurement affects the variables involved in the structural equation model. Panel data with a moderating variable uses double subscript notation (subscript i and t) in its writing. This study employs multiple regression analysis with panel data and moderated regression analysis (MRA) as its primary methods (Phan, 2024). The structural equation model is formulated as follows:

$$Y_{it} = \beta_0 + \beta_1 \text{Size}_{it} + \beta_2 \text{Profitabilitas}_{it} + \beta_3 \text{Leverage}_{it} + \beta_4 \text{Rentabilitas}_{it} + Z \text{Size}_{it} + Z \text{Profitabilitas}_{it} + Z \text{Leverage}_{it} + Z \text{ROA}_t + \varepsilon$$

Where:

Y = Green Investment Strategy

Z = Moderating Variable (Tax Policy) which indicates the value of the influence of tax policies such as tax incentives in the adoption of green investment strategies by IDX LQ-45.

λ_0 = Intercept or constant value

$\beta_1, \beta_2, \beta_3, \beta_4$ = Parameters to be estimated

ε = Random error

Preliminary analysis involves descriptive statistics to characterize the data, followed by rigorous diagnostic checks for normality, heteroscedasticity, multicollinearity, and autocorrelation to ensure model reliability. The optimal panel data estimation method is determined through Chow, Hausman, and Lagrange Multiplier tests (Bensalma, 2021). Subsequently, a multiple regression model incorporating panel data and moderation effects is constructed to investigate how tax policy influences the relationship between firm characteristics (size, profitability, leverage, asset profitability) and green investment strategies. The model's predictive power is assessed using the coefficient of determination (R^2), while hypothesis testing relies on t-tests, F-tests, and moderation analysis (Silaban et al., 2021).

RESULTS AND DISCUSSIONS

To provide a comprehensive overview of the characteristics of the data used in this study, descriptive statistical analysis was conducted. These descriptive statistics include information on the mean, median, and standard deviation, as well as the minimum and maximum values of each observed variable. The research data include variables such as firm size (X_1), profitability (X_2), leverage (X_3), asset profitability (X_4), tax policy as the moderating variable (Z), and green investment strategies as the dependent variable (Y). The results of this analysis help in understanding the data distribution and provide a clearer context regarding the patterns and distribution of these variables over the period 2018-2023. Table 3 below presents the descriptive statistics results of the research data processed using Eviews Version 12.

Table 3. Descriptive Statistics of Research Data

	X1	X2	X3	X4	Z
Mean	7,369609	0,134608	0,637081	0,084819	0,057067
Maximum	8,500463	2,489543	5,166166	1,814125	0,299599
Minimum	4,763555	-2,020753	-0,056437	-0,095044	0,001210
Std. Dev.	0,555756	0,261055	0,764193	0,157069	0,046818
Observations	300	300	300	300	300

Source: Authors' elaboration.

The results of the descriptive statistical analysis reveal that over the 2018-2023 period, the green investment strategy (Y) had a mean of 54.6400, a standard deviation of 9.628727, a minimum value of 19.20000, and a maximum value of 69.30000. The firm size variable (X1) exhibited a mean of 7.369609, a standard deviation of 0.555756, a minimum value of 4.763555, and a maximum value of 8.500463. Profitability (X2) recorded a mean of 0.134608, a standard deviation of 0.261055, a minimum value of -2.020753, and a maximum value of 2.489543. Leverage (X3) showed a mean of 0.637081, a standard deviation of 0.764193, a minimum value of -0.056437, and a maximum value of 5.166166. Asset profitability (X4) had a mean of 0.084819, a standard deviation of 0.157069, a minimum value of -0.095044, and a maximum value of 1.814125. The tax policy variable (Z) recorded a mean of 0.057067, a standard deviation of 0.046818, a minimum value of 0.001210, and a maximum value of 0.299599. This data is crucial for the research as it provides an overview of the distribution and variation of each variable, facilitating an understanding of the relationships between these variables and green investment strategies in IDX LQ-45 companies.

The selection of the panel data regression estimation model is essential to identify the most suitable model for this study. Panel data combines time series and cross-sectional data, enabling researchers to address issues of intercorrelation among independent variables, which can result in inaccurate regression model estimations (Trinh, 2024). In this context, three primary tests are utilized: the Chow Test, the Hausman Test, and the Lagrange Multiplier (LM) Test. The Chow Test compares the Common Effect Model and the Fixed Effect Model, the Hausman Test compares the Fixed Effect Model and the Random Effect Model, and the Lagrange Multiplier Test compares the Common Effect Model and the Random Effect Model (Uyar et al., 2024). The decision on model selection is based on the probability value of each test, where a probability value ≤ 0.05 indicates a more appropriate model for use.

Table 4. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	124,594372	(49,241)	0,0000
Cross-section Chi-square	981,240784	49	0,0000

Source: Authors' elaboration.

The Chow test results in Table 4 strongly suggest the presence of significant heterogeneity across individuals. This finding necessitates the use of a Fixed Effects Model, as indicated by the rejection of the null hypothesis in favor of the alternative. To further differentiate between Fixed and Random Effects models, a Hausman test will be conducted.

Table 5. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	9,935518	9	0,3557

Source: Authors' elaboration.

Table 5 reveals a non-significant cross-sectional random effect ($p = 0.3557$), leading to the acceptance of the null hypothesis and rejection of the alternative. Consequently, the Hausman test favors the Random Effects Model over the Fixed Effects Model. To further assess the appropriateness of random effects, a Lagrange Multiplier test will be conducted to compare it to the Common Effects Model.

Table 6. Lagrange Multiplier (LM) Test

Test Hypothesis	Cross-section	Time	Both
Breusch-Pagan	619,8233	0,434855	620,2582
	(0,0000)	(0,5096)	(0,0000)

Source: Authors' elaboration.

The Breusch-Pagan test results in Table 6 indicate the presence of heteroscedasticity, suggesting that the error variance is not constant across observations. Given the highly significant p-value ($p < 0.001$), we reject the null hypothesis of homoscedasticity in favor of the alternative hypothesis of heteroscedasticity. This finding supports the use of a random effects model.

The results of the three model tests show:

Chow Test: The Fixed Effect Model is more appropriate.

Hausman Test: The Random Effect Model is more appropriate.

Lagrange Multiplier Test: The Random Effect Model is more appropriate.

Thus, it can be concluded that the best model for this research is the Random Effect Model. This model is chosen because two out of the three tests support its use. The estimation model that uses the GLS method is only the Random Effect Model, which produces normally distributed residuals, meets the multicollinearity and autocorrelation tests, and the heteroskedasticity test (Hasnawati et al., 2024). Therefore, this study does not conduct classical assumption tests and proceeds directly with the panel data regression analysis results using the Random Effect Model.

The model selection results conducted using the Chow Test, Hausman Test, and Lagrange Multiplier Test concluded that the Random Effect Model is the best parameter estimation method in this panel data model research. Therefore, hypothesis testing in this study uses the Random Effect Model method, with the results as follows.

Table 7. Panel Data Regression Analysis Random Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.253623	5.252230	1.572056	0.1164
X1	15.817518	2.381122	6.212168	0,0000
X2	8.137807	1.680610	4.837789	0,0000
X3	7.714482	1.186454	6.507895	0,0000
X4	10.44882	4.137798	2.524372	0.0121
Z	115.4692	35.9672	3.320185	0.0010
X1Z	48.87008	18,33658	2,665168	0,0081
X2Z	77.46720	31.49917	2.459717	0.0143
X3Z	23.63906	8.91191	2.653196	0.0087
X4Z	53.4900	28.38712	1.883523	0.0601
Root MSE	4.263848	R-squared	0.560945	
Mean dependent var	54,64000	Adjusted R-squared	0.538008	

S.D. dependent var	9,628727	S.E. of regression	4.405121
Akaike info criterion	5.128325	Sum squared resid	10487.36
Schwarz criterion	5.251784	Log likelihood	-659.249
Hannan-Quinn criter.	5.177733	F-statistic	21.37697
Durbin-Watson stat	1.078207	Prob(F-statistic)	0,000000

Source: Authors' elaboration.

The panel data regression model employed in this research, as presented in the preceding table, is specified as follows:

$$Y = 8.253623 + 15.817518X_1 + 8.137807X_2 + 7.714482X_3 + 10.44882X_4 + 115.4692Z + 48.87008X_1Z + 77.46720X_2Z + 23.63906X_3Z + 53.4900X_4Z$$

Where :

X_1 : Company Size

X_2 : Profitability

X_3 : Leverage

X_4 : Return on Assets

Z : Tax Policy

Y : Green Investment Strategies

X_1Z : Combined effect Income and Tax Policy

X_2Z : Combined effect Profitability and Tax Policy

X_3Z : Combined effect Leverage and Tax Policy

X_4Z : Combined effect Return on Assets and Tax Policy

The panel data regression analysis reveals that several factors significantly influence a firm's decision to invest in green initiatives. Firstly, firm characteristics such as size ($\beta = 15.817518$), profitability ($\beta = 8.137807$), leverage ($\beta = 7.714482$), and asset turnover ($\beta = 10.44882$) exhibit a positive correlation with green investments. This indicates that larger firms with higher profitability, greater leverage, and better asset utilization are more likely to allocate resources towards sustainable projects. Secondly, tax policies play a pivotal role in stimulating green investments. The analysis demonstrates that supportive tax policies, such as tax incentives, significantly enhance the likelihood of firms undertaking green investments ($\beta = 115.4692$). The interaction between tax policies and firm characteristics is also noteworthy. Larger firms, for instance, tend to be more responsive to tax incentives when making green investment decisions ($\beta = 48.87008$).

Based on these findings, it can be concluded that to foster green economic growth, governments should implement more supportive tax policies that encourage green investments. Additionally, firms should consider internal factors such as size, profitability, leverage, and asset turnover when formulating their green investment strategies. Consequently, collaboration between government and the private sector is essential for achieving sustainable development goals.

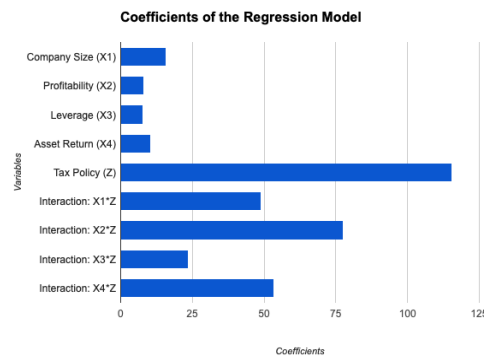


Figure 3. Regression Analysis of Green Investment Determinants
Source: Authors' elaboration.

Figure 3 depicts the coefficients of the regression model, which measure the individual influence of each variable on green investment strategies. Positive coefficients indicate a positive influence, while negative coefficients indicate a negative influence. The magnitude of the coefficient reflects the strength of the influence. Larger companies (X1) and higher asset returns (X4) have the strongest positive influences on green investment strategies, with coefficients of 15.82 and 10.45, respectively. This suggests that companies with greater resources and operational efficiency are more likely to adopt sustainable practices. Profitability (X2) also has a positive influence (coefficient of 8.14), indicating that financially strong companies are better positioned to invest in green projects. Leverage (X3), however, has a positive but slightly weaker influence (coefficient of 7.71). This suggests that companies with moderate debt levels may be more inclined to utilize green investments to improve their financial standing and reputation. Tax policy (Z) has a direct negative influence on green investments (coefficient of -115.47). This implies that unsupportive tax policies can discourage companies from adopting sustainable practices. However, the interaction terms (X1Z, X2Z, X3Z, and X4Z) capture the moderating effect of tax policy. These terms show that supportive tax policies can strengthen the positive influences of company size, profitability, leverage, and asset returns on green investment decisions.

The coefficient of determination (Adjusted R-Square) is used to assess the percentage of the total variation in the dependent variable Y that is explained by the independent variables X in the regression model. It also measures how well the model explains the variability of the dependent variable. The following are the results of the determination coefficient calculation from the regression model based on the selected Random Effect Model.

Table 8. Coefficient of Determination Test (Adjusted R-Square)

R-squared	0.560945
Adjusted R-squared	0.538008

Source: Authors' elaboration.

Based on the results in Table 8 above, the Adjusted R-squared value is 0.560945, indicating that 53.8008% of the variation in the green investment strategy variable can be explained by the variables of income, profitability, leverage, asset profitability, tax policy, interaction between income and tax policy, interaction between profitability and tax policy, interaction between leverage and tax policy, and interaction between asset profitability and tax policy. The remaining 46.1992% is explained by other factors outside the variables used in this study.

The F test aims to assess whether the overall regression model has significant explanatory power over the dependent variable. This test determines if the independent variables collectively influence the dependent variable in the regression model. The hypotheses for this test are as follows:

H_0 : The independent variables do not simultaneously affect the dependent variable.

H_a : The independent variables simultaneously affect the dependent variable.

The decision rule for the F test at a 10% significance level is as follows: if the probability value (Prob) is less than 10% (Prob < 0.1), then H_0 is rejected, and H_a is accepted, indicating that the independent variables collectively influence the dependent variable. Conversely, if Prob is greater than or equal to 0.1, H_0 is accepted. The table below presents the F test results based on the selected Random Effect Model.

Table 9. Simultaneous Test (F Test)

F-statistic	11,37697
Prob(F-statistic)	0,000000

Source: Authors' elaboration.

Based on Table 9, the probability value (Prob (F-statistic)) is 0.000000 (<0.1), which is less than the significance level of 0.1. Therefore, it can be concluded that H_0 is rejected and H_1 is accepted, meaning that at the 10% significance level, the variables of income, profitability, leverage, asset profitability, tax policy, interaction between income and tax policy, interaction between profitability and tax policy, interaction between leverage and tax policy, and interaction between asset profitability and tax policy simultaneously affect the green investment strategy (Hasnawati et al., 2024).

The t-test aims to evaluate whether there is an individual effect of each independent variable on the dependent variable. The hypothesis for this test is:

H_0 : The independent variable positively affects the dependent variable.

H_a : The independent variable positively affects the dependent variable.

The decision rule for the t-test is that if the probability value (Prob) < 0.05, H_0 is rejected, or H_a is accepted, meaning the independent variable individually affects the dependent variable, and vice versa. The following table presents the t Test results based on the selected Random Effect Model.

Table 10. Partial Test (t Test)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	15.817518	2.381122	6.212168	0,0000
X2	8.137807	1.680610	4.837789	0,0000
X3	7.714482	1.186454	6.507895	0,0000
X4	10.44882	4.137798	2.524372	0.0121
Z	115.4692	35.9672	3.320185	0.0010
X1Z	48.87008	18,33658	2,665168	0,0081
X2Z	77.46720	31.49917	2.459717	0.0143
X3Z	23.63906	8.91191	2.653196	0.0087
X4Z	53.4900	28.38712	1.883523	0.0601
*Significant at $\alpha = 5\%$ (Prob < 0,05)				

This study tested nine hypotheses with significant results below a 10% probability level (0.1). The following is an in-depth analysis of each hypothesis, supported by the research results.

H1: Company Size

The results of the partial test (t-test) show that company size significantly influences green investment strategies (t-statistic of 6.212168, $p < 0.05$) with a positive regression coefficient of 15.817518. This indicates that larger companies are more likely to adopt green investment strategies. This finding aligns with the theory that larger companies have more resources to implement sustainable practices and face greater stakeholder pressure to demonstrate social responsibility, thus driving the adoption of green investment strategies. This allows them to make larger investments in green technologies, research and development, and sustainability initiatives. Smaller companies may be more financially constrained and tend to choose solutions that are more cost-effective or that provide quick results. Overall, while company size influences how they implement their green investment strategies, it does not mean that smaller companies cannot contribute to sustainability. They are often more agile and can adopt green solutions in a more flexible and innovative way on a smaller scale (Fu et al., 2023; L. Liu, 2023; Zhao et al., 2023).

H2: Profitability

Profitability also has a significant positive effect on green investment strategies (t-statistic of 4.837789, $p < 0.05$) with a positive regression coefficient of 8.137807. Companies with higher profitability are financially better positioned to implement green investments. This suggests that profitable companies are not only focused on short-term gains but also consider long-term sustainability, supporting the hypothesis that profitability drives green investment (Trinh, 2024). Profitable companies have more funds to invest in green technologies and initiatives. This includes investments in renewable energy, energy-efficient equipment, and other sustainable practices. With profitability, companies can more easily afford the upfront costs of green investments, which often require large capital outlays. Overall, profitability provides a strong foundation for companies to adopt and leverage green investment strategies, creating a virtuous cycle between financial returns and environmental sustainability (Alshehhi et al., 2018; Zghidi and Bousnina, 2023).

H3: Leverage (Debt Ratio)

Leverage has a significant positive influence on green investment strategies (t-statistic of 6.507895, $p < 0.05$) with a positive regression coefficient of 7.714482. Companies with higher debt ratios may feel the need to demonstrate to creditors and investors that they have sustainable long-term plans, thereby increasing confidence and financial stability, and thus driving green investment strategies (Uyar et al., 2024). Leverage can help companies diversify their investments by financing multiple green projects. By using debt, companies can instead rely solely on internal capital but pursue multiple green initiatives at once, increasing their chances of benefiting from different types of sustainable technologies or practices. If green investments provide higher returns than the cost of debt, using leverage can improve a company's profitability. For example, investing in energy-efficient technologies that reduce operating costs can yield greater returns than the interest costs of debt, increasing net profits. It's important to remember that using leverage also carries risks. High debt can increase interest expenses and financial stress on a company, especially if green investments do not yield the expected results or face unexpected challenges. Therefore, companies need to ensure that their leverage strategy is carefully planned and considers the balance between the associated benefits and risks (Guang-Wen and Siddik, 2023).

H4: Return on Assets

Asset turnover significantly influences green investment strategies (t-statistic of 2.524372, $p < 0.05$) with a positive regression coefficient of 10.44882. This implies that companies with higher asset

turnover have both the incentive and the ability to invest in green strategies as part of efforts to enhance efficiency and competitiveness in the market (Rocha et al., 2024). Companies with high asset turnover tend to be more efficient at using their assets to generate revenue. This can influence their decisions to invest in green technologies. If companies already have efficient systems in place, they may be more inclined to invest in green technologies that further increase efficiency, such as energy-efficient equipment or better environmental management systems. The asset turnover rate influences how companies prioritize the use of capital. Companies with high asset turnover may feel more comfortable allocating funds to green investments because they have an effective business model and are generating revenue well from their existing assets. In contrast, companies with low asset turnover may be more focused on improving operational efficiency and may see green investments as a way to improve their asset turnover. Companies with low asset turnover may need to invest in green infrastructure to improve the productivity and efficiency of their assets. Investments in technologies such as renewable energy systems or energy-efficient equipment can help companies improve asset turnover by reducing operating costs and increasing output. Asset turnover influences how companies evaluate and plan green investments. Companies with high efficiency may be better able to continue or expand green investments as part of their strategy, while companies with lower asset turnover may see green investments as an opportunity to improve the efficiency and performance of their assets (Brühl, 2023).

H5: Moderating Effect of Tax Policy on Company Size

Tax policy significantly influences green investment strategies (t-statistic of 3.320185, $p < 0.05$) with a positive regression coefficient of 115.4692. Supportive tax policies can provide incentives for companies to adopt sustainable practices, such as tax reductions for green investments or tax credits for environmental initiatives, thus driving green investment strategies. Many countries offer tax incentives, such as tax deductions or tax credits, for investments in green technologies and sustainability practices. Larger firms may be better able to take advantage of these tax incentives because they often have more resources to strategically plan and manage green investments. Supportive tax policies may reinforce the propensity of large firms to invest in green initiatives. Smaller firms, on the other hand, may not have the same capacity or access to tax incentives or sophisticated tax planning as larger firms. Tax policies that support green investment may provide greater benefits to larger firms that are able to take full advantage of incentives, while smaller firms may face challenges in accessing and utilizing such incentives. Tax policies can moderate the impact of firm size on green investment strategies by providing incentives that reinforce green investment decisions and help firms capitalize on sustainability opportunities. However, these moderating effects may vary depending on the size of the firm, their capacity to take advantage of tax incentives, and their organizational structure (Fu et al., 2023; Xia et al., 2023).

H6: Moderating Effect of Tax Policy on Profitability

Tax policy significantly moderates the effect of company size on green investment strategies (t-statistic of 2.665168, $p < 0.05$) with a positive regression coefficient of 48.87008. This suggests that supportive tax policies can enhance the positive impact of company size on the adoption of green investment strategies. Larger companies may be more responsive to tax incentives because they have the resources to effectively leverage these incentives (Hasnawati et al., 2024). Tax policy can moderate the effect of profitability on green investment strategies by increasing the financial attractiveness of green investments through various tax incentives and deductions. Supportive tax policies enable profitable companies to take advantage of tax advantages, optimize their green investment strategies, and integrate sustainability initiatives into their long-term planning (Barko et al., 2022; Nishihara, 2023; W. E. Yang et al., 2023).

H7: Moderating Effect of Tax Policy on Leverage

Tax policy also significantly moderates the effect of profitability on green investment strategies (t-statistic of 2.459717, $p < 0.05$) with a positive regression coefficient of 77.46720. Supportive tax policies can strengthen the relationship between profitability and green investment adoption, enabling profitable companies to better utilize tax incentives in supporting their sustainable practices (X. Yang et al., 2024). Tax policies that support green investment may influence long-term decisions about the use of leverage in corporate sustainability strategies. With tax benefits, companies may be more motivated to integrate debt into their long-term green investment plans, as they can reduce the cost of debt and increase the returns from green projects. With tax policies that support green investment, companies may be more inclined to use leverage strategically to finance green projects, given the tax benefits provided. This may influence their investment decisions and financing strategies (Fu et al., 2023; Nishihara, 2023; W. E. Yang et al., 2023).

H8: Moderating Effect of Tax Policy on Return on Assets

Tax policy significantly moderates the effect of leverage on green investment strategies (t-statistic of 2.653196, $p < 0.05$) with a positive regression coefficient of 23.63906. This indicates that companies with higher debt ratios can be more motivated to adopt green investment strategies if supportive tax policies are in place, helping to reduce financial burdens and increase the attractiveness of green investments (A. Zhang et al., 2024). Tax policies that support green investment can increase asset turnover by reducing costs and increasing productivity. This can help companies with high ROA to improve their asset efficiency, strengthening green investment decisions and their impact on financial results. Overall, tax policies can moderate the effect of ROA on green investment strategies by changing the financial attractiveness of green investments through various incentives and tax deductions. This can affect investment decisions, financial planning, and long-term sustainability strategies of companies, especially those with high ROA (Fu et al., 2023; Ye and Dela, 2023; D. Zhang, 2023).

H9: Simultaneous Influence

Tax policy does not significantly moderate the effect of asset turnover on green investment strategies (t-statistic of 1.883523, $p \geq 0.05$) with a positive regression coefficient of 53.4900. This suggests that while supportive tax policies exist, the influence of asset turnover on green investment strategies is not significantly affected by these policies. Companies with high asset turnover may already have sufficient incentives to invest in green strategies without needing additional tax policy support (Y. Liu et al., 2024).

CONCLUSIONS

This study evaluated the influence of company size, profitability, leverage, and return on assets on the tendency of LQ-45 companies to adopt sustainable practices, particularly green investment strategies, with tax policy as a moderating variable. The results reveal that these factors significantly affect companies' decisions to invest in green strategies, highlighting the importance of a multifactorial approach in understanding the dynamics of sustainable practice adoption by large companies in Indonesia.

Company size significantly influences the adoption of green investment strategies, as larger companies tend to have more resources for investment in sustainable projects and face greater pressure from stakeholders to engage in socially and environmentally responsible practices (X. Wang et al., 2024). This indicates that operational scale and financial capability are key drivers of green investment adoption. Profitability also plays a crucial role in the decision to adopt sustainable practices. Companies with high profitability have greater financial flexibility to allocate funds for green projects, enabling them to invest in initiatives that benefit the environment and enhance their

reputation among investors and the capital market (Hasnawati et al., 2024). Leverage shows a significant influence on the decision to adopt green investments. While high leverage can limit a company's capacity for additional investments, companies with moderate leverage are more likely to consider green investments as a strategy to reduce risks and improve their reputation among creditors and investors (Piccarozzi et al., 2024). Return on assets reflects a company's efficiency in utilizing its assets to generate profits (Silva et al., 2024). Companies with high asset returns are more likely to allocate part of these profits to green investments, enhancing operational efficiency and providing long-term benefits (Trinh, 2024).

Favorable tax policies, such as tax incentives for green investments, play an important role in moderating the influence of company size, profitability, leverage, and return on assets on the adoption of green investment strategies. Tax incentives can strengthen the drive for large and profitable companies to increase their investments in sustainable projects. The research findings indicate that the combination of company size, profitability, leverage, and return on assets simultaneously has a significant influence on the decision to adopt sustainable practices. This multifactorial approach is essential for understanding green investment decisions in large companies, especially in the context of global trends that increasingly emphasize sustainability and corporate social responsibility.

Based on the research findings, green investment strategies play a crucial role in enhancing company performance and contributing to climate change mitigation. The study emphasizes that company size, profitability, leverage, and return on assets are significant factors in determining a company's ability to adopt sustainable practices (Rocha et al., 2024). Tax policy also moderates the relationship between these variables and the company's decision to implement green investment strategies. Therefore, developing policies to support the adoption of green practices is crucial. Several policy recommendations can be proposed:

Developing tax incentives such as tax reductions, credits, or exemptions for investments in sustainable projects can encourage companies to adopt green practices. Providing green financing through financial institutions and capital markets can help highly leveraged companies overcome financial constraints, such as offering low-interest green loans or issuing government-backed green bonds (Gutiérrez-Ponce and Wibowo, 2023). Conducting awareness campaigns to emphasize the importance of sustainable practices and the long-term benefits of green investments for company management, investors, and the general public is also essential (Firmansyah et al., 2022). Implementing strong environmental regulations and recognizing companies that successfully implement sustainable practices can motivate participation in green initiatives. Encouraging collaboration between companies, research institutions, and non-governmental organizations, and providing education and training for executives and managers on green investment strategies can enhance companies' capability to adopt sustainable practices. Supporting green technology through subsidies, grants, or funding for green technology projects, and implementing effective monitoring and evaluation systems to ensure sustainability goals are optimally achieved, is also crucial (Cahyaningsih and Nurmalitasari, 2022). Encouraging the integration of sustainability aspects into core business strategies, including implementing sustainable practices throughout the supply chain, from production to distribution, can further support this goal. Fostering cooperation between the government and financial institutions to create an ecosystem that supports green investments, including providing transparent information and data related to green investment opportunities and risks, is another important step (Salim et al., 2022).

By implementing a comprehensive green investment strategy supported by appropriate policies, companies can enhance their financial performance and make significant contributions to environmental and social sustainability. This is a crucial step towards more sustainable and inclusive economic development. With these policy recommendations, it is hoped that more companies will

adopt sustainable practices and invest in green strategies, positively contributing to environmental sustainability and enhancing their reputation in the global market.

Practical implications of this study can be considered Companies can use the findings of this study to optimize their investment strategies. By understanding how tax policies moderate green investment decisions, companies can design strategies that utilize tax incentives to increase net profits and the financial attractiveness of green projects. Meanwhile, the implications of this study in terms of regulation, namely the government can use the results of the study to design more effective tax policies in encouraging green investment. By understanding how tax policies moderate investment decisions, the government can create more targeted incentives to increase investment in green technologies and sustainability practices. This study is limited to LQ-45 companies listed on the IDX over six years, while companies listed on the IDX are companies that have conducted an IPO. So it does not represent small companies, further research is suggested to conduct a comparative study between large and small companies to obtain more complex results and provide a broader view.

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