

The Effect of Earning Management on Carbon Emmision Disclosure with Corporate Governance as a Moderation Variable

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ABSTRACT

The inconsistency of research results on the effect of earning management on carbon emission disclosures indicates that there are other factors that also influence, thus encouraging researchers to include corporate governance as a moderating variable. The sampling method used in this study was purposive sampling with a sample of 95 non-banking, non-financial and non-insurance companies listed on the Indonesia Stock Exchange (IDX) in 2010 - 2020 and have a role in the Corporate Governance Perception Index (CGPI). Statistical analysis used included classical assumption test, model feasibility test and to test the effect of moderating variables in this research hypothesis using Moderated Regression Analysis (MRA) test. The results of the classical assumption test showed that the regression model had met the requirements of the classical assumption test. The results of hypothesis testing showed that: 1) earnings management had no effect on carbon emission disclosures in companies listed on the Indonesia Stock Exchange and participates in the Corporate Governance Perception Index, 2) corporate governance as a moderating variable was proven to be able to strengthen the correlation between earnings management and carbon emissions. disclosure to companies listed on the Indonesia Stock Exchange and participating in the Corporate Governance Perception Index.

Keywords: *Earning Management, Carbon Emmision Disclosure, Corporate Governance.*

1. INTRODUCTION

UN Secretary General Antonio Guterres at a Virtual Summit held in December 2020 called all the conference participants to issue the status of a "climate emergency" for each participating country. The call is intended for the conference participating countries to focus on efforts to reduce carbon emissions so that disasters caused by climate change can occur. Human-caused climate change has been shown to increase the risk of floods and extreme rains, hot weather, and forests with nature for people, animals and the environment.

The current environmental phenomenon is part of a conversation that has attracted the attention of a number of institutions such as government institutions, organizations, environmental organizations and activists, communities, and business people.[1].

Indonesian government had issued Presidential Regulation No. 71 of 2011 concerning "Implementation of a national Greenhouse Gas Inventory" and strengthened by the Minister of Energy and Mineral Resources Regulation No. 22 of 2019 concerning "Guidelines for the Implementation of Greenhouse Gas Inventory and Mitigation in the Energy Sector". Carbon emission disclosure or disclosure of carbon emissions is part of social responsibility regulated in the Statement

of Indonesian Financial Accounting Standards (or Statement of Financial Accounting Standards/PSAK) Number 1 paragraph 9 regarding environmental issues[2]. Carbon emission disclosures can be considered as an important strategic tool for companies to signal certain information so that they can attract investment and improve the company's reputation[3]. Disclosure of carbon emissions is a form of accountability used to explain the impact of a company's operational activities on climate change. However, disclosure of carbon emissions can contain several risks for corporations, such as increasing operating costs, decreasing market value, and providing opportunities for managers to be involved in earnings management or prioritizing. [4-6].

The results of Gerged, Albitar, and Al-haddad's research show that the correlation between corporate environmental disclosures and earnings management is negative, the correlation between corporate governance arrangements and earnings management is heterogeneous because they may reduce or increase earnings manipulation in Jordan.[7]. Moreover, some corporate governance structures, such as board size, managerial, and institutional owner structure have a moderate effect on the correlation between corporate environmental disclosures & earnings management. The results of the same study were shown by You,

Brahmana, and Tan that corporate environmental disclosures had a significant effect on earnings management at a significance level of 1%.[8]. In contrast, different industries are subject to different norms, organizational structures and rules. Companies from the same industry are expected to show the same disclosures. Institutional investors demand accurate and adequate disclosures to avoid information asymmetry. Rupley, Brown, and Marshall's research is also in line with previous research which showed that the quality of environmental disclosure was positively related to environmental media coverage, negative environmental media and board attributes of independence, diversity, and expertise. [9]. Based on the results of the additional analysis, it shows that institutional investors influence managerial decisions on environmental reporting only in the face of negative environmental media. Meanwhile, in the longitudinal analysis the results show that the quality of environmental disclosure has increased from time to time. Siueia and Wang's research shows that there is a significant and negative correlation between Corporate Social Responsibility Disclosure (CRSD) and Earning Quality (EQ) in the Mozambique extractive industry.[10]. Empirical evidence also shows that the effect of a positive CRSD indicator (CRSD strength score) is much stronger than a negative CRSD indicator (CRSD concern score) in reducing earnings quality. This finding is consistent with the idea that opportunistic managers use CRSD to achieve their particular interests, suggesting that managers use CRSD as a strategic tool to engage in earnings management (poor earnings quality). The results are robust for alternative proxy measures of CRSD and earnings quality.

Research conducted by Setyorini and Sri shows that earning management has no effect on corporate environmental responsibility disclosure, while independent commissioners, audit committees and managerial ownership have no significant effect on moderating the effect of earning management on corporate environmental responsibility disclosure.[11]. Meanwhile, institutional ownership significantly influences corporate environmental responsibility disclosure. Two of the three control variables used in this study, namely profitability and leverage, do not have a significant effect on the effect of earning management on corporate environmental responsibility disclosure, while the effect of institutional ownership has a significant effect on the effect of earning management on corporate environmental responsibility disclosure.

The results of Bui, Houqe, and Zaman's research show that climate governance also reduces over-recognition of good performance through extensive disclosure and low polluters disclose more to differentiate themselves. [12]. This study highlights the importance of the frequency of reporting to the board

and the timeframe for carbon reporting to improve carbon disclosure and carbon performance. The proportion of female board members, the size of the board of commissioners, and the size of the audit committee affect the disclosure of greenhouse gas emissions[13]. Likewise, the role of internal audit significantly strengthens the influence between corporate governance and the disclosure of greenhouse gas emissions. Other results show that the proportion of independent commissioners and the frequency of audit committee meetings do not affect the disclosure of greenhouse gas emissions. Entities with a higher number of independent directors on the board of directors are more likely to exert influence on carbon emission disclosures[14]. In addition, the diversity of nationalities of the board and the existence of a sustainability committee cannot have a significant impact on carbon emission disclosures and the extent of such disclosure.

The level of carbon emissions, company size, and good corporate governance are the main triggers for determining the extent to which carbon emissions are voluntary disclosures [15]. The dummy variable for companies operating in emission-intensive industries also has a positive correlation with carbon emission disclosure scores, which indicates that industry characteristics are important explanatory factors in carbon emission disclosures. Overall, it shows that the NGERA Act in Australia in 2007 increased voluntary disclosure of carbon emissions in the 2007 and 2008 financial years, although the law did not take effect until the 2009 financial year. Board independence, board diversity, and managerial ownership has a significant correlation with the carbon disclosure project, while the existence of the environmental committee has no correlation with the carbon disclosure project"[16]. Firm size, institutional ownership and market value are positively related to the sensitivity of the sample firms, while board size is negatively related [17]. On the other hand, the results show that firm size, profitability, and institutional ownership have a positive impact on the transparency of companies listed in Turkey.

Competition and profit growth have no effect on carbon emission disclosures, while environmental performance has an effect on carbon emission disclosures[18]. Carbon emission disclosure and good corporate governance have no direct effect on company value[18–19]. On the other hand, financial performance mediates the effect of carbon emission disclosures and good corporate governance on firm value. This shows that carbon emission disclosures and good corporate governance are meaningless for investors if they do not provide an increase in financial performance. Institutional ownership, foreign ownership, independent board of commissioners have no effect on carbon emission disclosure, and audit committee has a positive effect on carbon emission disclosure [20]. Based on the

explanation above, there are other variables that affect a correlation between the dependent variable and the independent variable. In these variables there is a contingency theory that can affect other variables under certain circumstances.

The results of the research conducted by a number of researchers above show that there is an inconsistent correlation between the effect of earnings management on carbon emission disclosures. As for the inconsistent results, it is possible that there are disturbing factors, causing differences in research results between the correlation between earnings management and carbon emission disclosures. Then, from these factors, the contingency theory emerges. Contingency factors can be explained in contingency theory. In this study, the contingency theory is described by using one of the variables in the contingency theory, namely the moderating variable. The moderating variable allows the existence of variables that can strengthen and weaken the effect of earnings management on carbon emission disclosures.

The novelty of this research is the method of measuring Corporate Governance using the Corporate Governance Perception Index (CGPI). There has been no research with the same topic in formulating the measurement of Corporate Governance using the Corporate Governance Perception Index (CGPI). The Corporate Governance Perception Index is a research program and ranking of the implementation of Good Corporate Governance of companies in Indonesia through research designs that encourage companies to improve the quality of implementing the concept of Corporate Governance through continuous improvement by carrying out evaluations and benchmarking. The Corporate Governance Perception Index is the result of a collaboration between the Indonesian Institute of Corporate Governance and SWA Magazine. Most of the previous research used Good Corporate Governance mechanisms, including institutional ownership, managerial ownership, board of directors, board of commissioners, independent commissioners, and audit committees as the basis for measuring Corporate Governance.

2. LITERATURE REVIEW

2.1. Stakeholder Theory

This theory began to emerge starting with the development of awareness and understanding that companies have stakeholders. Stakeholders are stakeholders or groups of people who have an interest in the company. A study on stakeholders was conducted for the first time by Freeman, namely Strategic Management: A Stakeholder Approach [21]. Developed

from the study, so there are many studies that discuss the stakeholder concept [22].

Stakeholder theory suggests that the firm is an implicit and explicit contractual correlation between all of these stakeholders; managers are unique stakeholders in that they are at the center of the contractual correlation (managers have contractual correlations with all types of stakeholders and thus work as agents for them) and have direct control over the company's decision-making apparatus. Therefore, it is imperative that managers make strategic decisions and allocate resources that serve the interests of other stakeholders[23].

Stakeholder theory argues that an entity tries to align its activities with stakeholder expectations. External pressure from several stakeholder groups, including customers, non-governmental organizations (NGOs), media and local communities, is likely to continue to increase in terms of environmental and social issues[16].

Stakeholder pressure is considered more influential on the attitude of managers in controlling social and environmental issues compared to regulations or mandatory disclosure rules[24]. Some companies are more responsive to the demands of financial stakeholder groups than others such as environmental observers/activists [25]. In this case, management is given the responsibility to balance conflicting pressures from various stakeholders. Carbon emission disclosure is one example of disclosure that is in the spotlight of company stakeholders.

2.2. Agency Theory

Agency theory is a theory that describes the correlation between directors and agents, usually referred to as agency correlations [26]. Smith points out in *The Wealth of Nations* that when an organization is run by a person or group who is not the owner, that person or group may not be working for the benefit of the organization. [27]. An agency correlation is a contract between a client and an agent dedicated to realizing their interests and causing agency conflicts [28].

Agency theory is closely related to accounting research which is a guide in interpreting several factors that can influence the occurrence of earnings management and the implementation of corporate governance. This theory discusses the conflict of interest between the agent and the principal. Agent is an internal company that carries out the company's business operations. Agent means that the company management or manager. Principal is the party who owns capital or shareholders in the company. Each party, namely the agent and the principal, has different interests in the company. One agent, the manager is

morally responsible for maximizing the profits of the owners (principal).[29].

Agency correlation creates a conflict of interest because of the mismatch of interests between agents and directors, and managers do not always act in the best interests of the owners[30]. Agency theory helps implement mechanisms in state-owned companies to monitor agent behavior and resolve conflicts between agents within the company[31]. Agency theory proposes a framework linking carbon disclosure with the mechanism of the theory, showing that good governance arrangements can increase the company's ability to solve existing problems and reduce conflicts between agencies. In addition, agency theorists see carbon reporting as a solution to reduce information asymmetry between agents and managers [32].

2.3. Contingency Theory

Contingency theory is usually known as situational theory. The theory contains situational factors that can have an influence on one variable with another variable. Contingency theory popularized by Burn and Stalker which states that a design quality is contingent on organizational contextual factors[33]. According to Govindarajan who said that in reconciling differences in the results of previous studies, it could be resolved by taking a contingency approach[34]. This means that contingency theory is the most important design for research, because it can serve as a basis for theory development. Therefore, in this study, the effect of earning management on carbon emission disclosures and the application of corporate governance as a moderating variable relies on the application of contingency theory.

Based on the research of Bui, et al; Elsayih, et al; Astari, et al; Choi and Luo; and Grediani, et al. show that there is an inconsistent correlation between the effect of earnings management on carbon emission disclosures[12]–[14], [35], [36]. As for the inconsistent results, it is possible that there are disturbing factors, causing differences in research results between the correlation between earnings management and carbon emission disclosures. Then, from these factors, the contingency theory emerges. Where contingency factors can be explained in contingency theory. In this study, the contingency theory is described by using one of the variables in the contingency theory, namely the moderating variable. The moderating variable allows for variables that can strengthen and weaken the effect of earning management on carbon emission disclosures.

2.4. Earnings Management

Earning management is a choice of accounting policies chosen by managers or real actions that can

affect earnings to achieve certain earnings reporting objectives[12]. Managers can choose accounting policies that support the achievement of certain objectives within the limits set by generally accepted accounting principles (GAAP). GAAP is flexible, allowing management to use this policy to report actual earnings that do not accurately reflect the company's economic conditions[25]. Earnings management in an opportunistic perspective tries to provide information that can mislead investors but protect the performance, reputation, and compensation of managers in the company. This can be done by managers in obtaining personal profit by manipulating profits. Managerial actions like this can be misleading about the company's value and financial position[37].

Earnings management occurs when managers intentionally use judgment in financial reporting and in structuring financial transactions to alter financial statements to mislead some stakeholders about the firm's underlying economic performance or to influence contractual outcomes that depend on reported accounting numbers. The essence of earnings manipulation stems from the flexibility afforded to management in disclosing reported earnings [38].

Managers carry out earnings management by choosing certain accounting methods or policies to increase profits or decrease profits. Managers can increase profits by shifting earnings from future periods to the current period and managers can decrease profits by shifting current periods to subsequent periods [39]. Accounting information has traditionally been considered to have a dual role as information provider and administrator. The informative role arises because of the need for investors to predict future cash flows and assess investment risk [40].

Managers who are indicated to carry out earnings management try to cover up one of these actions by disclosing it as a broader social responsibility in the form of disclosing carbon emissions. Disclosure of social responsibility creates an image that environmentally friendly companies can increase support from stakeholders. Stakeholders will eventually divert supervision from earnings management indications with good corporate social responsibility performance [41].

2.5. Carbon Emission dan Carbon Emission Disclosure

Carbon emission is the stage of releasing gases that contain carbon into the atmosphere layer. This release occurs because of a stage of combustion of carbon either in the form of compounds or singly. According to the source of carbon emissions or greenhouse gases, they are divided into two, namely

industrial greenhouse gases and natural greenhouse gases.

Greenhouse gas emissions are referred to as carbon emissions because the magnitude of greenhouse gas emissions is often calculated based on the amount of carbon dioxide (CO₂). The concentration of carbon dioxide (CO₂) in the earth's atmosphere has increased since the start of the industrial revolution because at this time human activities are growing rapidly. Carbon dioxide (CO₂) is part of the greenhouse gas that must be reduced by member countries in accordance with the amendments to the Kyoto Protocol[42].

In dealing with climate change, companies are expected to disclose the activities of companies that play a role in climate change, one of which is carbon emission disclosures.

Carbon emission disclosure is part of social responsibility, regulated in the Statement of Indonesian Financial Accounting Standards (or Statement of Financial Accounting Standards/PSAK) Number 1 paragraph 9 regarding environmental issues. Transparency and reporting of carbon emission information in Indonesia began to develop after the government issued Presidential Regulation Number 61 of 2011 concerning the National Action Plan for Reducing Greenhouse Gas Emissions (RANGRK) and Presidential Regulation Number 71 of 2011 concerning Implementation of the National Greenhouse Gas Inventory [43]. The practice of disclosing carbon emissions is seen as a form of corporate responsibility to the public to explain the impact of corporate activities on climate change. Further regulations on voluntary disclosure of carbon gas emissions have not yet been established by the Financial Services Authority [44]. BAPEPAM only regulates the mandatory disclosures required by accounting standards through decision no. SE-02 / PM / 2002.

Carbon emission disclosures can be considered as an important strategic tool for companies to signal certain information so that they can attract investment and improve the company's reputation. Finally, companies that deliver good performance through disclosure can improve their public image and reputation and build a competitive advantage [45].

2.6. Corporate Governance

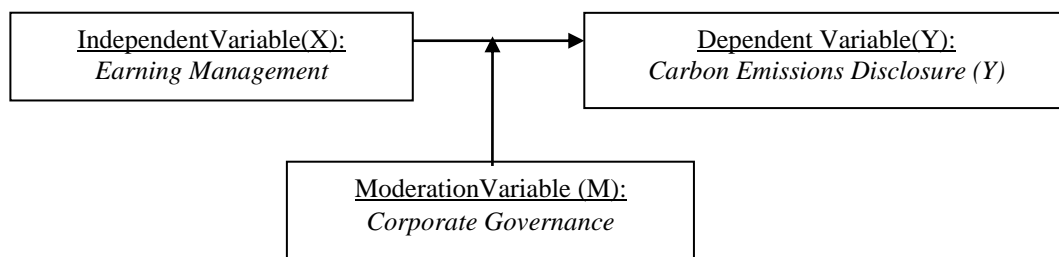
Corporate governance is defined by Widarwati and Mulyawati as a process, both formal and informal, in which a corporation is administered and managed including the legal requirements and policies adopted by the corporation, and the informal culture adopted by the corporation[46]. This is the embodiment of the interaction of stakeholders such as regulators, managers, directors, and customers. Corporate governance mechanisms ensure investors that adequate returns will be obtained from their investments [19]. A prerequisite for effective corporate governance is a wealth creation system view that provides directors with clarity on how to discharge their responsibilities. With adequate guidelines proposed through corporate governance, agents will understand and cooperate for the interests of the principal with incentives. The owner will understand the agent's interests and reward them accordingly. Thus, effective corporate governance will be able to reduce agency costs [28].

Corporate governance in the formation of companies leads to maximizing shareholder value legally, ethically, and sustainably, while ensuring equity and transparency to every stakeholder, company customers, employees, investors, vendor partners, land government and society. Corporate governance is the blood that fills the veins of transparent corporate disclosure and high-quality accounting practices. Thus, ensuring the suitability of the corporation with the interests of investors and society, by creating fairness, transparency and accountability in business activities between employees, management and the board[16].

Good corporate governance is a mechanism to protect investors from conflicts of interest of management shareholders. Good corporate governance is a concept based on agency theory that guarantees investors get a return on their investment. can provide investment returns to investors by preventing management from acting opportunistically and fraudulent behavior. Companies can provide returns to investors if the company can achieve higher financial performance [47].

2.7. Logical Framework

The form of the framework used to determine the role of corporate governance as a moderating variable on earnings management and carbon emissions disclosure is as follows.



2.8. Hypothesis

The hypothesis that was built in this study was to determine the effect between variables, namely between the independent variable and the dependent variable, as well as the moderating variable between the independent variable and the dependent variable. The independent variable is represented by earnings management and the dependent variable is formulated by carbon emission disclosures, while the moderating variable is corporate governance consisting of the board of commissioners, independent commissioners, institutional ownership, and audit committee meetings so that the hypothesis in this study is formulated in the following elaboration

Effect of Earnings Management on Disclosure of Carbon Emissions

Stakeholder theory argues that an entity tries to align its activities with stakeholder expectations. External pressure from several stakeholder groups, including customers, non-governmental organizations (NGOs), media and local communities, is likely to continue to increase in terms of environmental and social issues [16].

Agency theory proposes a framework linking carbon disclosure with the mechanism of the theory, showing that good governance arrangements can increase the company's ability to solve existing problems and reduce conflicts between agencies. In addition, agency theorists see carbon reporting as a solution to reduce information asymmetry between agents and managers [32].

Managers who tend to do earnings management can use several methods to make managers protect their positions and protect their interests by involving themselves in broad activities to develop correlations with corporate stakeholders and environmental activists, commonly known as Corporate Social Responsibility, to get support from groups. The main ones are stakeholders [6]. This method is used by managers using a strategy called an entrepreneurial strategy to anticipate the dissatisfaction of their stakeholders when they report unsatisfactory company performance.

Disclosure of social responsibility is also used to cover management actions that will directly impact stakeholders. Earning management has an effect on carbon emission disclosure [14], [35], [45]. Based on this description, the following hypothesis can be formulated.

H₁: Earning Management has effect on Carbon Emission Disclosure.

2.9. Effect of Corporate Governance in Moderating Earning Management on Carbon Emission Disclosure

Companies with effective corporate governance tend to invest in corporate social responsibility to disguise their rent-seeking activities, namely earning management. Therefore, companies with effective corporate governance mechanisms have lower motivation to invest and report more carbon emission reduction activities to distract stakeholders at the expense of shareholders. [48]. Managers who engage in socially responsible and earnings management activities at the expense of shareholders engage in unethical behavior. Therefore, there will be a correlation between corporate social responsibility and earnings management [49].

The researcher assumes that if there is an expansion of the point of view of carbon emission disclosures, it is possible that earnings management practices are rarely carried out by companies because of the implementation of corporate governance in the form of monitoring which can be used as a moderating variable. Through good corporate governance (GCG) the company carries out good business ethics. Based on this description, the researcher formulates the following hypothesis.

H₂: Corporate governance strengthens the effect of earning management on carbon emission disclosure.

3. RESEARCH METHODOLOGY

3.1. Type of Research

The type of research used was explanatory research based on the research objectives. The research was a research that explained the correlation between two or more events in the form of influence, correlation, and difference, or explain the sample studied in the population.

3.2. Research Approach

The research approach used was quantitative. The quantitative approach was the author's way of collecting data in the form of numbers, the data was then processed through the use of statistical work formulas and described based on variables that had been operationalized, on certain measuring scales, such as ratios, nominal, ordinal, and interval scales [50].

3.3. Data and Data Resources

This study used secondary data. Based on Umar's opinion, secondary data is primary data that has been processed, then presented by people who collect

secondary or other data, for example in the form of tables or diagrams [51]. In this study, the data was obtained from the Indonesian Stock Exchange (IDX) for the period 2010 – 2020 in the form of an annual report or a sustainability report. The reason for collecting data from www.idx.co.id was that the validity of financial report data was more reliable because it had been audited by a public accountant and was easier to access and from sustainability reports it could be seen about the company's commitment to carbon emission disclosures.

3.4. Subject and Research Object

3.4.1. Population

In this study, the population was publicly traded companies that are listed on the IDX between 2010 and 2020 and participate in the Corporate Governance Perception Index. The company was chosen with the consideration that the novelty of this research was the measurement of corporate governance using the Corporate Governance Perception Index. The Indonesian Institute for Corporate Governance (IICG) in collaboration with the SWA business magazine conducted research on Corporate Governance for companies in Indonesia and produced an index in the form of the Corporate Governance Perception Index.

Consideration of population collection from 2010 to 2020 with consideration of the issuance of

Presidential Regulation (PERPRES) No. 61 of 2011 concerning the National Action Plan for Reducing Greenhouse Gas Emissions dated 20 September 2011 and Presidential Regulation (PERPRES) no. 71 Presidential Regulation (PERPRES) concerning the Implementation of the National Greenhouse Gas Inventory dated October 5, 2011. With the issuance of two Presidential Regulations concerning greenhouse gases, it is hoped that researchers will be able to obtain an overview of companies listed on the Indonesia Stock Exchange which can provide a better picture of the steps to take. companies in disclosing and planning programs, plans and strategies to reduce the greenhouse effect which is also related to carbon emission disclosure.

Based on this, it was found that a population of 95 Indonesian publicly traded companies that publish an annual report or a sustainability report when observing and participating in the Corporate Governance Perception Index for the period 2010 to 2020.

3.4.2. Sampling and Sampling Technique

In this technique, the researcher used purposive sampling. Purposive sampling is a technique in determining the sample that is considered first[52]. It aims to provide convenience in research, the authors determine the characteristics and properties used.

Table 1. Sampling Criteria

No.	Criteria	Total
1	The number of company data included in the CGPI ranking during the period 2010 – 2020	369
2	Number of data on companies that are ranked but not listed on the Indonesia Stock Exchange during the period 2010 – 2020	(198)
3	Number of data on companies that are included in the CGPI ranking and listed on the Indonesia Stock Exchange during the period 2010 – 2020	171
4	The number of data on banking, financial, and insurance companies included in the CGPI ranking and listed on the Indonesia Stock Exchange during the period 2010 – 2020	(68)
5	Number of data on non-banking, non-financial, and non-insurance companies that are included in the CGPI ranking and listed during the period 2010 – 2020	103
6	The number of data on non-banking, non-financial, and non-insurance companies that are included in the CGPI ranking and listed during the period 2010 – 2020 clearly does not prove carbon emissions (at least includes a regulation regarding greenhouse gases or carbon emissions or explains at least points of proof of carbon emissions)	(8)
7	The number of data on non-banking, non-financial, and non-insurance companies that are included in the CGPI ranking and listed during the period 2010 – 2020 and the Company clearly proves carbon emissions (at least includes a regulation regarding greenhouse gases or carbon emissions or explains at least points of proof of carbon emissions)	95
Number of Samples that meet the criteria		95

Source: www.idx.co.id, data were processed in 2022

As can be seen from Table 1, the number of samples that did not meet the criteria were 8 samples, so that the obtained samples that met the criteria were 95 samples. From the data then analysed descriptively and quantitatively to find out the description of a variable in the study and the correlation between one variable and another variable.

3.5. Research variable and Variable Operational Definition

There were three kinds of variables in the study as follows.

3.5.1. Dependent Variable

In this study, the dependent variable was carbon emission disclosure as a form of environmental disclosure. This included strategy, corporate governance, energy use, and the intensity of greenhouse gases or GHG emissions related to the impact of climate change[53].

In measuring carbon emission disclosure, it was calculated through the use of content analysis method. The trick was through the examination of the sustainability report or the annual report that was sampled. In understanding the extent of carbon emission disclosures, the item parameters used an index that included five main groups related to carbon emissions and climate, including accountability for carbon emissions, reducing costs and greenhouse gases, greenhouse gas emissions, energy use, and climate change (opportunities). and risk)[15].

3.5.2. Independent Variable

In this study, the independent variable was earnings management. Earning management was experienced when managers deliberately consider financial statements and in structuring financial transactions in changing financial reporting in misleading a number of stakeholders regarding the economic performance that underlied the company or in influencing the results of contracts based on the accounting numbers contained in the report [32].

The measurement of earnings management was calculated using the modified Jones model and the discretionary accrual approach and calculated [54].

The following was the formula from the modified Jones model[54].

Step I

Measuring the total accruals of company i against period t using the formula:

$$TACC_{it} = EBXT_{it} - OCF_{it}$$

$$TACC_{it}/TA_{i,t-1} = \alpha_1 (1/TA_{i,t-1}) + \alpha_2 ((\Delta REV_{it} - \Delta REC_{it})/TA_{i,t-1}) + \alpha_3 (PPE_{it}/TA_{i,t-1})$$

Step II

Based on the regression equation above, nondiscretionary (NDACC) can be calculated by re-entering the alpha coefficient (α) below.

$$NDACC_{it} = \alpha_1(1/TA_{i,t-1}) + \alpha_2((\Delta REV_{it} - \Delta REC_{it})/TA_{i,t-1}) + \alpha_3 (PPE_{it}/TA_{i,t-1})$$

where:

- TACC_{it} : Total accruals of company i tot period
- OCF_{it} : Company Operating Cash Flows i to t period
- EXBT_{it} : Company Earnings Before Extraordinary Item
- NDACC_{it} : Company Non discretionary accruals i tot period
- TA_{i,t-1} : Company Total activa i to t period
- REV_{it} : Company Revenue i to t period
- REC_{it} : Receivable of company i to t period
- PPE_{it} : Fixed asset value (gross) of company i to t period

Step III

Next, discretionary accruals can be calculated, including:

$$DACC_{it} = (TACC_{it}/TA_{i,t-1}) - NDACC_{it}$$

Where:

- DACC_{it} : Discretionary accruals of company i to t period
- TACC_{it} : Total accruals of company i to t period
- TA_{i,t-1} : Total assets of company i to t period
- NDACC_{it} : Non discretionary accruals of company i to t period

The analytical steps that had been disclosed can be seen based on the calculated DACC to determine earnings management actions.

3.5.3. Moderation Variable

In this study, the moderating variable used was corporate governance. Corporate governance was the conformity of corporations with the interests of investors and society, by creating fairness, transparency, and accountability in activities between employees, management, and the board [38].

Corporate governance was documented based on IICG measurement from CGPI. The 2019 CGPI research stage from IICG was carried out through document and instrument analysis carried out from the following activities.

- a. Self-Assessment. It was an independent assessment of all stakeholders, organs and members regarding the quality of GCG implementation in the company. In the implementation of this stage, the company determined the respondents based on the provisions in filling out the questionnaire through providing perceptions in an objective and honest way to provide positive evaluation and feedback to the company.
- b. Documentation System. The k-2 rating stage was carried out by the assessor of the company's documentation system in the form of an analysis of the completeness and adequacy of the company's files regarding GCG. The assessment of the system is based on its fulfillment.

- 1) Completeness of application proof documents.

This completeness was fulfilled from the internal company through the collection of the required files, then clarified and analyzed by the appraisers from the appraisal team at each company office. The collection of files by the company was documentation including:

- a) Guidelines (covering responsibilities, policies and objectives)
- b) Procedure (including process, definition, and figure)
- c) Work instruction (including detailed work guidelines)
- d) Implementation track record (covering activity results)

- 2) Filling in company data

Data entry (entering company data) was a component that was very attached to the assessment system documentation. Data entry presents general company information that is filled out accurately and clearly from internal company

- 3) Observation Step

This stage was carried out by clarifying the assessment instrument and company file equipment from discussions of company organs and executive explanations. Observations were carried out in ensuring that GCG has been carried out based on the elements of the assessment. Executive explanations provided information about business model transformation, improvement, implementation, and evaluation of corporate governance. This was brought by one of the company's organs. The discussion had the aim of clarifying the improvement, implementation, and evaluation of corporate governance of the company. It linked the company's management, directors and board of commissioners to the CGPI observation team.

3.6. Data Collection Technique

Data collection techniques are methods and techniques or the way researchers collect data [55]. Data collection was conducted through the documentation method. Documentation is a method used with the aim of obtaining data and information in the form of archives, books, documents, pictures and written numbers in the form of reports and information as supporting research [56]. In this research, the documents used were annual reports & sustainability reports of non-financial companies which were downloaded via the IDX website.

3.7. Data Analysis Technique

In this study, the data analysis method used two regression analyzes, which were multiple regression analysis and Moderated Regression Analysis (MRA). Data analysis was carried out after information related to research variables from financial statements was collected. When we wanted to do a regression analysis, the previous classic assumption test is carried out.

3.7.1. Classic Assumption Test

A good regression model (not classified as a simple regression model) must be in accordance with classical assumptions. This criterion should be fulfilled so that when working on the regression model, a statistical problem did not occur. In addition, the regression model obtained could be in accordance with statistical standards. Thus, the indicators obtained were rational and logical. The classical assumption test stages were carried out simultaneously with the regression testing stage so that the stages carried out in the classical assumption test use a similar procedure to regression testing.

3.7.2. Normality Test

This test has the aim of seeing the distribution of the data whether the data is normally distributed or not. In testing the distribution of data against the normality test, the Kolmogorov - Smirnov goodness of Fit test is used. Tests on the confounding variables of the hypothesis model in the test include:

H_0 : Data residual terdistribusi normal

H_1 : Data residual tidak terdistribusi normal.

Dalam mengambil putusan, H_0 diterima apabila probabilitas $> 0,05$ maka modelnya normal, sementara H_0 ditolak apabila probabilitas $< 0,05$ artinya model tidak normal.

3.7.3. Multicollinearity Test

This test aimed to determine whether in a regression model there was a correlation between each independent variable. If there was a correlation, then there was a multicollinearity problem. A good

regression model should not have a correlation between the independent variables. If there was multicollinearity, then one of the independent variables should be out of the model, then repeat the regression model[57]. In knowing whether or not multicollinearity, it can be known based on the value of Tolerance and VIF (Variance Inflation Factor). An indication of a regression model that was free from multicollinearity was to have a tolerance value close to 1.

Limit of Variance Inflation Factor is 10, if Multicollinearity tests can be carried out, among others:

- 1) *Tolerance value* < 0.10 or *Variance Inflation Faktor* > 10 : had multicollinearity.
- 2) *Tolerance value* > 0.10 or *Variance Inflation Faktor* < 10 : had no multicollinearity

3.7.4. Heteroscedasticity Test

Heteroscedasticity testing had the aim of seeing whether a regression model experiences variance or residual inequality in each of the observations made[58]. In knowing the presence of heteroscedasticity, the Glejser test was carried out, namely regressing the absolute value of the confounding variable on the independent variable. Does not experience heteroscedasticity if the significance value is > 0.05. on the contrary, experiencing heteroscedasticity if the significance value < 0.05[59].

In this study, the autocorrelation test was carried out by the Durbin-Watson Test (DW Test). Decision making whether there is autocorrelation can be seen from the following provisions[60].

- a. DW value below -2 have a positive autocorrelation.
- b. DW value between -2 to +2 there is no autocorrelation.
- c. DW value above +2 had a negative autocorrelation

3.7.5. Regression Analysis

Regression analysis was a simple method to investigate the functional correlation to unequal variables. The correlation to the variable was written in a mathematical model. This study applied moderated regression analysis (MRA).

3.7.5.1 Moderated Regression Analysis (MRA) Equation

Based on the opinion of Ghazali (2013: 229) that MRA was an analytical approach that maintains sample integrity and provides a basis for controlling the influence of moderator variables.

$$CED = \alpha + \beta_1 EM + \beta_2 CG + \beta_3 |EM-CG| + e$$

Notes:

- EM = *earning management*
- CG = *corporate governance*
- |EM-CG| = Multiplication between *earning management* dengan *corporate governance*
- e = *Error*
- $\beta_1 \beta_2 \beta_3 \dots$ = Regression coefficient

3.7.6. Hypothesis Test

3.7.6.1. T Test

The t-test was a provisional guess from the formulation of the problem, stating the correlation of two or more variables [61]. Hypothesis testing design aimed to see the correlation between the two research variables.

t test test principles[62] were:

1. H0 was accepted if $t \text{ table} \leq t \text{ count} \leq t \text{ table}$.
2. H0 was rejected if $t \text{ count} > t \text{ table}$.

Based on the significance value, the SPSS output results:

1. The independent variable has a significant effect on the dependent variable, if the value of Sig. < 0.05.
2. The independent variable has no significant effect on the dependent variable, if the value of Sig. > 0.05

3.7.6.2. F Test

F test had following criteria:

1. Model test could not be applied if P value > 0,05.
2. Model test could be applied if P value < 0,05.

3.7.7. Coefficient of Determination Test

3.7.7.1 Moderation Variable Classification

Moderation variables could be classified into four types, including pure moderation (pure moderation), pseudo moderation (quasi moderation), potential moderation (homologized moderation, and moderating as a predictor (moderation predictor) "[63].

4. RESULTS AND DISCUSSION

4.1. Normality Test

The results of the analysis carried out showed that the Sig value obtained was 0.173 so that the data used in this study were normally distributed.

Table 2. Normality Test Result

	Sig	α	Note
Unstandardized Residual	0,173	0,05	Normal

Source: Processed Primary Data, 2021.

4.2. Multicollinearity Test

The multicollinearity test aimed to determine whether on one or all of the independent variables (free). the regression model had a correlation between

Table 3. Multicollinearity Test Results

Variable	Tolerance	VIF	Notes
Earning Management	0,879	1,396	Free of Multicollinearity
Corporate Governance	0,779	1,096	Free of Multicollinearity

Source: Processed Primary Data, 2021.

Tolerance value > 0.10 or Variance Inflation Factor < 10 did not experience multicollinearity. Based on Table 3, it is known that the tolerance value for earning management is 0.879 and corporate governance is 0.779 where both are > 0.1 and the VIF earning management value is 1.395 and for corporate

governance is 1.096, so that both are < 10, the variables in this study are free from multicollinearity.

4.3. Heteroscedasticity Test

Heteroscedasticity test had the aim of seeing whether a regression model experiences variance or residual inequality in each of the observations made.

Table 4. Heteroscedasticity Test Results

Variable	Sig	α	Note
Earning Management	1,000	0,05	Free of Heteroscedasticity
Corporate Governance	1,000	0,05	Free of Heteroscedasticity

Source: Processed Primary Data, 2021.

A variable was called free from heteroscedasticity if it had a sig value greater than 0.05. Table 4 shows that the sig value in the earning management and corporate governance variables was 1,000 (> 0.05) so that the two variables were free from heteroscedasticity.

4.4. Autocorrelation Test

Autocorrelation test aimed to determine, in the linear regression model, a correlation between the confounding error in period t and the confounding error in period t-1 (previously).

Table 5. Autocorrelation Test Results

Variable	Sig	Condition	Note
Durbin-Watson	1,536	-2 < X < 2	Free of Autocorrelation

Source: Processed Primary Data, 2021

The results of the autocorrelation test as listed in Table 5, show that the DW value of 1.539 is greater than the lower limit (-2,000) and less than the upper limit (2,000) so that the equation in this study is free from autocorrelation.

Multiple Linear Regression Analysis

Table 6. Multiple Linear Regression Results

Variable	β (Without Moderation)	β (With Moderation)
(Constant)	0,598	0,601
Earning Management	-0,096	1,123
Corporate Governance	-0,123	0,724
Moderation	-	4,056

Source: Processed Primary Data, 2021

Based on Table 6, the results of multiple linear regression with moderation and without moderation were obtained.

4.5. Without Moderation

$$CED = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

$$CED = 0,598 + (-0,096)X_1 + (-0,123)X_2 + e$$

- 1) Carbon Emission Disclosure increased by 0.598 if earnings management and corporate governance were constant/no change/fixed.
- 2) Carbon Emission Disclosure decreased by 0.096 if earnings management changes by 1 and corporate governance was constant/no change/fixed.
- 3) Carbon Emission Disclosure decreased by 0.123 if corporate governance changes 1 and earnings management was constant/no change/fixed.

4.6. With Moderation

$$CED = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 (X_1 * X_2) + e$$

$$CED = 0,601 + 1,123X_1 + 0,724X_2 + 4,056(X_1 * X_2) + e$$

- 1) Carbon Emission Disclosure increased by 0.601 if earning management, corporate governance and moderating variables were constant/no change/fixed.

- 2) Carbon Emission Disclosure increased by 1.123 if earnings management changes by 1 and corporate governance and moderating variables were constant/no change/fixed.
- 3) Carbon Emission Disclosure increased by 0.724 if corporate governance changes by 1 and earnings management and moderation were constant/no change/fixed.
- 4) Carbon Emission Disclosure increased by 4,056 if earning management and corporate governance moderating variables were constant/no change/fixed.

4.7. Hypothesis Test

4.7.1. Uji Goodness of Fit (F Test)

The goodness of fit test aimed to measure the accuracy of the sample regression function when statistically predicting the actual value. Measurement of the goodness of fit model from the F statistic value which showed whether all independent variables included in the model affect the dependent variable simultaneously.

Table 7. Goodness of Fit Test Results

Variable	Sig	Condition	Note
Goodness of Fit	0,022	0,05	There was a simultaneous effect

Source: Processed Primary Data, 2021

The results of the analysis shown in Table 7 showed that the probability value was 0.022 (<0.05) so that together all independent variables have a significant influence on the dependent variable.

T test

The t test (student test) is used to partially test the effect (respectively) between the independent variable and the dependent variable. The results of the t test are shown in Table 8.

Table 8. t Test Results

Variable	t count	t table	Sig	α	Note
Earning Management	-2,614	1,670	0,110	0,05	Had no effect
Corporate Governance	-0,121	1,670	0,904	0,05	Had no effect
Moderation	2,612	1,670	0,011	0,05	Had effect

Source: Processed Primary Data, 2021

The results of the t-test required that the hypothesis was accepted if the t-count value was greater than t-table and the probability value was less than 0.05. Based on Table 8, it was known that earning management had no effect ($-2.614 < 1.670$) and insignificant ($0.110 > 0.05$) on carbon emission disclosures. Meanwhile, corporate governance moderated ($2.612 < 1.670$) and significantly (0.904

>0.05) earning management on carbon emission disclosures.

4.7.2. Determinant Coefficient Test

The use of the coefficient of determination test had a purpose as a measurement of the model's ability when explaining the variation of the dependent variable, the closer the value to one, the better the ability of the model to explain the dependent variable.

Table 9. Determinant Coefficient Test Result

Variable	Result
R Square	0,748

Source: Processed Primary Data, 2021

Table 9 showed the R square value of 0.748 or 74.80% meaning that the ability of the earning management variable and corporate governance variable was able to explain the carbon emission disclosure variable by 74.80%, while the rest ($100\% - 74.80\%$) = 25.20% explained by other variables not included in this study.

4.7.3. Moderation Test

Based on the results of the analysis, it was known the influence of the variables in this study as shown in Table 10.

Table 10. Moderation Test Result

Variable	Sig	Note	Type of Moderation
Corporate Governance	0,904	β_2 was not significant	Pure Moderation
Moderation	0,011	β_3 was significant	

Source: Processed Primary Data, 2021

The results above show that the moderating variable in this study is pure moderation, meaning that the existence of a corporate governance variable

increased the effect of earning management on carbon emission disclosures.

5. DISCUSSION

5.1. Effect of Earning Management on Carbon Emission Disclosure

Hypothesis 1 in this study was to test whether Earning Management had an effect on Carbon Emission Disclosure. Based on Table 8, it was explained that hypothesis 1 of this study hypothesized that there was an effect of earning management on carbon emission

disclosures. The results of testing hypothesis 1 showed that the t count was -2.614 with a significance of 0.110 ($p > 0.05$). This means that earning management had no effect on carbon emission disclosures. Thus, **Hypothesis 1 was rejected.**

Earning management had no effect on carbon emission disclosure [11]. It could be concluded that because the company had to incur additional costs to disclose information about carbon emission disclosures, it meant that there was no reason for the management to

disclose carbon emission disclosures just to cover up fraudulent earnings management that may be committed.

Good Corporate Governance Strengthens the Effect of Earnings Management on Carbon Emission Disclosure

Hypothesis 2 in this study was to test whether Corporate Governance Strengthens the Effect of Earning Management on Carbon Emission Disclosure. Based on Table 8, it explained that hypothesis 2 of this study hypothesized the influence of corporate governance in moderating earnings management on carbon emission disclosures. The results of testing hypothesis 2 showed t count of 2.612 with a significance of 0.011 ($p < 0.05$). This meant that corporate governance was able to significantly moderate the effect of earning management on carbon emission disclosures. The correlation was included in the type of pure moderating moderation because (β_2 was not significant, β_3 was significant). Thus, **hypothesis 2 was accepted.**

Good corporate governance mechanisms included the size of the board of commissioners and the board of directors moderating earnings management on carbon emission disclosures[35]. Entities with a higher number of independent directors on the board of directors were more likely to exert influence on carbon emission disclosures[14].

The results of this study were in line with the research objectives, related to the inconsistency of the results of previous studies, which was the effect of earning management on carbon emission disclosure. As for the inconsistent results, it was possible that there were disturbing factors, causing differences in research results between the correlation between earnings management and carbon emission disclosures. Then, from these factors, the contingency theory emerged. Contingency factors can be explained in contingency theory. In this study, the contingency theory was described by using one of the variables in the contingency theory, which was the moderating variable. The moderating variable allowed for variables that could strengthen and weaken the effect of earning management on carbon emission disclosures. The results of this study could explain that the moderating variable in the form of corporate governance strengthens the effect of earning management on carbon emission disclosures.

It can be concluded that the application of carbon emission disclosures was part of the application of the concept of corporate governance. As a business entity that had responsibilities to society and the environment,

the company should be able to act as a good citizen as a result of good business ethics. In that way, if the manager implements earning management practices but the company implements good corporate governance and carbon emission disclosure was one of the implementations so that the company can minimize the suspicion of the public and stakeholders. Companies that implement this concept can increase trust in the community or stakeholders that the company has good financial performance and condition and can guarantee the continuity of the company. Corporate governance has the advantage that financial governance becomes transparent. Transparency that is consistently carried out has a positive aspect for the long term because the disclosure of carbon emission disclosures is carried out without any coercion. Thus, ideally the practice of carbon emission disclosure carried out by the company is accompanied by corporate governance practices so that sustainability and business development can run in synergy.

6. CONCLUSION

Based on the results of the research above on the effect of earning management on carbon emission disclosures with corporate governance as a moderating variable in Go Public companies listed on the Indonesia Stock Exchange (IDX) in the period 2012 – 2019 and participating in the Corporate Governance Perception Index (CGPI), it can be concluded as follows.

1. The result of the significant t test stated that it was known that the value of earning management was $-2.614 < 1.670$ ($t \text{ count} < t \text{ table}$) with a significance of 0.110 ($p > 0.05$), so it can be said that earning management had no effect on carbon emission disclosures, and H1 on the submission of the hypothesis was rejected.
2. The results of the significant t test carried out with interaction testing as an additional moderating variable, which was the corporate governance variable, it was known that the value of corporate governance was $2.612 > 1.670$ ($t \text{ count} > t \text{ table}$), with a significance of 0.011 ($p < 0.05$), then it could be said that corporate governance moderated earnings management on carbon emission disclosures, and H2 on the submission of the hypothesis was accepted.

RESEARCH LIMITATION

Researchers faced some research limitations, including:

1. The lack of data and the number of samples that are the object of research are relatively small, because they use a sample of publicly traded companies that only participate in

rankings in the Corporate Governance Perception Index (CGPI).

2. In this study, the method used to formulate corporate governance uses the Corporate Governance Perception Index (CGPI) scoring technique and has never been done by other researchers with the same topic.

WRITERS CONTRIBUTION

This study aimed to determine the existence of contingency theory in the form of corporate governance of the companies that were sampled in this study.

The results of this study were expected to be used as a reference for companies that will later be sampled to be able to examine the function of each aspect of corporate governance to achieve effective implementation of good corporate governance which will affect management performance and improve the quality of carbon emission disclosures.

This research was also expected to be able to make a policy contribution to the government as the main regulator in Indonesia to establish laws that specifically regulate policies regarding the disclosure and control of carbon emissions, which currently have become mandatory disclosures in developed countries, and carbon emissions. also received special attention by all countries in the world with the holding of a Climate High Level Conference (KTT) which is held every year and initiated by the United Nations.

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