

CHAPTER I

INTRODUCTION

1.1. Background

Climate change has become one of the biggest challenges that must be faced in various sectors, both politically and economically. The phenomenon of climate change has caused many negative impacts, including the increasing temperature worldwide, known as global warming. This impact is increasing over time and has significant consequences for the environment. With the increase in global temperature, unavoidable climate change occurs, which has an impact on human life and other living creatures on earth.

Intergovernmental Panel Climate Change (IPCC), an institution formed by the United Nations and consisting of scientists from the World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) responsible for addressing climate change issues, has collected sufficient evidence and provided information on how greenhouse gas (GHG) emissions related to agriculture and forestry affect food security. The panel also found that agriculture, forestry, and other land use contributed 24% of GHG emissions in 2010.

There are six types of greenhouse gases present in the atmosphere, namely carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆), with the latter only contributing 1%. Since the beginning of the industrial revolution, the rapid burning of carbon-based fuels has increased the concentration of CO₂ in the atmosphere and caused global warming, leading to climate change. Based on data from The World Bank Group (2014), Indonesia is the 12th largest contributor of

CO₂ emissions in the world with 233,504 metric tons of CO₂ produced from liquid fuel consumption.

In 2021, Carbon Brief reported that the largest emitters were mainly countries with large geographical areas and a lot of deforestation activities for agricultural land and fuel, such as the United States, Russia, and China.

In the United States, for example, waves of settlers spread throughout the region from east to west. Migrants also opened up land for farming as they went. At the same time, some European countries also became one of the most important contributors to the current historical warming.

Rainforest countries such as Brazil and Indonesia also experienced deforestation in the late 19th and early 20th centuries by settlers planting rubber, tobacco, and other commercial crops. "Deforestation accelerated around 1950, including for land for cattle ranching, logging, and palm oil plantations," said the report.

Indonesia ranks fifth as the country with the most cumulative carbon emissions reaching 102,562 GtCO₂. This means that Indonesia also plays a role in global environmental change. Whereas, The United States is in first place as the largest cumulative CO₂ emissions producer with widespread use of coal, followed by the emergence of motor vehicles.

At the end of 2021, the US produced more than 509 Giga tons of CO₂ (GtCO₂) since 1850. At 20.3% of the global total, it is currently the largest share and associated with around 0.2C warming to date. The following is a list of the 10 countries with the most cumulative carbon emissions from 1850 to 2021 taken from 185 countries can be seen in table 1.1.

**Table 1. 1
Carbon Dioxide Emitting Countries**

No	Country Name	Total Carbon Dioxide GtCO2 (1000.000.000.000 kg)
1	United States	509,143
2	China	284,467
3	Russia	172,234
4	Brazil	112,562
5	Indonesia	102,562
6	Brazil	88,486
7	India	85,675
8	United Kingdom	74,295
9	Japan	68,002
10	Canada	65,504

Source: reference from internet

According to table 1.1, many companies continue to produce carbon dioxide from activities such as industrial activities, motor vehicles, forest burning, and household activities, but the main contributing factors are ongoing industrial activities, motor vehicles, and forest burning. These industrial activities can be seen from the high levels of energy consumption, which significantly contribute to the increase in carbon dioxide. Motor vehicles also contribute to the production of carbon dioxide. This is due to the increasing number of motor vehicle purchases year after year.

The Carbon Disclosure Project (CDP) is a global disclosure system that provides information about carbon-emitting companies worldwide and the environmental impacts that occur in cities, countries, and regions. This information is available to investors to assist in decision-making.

According to the 2020 Carbon Disclosure Project (CDP) report, carbon emissions from companies worldwide increased by 0.3% in 2019, after a decrease of 2.4% in 2018. This increase was due to an increase in demand for fossil fuels in some countries, including China and India, as well as companies' failure to

significantly reduce their carbon emissions. Increased carbon emissions can have direct and indirect impacts on the environment, leading to pollution and climate change. Air pollution can also occur, which decreases air quality and negatively impacts the environment and health.

There are some environmental phenomena caused by the lack of reporting of social and environmental responsibility. One of them is air pollution in Jakarta. There are 47 out of 114 companies or factories in Jakarta that were reprimanded for violating regulations on air pollution. The factories produce dangerous and toxic substances that can threaten the health of residents if there is no prevention of industrial disasters. All industries produce chemicals with high levels of air pollution. Possible threats include leaks in industrial steam discharge and material processing reactors. In addition, the waste produced may not be sterilized, which can be detrimental to the surrounding community.

The phenomenon that occurs must be immediately addressed, not only from internal parties, that is the company itself, but also from external parties. So that the phenomenon does not increase every year. From external parties themselves, there are many efforts made in addressing environmental pollution.

Indonesia is committed to reducing greenhouse gas emissions by participating in the United Nations Framework Convention on Climate Change (UNFCCC) starting in 1992 in Rio de Janeiro. Indonesia's participation continued in the 1997 amendment to the UNFCCC, known as the Kyoto Protocol, which is an international convention that requires developed countries (Annex 1 group) to reduce greenhouse gas emissions in order to prevent global warming and restore the average Earth's temperature to preindustrial conditions. Regulating carbon

concentration in the Earth's atmosphere allows ecosystems to adapt naturally to climate change, ensuring food production and enabling sustainable economic development (Dewi et al., 2019).

The Kyoto Protocol uses three mechanisms to reduce greenhouse gases: the Clean Development Mechanism (CDM), Joint Implementation (JI), and Emission Trading. The Clean Development Mechanism involves cooperation between developed countries and developing countries, where developed countries fund development projects that reduce greenhouse gas emissions. As a benefit, developed countries receive Certified Emission Reduction certificates as evidence of their commitment to reducing emissions required by the Kyoto Protocol. The Joint Implementation mechanism involves reducing emissions through cooperation between Annex 1 countries, which involves transferring or receiving units of emission reduction resulting from emission reduction projects in each economic sector. The third mechanism, Emission Trading, regulates the trade of emissions between Annex 1 countries as a means of reducing and limiting carbon emissions (Irwhantoko & Basuki, 2016).

The Indonesian government gives serious attention as a follow-up to its involvement in the UNFCCC. Several regulations have been established to regulate carbon emission reductions. Indonesia has established various regulations to regulate carbon emissions in the country. One such regulation is the Law No. 32 of 2009 on Environmental Protection and Management, which regulates the prevention and reduction of greenhouse gas emissions responsible for climate change. In addition, The government has ratified the Paris Agreement through Law Number 16 of 2016, which aims to control the increase in the global average

temperature to below 2 degrees Celsius above preindustrial levels and aims to achieve a target of 1.5 degrees Celsius. As part of efforts to achieve these targets, Indonesia has set a target to reduce emissions by 29% by 2030 with the support of other countries, and 41% by 2030 without the support of other countries.

The phenomena and efforts mentioned above show that companies are a key focus in relation to their activities that affect the environment and society. Companies must be more transparent about information related to the disclosure of carbon emissions. It is hoped that this will increase the added value and image of the company in the eyes of its stakeholders and investors who will invest. Based on the Theory of Legitimation, which states that a company's activities must be supported by the surrounding community, organizational legitimation can be seen as something given by the community to the company and something that the company desires or seeks from the community (Ghozali and Chariri, 2007). According to the theory of legitimation, the main focus of a company is the activities it carries out, in which there is interaction between the company and society. The existence of such operational activities naturally also requires the company to consider the profits generated. The profits generated by the company are the answer to the activities carried out, because society will always exert pressure on the company to pay attention to the surrounding environment. Companies with high profits will be able to answer this pressure from society because they have more resources. Not only that, another factor that can answer the pressure from society is the size of the total assets owned by the company, in other words, a large company size. In addition, a company with good environmental

performance indicates that the company is very concerned about the surrounding environment.

This study aims to examine the factors that influence the extent of carbon emissions disclosure in Indonesia as one of the developing countries. The factors considered to affect carbon emissions disclosure are leverage, profitability, company size, and capital expenditure.

Leverage is used as a measure of the percentage of funds originating from creditors in financing a company's assets. High leverage means the company relies more on external borrowing to finance its assets, while low leverage means the company relies more on its own capital. The percentage of leverage also indicates the risk of the company (Pratiwi, 2017). The level of leverage is expected to influence the decisions and actions taken by the company regarding the use of funds, so leverage is considered to have an effect on the level of disclosure made by the company. Choi et al. (2013) and Gonzalez et al. (2016) concluded in their research that leverage does not affect carbon emissions disclosure. However, Luo et al. (2012) and Liesen et al. (2015) found evidence that leverage has a negative effect on carbon emissions.

Profitability is the ability of a company to generate profits in a certain period. Companies with good financial conditions are more likely to disclose environmental information (Solikhah et al., 2018). Other studies have also found that companies with good financial conditions are able to pay for additional human or financial resources needed for better voluntary reporting and disclosure of carbon emissions to gain public trust and legitimacy (Tauringana and Chithambo, 2014; Choi et al., 2013). On the other hand, less profitable companies tend to focus more

on achieving financial goals, limiting their ability to undertake efforts for carbon emission prevention and disclosure (Luo et al., 2013).

Company size can describe the operational activities and resources owned by the company. The larger the company size, the greater the resources owned, which also means greater operational activities that impact the environment (Choi et al., 2013). Studies conducted by Hermawan et al. (2018) and Widiyanto & Sari (2020) have found that company size has a significant influence on carbon emission disclosure, while Irwhantoko & Basuki's (2016) study found no relationship between company size and carbon emission disclosure.

In legitimacy theory, companies that produce a lot of carbon waste tend to face greater pressure from society, which makes it necessary for companies to manage their carbon waste in a way that aligns with social expectations and gains legitimacy with the public. Good companies will renew their assets in order to reduce environmental pollution. Capital expenditures are one aspect of environmental social activity because the renewed assets are part of fixed assets (Dwinanda & Kaweda, 2019).

There is a significant relationship between capital expenditure and carbon emission disclosure. It is stated that companies that have more aggressive environmental strategies also invest in newer equipment that is operationally and environmentally more efficient. Companies that have been disclosing carbon information from the outset have a separate budget to address carbon emissions. This budget is used to manage the equipment they have so that it does not have an impact on the environment (Dwinanda & Kaweda, 2019). The results of this study are consistent with Karim et al (2021) research, which found a significant positive

relationship between internal governance and carbon emission disclosure. However, when a firm does more carbon emissions, it is punished by the market, and the market reaction is more negative if firms do not disclose that information (Matsumura et al., 2014). Therefore, even capital expenditure causes more carbon emission; but firms disclose more information to avoid such negative market reactions.

This research is based on previous studies conducted by Choi et al (2013), which stated that carbon emission disclosure has no effect on leverage. However, research conducted by Irwhantoko & Basuki (2016) states that there is a negative impact of leverage on carbon emission disclosure. This shows that equity composition determines carbon emission disclosure more than the amount of debt a company has. Although creditors and investors both need information on potential climate change risks, disclosure is inconsistent. All previous studies show inconsistent conclusions with each other (research gap). This encourages researchers to conduct further studies.

1.2. Research Question

Based on the background that has been described, the problem to be studied in this research is to determine the factors that affect carbon emission disclosure. The research problem in this study is as follows:

1. Does leverage have an effect on carbon emission disclosures?
2. Does profitability have an effect on carbon emission disclosures?
3. Does company size have an effect on carbon emission disclosures?
4. Does Capital Expenditure have an effect on carbon emission disclosures?

1.3. Objective of Research

Based on the problem formulation, the objectives of this research are to find empirically evidence about:

1. the effect of leverage on carbon emission disclosure.
2. the effect of profitability on carbon emission disclosure.
3. the effect of company size on carbon emission disclosure.
4. the effect of Capital Expenditure on carbon emission disclosure.

1.4. Benefit of Research

Based on the research objectives, the results of this research are expected to be useful as follows:

1. For Academics

The results of this research are expected to be used as a reference to understand the variables that affect carbon emission disclosure and as evidence for the applicability of the theories referred to by the researcher in developing hypotheses. In addition, the results of this research can be used as input for future research and as a comparison for subsequent research, especially research related to carbon emission disclosure.

2. For Companies

The results of this research are expected to be considered in decision-making by management in making policies on carbon emission disclosure. In addition, it can be used as a benchmark for the company's performance from previous years, whether the company has reduced carbon emissions or increased them. Furthermore, it represents the company's responsibility to provide transparency to stakeholders regarding social environmental issues.

3. For Prospective Investors

The results of this research are expected to be used as a basis for determining decisions for prospective investors to invest. Investors will invest in companies with good performance and responsible for social environmental issues.

4. For Government

The results of this research are expected to be a guide and reference for government performance in making regulations and standards in regulating carbon emission disclosure practices in Indonesia.

5. For Society

The results of this research are expected to involve society in monitoring and controlling the activities of companies. So that companies not only focus on achieving good performance but also pay attention to the environmental conditions of the company's activities.

1.5. Writing System

The writing systematics that are the steps in writing this thesis are as follows:

Chapter 1 INTRODUCTION

This chapter contains a description of the background, research problem, research objectives, research benefits, research scope, and writing systematics.

Chapter 2 LITERATURE REVIEW

This chapter contains a description of the theories related to the research problem, previous research, conceptual framework and hypothesis development.

Chapter 3 RESEARCH METHODOLOGY

This chapter contains a description of the research variables, data types, data sources, data collection methods, population, sample, and data analysis techniques.

Chapter 4 ANALYSIS AND RESULT

This chapter will discuss the results of the research conducted and will answer a question from the initial problem formulation.

Chapter V CONCLUSION

The last chapter contains conclusions from the research that has been done and advice that will be given for subsequent research related to this research.

