CHAPTER II

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

2.1.Stakeholder Theory

According to (Rankin et al., 2018), stakeholder theory states that organizations must consider how their operations affect stakeholders and should not only focus on maximizing profit for the benefit of owners. Based on the theory of stakeholders, organizational management is expected to carry out activities considered important by their stakeholders and report these activities to stakeholders (Ulum, 2017). Stakeholders have the right to know information about how firms affect them, one of which is information about carbon performance practices and carbon emission disclosures carried out by the company.

Stakeholder theory states that entities seeking to serve the interests of a broad group of stakeholders will add more value (Rankin et al., 2018). Companies that build relationships with stakeholders based on trust and cooperation could add competitive advantages that could increase the company's value. To meet the stakeholder expectation, the company must voluntarily disclose information about social and environmental performance on operational activities.

One of the company's efforts in fulfilling the wishes of its stakeholders is if the company has good carbon performance. If a company does not make a low-carbon investment, the company will experience high explicit costs

resulting in competitive disadvantages (Rahman et al., 2014). Therefore, good carbon performance will add a competitive advantage to obtain stakeholder support.

Due to climate change becoming an important issue in society, society has pushed (directly and indirectly) firms to disclose environmental information. Since investors evaluate related information, firms are motivated to disclose information voluntarily to access high-quality resources. Disclosure of carbon emissions is a form of accountability carried out by the company to all stakeholders. Therefore, this theory is the basis for companies to disclose carbon emissions to avoid information asymmetry with stakeholders.

2.2.Legitimacy Theory

The theory of legitimacy states that organizations are continuously looking for ways to guarantee that their operations are within the limits and norms that exist in society (Ulum, 2017). One way that companies can legitimize their actions is by providing information to the entire community and stakeholders that shows that the company cares about social and environmental in its operational activities, by using annual reports or sustainability reports to inform that the company has minimized social risks and environmental risks in its operational activities to create value in the long term.

Legitimacy theory states a social contract between the company and the society in which it operates. The company must operate under the norms and social expectations that exist in society to ensure its sustainability (Ulum, 2017).

This social contract can be both written and unwritten. The contract involves the company and the community where the company operates to create its profits so that the company improving carbon performance and disclosing carbon emissions can get legitimized by the surrounding community. When legitimacy is obtained, the company can continue its operations because the entity has paid attention to the existing norms and the state of society.

2.3.Signaling Theory

According to signaling theory, the company must disclose all available information to maximize its value (Rankin et al., 2018). It shows that the signaling theory could increase the report's value through financial reporting. Signaling theory focuses on the importance of information produced by a company with investment decisions parties outside the company. Information becomes an important element for investors and business parties because it describes the past, present, and future for the company's continuity. The company needs to provide information because of the asymmetry between the company and external parties because companies know much about the company's internal prospects compared to the external parties. Signals will arise from company information that can be in the form of financial or non-financial information.

Signaling theory will make investors and other stakeholders raise the company's value and then make more favorable decisions for the company. The increase in the company's share price indicates that shareholders are receiving positive signals from the company. Therefore, companies need to provide

signals through disclosing information that can be seen by the presence of carbon performance and carbon emission disclosure.

2.4.Financial Report

Companies that decide to go public must make a finance report as an accountability report of activities and operations to show the company's performance. According to the Statement Financial Accounting Standard (PSAK) Number 1 of 2018 concerning The Presentation of Reports Financial, financial statements are a structured presentation of the financial position and performance finances of an entity, whereas the components consist of:

1. Statement of Financial Position
2. Income Statement and Other Comprehensive Income
3. Equity Change Report
4. Cash Flow Statement
5. Notes to Financial Statements
6. Statement of Financial Position at the Beginning of the Comparative Period

Every component of financial statements has its purpose, but the data presented describes the company's situation at that time. Financial statements are used as information for stakeholders to measure firm value.

2.5. Carbon Performance

2.5.1. Carbon Emission

Carbon emissions are the total greenhouse gas (GHG) emissions caused

directly and indirectly by people, organizations, events or products. Greenhouse gases contribute to the greenhouse effect that has caused global climate change. Emissions of CO2 e are based on the seven GHGs identified by the Kyoto Protocol Carbon dioxide (CO2), Methane (CH4), Nitrous oxide (N2O), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF6), and Nitrogen trifluoride (NF3). Company emission intensity is usually reported in mass units of CO2 equivalent (Co2e), for example, tons of Co2e or kg Co2e (Funk, 2020)

Company activities also produced carbon emissions. Companies usually generate emissions from their supply chain, through their operations, to the products/services they manufacture and distribute. There are three types of company carbon footprint:

1. An organization's carbon footprint measures GHG emissions from all activities within an organization, including energy used in buildings, industrial processes,and company vehicles.
2. Supply chain carbon footprint measures the carbon impact of an organization's rawmaterials and services to deliver its services and products.
3. A product's carbon footprint measures the GHG emissions over the life cycle of aproduct, from raw material extraction and manufacturing to its use, recycling, or disposal.

The GHG Protocol categorizes emissions into three scopes:

1. Scope 1: Direct emissions from owned or controlled sources. Examples are such ascompany facilities and vehicles, as well as fugitive emissions.
2. Scope 2: Indirect emissions from purchased electricity, steam, heating and coolingconsumed by the reporting company. Examples are purchased electricity, steam, heat or cooling.
3. Scope 3: All other indirect emissions in the company's value chain. Examples are goods and services purchased, business travel, and employee commuting and investments. Measuring scope 3 emissions is quite challenging because the availability of emissions data is variative (Roy & Thomas, 2021).

2.5.2. Carbon Performance

Carbon performance describes quantitative emissions from managerial activity that deals with carbon emissions (Velte et al., 2020). One of the methods to measure carbon performance is carbon intensity. According to Funk (2020), carbon intensity can then be calculated by dividing emissions by a relevant measure of activity. These activities can be calculated from either an economic perspective (using revenue as a common economic denominator) or a physical perspective (using sector-specific physical production units).

According to Roy & Thomas (2021), carbon intensity that using economic perspective is more suitable for cross sector analysis and more reflects the carbon efficiency of individual companies.

2.6.Carbon Information Disclosure

Carbon emission disclosure is a collection of information of a quantitative and qualitative nature on the past and predictions of the company regarding the level of the company's carbon emissions, as well as disclosures, explanations, and implications (Anggraeni, 2015). There are two characteristics for disclosing carbon emissions, the first is mandatory disclosure which is mandatory where the company is obliged to disclose information based on certain regulations or standards, and the second is voluntary disclosure which is not bound by applicable regulations so that the company is free to choose the type of information to be disclosed that relevant to assist in the decision-making process as one of the types of disclosures listed in the annual report, disclosure of carbon emissions is still voluntary in Indonesia.

There were three types of carbon emission disclosure (Hardiyansah et al., 2021) :

1. Adequate disclosure, which only discloses the minimum items required by the standard.
2. Fair disclosure only discloses the standard's minimum items and other relevant information.
3. Full disclosure, which discloses all information relevant to the required standard.

The company uses the annual or sustainability report to disclose information about the carbon emissions produced. The report is a source of

investor information and financial statements related to the company's performance or condition. The report is beneficial for stakeholders because they need the right information.

There was a demand from the environment, business, and politics for companies to respond to the threats caused by extreme global warming (Bae Choi et al., 2013). The stakeholders can see carbon emission disclosure implemented by the companies as a form of concrete action to reduce their carbon emissions. The information disclosure related to environmental performance can be a positive signal for the stakeholders as the companies have voluntarily disclosed the information needed by the stakeholders.

2.7.Enterprise Value

In companies that have gone public, the company's value is performance reflected by a share price formed by demand and capital market offerings that reflect people's assessment of performance companies (Harmony, 2014). According to Hery (2017), the company's value is the shareholder's perception of the company's success rate, which is often associated with stock prices. In his opinion, the higher the price, the company's shares reflect the company's growing value.

According to Sukamulja (2019), one of the indicators for assessing company value is to use market ratio. The market ratio compares the market value with the company's book value. Some market ratios commonly used for the company's rating include price to earning ratio, market-to-book ratio, and Tobin's

Q.

The selection of Tobin's Q is a measurement indicator of company value because the calculation of Tobin's Q is considered more rational for including all the elements in its calculations, both debts and company capital (Utomo, 2019). Tobin's Q has many advantages, namely considering the development potential share price, the potential management capabilities in managing company assets, and the growth potential.

2.8.Past Research

There are previous studies that have tested the effect of carbon performance and carbon information disclosure on the enterprise value. Research conducted by Yan et al. (2020) shows that carbon performance and carbon information disclosure have positive effect on enterprise value. The consistency of carbon performance and carbon information disclosure has a significantly positive impact on enterprise value, and this impact is more obvious for non-state-owned enterprises and for enterprises with strong governance.

Research conducted by Ziping & Genzhu (2018) shows that carbon performance is not only significantly positively correlated with market value in the capital market, but also significantly correlated with financial performance in the product market. Size, profitability, risk level, and operating activities are positively correlated with market value, but leverage and growth are negatively correlated with market value.

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Research conducted by Ganda (2018) shows that carbon performance produces a positive relationship with ROE and ROS, but a negative relationship with ROI and MVA. Firm size has negative relationship with ROI and MVA, but has positive relationship with ROS and ROE. Leverage has positive relationship with ROI and ROE, but has negative relationship with ROS and MVA. Growth has positive effect on ROE and ROI, and ROS, but negative effect on MVA. Capital intensity has positive effect on ROI, but negative effect on ROE, ROS, and MVA.

Research conducted by Natasha (2022) shows that carbon performance has positive effect on firm value. Meanwhile research conducted by (Busch et al., 2022) shows that carbon performance effect negative on performance financial performance short-term and long-term financial performance.

Research conducted by Alfayerds & Setiawan (2021) shows that carbon emissions disclosure has a positive influence on firm value, but annual report readability has no significant influence on firm value.

Research conducted by Hardiyansah et al (2021) shows that carbon emission disclosure had a positive and significant effect on firm value.

Research conducted by Anggraeni (2015) shows that carbon information disclosure has a positive impact on firm value, while environmental performance does not.

Research conducted by Rachmawati (2021) shows that disclosure of carbon emissions has no effect on firm value. Environmental performance and

green strategy have a significant positive effect on firm value. The green strategy strengthens the effect of carbon emission disclosure on firm value. The green strategy is not proven to strengthen environmental performance on firm value.

Research conducted by Asyifa & Burhany (2022) shows that carbon information disclosure doesn't affect firm value, but environmental performance affects firm value.

Table 2. 1.

Result of Past Research

No	Researcher	Variable	Subject	Result
1	Yan et al. (2020)	**Independent Variables** Carbon performance, carbon information disclosure, and consistency **Dependent Variables** Enterprise Value **Variable Control** Company size, Growth, Leverage, Years, Firm **Grouping Variable** Ownership, Corporate	Chinese manufacturing a-share listed companies for 2009 to 2017	Carbon performance and carbon information disclosure have positive effect on enterprise value. The consistency of carbon performance and carbon information disclosure has a significantly positive impact on enterprise value, and this impact is more obvious for non-state owned enterprises andfor enterprises with strong governance

		governanc e Score		.
2	Ziping & Genzhu (2018)	**Independent Variables** Carbon Performance **Dependent Variables** Enterprise Value , Financial Performance **Variable Control** Size,leverage, profitability, growth, risk level, operating activities	World's top 500 Enterprises in the 2011- 2013	Carbon performance is not only significantly positively correlated with market value in the capital market, but also significantly correlated with financial performance in the product market. Size, profitability, risk level, and operating activities are positively correlated with market value, but leverage and growth are negatively correlated with market value.
3	Ganda (2018)	**Independent Variables** Carbon Performance **Dependent Variables** Financial Performance (ROS, ROE, ROI, and MVA) **Variable Control**	Top 100 firms on the JSE by market capitalization cuts across diverse industrial categories	Carbon performance produces a positive relationship with ROE and ROS, but a negative relationship with ROI and MVA. Firm size has negative relationship with ROI and MVA, but haspositive relationship with

		Growth, size, leverage, capital intensity		ROS andROE. Leverage has positive relationship with ROI and ROE, but has negative relationship with ROS andMVA Growth has positive effect on ROE and ROI, and ROS, but negative effect on MVA. Capital intensity has positive effect on ROI, but negative effect on ROE, ROS,and MVA.
4	Natasha (2022)	**Independent Variables** Carbon Performance **Dependent Variables** EnterpriseValue	Listed companies on the Indonesia Stock Exchange in 2016-2020	Carbon performance has positive effect on firm value.
5	Busch et al (2022)	**Independent Variables** Carbon Performance **Dependent Variable** Short-term financial performance (ROA), long-term financial performance (Tobin's Q) **Control Variables**	5,663 companies that are listed in Europe and the United States in 2005-2014.	Research concluded that carbon performance effect negative on performance financial performance short-term and long-term financial performance.

		Company size, Leverage, Capital intensity, Cash flow, R&D Intensity		
6	Alfayerds & Setiawan (2021)	**Independent Variables** Carbon Information Disclosure and Annual Report Readability **Dependent Variables** EnterpriseValue	Firms that listed in PROPER's and Indonesian Stock Exchange (BEI) for the year	Carbon information disclosure has a positive influence on firm value, but annual report readability has no significant influence on firm value.
7	Rachmawati (2021)	**Independent Variables** Carbon Information Disclosure and Environmental Performance **Dependent Variables** Enterprise Value **Moderating Variables** Green Strategy	Manufacturing companies listed on the Indonesia Stock Exchange in 2015 – 2019	Disclosure of carbon emissions has no effect on firm value. Environmental performance and green strategy have a significant positive effect on firm value. The green strategy strengthens the effect of carbon emission disclosure on firm value. The green strategy is not proven to strengthen environmental performance on firm value.
8	Asyifa & Burhany (2022)	**Independent Variables** Carbon Information	Seven companies onthe SRI-KEHATI index from2016-2020	Carbon information disclosure doesn't affect

		Disclosure, Environmental Performance **Dependent Variables** Enterprise Value		firm value, but environmental performance affects firm value.

Source : Past research

2.9.Hypothesis Development

Hartono (2017) states that hypotheses need to be developed. Hypotheses can be developed by using relevant theories, logical explanations, and using the results of previous research. In this study, there are two hypothesis developments proposed, namely related to the effect of carbon performance on company value and the effect of carbon emission disclosure on company value.

2.9.1. Effect carbon performance on enterprise value

Carbon performance describes quantitative emissions from managerial activity that deals with carbon emissions (Velte et al., 2020). The efforts from various parties to prevent any climate changes by decreasing carbon emissions will make companies reduce carbon emissions/greenhouse gases from their business operation. The lower carbon emission will increase carbon performance (Yan et al., 2020).

Based on the theory of stakeholders, organizational management is expected to carry out activities considered important by their stakeholders and report these activities to stakeholders (Ulum, 2017). Due to investors are more interested in investing and valuing companies that pay attention to ESG

(Environmental, Social and Environmental) aspects, which is why one of the company's efforts in fulfilling the wishes of its stakeholders is if the company has good carbon performance. According to Rahman et al. (2014), if a company does not make a low-carbon investment, the company will experience high explicit costs resulting in competitive disadvantages. Therefore, good carbon performance will add a competitive advantage to obtain stakeholder support, increasing enterprise value.

Based on the theory of legitimacy, organizations are continuously looking for ways to guarantee that their operations are within the limits and norms that exist in society (Ulum, 2017). Companies can legitimize their actions is by improving carbon performance, which shows that the company cares about reducing emissions in its operational activities. When the company focuses on reducing carbon emissions, it will minimize the impact of environmental damage. The public will well assess the reduction in environmental impact damage is no exception for investors, which will increase trust in the company and impact on increasing value company.

Besides that, signaling theory focuses on the importance of information produced by a company with investment decisions parties outside the company. Improving carbon performance can signal investors because it shows a company's seriousness in reducing carbon emissions, resulting in solving existing environmental issues. This positive signal will certainly get a positive response from the stakeholders, especially shareholders, who will be able to improve the

trust of shareholders and prospective shareholders in the company to increase stock prices and company value.

This theory is in line with the results of research conducted by Yan et al (2020), Ziping & Genzhu (2018), Ganda (2018), and Natasha (2022), which states that carbon performance has a positive influence on the firm value. Therefore, the hypothesis that proposes:

Ha_1: Carbon performance has a positive effect on company value

2.9.2. Effect carbon information disclosure on enterprise value

Disclosure of carbon emissions is a collection of information of a quantitative and qualitative nature on the past and predictions of the company regarding the level of the company's carbon emissions, as well as disclosures, explanations, and implications (Anggraeni, 2015). Companies that disclose carbon emissions and have a green strategy tend to increase public trust in the company and increase intangible assets and firm value.

Based on the theory of stakeholders, organizational management is expected to carry out activities considered important by their stakeholders and report to stakeholders. Due to climate change becoming an important issue in society, society has pushed (directly and indirectly) firms to disclose environmental information. Since investors evaluate related information, firms are motivated to disclose information voluntarily to access high-quality resources. Disclosure of carbon emissions is a form of accountability carried out by the company to all stakeholders. Therefore, disclosing carbon emissions will add a

competitive advantage to obtain stakeholder support that could increasing enterprise value.

Based on the theory of legitimacy, organizations are continuously looking for ways to guarantee that their operations are within the limits and norms that exist in society (Ulum, 2017). Companies can legitimize their actions by disclosing carbon emissions that provide information related to the company's operating activities that impact its environment. Companies that gain legitimacy are likely to improve their image and reputation in the eyes of the stakeholders, which will impact the company's value as a whole.

Besides that, signaling theory focuses on the importance of information produced by a company with investment decisions parties outside the company. Disclosing carbon emissions can signal investors because it shows a company's seriousness in solving existing environmental issues. This positive signal will certainly get a positive response from the stakeholders, especially shareholders, who will be able to improve the trust of shareholders and prospective shareholders in the company to increase stock prices and company value.

This theory is in line with the results of research conducted by Yan et al (2020), Hardiyansah et al (2021), Alfayerds & Setiawan (2021), and Anggraeni (2015), which states that carbon information disclosure has a positive influence on the firm value. Therefore, the hypothesis that proposes:

H_{a2}: Carbon information disclosure has a positive effect on firm value