

Impacts of Climate Change Disclosure on Financial Performance of Listed Companies in Vietnam

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Abstract: Vietnam currently faces significant challenges due to environmental pollution and climate change. This has intensified pressure on companies to enhance their social responsibility practices throughout their production and business activities. As a result, the need to disclose environmental information transparently has become paramount to meet stakeholder expectations. The aim of the study is to assess the impacts of information disclosure on financial performance of companies in Viet Nam. For that purpose, the author has selected 130 companies listed on the stock market at the Ho Chi Minh City Stock Exchange. This research is based on climate change disclosures made on sustainability and annual reports by the 130 companies. The author found a subtle positive correlation – companies with more transparent climate practices (higher disclosure index) tend to experience some financial benefits. Firm age is also positively related to financial performance while leverage has negative correlation with profitability. This study contributes to a series of empirical studies on environmental disclosure in Vietnam - an issue of great concern to the Vietnamese government for Vietnam's sustainable and green economic development.

Keywords: Greenhouse gas emissions, climate change, climate change disclosure, financial performance.

INTRODUCTION

Global climate change leads to many adverse consequences for the atmosphere, ocean, cryosphere and biosphere, and human beings. One of the most important factors contributing to this problem is the emission of CO_2 . On a global scale, the fingerprints of climate change are becoming increasingly evident. According to IEA's Carbon Dioxide Emissions report in 2023, the global amount of CO_2 increased by 1.1%, in other word, 410 million tonnes, reaching a new peak of 37.4 billion tonnes of CO_2 worldwide.

Vietnam is among the countries most heavily affected by climate change. Vietnam was ranked 6th among countries worst affected by extreme weather events during 1999-2018 period (Eckstein *et al.*, 2020). Extreme weather events cause high fatalities and limit economic growth. Vietnam, with its extensive coastline and reliance on agriculture, is particularly vulnerable to rising sea levels, extreme weather events, and resource scarcity. Businesses operating in Vietnam are increasingly exposed to these climate-related risks, which can adversely impact their financial performance.

According to the World Bank (2022), Vietnam is "one of the most GHG-intensive economies in East Asia". In an effort to address climate change and global warming, Vietnam officially ratified the Paris agreement on October 31, 2016, showing the commitment to resolve the issue alongside the international community. Vietnam has set a goal to reduce net greenhouse gas (GHG) emissions by

25-30% by 2030 and commit to reach net-zero GHG emissions by 2050, which was stated in the National Strategy on Climate Change to 2050. Vietnam's government is actively working towards achieving net-zero emissions by introducing new legal framework aligned with the Paris Agreement. The government also requires firms to include environmental information as a part of corporate social responsibility (CSR). There are, however, many actions needed to be done by the government and private sector in order to achieve the commitment. Among these actions, GHG emissions reporting and climate change disclosure are essential for businesses to start their journey toward net-zero emissions. Recently, however, less than 10% of 1,700 companies listed in Ho Chi Minh City Stock Exchange and Hanoi Stock Exchange disclose carbon emissions in their annual reports and sustainability report (Pham Nguyen Vinh, 2023).

2. Theoretical Background and Literature Review of Climate Change Disclosure's Impacts on Financial Performance

Several theories have been developed to explain the influence of environmental disclosures on financial performance of companies, including resource-based view, asymmetric information theory, and signaling theory, are explored in this research.

According to the resource-based view (RBV), in a corporate environment where competition is fierce, a company's main goal is to surpass its rivals by

developing a competitive edge. According to Wernerfelt (1984), a firm is a collection of resources. These resources can be tangible (facilities, equipment) or intangible (reputation, knowledge). RBV focuses on a company's internal resources and capabilities as the keys to achieving superior performance and a sustainable competitive advantage. This theory plays a dominant role in explaining how environmental practices in general are associated with financial performance. A study of Hasseldine *et al.*, in 2005 recognises the importance of the creation of intangible assets or resources, such as legitimacy and the broader reputational benefits of taking a proactive approach to the environment. The work of Fujii (2012) also shows that proactive carbon policies often maximize operational efficiency and minimize environmental and human risk.

When climate change disclosure functions as a valuable, rare, inimitable, and non-substitutable resource, it can lead to improved financial performance through several mechanisms, such as reduced costs (cost savings in areas like energy use and waste management); increased revenue (appealing to environmentally conscious consumers and investors can boost sales and attract green investments); and improved risk management (enhancing financial stability). Overall, this theory explains the motivation of organizations to choose and voluntarily communicate to their stakeholders about the information of climate change and the management, thereby develop its exclusive competitive advantage among the market competitors.

As for the theory of information asymmetry, it states that high-quality disclosure of carbon information can significantly lessen investors' information disadvantage and that carbon information is a crucial non-financial piece of information for investors to consider when making decisions. The scenario where investors are at a disadvantage in terms of information can be successfully improved by the disclosure of high-quality carbon information, which can also, to some extent, lower investor risk and safeguard investor interests. Businesses can obtain the resources they need for operations and production at the same time. It is crucial for businesses to disclose carbon information proactively in order to connect with stakeholders and accomplish sustainable development. While implementing carbon emission reduction strategies and disclosing carbon footprint data may incur upfront

costs for enterprises, neglecting these actions can generate greater long-term burdens.

Signaling theory proposes that companies use actions and disclosures to signal valuable information to reduce asymmetry between them and stakeholders. In the context of climate change disclosure, companies can signal their commitment to sustainability, potentially gaining a competitive advantage. By disclosing comprehensive and transparent information on their climate-related activities, companies can differentiate themselves from competitors with less robust practices. This can lead to financial benefits such as reduced cost of capital due to a perceived lower risk for lenders and investors, increased innovation and efficiency through identifying and addressing climate risks within operations, and attracting and retaining top talent who value environmental leadership. Ziegler *et al.*, (2011) and Schiager (2012) posit that pressure from global warming agencies compels U.S. energy companies to engage in strategic disclosure of their climate change initiatives. This disclosure strategy serves a dual purpose: enhancing legitimacy and fostering a positive corporate image. Consequently, the authors found a significant correlation between such disclosure and improved stock performance for these energy companies.

Signaling theory states that corporations can perform better financially by reducing pressure and gaining the support and recognition of stakeholders through the disclosure of carbon information.

The relationship between climate disclosure practices and financial performance has been a topic of interest in recent literature. Gallego-Álvarez (2012) highlighted a direct relationship between companies in countries that have ratified the Kyoto Protocol, size, environmental performance, and the disclosure of information related to greenhouse gas emissions and financial implications due to climate change. Additionally, Platonova *et al.*, (2016) focused on the impact of CSR disclosure in general on financial performance and the result supported other research findings. While the mentioned articles used accounting-based measures for financial performance, the work of Alsaifi *et al.*, in 2019 developed an index that comprises 10 financial variables that reflect both accounting and market measures. the result, however, also showed that voluntary carbon disclosure is positively associated with firms' financial performance. Lu *et*

al., (2021) took a step forward examining the impact of climate change disclosure on financial performance under low carbon constraint and found that carbon disclosure can substantially improve financial performance in the current period for carbon-non-intensive industries but not significantly improve financial performance for carbon-intensive industries. Furthermore, the benefits of carbon disclosure on financial performance in the current period can be carried over to the following period.

Kalai and Sbais (2019) paid attention to how differently CSR quantity and quality impact firm financial performance in Tunisia market. The result still aligned with other researches, showing both characteristics have positive effect on financial performance. This, however, negates Yusoff's previous research in 2013, in which the author stated that it is not the volume of disclosure that matters, but the variety of items disclosed and concentration that has greater impact on financial performance. While other studies investigate the relation in each year, Schiager (2012) had an interesting finding where the year-on-year "improvement" in firms' environmental disclosure practices results in excess returns.

On the other hand, Connelly and Limpaphayom (2004), found no significant relation between environmental reporting and accounting performance, but there is a significant positive yet non-linear relation between environmental disclosure and market valuation. Usman *et al.*, (2015) decomposed CSR into four categories and found a negative relationship between environmental disclosure and corporate financial performance in Nigeria, suggesting that disclosure of environmental impact information could be value-destroying. Despite Usman's study, the author argue that transparent and comprehensive climate change disclosure attract stakeholders that have special attention to climate issue, making the company to stand out among others and therefore receive greater advantages. While other studies found a linear relationship between climate change disclosure and financial performance, prior work of Ibnu Qizam (2021) pointed out an interesting twist where the positive effect of the increasing disclosure turn into negative effect on firm performance in conditions of high proprietary information and competition and there is an "optimal" point for disclosure quality.

3. RESEARCH DESIGN

Data collecting methods

The author uses secondary data which is collected from 2022 financial statements, annual reports and social responsibility reports of 130 enterprises listed on the Ho Chi Minh City Stock Exchange (HOSE). HOSE is the largest stock exchange in Vietnam, listing the country's biggest and most established companies. Focusing on HOSE-listed firms allows the study a sample that represents a significant portion of the Vietnamese economy. Moreover, publicly traded companies generally have stricter disclosure requirements compared to private companies. This makes HOSE-listed firms a good source of data for climate change disclosure research, as they are likely to have more readily available information on their climate change initiatives. Information on the model's variables were collected from financial statements, annual reports and others documents published on the websites of the companies. Annual reports and sustainability reports are among the most important documents of an enterprise. They play an important role in disclosing information to shareholders and other stakeholders. These reports provide comprehensive information about the company's financial performance and activities occurring throughout the financial year.

Dependent variable

In this study, we focus on how climate change disclosure impacts a company's ability to generate profit, using ROA as the proxy for firms' financial performance. ROA shows how effectively a company uses all its assets (current and non-current) to generate profits. Companies with strong ROA are able to extract more profit from each dollar invested in their assets.

In the context of climate change disclosure, stronger disclosure practices might encourage companies to identify and address climate-related risks in their operations. This could lead to improved efficiency by reducing costs; increasing revenue; and improving risk management. These operational improvements can translate into a higher ROA. Therefore this study will test the hypothesis "There is a positive relationship between climate disclosures and financial performance for Vietnamese listed companies".

Independent variable

The method of applying content analysis in this study was the same as that used by Freedman and Jaggi (2005) to evaluate the climate change disclosure of firms and level of commitment to the Kyoto Protocol. In this study, the author chooses the disclosure index developed with equal weights.

Table 1 displays the five main criterias that were expected to be met in respect to climate change disclosure, which can be found by scanning annual

reports, social responsibility reports, and sustainability reports.

Table 1: Five main criteria for climate change disclosure measurement

No.	Content analysis
1.	Mention of global warming or of the Kyoto Protocol
2.	Firm's plan to deal with global warming and the objective to control global warming
3.	Potential costs to achieve the global warming objectives
4.	Current costs to reduce greenhouse-gas emissions
5.	Information on the extent of greenhouse-gas emission

Source: Freeman and Jaggi, 2005

Control variables

Previous studies also explores the importance of mediators in the link between corporate social performance and financial performance (Brammer and Millington 2008, Rowley and Berman 2000; Margolis and Walsh 2003). Platonova *et al.*, (2016) summarizes the findings of previous studies and suggest that “the relationship between corporate social performance and financial performance should possibly be examined by controlling certain other variables, such as institutional size, industry specification, how closely they interact with each other and the socially responsible practices performed by institutions etc.”. This study includes firm size, capital structure and age as control variables.

- **Firm size**, measured by natural logarithm of total assets, can influence a company's resource utilization and its potential impact on the environment. Larger firms might have a bigger environmental footprint and require more robust strategies to manage climate change risks. Larger companies also attract the attention of the media, planners and the media policy makers and regulators, putting them under greater pressure to act in a way that is consistent with requirements. Because of abundant financial resources, management and technical staff are more qualified, it is easy to carry out environmental disclosure to meet the requirements of the government and society. Freedman and Jaggi (2005) found that greenhouse gas pollution disclosure is positively related to firm size.

- **Capital structure**, reflected by leverage ratio (debt-to-equity), can influence a firm's risk tolerance and investment decisions. Firms with higher leverage might be more risk-averse and prioritize short-term financial stability over long-term investments in sustainability initiatives. Including leverage as a control variable helps account for the potential impact of a company's

financial risk profile on its financial performance, independent of its climate change disclosure practices.

- **Firm age**: Companies might become more aware of the importance of sustainability and environmental responsibility over time. Younger firms might still be developing their sustainability strategies, while older firms might have more established practices in place. Enterprises with a long operating time disclose more voluntary information than newly established enterprises. The longer the existence, the wider the interaction for the company to build an effective public image (Samarah, *et al.*, 2021). Age is considered an important specific that affects environmental disclosure since stability, financial strength; strategic posture usually increases with age (Liu and Anbumozhi, 2009). “As a company matures, its reputation and involvement in discretionary activities, such as environmental protection activities and disclosure of environmental information, can become entrenched and more valuable to the company” (Akhter *et al.*, 2022). On the other hand, Sorensen and Stuart (2000) argue that the inertia of long-established firms may make them inflexible and unable to accurately assess environmental changes. Long-operating businesses can also become outdated and cause business decline.

Regression model

To examine the relationship between firms' financial performance and climate change disclosure practices, the author proposes the following research model:

$$FP = \beta_0 + \beta_1 DI + \beta_2 SIZE + \beta_3 LEV + \beta_4 AGE + \varepsilon$$

Where:

FP: Firms' financial performance (measured by ROA)

DI: Climate change disclosure index

SIZE: Firms' size (measured by the variable SIZE = log(total assets of the enterprise))

LEV: Financial leverage (measured by its debt-to-equity ratio)

AGE: Firm's year of operation

4. RESEARCH RESULTS

Descriptive Analysis

Table 2: The level of climate change disclosure

	Criterion	Number of firms	Percent
1.	Mention of global warming or of the Kyoto Protocol	104	80.0%
2.	Firm's plan to deal with global warming and the objective to control global warming	97	74.6%
3.	Potential costs to achieve the global warming objectives	15	11.5%
4.	Current costs to reduce greenhouse-gas emissions	36	27.7%
5.	Information on the extent of greenhouse-gas emission	58	44.6%

Source: Compilation of the author

The average level of climate change disclosure of 130 companies in the sample is 2.4. For individual criterion, there are higher percentages of companies that meet the descriptive criteria. 80.0% and 74.6% of the companies meet the criteria of "Mention of global warming or of the Kyoto Protocol" and "Firm's plan to deal with global warming and the objective to control global warming", respectively. For quantitative criteria, 44.6% of the companies disclose information on "the extent of greenhouse-gas emission". The proportion of companies that disclose "potential cost to achieve global-warming objectives" and "current costs to reduce greenhouse-gas emission" are much lower, at 11.5% and 22.7%, respectively. While descriptive criteria are achieved by higher proportion of the companies, it is more difficult for the companies to publish quantitative criteria on climate change in their reports.

Regression Analysis

Regression results using stata software:

Table 3: Regression results

ROA	Coef.	Std. Err.	T	P> t
DI	.0164179	.0050319	3.26	0.001
SIZE	-.0059037	.0040579	-1.45	0.148
LEV	-.0049406	.0024381	-2.03	0.045
AGE	.0008174	.000448	1.82	0.070
-cons	.1890582	.1196485	1.58	0.117

R-squared = 0.2304

Adj R-squared = 0.2058

N = 130

Table 3 shows the result of the regression model using 130 observations. The coefficient for DI is 0.0164 with a p-value of 0.001. This means that DI is statistically significant at the 1% level. The

positive coefficient confirms the hypothesis that companies with higher disclosure indexes tend to have better financial performance, for which the author used ROA as proxy. When the Disclosure Index by 1 unit, their ROA will increase by 0.016.

The coefficient for LEV is -0.0049 with a p-value of 0.045. This means that Lev is statistically significant at the 5% level. A negative coefficient means that companies with higher leverage tend to have lower values of ROA. The coefficient for AGE is 0.0008 with a p-value of 0.070. This means that AGE is statistically significant at the 10% level. A positive coefficient means that older companies tend to have higher values of the dependent variable. On the other hand, p-value for SIZE 0.148, suggesting that SIZE is not statistically significant.

The R-squared value of the model is 0.2304, which means that the model explains 23.04% of the variance in the dependent variable. The adjusted R-squared value is 0.2058, which takes into account the number of independent variables in the model and is a more accurate measure of the model's explanatory power.

5. CONCLUSION

This study investigates the relationship between climate change disclosure practices and financial performance in Vietnamese companies. The analysis, based on the data set of 130 companies in 2022, sheds light on how a company's approach to climate change disclosure interacts with its financial performance.

The results reveal a relatively weak but positive correlation between a company's DI and its financial performance. The finding of this study is

aligned with previous researches of Platonova (2016), Alsaifi *et al.*, (2019), Schiager (2012), Kalai (2019), suggesting that companies with more transparent reporting on climate change practices might experience some financial benefits. This aligns with theories, where companies that demonstrate environmental responsibility can attract customers and investors who prioritize sustainability, helping them achieve better performance.

An interesting finding is the weak negative correlation between leverage and DI. Companies with higher leverage tend to have lower profitability. This could be due to several reasons. Companies with high debt might prioritize short-term financial stability over long-term environmental considerations. Additionally, the costs associated with implementing robust climate change disclosure practices might be seen as a burden by highly leveraged companies.

However, the model's explanatory power (R-squared) is only 23.04%. This implies that other factors beyond disclosure practices, scale, capital structure, age significantly influence a company's financial performance in Vietnam. Future research could explore these factors, such as industry-specific regulations, government incentives for sustainable practices, and investor preferences towards environmentally conscious companies in the Vietnamese market.

Overall, this study provides valuable insights into the connection between climate change disclosure and financial performance in Vietnam. While a clear cause-and-effect relationship remains elusive, the positive correlation between disclosure and performance suggests potential benefits for companies that prioritize transparency on climate change issues. Additionally, the negative association between leverage and profitability highlights a potential trade-off for companies with high debt burdens. As Vietnam's economy continues to develop and environmental concerns gain prominence, further research can help us understand how companies can navigate this complex dance between financial performance, climate change disclosure, and responsible business practices.

This study still has several limitations and is open for further studies. Due to time constraint, the research sample includes only 130 companies. Bigger sample size will help improve research results. The study is for the year 2022 only and a

study of climate change over several years should be analysed to examine the trend and changes of disclosure over time. Future studies using primary data from survey questionnaires answers by companies' directors and managers may better captured the reasons behind decision-making of climate change disclosure.

REFERENCES

1. Noor Afza, B. U. A., & Amran, B. A. "Corporate social responsibility practice and corporate financial performance: evidence from Nigeria companies." *Social Responsibility Journal* 11.4 (2015): 749-763.
2. Alsaifi, K., Elnahass, M., & Salama, A. "Carbon disclosure and financial performance: UK environmental policy." *Business Strategy and the Environment* 29.2 (2020): 711-726.
3. Cline, W. R. *Global warming and agriculture: Impact estimates by country*. Peterson Institute, 2007.
4. Connelly, B. L., & Limpaphayom, P. "Environmental reporting and firm performance: evidence from Thailand." *Journal of Corporate Citizenship* 13 (2004): 137-149.
5. Freedman, M., & Jaggi, B. "Global warming, commitment to the Kyoto protocol, and accounting disclosures by the largest global public firms from polluting industries." *The International Journal of Accounting* 40.3 (2005): 215-232.
6. Fujii, H., Iwata, K., Kaneko, S., & Managi, S. "Corporate environmental and economic performance of Japanese manufacturing firms: Empirical study for sustainable development." *Business Strategy and the Environment* 22.3 (2013): 187-201.
7. Intergovernmental Panel on Climate Change. *Climate Change 2023 Synthesis Report*. 2023.
8. Gallego-Álvarez, I. "Indicators for sustainable development: Relationship between indicators related to climate change and explanatory factors." *Sustainable Development* (2010): doi:10.1002/sd.483.
9. Hasseldine, J., Salama, A. I., & Toms, J. S. "Quantity versus quality: The impact of environmental disclosures on the reputations of UK PLCs." *The British Accounting Review* (2005): doi:10.1016/j.bar.2004.10.003.
10. International Energy Agency. *Carbon dioxide emissions report*. 2023. Access: <https://www.iea.org/reports/co2-emissions-in-2023/executive-summary>.

11. Kalai, L., & Sbais, Y. "The impact of corporate social responsibility disclosure in terms of quantity and quality on the financial performance of companies in Tunisia." *International Review of Management and Marketing* (2019): doi:10.32479/irmm.7573.
12. Lu, W., Zhu, N., & Zhang, J. "The impact of carbon disclosure on financial performance under low-carbon constraints." *Energies* (2021): doi:10.3390/en14144126.
13. Platonova, E., Asutay, M., & Dixon, R. "The impact of corporate social responsibility disclosure on financial performance: Evidence from the GCC Islamic banking sector." *Journal of Business Ethics* (2016): doi:10.1007/s10551-016-3229-0.
14. Qizam, I. "The impact of disclosure quality on firm performance: Empirical evidence from Indonesia." *The Journal of Asian Finance, Economics and Business* (2021): doi:10.13106/jafeb.2021.vol8.no4.0751.
15. Schiager, H., & Haukvik, K. "The effect of voluntary environmental disclosure on firm value: A study of Nordic listed firms." (2012): Access: <http://hdl.handle.net/11250/169735>.
16. Securities and Exchange Commission. *The enhancement and standardization of climate-related disclosures for investors*. 2024. Access: <https://www.federalregister.gov/documents/2024/03/28/2024-05137/the-enhancement-and-standardization-of-climate-related-disclosures-for-investors>.
17. Velte, P., Stawinoga, M., & Lueg, R. "Carbon performance and disclosure: A systematic review of governance-related determinants and financial consequences." (n.d.).
18. Wernerfelt, B. "A resource-based view of the firm." *Strategic Management Journal* (1984): doi:10.1002/smj.4250050207.
19. Yusoff, H., Mohamad, S. S., & Darus, F. "The influence of CSR disclosure structure on corporate financial performance: Evidence from stakeholders' perspectives." *Procedia Economics and Finance* (2013): doi:10.1016/s2212-5671(13)00237-2.
20. Ziegler, A., Busch, T., & Hoffmann, V. H. "Disclosed corporate responses to climate change and stock performance: An international empirical analysis." *Energy Economics* (2011): doi:10.1016/j.eneco.2011.03.007.
21. World Bank. *Vietnam Country Climate and Development Report*. 2022.
22. World Meteorological Organization. *The Global Climate 2011–2020: A decade of accelerating climate change report*. 2023.

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