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Original Research

The Effect of Water Disclosure on Firm Value in Vietnamese Listed Companies

Nguyen Vinh Khuong[1,2]*, Tran Thai Ha Nguyen[3,4], Ha Manh Bui[5], Nguyen Thanh Liem[1,2], Phan Anh Quoc[1,2], Duong Quynh Yen Nhi[1,2], Nguyen Thi Kim Loan[1,2], Do Minh Thu[1,2], Nguyen Quoc Bao[1,2]

[1]University of Economics and Law, Ho Chi Minh City 700000, Vietnam
[2]Vietnam National University, Ho Chi Minh City 700000, Vietnam
[3]Department of Business Administration, College of Management, Asia University, Taichung 41354, Taiwan
[4]Faculty of Finance and Accounting, Saigon University, Ho Chi Minh City 700000, Vietnam
[5]Department of Environmental Sciences, Saigon University, Ho Chi Minh City 700000, Vietnam

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Abstract

This paper analyzes the impact of country disclosure on the firm value of listed companies in Viet Nam. As the sharp increase in population and urbanization has led to the depletion of water resources, the issue of water management is having an impact on the sustainable development of businesses. These days stakeholders and investors are taking this issue more and more seriously, which leads to a business disclosing country information that has a positive effect on their firm value. We use the quantitative method through instrumental variables for a sample of 170 companies listed on the Ho Chi Minh Stock Exchange and conducted from 2015-2019. The results of our study have shown that there is a positive influence of information disclosure on corporate governance. Our research aims to provide additional information for the current literature by providing further evidence for the field and suggesting solutions for governments, stakeholders and companies.

Keywords: water disclosure, firm value, emissions, Vietnam.

Introduction

Water plays a vital role in the survival and development of all living creatures on earth. It's also an important component of industrial activities that provide a variety of products and services that are essential to our contemporary way of life [1-3]. However, Schoproni Bichueti et al. (2014) [4] pointed out that water is the renewable resource most vulnerable to shortages today. Other water concerns (such as water depletion and pollution) produced by global urbanization and industrialization have also become critical problems internationally, these water issues have the potential to have a substantial impact on human society's long-term growth [5]. As a result, it is more important than ever to consider water as a community and economic resource. Firms produce the world's most basic items to meet human needs, yet they are also significant freshwater users [6].

*e-mail: khuongnv@uel.edu.vn

Business water management is a relatively abstract notion, even though it is widely acknowledged as an important component of corporate sustainability [8]. In the context of water shortage, industry might be the most susceptible stakeholder due to the ill-defined roles and duties of numerous stakeholders engaged and the indispensable function of water for human nutrition [1, 9]. Many mining firms use the Global Reporting Initiative to share information about their water resource management regarding reducing the risk of disputes with their stakeholders [10]. The specific standard differs depending on whether the disclosure is for economic, environmental, or social reasons, with the GRI 303: Water and Effluent Standards under the environmental branch being particularly important for water reporting. Corporate water responsibility, especially in a resource-depletion business, must be considered from a social, environmental, and economic standpoint. The economic advantages of water consumption and resource depletion must balance the social and environmental costs associated with them [9, 11-13].

From a business standpoint, industry's principal goal is to create revenue through meeting human wants [14] and getting better profitability, investment, and trading strategies [15]. Industries are just now beginning to integrate social and environmental costs, thanks to the introduction of a new sustain-centric worldview [16]. Stanwick and Stanwick (1998) [17]; Weber (2017) [18] pointed that although these principles are acknowledged to have a positive overall impact on a business' social performance, they lack the necessary technique to assess the long-term financial success of the organization. Water disclosure is incorporated into sustainable development reporting under natural capital and can be described as adopting a consistent and structured approach to identifying, measuring and reporting water resources information [19].

The impact of water disclosure on corporate value is important but under-researched, especially in Vietnam, and current empirical literature provides mixed findings. Zhou et al. (2018) [20] concluded in a study the relationship among water information disclosure, firm value, and provides important information for the firm management level. The financial market has begun to recognize the impact of water risks on the firm as a result of the paucity of water resources. As a result, businesses should aggressively communicate water information in order to avoid water risk, minimize the degree of asymmetry with investors and creditors in order to boost their confidence in the company, and finally address the corporate finance problem.

There are many research papers that have shown the impact of water disclosure on economic indicators of firms [21-25]. According to studies comparing organizations with and without formal CSR and EMS, the former has a competitive edge [18]. Sustainability initiatives (water disclosure), according to Moliterni (2018) [26], also contribute to the development of market value for listed firms. Zhou et al. (2018) [20] pointed that depending on the level of disclosure, water will have a different effect on the cost of capital. Despite the fact that there have been several studies on the topic of water source disclosure throughout the world, there are presently few in Vietnam, particularly in terms of information disclosure. Research in developing markets with substantial legislative frameworks on voluntary non-financial disclosure aids in providing an insight into the issue. In the case of Vietnam, this work contributes to the research on water disclosure in developing nations. Because the research legal framework is vague due to institutional changes, the study contributed to the review with a different sample of the setting. To improve the review, we took measurements of emissions and water to ensure that the research findings were accurate. Finally, in terms of improving the investigation dependability, we assess business performance using three proxies.

Theoretical Framework and Hypothesis Development

Legitimacy means that something is natural, right, and appropriate, conforming to the way things are or the way it should be. Anything that may be legitimate: behaviours, people, positions, relationships, the rules that govern them, or any other characteristic of a group, including the group itself [27]. If society doubts the legitimacy of an organization, it will have difficulty attracting capital, employees or customers [28] . Hedberg and Von Malmborg (2003) [29] argued that Swedish companies CSR production is mainly to seek the legitimacy of the organization. It shows that there is support for the theory of legitimacy as an explanatory factor for environmental claims [30]. By generating corporate sustainability reports, organizations can get their stakeholders to accept the company's view of society [28]. Deegan (2002) [32] described this as the need to legitimize their actions to promote companies to prepare sustainability reports. The information contained in these reports is important for changing society's perception of the company [32]. Based on the theory of legitimacy, sustainability reporting quality improvements serve as a strong signal to gain legitimacy.

Zametica and Johansson (2019) [33] studied about the impact of sustainability reports' quality on firm performance and firm value in the Swedish manufacturing industry. In particular, there was a positive significant relationship between the quality of sustainability reports, financial performance and firm value for the year 2015. However, the study found no significant relationship between the variables for 2016 and 2017. Liu and Zhang (2017) [34] examined the relationship between corporate governance,

social responsibility information disclosure, and firm value. The results revealed that listed firms in the heavy polluting industry are disclosing less social responsibility information.

Jones et al. (2015) [35] conducted an exploratory study of the extent to which some of the world's most well-known food and beverage firms are openly addressing water stewardship as part of their corporate sustainability plans. The empirical data for this study comes from the most up-to-date water stewardship information available on the corporate websites of the top food and beverage corporations. The findings revealed that the great majority of the organizations studied handle several aspects of water stewardship as part of a broader strategy to corporate sustainability. Raj (2016) [36] examined the business risk of water in the metal mining sector, as well as its influence on corporate water and financial performance. These findings suggest that water risk has an impact on corporate water management. Water performance is also influenced by the age, location, and size of the company. Furthermore, there is no discernible link between business sustainability (nonfinancial) and financial performance.

Finally, profitability and economic success have been employed by several researchers to explain discrepancies in water disclosure levels. Justification A successful company will be able to participate in environmental initiatives and provide more information to its customers. Companies that make big money might wish to convince the public that they didn't get there by contaminating the water. Companies with lower profits, on the other hand, lack the resources to participate in environmental projects and hence report less. This is especially important for companies that rely on water in their operations and manufacturing.

While most of the studies show a positive result between water disclosure and firm value. On the contrary, A study of 100 S&P corporations from 2004 to 2008, Wu and Shen (2010) [37] discovered that environmental disclosures have a detrimental influence on firm performance. Firms with bad financial performance, according to Freedman and Jaggi (1992) [38], tend to declare large investments in pollution mitigation to excuse their low financial performance. Beside that, Qiu et al. (2016) [39] discovered no link between the variables. Without taking into account the market categories, found no correlation. These findings indicate that there may be other undisclosed variables that need to be considered. Businesses have begun to pay greater attention to water disclosure to investors not only in European nations, but also in Vietnam, reflecting the expansion of the Vietnamese market. We arrive at the following hypothesis after discussing the theoretical framework and doing the above-mentioned empirical review:

Hypothesis 1: Water disclosure has a positive effect on firm value.

Research Design

Due to differences in operating processes and financial reporting system features, we have separated all banking and insurance operations from HOSE and HNX. We'll keep weeding out firms who don't have enough information. As a result, we only examine businesses who have complete financial statements for the years 2015 to 2019. The study's ultimate sample size was determined to be 170 companies.

Based on theoretical, legitimacy theory and conclusions from previous empirical studies mentioned in the above sections, the we built the following equation:

$$FPit = \alpha + \beta\ WATERit + Xit\ i + it$$

Where:
i = 1, 2, …, 170 (where i represents 170 listed companies under consideration); t = 1, 2, 3, 4.5 (where t is the 4-year period under consideration from 2015 to 2019); FP: Value of listed company i at time t, measured by ROA, ROE, TOBIN Q; WATER: Quality of reporting water information (GRI 300), as a dummy variable, equals 1 if the company does disclose water information (otherwise, zero); X are control variables; εit: random error value.

Measuring Firm Value

In this research, we use the dependent variable "FP" to represent the value of an firm listed on the Vietnamese market, measured by ROA, ROE and TOBINQ, representing the Return on Assets of the firm, the rate of return on equity of the firm and market value of the business Raj (2016) [36, 40].

Water Disclosure

The fact that water information is reported in the Sustainable Development Report is shown through the WATER variable - a dummy variable in the research model. According to Burger (2020) [41], companies that publish water information in their sustainable development reports are valid firm much higher than companies that ignore this.On the other hand, many research articles in Vietnam on the sustainable development report of a listed company have not mentioned much or completely ignored the GRI 300 - How water disclosure affects the value of the firm.

In western countries, many researchers have recommended that the water disclosure variable be measured using the dummy variable WATER, which has two values of 0 or 1 Burger (2020) [41]; Raj (2016) [36], Signori and Bodino (2013) [42, 43]. When companies disclose information regarding water in their Sustainable Development Reports, the value will be one, and vice versa.

Control Variables

In this research, team research uses a measure of natural logarithm (total revenue) to evaluate the revenue growth of the joint stock companies listed on the Vietnam stock market. Because this measurement is performed on many studies such as Amouzesh et al. (2011) [44]. In line with these studies, we expect a positive sign of this variable. Financial leverage is used as a control variable because firms with high debt ratios are more likely to face financial problems and risk bankruptcy, leading to a poor level of corporate sustainability. Korteweg (2010) [45] also discovered that the company's market will increase in the future, benefiting leverage. In addition to financial leverage, Wu and Shen (2010) [37] discovered that a firm's asset tangibility and initial market book ratios were able to define and forecast distinct future leverage for growth kinds of organizations. From there, determine the sustainability and development ability of an firm, as a premise for investment and determine the future value of a listed firm. However, reality shows that the coefficient is only for reference for determining the value of an firm and long-term development for firm, that's also the reason, many scholars around the world have used this variable for their research. Through the above discussion, we expects a positive sign of this variable. The company's listing time variable was used as a control variable in determining the relationship between water reporting and corporate sustainability. In the studies of Rossi (2016) [46], the results of the study show that the listing time of the business has an inverse effect on the sustainable value of the firm.

Results and Discussion

The ROA variable has 849 observations in which the lowest and highest values are -1.59 and 0.78 respectively. The mean value of this variable is 0.0751, which is relatively lower than 0.0839 in Malaysia [47], and -0.25 in China [37] and greater than 0.0462 [48]. The standard deviation is 0.099, which is relatively higher than 0.0825 for Malaysia [47] and larger than 0.0692 [48] and lower than 0.1 for China [37]. The mean value of our study is 1.482, compared with Wu and Shen (2010) [37] and [48] of 1.633 and 1.927 respectively.

The results show that water disclosure has a positive effect on firm value (ROA and ROE), but does not affect Tobinq. This is also consistent with our hypothesis H1. The obtained results are consistent with the results from the study of Zametica and Johansson (2019) [33] and Zhou et al. (2018) [20]. It indicates the more water disclosure, the higher firm value and performance. Moreover, according to legitimacy and stakeholder theory, firms which make water disclosure are complying with society's expectations. The relevant and transparent water information not only supports local agencies or relevant departments to manage and propose appropriate measures or sanctions, but also affects the value of firms, contributing to building brand, reputation and good image of firms before stakeholders and investors.

In order to increase the reliability of the research paper, we added emission variables to evaluate and analyze the impact of water environment on firm value. Behaviors such as discharge of water; the generation and treatment of wastes that negatively affect the water environment and human health will affect the financial performance of the company. From here, it is possible to draw conclusions for the necessity of firms to disclose water information in their annual sustainability reports.

From the results, it is shown that the variable Emission has a positive effect on all three variables ROA, ROE and Tobinq, in other words, the disclosure of emissions in the Sustainable Development Report has a positive effect on firm value. The obtained results are consistent with the results from the study of Hardiyansah et al. (2021) [49]. This shows carbon emission disclosure has a positive and significant effect on firm value. According to legitimacy and stakeholder theory, firms need to comply with society's expectations due to its existence, and it can be good news for investors because firms have voluntarily provided information at the request of investors. They assume that firms that disclose their carbon footprint have a commitment to

Table 1. Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	849	0.075	0.099	-1.59	0.78
ROE	849	0.085	1.455	-40.82	1.59
Tobinq	849	1.482	1.614	0.2182	30.746
Water	849	0.511	0.500	0	1
FGrowth	849	0.178	0.627	-0.67019	11.915
FAge	849	0.911	0.163	0	1.278
RBTM	849	1.179	1.051	-0.10151	13.065
LEV	849	0.258	0.190	0	0.7356

Table 2. Estimation results of the model with Water variable.

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	roa	roe	tobinq	roa	roe	tobinq
Water	0.005**	0.032***	0.022			
	[2.43]	[3.09]	[1.46]			
Emissions				0.012***	0.036***	0.058***
				[6.30]	[3.61]	[3.05]
fgrowth	-0.007***	-0.014**	0.150***	-0.007***	-0.012*	0.137***
	[-2.60]	[-2.04]	[3.68]	[-2.60]	[-1.76]	[3.18]
fage	0.023***	-0.037	0.093	0.022***	-0.027	0.094
	[3.48]	[-1.05]	[1.36]	[3.37]	[-0.72]	[1.18]
rbtm	-0.028***	-0.032***	-0.405***	-0.028***	-0.033***	-0.400***
	[-23.41]	[-6.83]	[-28.87]	[-24.04]	[-7.40]	[-27.10]
lev	-0.131***	-0.046*	-0.852***	-0.133***	-0.044*	-0.813***
	[-25.35]	[-1.80]	[-17.22]	[-26.01]	[-1.73]	[-15.05]
_cons	0.110***	0.179***	1.824***	0.109***	0.170***	1.800***
	[14.45]	[4.78]	[25.82]	[14.67]	[4.32]	[20.65]
Year	Yes	Yes	Yes	Yes	Yes	Yes
N	849	849	849	849	849	849

t statistics in brackets * p<0.1, ** p<0.05, *** p<0.01

reduce the impact of environmental damage caused by their operations. Firms that voluntarily disclose transparent and appropriate emissions information will attract more investors, thereby increasing business value.

The level of revenue growth (FGrowth) has a negative effect on the value of the firm. In contrast with this research, Sudiyatno et al. (2021) [50] stated that in companies with strong profitability, firm growth will decrease firm value. Financial leverage (LEV) is defined as total debt divided by total assets. Ben-Amar and Chelli (2018) [51] indicated that Firms with greater debt ratios may choose to raise their voluntary disclosure level to decrease leverage-related agency expenses; nevertheless, higher leverage may limit managers' financial capabilities to make environmental disclosures. The book-to-market (RBTM) ratio has a negative effect on firm value. The higher this ratio shows that the business is undervalued relative to its book value and investors are spending less money to buy the stock and valuing the stock cheaper than its book value. On the contrary, if this ratio is low, it indicates that the business is overvalued and investors have high expectations, making the market value of the stock higher than the book value of that stock. Time of listing of firms (Fage) has a positive effect with firm value.

Conclusions

Due to the country's specific market economic restrictions, water disclosure processes in Vietnam are still primitive and have not been widely adopted in the operational models of many firms. Following in the footsteps of numerous corporations, Vietnam has accepted the new GRI 303 standards in recent years, and businesses are increasingly focusing on the quality of sustainability reports contained in their annual reports. When implementing the GRI into a sustainability report, the first is utilized to achieve certain goals. On this basis, a correlation may be formed between the disclosure of country-specific information and the firm's value.

We have offered a number of recommendations for companies, management agencies, and investors based on the findings of the study to enhance the quality of management and the quality of information disclosure in the report. The management agency should establish a common framework for water data reporting so that firms can agree on the content of the sustainable development report on resources and the environment. In the financial and securities markets, the government should establish guidelines for the disclosure of nation information by publicly traded companies.

Using the company's water usage information, investors can estimate market risk. At the same time, the information helps investors assess management

quality in terms of the company's environmental concerns. The information in the sustainability report will be a key component in supporting investors in their decision-making when financial and strength criteria are comparable. The aforementioned reference will be incredibly beneficial in deciding to hold shares, vote in the long term, and providing information on the company's water consumption as a reference for environmental friendliness, resulting in tremendous peace of mind for investors.

From here, we suggest some directions for future research on this topic. Future research will focus on the disclosure of water information, including the variables that influence it and the extent to which it is disclosed in businesses. Furthermore, collecting more practice reports will increase the data's dependability. Also, the next researchers can extend the survey period of the study, especially before and after the Covid 19 epidemic to assess its influence on water disclosure of firms. Finally, we will research each distinct company sector to learn how water disclosure differs from one type of firm to the next, offering a wide perspective for the disclosure of water information throughout the whole economy.

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Conflict of Interest

The authors declare no conflict of interest.

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