

Article

The Influence of Information Transparency and Disclosure on the Value of Listed Companies: Evidence from Vietnam

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Abstract: This analysis examines the influence of information transparency and disclosure on the value of companies listed on the Vietnamese stock market. Data employed in this study were primarily gathered from the audited financial statements, management reports and other related documents of 430 publicly traded firms listed on the Ho Chi Minh Stock Exchange (HOSE) and Ha Noi Stock Exchange (HNX) for the time period from 2014 through 2016. Using the GMM (Generalized Method of Moments) approach, the empirical findings indicate that the level of transparency and disclosure of the companies has a significant positive effect on firm value as measured by Tobin's Q.

Keywords: transparency and disclosure; value of listed companies; Vietnam

JEL Classification: G11; G32; G34



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1. Introduction

Information transparency and disclosure (ITD) for listed companies are essential components of corporate governance (Patel et al. 2002). The sufficient and timely disclosure of information contributes to both the informational and allocational efficiency of the market. Investors can more accurately evaluate appropriate risks and expected returns for prospective investments and allocate their funds appropriately. For listed companies, ITD is an avenue to reduce asymmetric information between shareholders and corporate insiders. This reduction in the agency costs associated with asymmetric information between insiders and shareholders serves to reduce the cost of capital and thus enhance firm value.

The influence of ITD on firm value is a topic that has received increasing attention from both academics and practitioners over the last several decades as technology has facilitated greater and more timely access. However, there has yet to be a consensus in the research on the value of this information transparency to market participants. Some empirical studies found that ITD is positively related to firm value (Uyar and Kilic 2012; Garay et al. 2013; Sharif and Lai 2015; Ghorbel and Triki 2016; Setiadi et al. 2017; Aboud and Diab 2018; Gonzalez et al. 2021). However, other scholars have asserted that ITD by companies has a negative effect on firm value because it potentially leads to an increase in operational risks and transaction costs when valuable inside information is leaked to competitors (Cheng and Lo 2006; Botosan and Stanford 2005; Chahine and Filatotchev 2008). In another aspect, Boubaker and Sami (2011) determined the effect of the ownership structure on the informativeness of accounting earnings. They documented that earnings informativeness is positively associated with the ultimate cash flow rights of owners. Besides, Boubaker et al. (2019) investigated the effects of the readability of annual reports on firms' stock liquidity. The authors found that a less readable disclosure is associated with a decline in firms' stock liquidity. In a recent study, Boubaker et al. (2022) examined the influence of voluntary disclosures in annual reports on tax avoidance activities. The main finding of the study indicated that voluntary disclosures reduce tax avoidance activities.

The Vietnamese stock market encompasses two stock exchanges, the Ho Chi Minh Stock Exchange (HOSE) and the Hanoi Stock Exchange (HNX). According to the State Securities Commission of Vietnam, by the end of 2016, there were 695 listed firms with a total market capitalization of VND 1,765,000 billion (USD 77.68 billion) on the market. In addition, small individual investors have dominated the Vietnamese stock market, accounting for about 80 percent of volume. Although the influence of ITD on firm value has been widely studied across global markets, our review of the literature finds no studies on this topic for the Vietnamese stock market. Therefore, this study moves to fill this gap in the literature and is devoted to investigating the influence of ITD on the value of listed companies in Vietnam.

This study makes several key contributions to the literature. First, this study enriches the agency costs literature by investigating the effect of ITD on the value of listed companies in the frontier stock market of Vietnam. The case of the Vietnamese stock market provides fertile grounds for a unique examination of this topic due to the fact that the market has been characterized by weak legal investor protections and weak corporate governance, along with low levels of ITD. Second, this study employs a transparency and disclosure index (TDI) as an indicator to measure the level of ITD of Vietnamese-listed companies. This index is unique because it is developed on the basis of the transparency and disclosure practices published by Standard & Poor's, with adaptations for the context of the Vietnamese stock market. In addition, it is expected that based on the empirical evidence of the study, Vietnamese policymakers can issue appropriate regulations regarding information disclosure to stimulate the sustainable development of the market.

Based on agency theory and the empirical literature, it is hypothesized that ITD has a positive effect on the value of listed firm in Vietnam. This hypothesis was tested by using a sample of 430 companies for the period from 2014 to 2016. As expected, the results derived from the GMM model indicated that ITD has a significantly positive effect on firm value as measured by Tobin's Q. In addition, it is found that foreign ownership (FO) and returns on equity (ROE) are key determinants of the value of listed companies in Vietnam.

The remainder of the paper is organized as follows. Section 2 reviews the theoretical background and empirical literature related to the study. Data collection and the research methodology are presented in Section 3. Section 4 reports the empirical results of the study. Finally, Section 5 concludes the paper.

2. Theoretical Background and Empirical Literature Review

Agency theory can be utilized as a theoretical framework to explain the effects of ITD on firm value. Generally, agency theory attempts to explain and resolve the principal-agent problem that occurs when the interests of different stakeholders come into conflict. In a corporation, the principals are the shareholders, delegating to directors, as the agents, the responsibility to conduct tasks on their behalf. The theory assumes that both principals and agents are motivated by their self-interest. Therefore, if the two parties have conflicts of interest, then agency costs are incurred. Jensen and Meckling (1976) classified agency costs into three categories, including monitoring costs, bonding costs and residual losses. It is argued that a greater ITD for a company reduces the adverse selection and potential moral hazard behavior of corporate insiders, which in turn reduces agency costs for outside investors (Gonzalez et al. 2021). In addition, companies can increase market participants' perceptions of their intrinsic value by enhancing their ITD (Patel et al. 2002). Therefore, ITD has a positive relationship with the market value of firms.

The empirical literature has shown that ITD has significant effects on the value of firms. Recent empirical evidence from developing countries suggests that ITD is positively associated with firm value. Chao et al. (2010) investigated the effect of ITD as measured by the disclosure index on the market value of IT companies listed on the Taiwan Stock Exchange for the year 2006. They found that ITD is positively associated with firm value. Chu et al. (2019), also in Taiwan, determined the effect of an ITD ranking system on companies' value deviations. The results from this study indicated that ITD is negatively

associated with companies' value deviations, meaning that ITD reduces information asymmetry. In addition, [Uyar and Kilic \(2012\)](#) examined the effects of voluntary information disclosures on corporate values in Turkey. Using a dataset of 129 manufacturing companies traded on the Istanbul Stock Exchange for the year 2010, the study provides evidence to confirm that the voluntary disclosure of information has a positive effect on firm value. Moreover, [Garay et al. \(2013\)](#) reported that internet-based corporate disclosure is positively related to company value for the seven largest Latin American stock markets. Using a large sample across 47 developed and emerging countries, [Yu et al. \(2018\)](#) examined the impact of environmental, social and governance disclosure on firm value. They found that the extent of environmental, social and governance disclosure is positively associated with firm valuations as measured by Tobin's Q. Similarly, [Li et al. \(2018\)](#) investigated the effect of environmental, social and corporate governance disclosure on firm value in the UK. This study also confirmed that the level of environmental, social and corporate governance disclosure has a significantly positive effect on firm value. In addition, the authors found that higher CEO power increases the effect of environmental, social and corporate governance disclosure on firm value. Besides, [Salvi et al. \(2020\)](#) investigated the effect of the quality of intellectual capital disclosure on firm value by using a sample of 110 international companies. They found that the quality of intellectual capital disclosure has a significantly positive impact on firm value. In a recent study, [Gonzalez et al. \(2021\)](#) determined the effects of information disclosure on firm value in the six largest Latin America countries for the period 2010–2015. This study confirmed that firms with greater disclosure practices are associated with greater market valuations as measured by Tobin's Q. In addition, [Kalantonis et al. \(2022\)](#) examined the effect of the reported corporate governance information on value relevance. The authors documented that the independence of the board of directors, CEO duality and the participation of women on the board of directors are determinants of the market value of firms.

In Southeast Asia, [Sharif and Lai \(2015\)](#) measured the impact of corporate governance disclosure on selected financial indicators, including company value as measured by Tobin's Q, for Malaysian listed companies. Their study used a transparency and disclosure index (TDI) as a measure of the ITD of a company. The study provides evidence to confirm that corporate governance disclosure has a positive impact on the market value of companies. [Setiadi et al. \(2017\)](#), also in the Southeast Asian region, determined the impact of board independence and environmental disclosure on firm value in Indonesia. In this study, environmental disclosure and firm value are measured by the Indonesian Environmental Reporting index and Tobin's Q, respectively. Using 134 companies during the period from 2009 to 2013, the results show that environmental disclosure has a positive and significant influence on firm value. Recently, [Nguyen et al. \(2021\)](#) explored the effect of the crash risk of stock prices as a proxy for the low level of information transparency for corporate value in Vietnam. Using a two-step system generalized method of moments approach, the authors found that corporate information transparency has a significantly positive effect on corporate value.

In Africa, [Ghorbel and Triki \(2016\)](#) determined the effects of voluntary information disclosure on corporate value in Tunisia. With a sample of 50 Tunisian firms traded on the Tunis Stock Exchange for the period from 2005 to 2007, they found that voluntary disclosure is positively associated with corporate value. [Aboud and Diab \(2018\)](#) investigated the effects of environmental, social and governance practice disclosure on firm value in Egypt. Using a sample of 227 firms listed on the Egyptian stock market for the period 2007–2016, this study also confirmed that information disclosure, as measured by the Egyptian Corporate Responsibility Index, has a positive impact on firm value.

Based on the theoretical framework and the empirical literature reviewed, it is expected that companies with a greater level of disclosure and transparency have enhanced firm value. Therefore, the hypothesis is as follows: the level of ITD of Vietnamese-listed firms is positively related to their firm value.

3. Data and Research Methodology

3.1. Data

This study employs a sample of 430 companies that have sufficient disclosure information for the studied period (2014–2016), including 247 companies listed on HOSE and 183 companies listed on HNX. Specifically, the data were derived from the annual reports of the companies, public information disclosures of the companies and reports of information disclosure from HOSE and HNX. All data and information were obtained from the website of HOSE (www.hsx.vn, accessed on 30 July 2017), HNX (www.hnx.vn, accessed on 15 September 2017) and websites of the selected companies.

It is important to note that the Vietnamese derivatives market was officially launched on 10 August 2017, with the index futures contracts to be introduced first. [Truong and Friday \(2021\)](#) showed that the introduction of the index futures contract facilitates the efficiency of the Vietnamese stock market. Therefore, to avoid the impact from index futures trading while measuring the effect of ITD on the value of listed companies, the selected period for this study is from 2014 to 2016.

3.2. Research Methodology

3.2.1. Measurements of Information Disclosure, Transparency and Firm Value

An official index that measures the magnitude of ITD for companies in Vietnam has not heretofore existed, requiring the authors to develop a transparency and disclosure index (TDI) for the listed companies. The index was constructed based on the transparency and disclosure practices published by Standard & Poor’s that has been widely employed in previous studies ([Patel et al. 2002](#); [Aksu and Kosedag 2006](#); [Banerjee et al. 2021](#)), in combination with Vietnamese regulations regarding information disclosures of listed companies.

To confirm the reliability and suitability of the developed index, it was sent to 30 experts (researchers and managers of securities companies) and 34 investors for review and recommendations. Based on responses from the surveyed persons, the index was appropriately revised before being employed in this study. Specifically, the TDI is composed of 79 items with a total of 98 points divided into three subcategories: (A) ownership structure and investor relations; (B) financial transparency and disclosure; (C) board and management composition and process (see [Appendix A](#)). All items are evaluated by researching company’s annual reports and related information disclosures. Each item is scored as zero points if the information related to the item is not disclosed; otherwise, it is assigned one or two points, depending on the level of importance.

The TDI of each company is calculated by the following equation:

$$TDI_j = \frac{\sum_{i=1}^{79} P_i}{P_{tc}} \times 100 \tag{1}$$

where,

TDI_j : Transparency and disclosure Index of the company j ;

P_i : Points of item i ;

P_{tc} : Total points of the Index (98 points).

In this study, Tobin’s Q is utilized to measure the value of listed companies. Specifically, the Tobin’s Q for each company is computed as follow:

$$\text{Tobin's Q} = \frac{\text{Equity market value}}{\text{Equity book value}} \tag{2}$$

3.2.2. Model and Estimation Methods

To measure the influence of ITD on the firm value of listed companies in Vietnam, the following regression model is employed:

$$TQ_{it} = \alpha + \beta_1 TDI_{it} + \beta_2 FO_{it} + \beta_3 MO_{it} + \beta_4 FSIZE_{it} + \beta_5 LEV_{it} + \beta_6 ROE_{it} + \varepsilon_{it} \tag{3}$$

where:

- TQ: Tobin’s Q, representing the value of listed companies;
- TDI: Transparency and disclosure index (points), measuring the level of transparency and disclosure of a listed company;

Following the literature, foreign ownership (FO), management ownership (MO), firm size (FSIZE), financial leverage (LEV) and return on equity (ROE) are included in the model as control variables. Profitability can be seen as a key driver of firm value. A firm with high profitability conveys signals as to the quality of management, thus resulting in value creation (Naceur and Goaied 2002). Many studies reported the positive effect of profitability on firm value (Uyar and Kilic 2012; Rizqia et al. 2013; Setiadi et al. 2017; Aboud and Diab 2018; Salvi et al. 2020; Ibrahim and Isiaka 2020). In this study, profitability is measured by the ratio of net income to equity.

It is important to stress that in the context of the frontier stock market of Vietnam, foreign investors play an important role in the corporate governance of listed companies. In Vietnam, most foreign investors are institutions, so they have strong incentives to monitor managers in order to reduce agency costs, thereby enhancing firm value. Therefore, foreign ownership is expected to be positively associated with firm value. In fact, the effect of foreign ownership on firm value was documented in many studies (Wei et al. 2005; Choi et al. 2012; Mishra 2013; Khasawneh and Staytieh 2017; Mishra and Kapil 2017; Ahmed and Iwasaki 2021). Likewise regarding the effect of ownership structure on firm value, Morck et al. (1988) asserted that greater management ownership results in an alignment of interests between managers and shareholders, thus reducing agency costs and increasing firm value. Some empirical studies reported the effect of management ownership on firm value (Chen and Ho 2000; Han 2006; Bhabra 2007; Ryu and Yoo 2011; Mishra and Kapil 2017).

Another potential determinant of firm value is firm size. Big firms have a lower risk than small firms (Fama and French 1992). Moreover, big firms own more resources to increase their value compared with small firms. According to Husna and Satria (2019), big firms could be in their majority stage and considered as having good prospects in a relatively stable period. Therefore, these firms could generate more value for investors compared to small firms. The positive effect of firm size on firm value was empirically found in Rizqia et al. (2013), Sharma (2018), and Husna and Satria (2019).

In addition, the relationship between financial leverage and firm value was well established in the capital structure irrelevance theory of Modigliani and Miller (1958), Modigliani and Miller (1963) and the trade-off theory of Myers (1984). However, empirical evidence regarding the effect of financial leverage on firm value has been inconsistent. Some studies found a positive effect of financial leverage on firm value (Cheng and Tzeng 2011; Rizqia et al. 2013; Kim et al. 2018), while some other studies documented the negative influence of financial leverage on firm value (Khan 2012; Fosu et al. 2016; Pandey and Sahu 2017; Ibrahim and Isiaka 2020). Control variables are defined and presented in Table 1.

Table 1. Definitions of independent variables used in the model.

Variable	Abbreviation	Definition
Transparency and disclosure	TDI	Transparency and disclosure index (points).
Foreign ownership	FO	Percent of ownership by foreign investors in a company.
Management ownership	MO	Percent of ownership by CEO and directors in a company.
Firm size	FSIZE	Log total asset
Financial leverage	LEV	Total liabilities on total assets.
Return on equity	ROE	Return on equity (%)

This table is devoted to defining independent variables used in the model.

In order to fit the employed data, the model presented above is first estimated by both the fixed effects model (FEM) and the random effects model (REM). Then, based

on the results of the Hausman test, the most appropriate model is chosen for the next step. Moreover, it is important to note that heteroskedasticity and endogeneity may be present in the studied model. There are two possible reasons for endogeneity to exist in the models. First, some firm-level variables might be omitted. Second, some of the regressors, such as transparency and disclosure (TDI) and financial leverage (LEV), are likely to be simultaneously correlated with firm size and firm performance, which affects firm value. In order to address the endogeneity concerns, the GMM (Generalized Method of Moments) approach is applied as the final step of the study. For the GMM analysis, management ownership (MO) is used as an instrument variable. There are two reasons for choosing MO as the instrument variable in the GMM model. First, we found that management ownership has a significant effect on the ITD of listed companies (the results are not presented here, but available upon request). Second, by using this instrument variable, we addressed the endogeneity issue in the model.

4. Empirical Results

4.1. Descriptive Statistics of the Sample

Table 2 provides summary statistics of variables that are used in the models based on the data of 430 listed companies over the period 2014 through 2016. It is found that the average Tobin’s Q of the sample is 1.12, with a standard deviation of 1.01. These statistics imply that the market value of the listed companies trades at a small premium compared with the book value of assets and fluctuates widely across the sample of companies. In addition, Table 2 shows that the TDI ranges from 36.70 (points) to 79.59 (points), with an average of 62.89 (points). Based on these results, it is concluded that the level of ITD of Vietnam-listed companies is fairly low. Moreover, Table 2 reports that shares owned by the CEO and members of the board of directors in a company, on average, account for 16.30 percent of total shares, while the portion of shares controlled by foreign investors, on average, is 11.02 percent. Besides, Table 2 reports that the mean of financial leverage, measured by total liabilities on total assets, is 0.49, with a standard deviation of 0.23. Finally, statistics presented in Table 2 indicate that the mean ROE of the listed companies is 12.08 percent.

Table 2. Summary statistics of the sample.

Variables	Obs.	Mean	Min.	Max.	Std. Dev.
Tobin’s Q	1290	1.12	0.20	27.63	1.01
Transparency and disclosure (TDI)	1290	62.89	36.70	79.59	5.67
Foreign ownership (FO)	1290	11.02	0	89.05	14.82
Management ownership (MO)	1290	16.30	0	84.38	18.95
Firm size (FSIZE)	1290	27.45	23.33	34.55	1.72
Financial leverage (LEV)	1290	0.49	0	0.97	0.23
Return on equity (ROE) (%)	1290	12.08	−4.84	98.21	9.70

This table summarizes descriptive statistics of variables used in our models.

4.2. Regression Results

As presented above, this study performs both REM and FEM as the first step. The results of REM and FEM models are provided in Table 3. Specifically, the results of the Hausman test indicate that FEM is more appropriate to estimate the effects of the explanatory variables on the value of listed firms than REM. In addition, the Wald test for heteroscedasticity is conducted to determine the validity and reliability of the estimated results. The results of the Wald test confirm that heteroscedasticity is present in the model.

Table 3. Estimated results of the REM and FEM models.

Variables	REM		FEM	
	Coefficients	z-Statistics	Coefficients	t-Statistics
Constant	0.4400	0.65	−2.1015	−0.92
Transparency and disclosure (TDI)	0.0036	0.80	0.0038	0.70
Foreign ownership (FO)	0.0101	4.38 ***	0.0072	2.05 **
Management ownership (MO)	0.0035	2.10 **	0.0035	1.47
Firm size (FSIZE)	0.0005	0.02	0.0957	1.12
Financial leverage (LEV)	−0.1552	−0.95	−0.0108	−0.04
Return on equity (ROE)	2.9132	10.28 ***	1.8849	5.16 ***
Observations	1290		1290	
R ² (%)	23.95		14.26	
F-statistic (model)			5.81 ***	
Wald-statistic (model)	148.46 ***			
Hausman test		24.21 ***		
Wald test (heteroskedasticity)			5.3 × 10 ⁹ ***	
Wooldridge test (autocorrelation)			7.33 ***	

This table presents the results of the REM and FEM models. The dependent variable of the models is firm value measured by Tobin’s Q. The Hausman test is employed for selecting the appropriate model. *** and ** indicate significance at 1% and 5% levels, respectively.

Due to the existence of heteroscedasticity and endogeneity in the model, the GMM method is finally employed in order to estimate the effects of transparency and disclosure, along with the other explanatory variables, on firm value for these companies. In the GMM approach, management ownership (MO) is employed as an instrument variable. The results of the models are presented in Table 4.

Table 4. Estimated results of the GMM model.

Variables	Coefficients	t-Statistics
Constant	5.4334	1.91
Transparency and disclosure (TDI)	0.0122	2.11 **
Foreign ownership (FO)	0.0176	2.35 **
Firm size (FSIZE)	−0.2185	−1.73
Financial leverage (LEV)	0.5444	1.22
Return on equity (ROE)	3.8592	3.89 ***
Observations	1290	
R ² (%)		59.88
F-statistic (model)		13.68 ***
Hansen’s J-test (overidentification)		0.00
Wu-Hausmantest (endogeneity)		3.66

This table provides the results of the GMM model. The dependent variable of the models is also firm value as measured by Tobin’s Q. Management ownership (MO) is used as an instrument variable for the model. *** and ** indicate significance at the 1% and 5% levels, respectively.

The result of Hansen’s J-test presented in the last column of Table 4 confirms that the null hypothesis of valid overidentifying restrictions cannot be rejected. Based on this result, it can be concluded that the instrument variable used in the model is relevant and valid. In addition, the result of the Wu–Hausman test does not reject the null hypothesis of the exogeneity of the regressors at the five percent significance level. This result implies that the GMM results are more reliable than the FEM results. Therefore, the results derived from the GMM model are used to evaluate the effect of ITD on firm for the companies listed in Vietnam.

As expected, the GMM results reveal that ITD has a significant positive influence on the value of listed firms in Vietnam at the five percent level of significance. Specifically, a 1-point increase in the transparency and disclosure index is associated with a 1.22 percent increase in the corporate value as measured by Tobin’s Q. This result is in line with previous

findings of [Chao et al. \(2010\)](#), [Uyar and Kilic \(2012\)](#), [Garay et al. \(2013\)](#), [Sharif and Lai \(2015\)](#), [Ghorbel and Triki \(2016\)](#), [Setiadi et al. \(2017\)](#), [Aboud and Diab \(2018\)](#) and [Gonzalez et al. \(2021\)](#) in emerging markets. In addition, this finding is consistent with the conclusion of [Nguyen et al. \(2021\)](#) about the effect of information transparency on firm value in a frontier stock market such as Vietnam. This evidence implies that by improving the ITD, listed companies can enhance market perceptions of their value. Therefore, ITD is not only a compulsory obligation of the listed companies, but also brings benefits to their shareholders. Good firms could enhance ITD as a way to provide a stronger signal of their quality to investors.

The main finding of this study is in line with agency theory. Specifically, in the context of asymmetric information, a greater ITD can help a company to reduce the adverse selection and potential moral hazard behavior of corporate insiders, which in turn reduces agency costs for outside investors. In addition, companies can increase market perceptions of their value by improving their ITD. Although this study has a limitation in the selected period, by employing reliable data and an appropriate method, we still think that our finding is robust enough to justify the positive effect of ITD on the value of listed companies in Vietnam. This evidence enriches the agency cost literature in the context of frontier stock markets.

Regarding control variables, the results derived from the GMM model reveal that foreign ownership (FO) and returns on equity (ROE) are key determinants of the value of listed companies in Vietnam. Specifically, the findings indicate that foreign ownership has a significant positive effect on firm value at the five percent level. In other words, firms with higher foreign ownership are associated with greater value creation. This finding is consistent with agency theory and previous empirical findings of [Choi et al. \(2012\)](#), [Mishra \(2013\)](#), [Khasawneh and Staytieh \(2017\)](#), [Mishra and Kapil \(2017\)](#) and [Ahmed and Iwasaki \(2021\)](#). Moreover, this study finds a significantly positive effect of ROE on corporate value. This effect is statistically significant at the one percent level. This evidence is in line with empirical findings of [Rizqia et al. \(2013\)](#), [Setiadi et al. \(2017\)](#), [Aboud and Diab \(2018\)](#), [Salvi et al. \(2020\)](#) and [Ibrahim and Isiaka \(2020\)](#). However, this study did not find any statistically significant effects of other control variables, including firm size (FSIZE) and financial leverage (LEV), on firm value.

5. Conclusions

This study enriches the agency cost literature by determining the influence of ITD on the value of listed companies in the frontier stock market of Vietnam, which has been characterized by weak legal investor protections and weak corporate governance. While most of the previous studies investigated the effect of environmental, social and corporate governance disclosure on firm value ([Sharif and Lai 2015](#); [Setiadi et al. 2017](#); [Yu et al. 2018](#); [Li et al. 2018](#); [Aboud and Diab 2018](#); [Kalantonis et al. 2022](#)), this study developed a transparency and disclosure index that combines corporate governance and financial transparency and disclosure, and examined the effect of the index as a proxy for ITD on the value of listed companies. It is important to note that this study is the first to measure the effect of ITD on firm value in a frontier stock market by using a transparency and disclosure index.

In addition, while many studies did not take into account endogeneity issues that could cause biases in estimation ([Chao et al. 2010](#); [Uyar and Kilic 2012](#); [Sharif and Lai 2015](#); [Ghorbel and Triki 2016](#); [Setiadi et al. 2017](#); [Yu et al. 2018](#); [Aboud and Diab 2018](#); [Chu et al. 2019](#); [Salvi et al. 2020](#)), this study employed the GMM method in order to deal with heteroscedasticity and endogeneity issues that are in existence in the FEM and REM models. The results derived from the GMM model confirm that ITD has a significantly positive effect on the value of listed firms as represented by Tobin's Q. This evidence implies that in the context of market imperfections with high levels of information asymmetry such as Vietnam, listed companies can enhance market perceptions of their firm's value by increasing their level of ITD. ITD can help investors to evaluate more accurately the firm's

value. Therefore, the managerial implication that can be drawn from this study is that ITD is not only a compulsory obligation of listed companies by regulations, but it also brings some benefits to companies and their shareholders. In addition, it is proposed that the State Securities Commission of Vietnam should build and apply an official transparency and disclosure index for all Vietnam-listed companies. Based on this index, the level (points) of transparency and disclosure of listed firms could be computed and publicly disclosed annually. This index could be seen as a signal that helps investors fairly evaluate firm value by using an appropriate discount rate for risk which, in turn, facilitates market efficiency. In this way, the Vietnamese stock market can quickly shift from a frontier market to an emerging market as a goal of the government in order to attract more foreign investors, especially institutional investors.

Although this study has broadened our understanding about the effects of ITD on the value of listed companies in a frontier stock market, it still has a limitation which should be addressed in future research. This limitation is concerned with weaknesses in the data that are employed in this study. With the data, we do not take into consideration the effects of the index futures trading, especially the impact of COVID-19 on the value of listed companies in Vietnam. This could be an interesting topic that await further research.

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Appendix A

Table A1. The transparency and disclosure index.

No	Items	Points
<i>Part A—Ownership structure and investors’ rights (Question 1–14)</i>		
1	Whether is a description of share classes provided by the company?	1
2	Whether is a review of shareholders provided by the company?	1
3	Whether is issued and tradable common shares provided by the company?	1
4	Whether company provides the par value of issued common shares?	1
5	Whether company provides the number of preferred shares?	1
6	Whether company provides the par value of preferred shares?	1
7	Whether is the voting right for each kind of shares disclosed by the company?	1
	Whether company discloses top 1, 3, 5, or 10 shareholders?	
8	a.The company discloses only top 1 and 3 shareholders.	1
	b. The company discloses top 5 and 10 of shareholders.	1
	Whether company discloses shareholders owning more than 3 percent?	
9	a. The company discloses only shareholders owning from 3% to 5%	1
	b. The company discloses shareholders owning more than 5% to 10%	1

Table A1. Cont.

No	Items	Points
10	Does the company disclose cross-ownership percentages?	1
	Does the company provide a calendar of important shareholder dates?	
11	a. The company discloses agenda for the annual general meeting of shareholders	1
	b. The company discloses meeting notes for shareholders meetings, the meeting minutes (time)	1
	Whether company reviews shareholder meetings? Whether company provides complete information on each item in the annual general meeting agenda the "Notice"?	
12	a. The company reviews shareholder meetings.	1
	b. The company discloses full information on each item in the annual general meetings agenda.	1
13	Does the company conduct voting on all resolutions at the annual general meetings ?	1
14	Whether company discloses the detailed results of voting from the annual general meetings? Results briefings to announce full-year?	1
<i>Part B—Financial transparency and information disclosure (Question 15–50)</i>		
15	Whether company reports details of the kinds of business?	1
16	Whether company reports details of the products or services produced or provided?	1
17	Is there a discussion of corporate strategies?	1
18	Whether is the market share for any or all of businesses of the company disclosed?	1
	Whether is the company's plans or details for investment in the following years disclosed?	
19	a. The company discloses only investment plans in the following years.	1
	b. The company discloses detail investments in the following years.	1
	Does the company provide financial performance indicators?	
20	a. The company discloses only indicators of profitability.	1
	b. The company discloses additional indicators, such as current ratio, quick ratio, operating ratios, capital structure ratio.	1
	Whether is the company's risk management policies in the annual report disclosed?	
21	a. The company discloses potential risks in annual report.	1
	b. The company discloses measures to manage risks in annual report.	1
	Whether company discloses financial information on a quarterly basis ?	
22	a. The company discloses quarterly financial statements in time.	1
	b. The company discloses semi-annual financial statements in time.	1
23	Does the company disclose accounting standards that is used for its accounting and financial statements?	1
24	Does the company report financial results according to the Vietnamese accounting standards or to international accounting standards?	1
25	Does the company disclose asset valuation methods?	1
26	Does the company disclose methods of asset depreciation?	1
	Does the company provide financial results by alternative internationally recognized accounting standards? Does the company provide all financial statements by internationally recognized standards?	
27	a. The company provides financial reports in alternative internationally recognized accounting standards.	1
	b. The company provides all financial statements by internationally recognized standards.	1
28	Does the company produce consolidated financial statements?	1

Table A1. Cont.

No	Items	Points
29	Does the company disclose the name of its auditing company?	
	a. The company discloses the name of the auditing company.	1
	b. The auditing company belongs to Big4.	1
30	Does the company reproduce the auditing company's report?	1
31	Does the company disclose an audited fee?	1
32	Whether company's financial report needs adjustment or re-statement as required by regulator? Is company explaining its adjustment?	1
33	Are there any adjustments or re-statements of the company's annual report as required by regulator? Does the company explain its adjustments?	
	a. The company's annual report needs adjustments or re-statement as required by regulator.	1
	b. The company explains its adjustments.	1
34	Whether company discloses information about losses in business?	1
35	Whether company reports performance changes in financial statements?	
	a. The company reports performance changes in annual financial statements.	1
	b. The company reports performance changes in semi-annual financial statements.	1
36	Whether company discloses consolidated financial statements in time? This item is assigned 2 points if the company discloses consolidated financial statements within 10 days after annual financial statements approved by the auditing company; 1 point if the company discloses consolidated financial statements longer 10 days after annual financial statements approved by the auditing.	2
37	Whether company discloses consolidated semi-annual financial statements in time? This item is assigned 2 points (extra point) if the company discloses consolidated semi-annual financial statements within 5 days after semi-annual financial statements approved by the auditing company; 1 point if the company discloses consolidated semi-annual financial statements after 5 days after semi-annual financial statements approved by the auditing company.	2
38	Whether the company discloses annual report in time? This item is assigned 2 points (extra point) if the company discloses annual report within 20 days from the end of a financial year; 1 point if the company discloses annual report after 20th from the end of a financial year.	2
39	Whether company discloses the notices of annual general meetings/directors board meetings in time?	
	a. The company discloses the notices of annual general meetings/directors board meetings.	1
	b. The company discloses the notices of annual general meetings/directors board meetings in time.	1
40	Does the company violate regulations of information disclosure?	
41	Whether company provides all affiliates that it holds a minority stake?	
	a. The company provides all affiliates that the company holds a minority stake.	1
	b. The company summarizes the operations and financial situation of the affiliates.	1
42	Is the ownership structure of affiliates of the company disclosed?	1
43	Whether company provides information of investor relations on the company's website or annual report?	1
44	Whether the company has a website, and the link is provided on the the State Securities Commission's website?	1
45	Does the company's website provide a clearly dedicated "investor relations" link instead of disclosing information under headings such as "news" or "announcements"?	1
46	Whether the company has the final annual report/financial results available on the company's website?	1

Table A1. Cont.

No	Items	Points
47	Whether the company's rules/regulations are disclosed on the company's website?	1
48	Whether the company's website provides a list of consolidated semi-annual/annual financial statements?	1
49	Is the final annual report provided on the company's website?	1
50	Whether company's website provides a list of four quarters consolidated financial statements?	1
<i>Part C—Board structure and process (Question 51–79)</i>		
51	Does the company provide a list of board members?	1
52	Is there a chairman listed?	1
53	Are details about current employment/position of directors provided?	1
54	Whether the company discloses retention or appointment of directors or senior management?	1
55	Does the company set up CEO—Chairman of board separation?	1
56	Does the company's directors have academic and professional qualifications on management or finance?	1
57	Whether the company classifies directors as an inside executive or an outside director?	1
58	Whether is the number of shares in the company held by directors disclosed by the company?	1
59	Whether the company discloses number of shares held by the senior managers?	1
60	Whether the company discloses a list of independent directors in annual report?	1
61	Whether the company discloses names on audit committee members?	1
62	Whether the company has divisions that belong to the board of directors?	1
63	Whether the company has a secretary of the company or a secretary of the board of directors?	1
64	Whether the company reviews directors' reports for the board meetings?	1
65	Whether the company discloses salary policy for directors and managers?	1
66	Whether the company discloses corporate governance reports (semi-annual, annual) based on corporate governance rules?	1
67	Whether the company discloses board/managers' participation in corporate governance in annual report?	1
68	Whether the company discloses corporate social responsibility in annual report?	1
69	Whether the company discloses the board meeting attendance of directors in annual report?	1
70	Whether the company discloses the audit committee meetings in annual report?	1
71	Whether the company reports consolidated financial statements in annual report?	1
72	Whether the company discloses directors' and audit committee's remuneration in annual report?	1
73	Whether the company discloses governing information regarding the operation of board meeting in annual report?	1
74	Whether the company limits external directors be held CEO or executive directors up to 5 companies?	1
75	Are financial statements certified by the CEO/CFO of the company?	1
76	Whether the company regulates a term of directors?	1
77	Whether the company discloses training policies for CEO and directors in annual report?	1
78	Does the company have a policy that requires directors to seek approval of the board of directors before selling the company's shares and disclose this policy in the annual report?	1
79	Whether the company discloses the status (increase or decrease) of shares being used as collateral by directors, supervisors, managers, and large shareholders in annual reports?	
	a. The company discloses the status of shares being used as collateral by directors, supervisors, managers.	1
	b. The company discloses the status of shares being used as collateral by large shareholders.	1

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