



## How do liquidity and leverage affect reporting delays?

 Le Thanh Huyen

Hoa Binh University, Hanoi, Vietnam.  
Email: [Vocalcords21@gmail.com](mailto:Vocalcords21@gmail.com)

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(\* Corresponding Author)

### Abstract

This study aims to identify factors that impact the reporting delay of financial reports for listed companies. Research on late submission of reports plays an important role not only for companies (finding ways to overcome signs of late submission of reports) but also for related stakeholders. Stakeholders will look for signs that indicate the company is likely to submit reports late and make their decision. The study used regression with Driscoll-Kraay standard errors for adjustment by analyzing 753 listed companies in the Vietnam stock market from 2016 to 2020. The STATA software version 15 is used in this study. The results show that liquidity (LIQ) and leverage (LEV) have a negative impact on reporting delay, while profit (return on total assets) and financial distress (ZSCORE) have no impact on reporting delay. From these results, the author provides some implications to help company owners' better control the issue of reporting delays. At the same time, investors can also predict the late submission of reports by companies to develop suitable investment strategies. The investor can make investment decisions when the company has not yet reported. Issues of LIQ and LEV will be a signal predicting the reporting delay of reports by the company. From there, investors will have useful information before making their investment decisions.

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## 1. Introduction

The disclosure of reporting information plays a vital role in promoting economic development and benefiting various stakeholders, such as investors, employees, and government entities. The report emphasizes that providing information is crucial for enabling these parties to make informed decisions effectively. Numerous studies have validated this point, and it remains an active area of research. Among the key aspects of financial information reporting, the regularity of publishing reports stands out as an essential element. Conversely, research indicates that timely reporting can contribute to diminishing information asymmetry and mitigating the propagation of rumors regarding a company's financial health and operational performance. Research on late financial reporting plays an important role for company owners as well as related parties such as investors and creditors. Reporting delays in a company's financial report can affect its credibility and reliability in the eyes of investors, regulatory agencies, and company partners. This can lead to financial losses and poor company relationships. Therefore, to control the issue of reporting delays, managers need to identify signs that reporting delays may occur. At the same time, investors can predict reporting delays to make informed decisions.

In a study conducted by [Lukason and Camacho-Miñano \(2019\)](#) the primary objective was to investigate the link between tardiness in filing financial statements and its impact on a company's bankruptcy risk and financial decision-making. The study's findings revealed a noteworthy association between delayed financial statement submissions and increased vulnerability to bankruptcy or overall business instability. [Lukason and Camacho-Miñano \(2019\)](#) observed that companies that postpone their financial disclosures tend to

underperform or face a higher risk of bankruptcy. Furthermore, the delay in disseminating this information serves as a crucial indicator of impending financial distress. As such, businesses are encouraged not to delay the release of financial statements to ensure they maximize the benefits of timely information

Healy and Palepu (2001) introduce a central conflict regarding the interests of information users. Business managers may resist disclosing certain information, either due to concerns about competition or a desire to conceal inefficiencies, as noted in studies by Singhvi and Desai (1971) and Whittred and Zimmer (1984). On the other hand, different investors require more extensive information to facilitate their decision-making processes. For instance, investors may choose to delay their buying or selling activities until comprehensive reports become available. Furthermore, research by Bamber, Bamber, and Schoderbek (1993) highlights that the delay in information disclosure can impose costs on investors who have limited access to unpublished information.

There have been several studies on the factors influencing the delayed submission of financial reports by companies (Ahmad & Kamarudin, 2003; Al-Ajmi, 2008; Asmara & Situanti, 2018; Lukason & Camacho-Miñano, 2019). Some researchers have pointed out the impact of liquidity and profitability on the delayed submission of reports by companies (Lukason & Camacho-Miñano, 2019). Some studies suggest that leverage also affects delayed reporting (Angruningrum & Wirakusuma, 2013; Owusu-Ansah, 2005). There are also studies that highlight the influence of bankruptcy on delayed reporting (Aleksanyan & Huiban, 2016; Kogei & Jagongo, 2021). However, there is currently no comprehensive study on the various factors affecting delayed reporting in Vietnam. No study has yet synthesized the factors influencing delayed reporting among companies in Vietnam. Based on the foregoing, the aim of this study is to examine the factors that influence the delay in the disclosure of financial information. Factors considered in the study include bankruptcy risk, liquidity, and the profitability of the company. The study was conducted with enterprises in Vietnam. This study contributes to identifying the causes of the delay in information disclosure so that investors and businesses can make appropriate decisions.

## **2. Literature Review**

Disclosure is seen as a way to implement transparent business processes and ensure fairness between shareholders and the public investors that can access information. Disclosure can be divided into two categories according to its mandatory or voluntary nature. The financial statements are important as they offer information about an entity's financial position, performance, and changes in financial position that can be useful for various users in making economic decisions. The disclosure of information is a strategic tool that can help a company raise capital at a lower cost (Healy & Palepu, 2001; Lev, 1992). Researchers have found that managers of companies benefit from useful information disclosure policies (Williams, 2001).

There are several theories that explain why companies disclose information, including agency theory, owner cost theory, signaling theory, and political process theory. Agency theory suggests that conflicts may arise due to incomplete and asymmetric information between the principal and agent in a company (Jensen & Meckling, 1976). This theory focuses on the contractual relationship between business owners and managers of joint-stock enterprises. The problem of differing interests between both parties can be minimized by providing more information. Factors such as size, leverage, profitability, and listing status are commonly associated with voluntary information disclosure and can help satisfy the information needs of long-term and short-term creditors. Highly leveraged companies may have more of an obligation to disclose information to meet the needs of creditors than less leveraged firms, according to agency theory (García-Meca, Parra, Larrán, & Martínez, 2005). Additionally, higher profitability can lead to greater disclosure to obtain better contractual conditions.

The signaling theory holds that firms often voluntarily disclose information because the information asymmetry between the company and its investors will cause a bad choice for investors. According to the theory, size, profitability, and economic growth affect information disclosure. Due to the issue of information asymmetry, companies attempt to offer specific details to potential investors in order to demonstrate their superiority over other companies in the market. This is done with the goal of enticing investors to invest in their company and to improve their reputation (Verrecchia, 1983).

According to the theories of political process (Watts & Zimmerman, 1986), regulators base their decisions on the data provided by companies. To avoid political costs, companies voluntarily disclose information, with larger firms being more likely to disclose more information due to higher political costs (Watts & Zimmerman, 1986). This information disclosure can serve as a justification for a company's profits and help them avoid legal obligations (Lang & Lundholm, 1993; Watts & Zimmerman, 1986). The competitive environment and political costs within the industry also have an impact on the level of disclosure (Urquiza, Navarro, Trombetta, & Lara, 2010).

In conclusion, from previous studies, many factors have been studied to assess the impact or relationship of information disclosure, such as size, liquidity, financial leverage, and the ability to disclose information. profitability. However, this is a general theory; in some cases, there may be other specific influencing factors (Urquiza et al., 2010). Some other factors are considered, such as bankruptcy risk, audit tenure, etc.

### 2.1. Liquidity and Reporting Delays

According to Lukason and Camacho-Miñano (2019), the role of liquidity in predicting bankruptcy is based on direct legal considerations. This is because the ability to repay outstanding debts serves as a sufficient condition for initiating bankruptcy proceedings in most jurisdictions. Besides, the study of Owusu-Ansah (2005) on the topic of information disclosure for companies listed on the stock market in New Zealand and Alsaeed (2006) on businesses in Saudi Arabia confirmed that the liquidity factor of enterprises has a significant positive effect on the level of disclosure. Therefore, the first hypothesis is:

*H<sub>1</sub>: Liquidity has a negative impact on reporting delays.*

### 2.2. Profitability and Reporting Delays

The ratio of net profit after taxes to total assets, or ROA, is a measure of company's profitability and reflects the results of its various policies and decisions (Hartati, Martini, Yanto, Astuti, & Ibrahim, 2022). A common determinant of financial distress is annual and cumulative (aggregate) profitability (Altman, Iwanicz-Drozowska, Laitinen, & Suvas, 2017). According to the theory in the previous section, agency theory shows that profitability affects a firm's delay in reporting information. Besides, this is also shown by the symbol theory and the cost theory. Regarding actual studies, according to Lukason and Camacho-Miñano (2019), reporting delays are often associated with lost reporting periods. This means that companies suffering losses are more likely to report later than those reporting profits, but the results are not entirely conclusive. In addition, in theory, an increase in profitability should reduce the likelihood of financial distress and failure (Chiaromonte & Casu, 2017).

*H<sub>2</sub>: Profitability has a negative impact on reporting delays.*

### 2.3. Leverage and Reporting Delays

Leverage is used to avoid using too much capital in working capital. Excessive financial leverage increases the risk of default by making debts more difficult to service (Nyor & Mustapha, 2020). Leverage is often considered a criterion commonly used to talk about financial health. Leverage is often considered a criterion commonly used to talk about financial health. Debt financing has fixed costs that impact your business. Failure to pay interest can lead to financial difficulties, leading to bankruptcy. On the other hand, using debt provides a beneficial tax credit for shareholders. According to Fahmi and Saputra (2011) and Darsono (2005), the company falls into the extreme leverage category, so excessive leverage is dangerous. Definition of leverage (Febrianty & Kusumartono, 2011) and leverage positively impacts audit reporting delays. Angruningrum and Wirakusuma (2013) investigated this. Higher-leveraged firms have longer or longer audit reporting delays, and lower-leveraged firms have shorter or faster audit reporting delays. However, there are numerous studies to the contrary. However, there are many different studies to give the opposite results, such as the study of Owusu-Ansah (2000), which found that there is no evidence that having a long-term dependence on external capital will lead to the disclosure of information. Therefore, this leads to the following research hypothesis:

*H<sub>3</sub>: Leverage has a positive impact on reporting delays.*

### 2.4. Bankruptcy Risk and Reporting Delays

Bankruptcy occurs when a company cannot repay its debts, leading to negative consequences such as job loss, asset destruction, and decreased productivity (Aleksanyan & Huiban, 2016; Kogei & Jagongo, 2021). The risk of bankruptcy indicates the likelihood of a company being unable to meet its debt obligations. However, this risk may not be fully disclosed or understood in financial statements, leading to inappropriate stakeholder decisions. Lukason and Laitinen (2019) aimed to identify the factors that contribute to the fixed failure process (FFP) leading to bankruptcy and rank their importance at various stages. Their dataset included 1234 bankruptcies from European countries, and they found three theoretically motivated FFPs. If a dominant FFP is found (73% of cases), the risk of default is high just before declaring bankruptcy (Lukason & Camacho-Miñano, 2019). In all FFP phases where the probability of default exceeds 50%, annual and cumulative profitability are the primary drivers of default risk (Lukason & Camacho-Miñano, 2019). Based on these findings, the research hypothesis is that profitability is a significant factor in default risk at various stages of the FFP. Therefore, this leads to the following research hypothesis:

*H<sub>4</sub>: Bankruptcy risk has a positive impact on reporting delays*

Some studies have found that larger firms tend to have longer reporting delays. This may be because larger firms typically have more complex operations, a greater volume of transactions, and more stakeholders, which can result in a longer time needed to gather, process, and verify financial information before it is reported to investors and regulatory authorities. Therefore, this leads to the following research hypothesis:

*H<sub>5</sub>: Firm size has a positive impact on reporting delays*

## 3. Method

### 3.1. Research Model

From the theories and previous research, the author gives the research model:

$$Delay_{it} = \alpha_i + \beta_1 LIQ_{it} + \beta_2 ROA_{it} + \beta_3 LEV_{it} + \beta_4 ZSCORE_{it} + \beta_5 SIZE_{it} + \tau_i + \varepsilon_{it}$$

In which the research variables in the model are described in detail as follows:

**Delay:** Financial reporting is a very important document to evaluate the financial situation of a company. It provides information on income, expenses, profits, debts, capital, and other financial indicators. Therefore, financial reports need to be prepared and submitted on time. However, in some cases, businesses may not submit financial reports on time for various reasons, such as lack of resources, lack of personnel, or incomplete work. This case is called "reporting delay." The reporting delay of financial reports can have serious consequences for the business and may lead to fines or penalty interest due to the reporting delay. Moreover, if financial reports are not submitted on time, investors, banks, or other related parties may lose trust in the business and cause damage to the business's reputation.

**LIQ:** The quick ratio measures the ability of a business to immediately pay off its short-term debts by comparing the total amount of easily convertible assets (such as cash, short-term investments, and accounts receivable) to the total amount of short-term debts. A quick ratio higher than 1 indicates that the business has the ability to quickly pay off its short-term debts (Lukason & Camacho-Miñano, 2019). The calculation of the quick ratio is used to evaluate a company's liquidity position.

**ROA:** ROA is an acronym for "Return on Assets," a financial ratio that measures a company's profitability in relation to its total assets. It is calculated by dividing a company's net income by its total assets. This ratio indicates how effectively a company is using its assets to generate profits (Lukason & Camacho-Miñano, 2019). Companies can compare their ROA to those of their industry peers to better understand their financial performance. Investors and analysts use ROA to evaluate a company's financial health and performance, while companies can use it to identify areas for improvement. It is important to note that different industries have different benchmarks for ROA.

**LEV:** Leverage refers to the amount of debt that a company uses to finance its operations and investments. It measures the extent to which a company uses borrowed money (i.e., debt) to finance its assets relative to its equity. The use of debt can magnify both profits and losses, which means that companies that use leverage may be able to generate higher returns on investment but also face higher risks. Leverage is typically measured using financial ratios such as the debt-to-equity ratio or the debt-to-total-assets ratio. These ratios provide insight into the amount of debt a company has in relation to its equity or assets, respectively. Leverage can be both positive and negative. On one hand, it can increase a company's return on investment and allow it to pursue growth opportunities that may not be available if it were solely relying on equity financing (Owusu-Ansah, 2000). On the other hand, excessive leverage can be risky, as it can make a company more vulnerable to economic downturns, rising interest rates, or other external shocks.

**ZSCORE:** Edward Altman created the Altman Z-score financial model in the 1960s to forecast the likelihood that a company will go out of business within the next two years. It is based on several financial ratios and uses a weighted formula to calculate a single score for a company. It is important to note that the Altman Z-score is just one tool among many that can be used to assess the financial health of a company and should not be relied on as the sole indicator of a company's financial stability (Lukason & Camacho-Miñano, 2019). Additionally, the Z-score was developed for manufacturing companies and may not be as effective for other industries.

**SIZE:** Firm size is measured as the logarithm of total assets. Firm size refers to the measurement of a company's magnitude or scale, typically determined by various quantitative factors. It is a fundamental characteristic used to categorize and analyze businesses in terms of their operations, resources, and economic impact. Firm size can be assessed using different metrics, each providing insights into different aspects of a company's scale and significance within an industry or market. For large-scale enterprises, there will be many contents that need to be reported, so these enterprises have a high risk of late submission of reports.

Details of the measurement of variables in the research model are described in [Table 1](#).

### *3.2. Data Collection*

The data on listed companies is collected from the Vietnam stock exchange based on audit reports. The data collected from 753 companies from 2016 to 2020 will be processed using STATA software. After collection, the data will be computed, and outliers will be processed using winsorization. After being cleaned, the variables were included and subjected to regression analysis to test the hypotheses stated below.

### *3.3. Data Analysis*

The research will utilize quantitative analysis with data tables, specifically focusing on listed companies on the stock exchange from 2016 to 2020. Descriptive statistical techniques will be used to assess the research variables. The study will use regression analysis with fixed effect and random effect models, as they are most suitable for table data analysis. OLS regression will not be used due to the spatial and temporal factors present in the data. The Hausman test will be used to determine the appropriate model for the data. The regression results will be considered reliable if they do not have autocorrelation or changing variance. If these defects are present, the student will use the adjusted error model, or autocorrelation. The regression analysis results section will provide further details on the model testing and appropriate adjustment models. The study used regression with Driscoll-Kraay standard errors for adjustment with the command `xtsc` in STATA software.

Table 1. The variables.

Variable name	Code	Measurement	Expected
Dependent variable			
Delay	Delay	= Number of day - reporting delay	
Independent variables			
Profit	ROA	=Return on assets	+
Liquidity	LIQ	= (Current asset)/Current liability	+
Leverage	LEV	=Liability/Total assets	+
Risk of bankruptcy	ZSCORE	$= \frac{1}{(1+e^{-L})}$ , in which $L = 0.035 - 0.495*WCTA - 0.862*RETA - 1.721*EBITTA - 0.017*BVETD$ , to understand the definitions of WCTA, RETA, WCTA, and BVETD. RETA=Retained earnings/Total assets; EBITA= Earnings before interest and taxes /Total assets; WCTA=(Current assets – current liabilities)/Total assets; BVETD= Book value of equity/Total debt	+
Firm size	SIZE	=Logarit(Total assets)	+

#### 4. Result

##### 4.1. Descriptive Variables

The studies collected will be analyzed using the STATA software. Initially, the authors provided a description of the initial data. The statistical results showed that the average number of days a company submits a late report is 73 days. The maximum is 18332 days, and the minimum is 289 days. The average profit rate for the time period according to ROA was 6.2%, or 0.602. The maximum profit rate was 61%, while the minimum was -163%. The average leverage was 0.487, with the highest being 1.29 and the lowest being 0.001. The average LIQ was 2.78, with the maximum being 982 and the minimum being 0.097. The average ZSCORE was 0.543, with the maximum being 1 and the minimum being 0.192. For more information on these variables, please refer to Table 2.

Table 2. Descriptive variables.

Variables	N	Mean	SD.	Min.	Max.
DELAY	3830	73.319	299.677	-289	18332
ROA	3711	0.062	0.141	-1.632	0.61
LEV	3710	0.487	0.236	0.001	1.294
LIQ	3615	2.787	16.847	0.097	982.607
ZSCORE	3710	0.543	0.061	0.192	1

Table 3. The regression result.

Variables	(1)	(2)	(3)	(4)
	Driscoll-Kraay standard errors	Driscoll-Kraay standard errors	Driscoll-Kraay standard errors	Driscoll-Kraay standard errors
ROA	1.404 (13.48)			
LIQ		-0.112*** (0.0277)		
LEV			-25.86** (11.37)	
ZSCORE				0.0752 (22.46)
SIZE	17.73* (10.1)	18.35* (10.71)	20.89* (10.78)	17.75* (10.31)
Constant	-414.7 (305.7)	-428.7 (299.7)	-489.4 (299.4)	-415.2 (286.9)
Observations	3,711	3,615	3,710	3,710
Number of groups	753	734	753	753
Hausman test		0.000		
Autocorrelation test		0.000		
Heteroskedasticity test		0.000		

Note: SE in parentheses.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

##### 4.2. Regression

The regression model was estimated using pooled OLS (ordinary least squares), FEM (fixed effect model), and REM (random effect model) methods. However, the Hausman test showed that the FEM model was appropriate. At the same time, all models had autocorrelation and heteroscedasticity. Therefore, the study used regression with Driscoll-Kraay standard errors for adjustment. The final results are described in Table 3.



The result shows that LIQ has a negative impact on reporting delay ( $\beta < 0$  and statistical significance). The H1 is accepted. This indicates that companies with higher liquidity are less likely to delay their financial reporting. This result is similar to some previous studies by [Lukason and Camacho-Miñano \(2019\)](#). When a company holds highly liquid assets, such as cash or marketable securities, the valuation of these assets is relatively straightforward. However, when a company has illiquid assets, like real estate or private equity investments, determining their fair market value can be complex and time-consuming. This complexity can lead to delays in financial reporting as companies need more time to accurately assess the value of these assets. In recent years, accounting standards have increasingly moved towards fair value accounting, which requires companies to report the fair market value of their assets and liabilities. For highly liquid assets, determining their fair value might be relatively easy, but for illiquid assets, it can be a challenge. Companies may need to use various valuation models and consult with external experts, further contributing to reporting delays.

At the same time, LEV has a negative impact on reporting delays ( $\beta < 0$  and statistical significance). The H1 is partially accepted. The companies with higher leverage tend to have shorter reporting delays. This result is similar to some previous studies by [Angruningrum and Wirakusuma \(2013\)](#) and [Owusu-Ansah \(2005\)](#). Companies that employ leverage often have complex debt structures, including various types of debt instruments, covenants, and repayment schedules. Managing and accounting for these complexities can be time-consuming and require extensive documentation. This complexity can lead to delays in preparing financial statements, as companies must ensure accurate and compliant reporting of their debt obligations. Leverage typically involves interest-bearing debt, and calculating interest expenses accurately requires meticulous record-keeping and reconciliation. If a company has multiple debt instruments with varying interest rates, terms, and payment schedules, it can be challenging to calculate interest expenses promptly and accurately. This can delay the reporting process.

The firm size has a positive effect on reporting delays ( $\beta > 0$  and statistical significance). The H5 is accepted. This suggests that larger companies tend to have longer reporting delays compared to smaller ones, as their operations are more complex and time-consuming. In conclusion, while larger firms may have more resources at their disposal, their size and complexity can introduce challenges that result in reporting delays. These challenges include managing complex operations, multiple subsidiaries, complying with regulations, and coordinating with various stakeholders. To mitigate these negative impacts, large firms must invest in efficient reporting processes, robust infrastructure, and effective communication among departments to ensure timely and accurate financial reporting.

On the other hand, the variables ROA and ZSCORE have no impact on reporting delay. The H2 and H4 are rejected. This means that a company's financial performance does not necessarily affect its reporting delays. Profitability is not a direct cause of reporting delays, and neither is the bankruptcy index. Overall, these findings provide insights into the factors that influence financial reporting delays in companies.

## **5. Conclusion**

The disclosure of financial information is very important for the economic development and decision-making of companies, investors, employees, and governments. The frequency and timing of reporting can also reduce asymmetric information and rumours about a company's financial situation and performance. Therefore, the issue of delayed financial reports can affect stakeholders. Therefore, in order to have predictive signs for the reporting delay of financial reports by businesses, research has systematized theories related to reporting delay. At the same time, the study constructs a model of factors affecting the reporting delay of reports by listed companies on the Vietnam stock exchange. The research results show that LIQ, SIZE, and LEV are important factors in detecting the reporting delay of financial reports by companies. Therefore, these factors can be predictive variables for the likelihood of late reporting by listed companies. Other factors, such as ROA or ZSCORE, are not factors that can predict the ability of companies to report delays.

## **6. Implications, Limitations and Future Research**

When a company's liquidity is low, the likelihood of delayed reporting increases. Based on this result, business owners need to work with relevant agencies, such as tax authorities and CEOs, to promote the development of reports as well as reporting extension regimes. Reporting delays will affect the company. This will be negative information for investors to think negatively about the company. This will affect their investment decisions as well as the decisions of related parties, such as creditors. At the same time, on the investor side, they can make investment decisions when the company has not yet reported. Issues of LIQ and LEV will be a signal predicting the reporting delay of reports by the company. From there, investors will have useful information before making their investment decisions.

Although research has found the impact of LIQ and LEV on reporting delays, there are still some limitations. Firstly, the study only considers adjusting for autocorrelation and heteroskedasticity. The study has not considered the endogeneity that may occur in the research model. Although endogeneity is a complex phenomenon, future studies can consider this phenomenon. Secondly, the study only examines listed companies on the Vietnam stock exchange in general without comparing the differences between private,

state-owned, or different industries in terms of reporting delay. Therefore, future studies can collect more data and analyze the evaluations of different types of companies.

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