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**Article**

## The impact of financial distress on tax avoidance: An empirical analysis of the Vietnamese listed companies

Cogent Business & Management

**Provided in Cooperation with:**

Taylor & Francis Group

*Suggested Citation:* Van Cuong Dang; Xuan Hang Tran (2021) : The impact of financial distress on tax avoidance: An empirical analysis of the Vietnamese listed companies, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 8, Iss. 1, pp. 1-10, <https://doi.org/10.1080/23311975.2021.1953678>

This Version is available at:

<https://hdl.handle.net/10419/245092>

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To cite this article: Van Cuong Dang & Xuan Hang Tran | (2021) The impact of financial distress on tax avoidance: An empirical analysis of the Vietnamese listed companies, Cogent Business & Management, 8:1, 1953678, DOI: [10.1080/23311975.2021.1953678](https://doi.org/10.1080/23311975.2021.1953678)

To link to this article: <https://doi.org/10.1080/23311975.2021.1953678>



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Published online: 20 Jul 2021.



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Received: 21 February 2021  
Accepted: 30 June 2021

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Reviewing editor:  
David McMillan, University of Stirling, Stirling, United Kingdom

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## BANKING & FINANCE | RESEARCH ARTICLE

# The impact of financial distress on tax avoidance: An empirical analysis of the Vietnamese listed companies

Van Cuong Dang<sup>1\*</sup> and Xuan Hang Tran<sup>2</sup>

**Abstract:** This paper examines empirical evidence on the impact of financial distress on tax avoidance of 369 listed companies in Vietnam over the 2008–2020 period. Empirical results show the existence of a positive relationship between financial distress and tax avoidance for survey companies. In particular, the more the company is in danger of capital, the more tax avoidance it will take. The results also show that small companies will tend to avoid taxes more. Companies use debt leverage as a tax shield to help them reduce their tax obligations. Companies with large long-term assets are less likely to avoid taxes than companies with little long-term assets. And finally, the study also shows that the more the company has a big difference in book-tax, the more tax avoidance activities it will implement.

**Subjects:** Economics; Finance; Business, Management and Accounting

**Keywords:** Financial distress; tax avoidance; Listed companies in Vietnam

### 1. Introduction

Since 1994, the first tax audit consulting firms have attacked the Vietnam market. Around the same time, the concept of tax avoidance has appeared and become a more common practice for businesses. In most countries around the world, taxation is a key pillar of government revenue, and by tightening policy rules, they bridge the gap between the actual tax and the tax receivables. At the same time, corporate income tax is a huge expense for firms, so firm management is pushed to develop tax planning strategies to reduce the number of expenses to a minimum to

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### PUBLIC INTEREST STATEMENT

In most countries, a major part of government's income is made through taxation. However the total share of public incomes from taxation differs from one country to another. In the mean time, tax avoidance and tax evasion have always made the actual income from taxation fall short of the estimated amounts. In this study, we examine the link between financial distress and tax avoidance. We apply the Zscore index established by Altman et al. (2017) as a proxy measure for financial distress. Our findings first confirm the existence of a positive relationship between financial distress and tax avoidance for survey companies. Further analysis then suggests that the Vietnamese tax authority should set the top tasks in strictly managing, filling legal loopholes, monitoring tax avoidance, and imposing strict measures on tax avoidance cases.

meet profit targets, capital needs, especially in financially difficult periods. It has since created an invisible confrontation chase between legislators and businesses for their good reasons.

Through tax evasion, firms directly deprive government resources, especially developing countries, putting poor communities at a disadvantage. Therefore, the issue of tax evasion is always concerning to the government, firms, and people. Thus, the study of this topic has attracted not only scholars of corporate finance but also public finance, public policy, and state management.

According to Prebble and Prebble (2009), tax avoidance is ethical when you use your money to develop your interests through production and consumption, which will help you achieve your long-lasting goals and personal fulfillment. In the world, tax avoidance has been attractive to researchers since the past, so there are many studies related to this issue such as the impact of financial distress on tax avoidance during the financial crisis (Richardson, Lanis et al., 2015), tax avoidance is the core management strategy of companies (Desai & Dharmapala, 2006; Rego & Wilson, 2012; Scholes et al., 2014; Sims & Sunley, 1992) or financial and macroeconomic constraints are accompanied by increased tax avoidance (Brondolo, 2009).

For businesses, maximizing benefits and increasing profits are always target goals. These goals are achieved by maximizing revenue or minimizing costs. In particular, corporate income tax is an expense that the company always tries to minimize because it has a direct impact on the actual profit of the business. Because the act does not violate the law, businesses are always motivated to minimize corporate income tax through tax avoidance. This paper aims to find empirical evidence on the impact of financial distress on tax avoidance in Vietnam. We are going to follow the model of Richardson, Taylor et al. (2015). Due to data mining limitations, our paper only uses the Effective Tax Rate (ETR) to represent the tax avoidance instead of using four indices respectively like Richardson, Taylor et al. (2015). Besides, the article adjusts some of the control variables based on many previous studies in accordance with the context of Vietnam.

## **2. Theoretical framework**

### **2.1. Theory and hypotheses development**

When a company decides whether or not to avoid taxation, it must consider many problems regarding the benefits, costs, and risks that may occur. In other words, the theory of cost-benefit states the company will consider the possible consequences of tax avoidance. When executing tax avoidance, the administrator weighs the benefits (reduced tax, increased cash flow) against the costs that may arise (audit costs, penalties, reputation damage). If the benefits received are greater (more important) than the costs may, the manager will decide to take tax avoidance. Besides, the risk transformation theory will explain why when the company is in financial distress, it is easier to practice tax avoidance. Bulow and Shoven (1978) formulated risk transformation theory. This theory holds that when companies are in a state of financial distress, shareholders and managers tend to take risky behavior (Eberhart & Senbet, 1993; Maksimovic & Titman, 1991). The company's equity was considered an asset in the market. Shareholders often transfer risks to bondholders and creditors by implementing high-risk projects through debt financing to finance the projects. However, bondholders and creditors also recognize the risk transfer behavior on their part and therefore require higher capital cost when considering buying bonds, leading to companies that fall into financial distress. This makes companies more willing to implement risk management policies. In particular, implementing tax avoidance is also considered as one of the high-risk management policies.

Risk—shifting theory was first introduced by Bulow and Shoven (1978). Then in 1981, Globe mentioned this theory in the article “the effects of imminent bankruptcy on stockholder risk preference and behavior.” The risk conversion theory is given in the context that when companies fall into bankruptcy, which is the most effective option. Accordingly, when a company falls into financial exhaustion, shareholders and managers tend to carry out risk-shifting behaviors

(Eberhart & Senbet, 1993; Maksimovic & Titman, 1991). The company's equity is then seen as an asset in the market. Galai and Masulis (1976) and Jensen and Meckling (1976) show that shareholders often convert risk to bondholders and creditors by implementing high-risk projects in the form of borrowing to finance the project. However, the owners and creditors also recognize risk-shifting behavior on their part, and they demand a higher cost of capital when considering buying bonds or lending to companies that fall in love with financial exhaustion. This makes companies more willing to implement higher risk management policies. Implementing tax avoidance is considered a riskier management policy.

Following from the above discussion, we hypothesize that:

H: All else being equal, financial distress is positively associated with corporate tax avoidance.

## **2.2. The previous studies**

Richardson, Taylor et al. (2015) studied the impact of financial distress on tax avoidance at listed companies in Australia. Companies are motivated to participate in avoiding corporate taxes when marginal benefit exceeds marginal cost. When companies are struggling financially, the benefit of tax avoidance outweighs the cost, thus increasing incentives to avoid taxes. The global financial crisis (GFC) of 2008 provides a unique setting to consider whether tax avoidance is different from before GFC and after GFC, and whether company management is required to avoid strong taxes in times of serious financial hardship or not. This study examines the impact of the financial downturn on tax avoidance and, in particular the impact of the GFC on the relationship between financial distress and tax avoidance. Based on a sample of 203 publicly listed firms in Australia over the 2006–2010 period, our regression results indicate that financial distress is positively associated with tax avoidance through several tax avoidance measures and financial crisis. More importantly, according to the regression results, the link between financial distress and tax avoidance has been enlarged on GFC's account.

Tandean and Winnie (2016) show that corporate governance quality has an impact on tax avoidance. This study used the Effective Tax Rate (ETR) to represent the tax avoidance of manufacturing companies in Indonesia. Using the GLS estimation method for panel data, the empirical results show that the control board has a positive impact on tax avoidance at Indonesian manufacturing firms, and the bonuses for management, especially leadership, firm size, ownership structure, and independent audit quality also impact tax avoidance at these firms.

Richardson et al. (2013) assessed the impact of governance characteristics on tax avoidance activities of 812 listed firms in Australia in the period 2006–2009. Empirical results show that governance characteristics are systematically risk management and internal control have an impact on tax avoidance at these firms. Besides, the results also show that the financial distress measured by the company's debt obligations also affects tax avoidance at these firms.

Edwards et al. (2013) show that the tax policy of a firm when it is in financial distress has many implications such as increasing the cost of capital, reducing access to outside capital. At that time, the manager is willing to take risks by changing the tax avoidance policy we are using. When in equilibrium, the company will implement a strategy to avoid taxes when the marginal benefit exceeds the marginal cost (Chen et al., 2010). Firms that are in financial distress will have fewer options, take greater risks, and take even more tax avoidance as a need to increase cash flow (limit cash outflows of tax) and skip down the reputation of the firm.

Firms that are in financial distress are likely to use accounting tactics to increase temporary income to avoid adjusting their debts or affecting their ability to repay their debts. If firms are flexible in implementing accounting policies, accounting estimates, and disclosures, it also shows

that they have flexible tax plans. Consistent with this argument, Frank et al. (2009) found a positive relationship between tax evasion and financial information. Specifically, the firm makes up taxable profits to reduce taxable income but at the same time increase income on financial statements.

Previous research also shows evidence of the potential of corporate governance to adjust taxable income when the company persistently faces declining profits or a forecast to be downgraded to credit. Joos et al. (2000) suggested that the ratio of profit to profit will decrease as the tax bookkeeping gap increases. This is confirmed by firms that make up taxable income when given the opportunity. Mills (1998) and Mills and Newberry (2005) argued that bookkeeping tax gaps were positively associated with pretax profit and financial distress. At the same time, the author pointed out that firms with low credit ratings have higher interest expenses in their tax returns than in financial statements. This is also a sign of tax avoidance.

Wilson (2010) also points out that firms with large off-balance accounts are more likely to have future problems and fall into greater financial distress. This also reflects in the tax gaps recorded in the books. Therefore, many firms are always seeking ways to reduce taxable income in the face of reduced income and/or low credit ratings. In general, reasonable expectations are about a positive relationship between financial distress and tax avoidance.

Besides, when the economy is in a recession, tax avoidance at enterprises is also more frequent (Edwards et al., 2013). Brondolo (2009) shows that the period of economic crisis will push many companies into financial distress. In particular, during the financial crisis, firms face financial difficulties and will cut back on investment, technology, marketing, and labor (Campello et al., 2011). Also, the companies are forced to use a large portion of its cash savings and cut its dividend payout plan, which make the company more difficult. This persistent predicament will motivate managers to find ways to cut corporate tax obligations. That is, during the financial crisis, managers would more likely to engage in tax avoidance (Brondolo, 2009). Research by Richardson et al. (2013) in the US and Australian markets also shows that, during the financial crisis, financial distress and tax avoidance behavior in enterprises became more severe.

### 3. The econometric model

#### 3.1. Regression model

To test the impact of financial distress on the tax avoidance hypothesis (H), we estimate the research model as follows:

$$TA_{it} = \beta_0 + \beta_1 Zscore_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 CINT_{it} + \beta_5 MKTBK_{it} + \beta_2 DITE_{it} + \varepsilon_{it} \quad (1)$$

Where the dependent variable (TA) is represented by corporation income tax avoidance. TA is determined based on an effective tax rate, which reflects the idea that managers perceive effective tax planning as the ability to minimize cash tax payables (Dyreng et al., 2008).

To measure financial distress, there are several models based on accounting information, using useful information presented in financial statements such as the zero-point model (Ohlson, 1980), and the X-point model (Zmijewski, 1984). They provide concrete insight into the probabilities of companies falling into financial distress. The main technique of these models is to compute financial ratios and compare them with one standard ratio or combine different ratios to see if the company is in financial exhaustion. The financial ratios used mainly are the ratios of profit, debt, and liquidity. The information on the financial statements was audited though, but, they also have certain limitations. However, it's the simplicity, ease of use, ease of collection, and regular information updates on financial statements that make these methods commonly used in previous empirical studies.

In this study, we apply the Zscore index established by Altman et al. (2017) as a proxy measure for financial distress. Zscore is calculated using the following formula (Graham et al., 1998):

$$Zscore = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5$$

Where:

X1 = working capital/Total assets

X2 = Retained earnings/Total assets

X3 = EBIT/ Total assets

X4 = Market value of shareholder equity/Total liabilities

X5 = Revenue/ Total assets

As a higher value of Zscore represents a proxy measure of lower financial distress (Altman et al., 2017), we transformed Zscore by multiplying it by—1 to obtain an increasing measure of financial distress for our regression analysis (Richardson, Lanis et al., 2015).

Company size (SIZE): determined by the natural logarithm of total assets (Q. K. Nguyen & Yang, 2020; Richardson & Lanis, 2007). We expect to find a great similarity between firm size and the ability to avoid taxes because they hold more political and economic power than small firms.

Debt leverage (LEV): determined by long-term liabilities over total assets. Stickney and McGee (1982) suggest that leverage has a positive effect on tax avoidance. Because interest expense is tax deductible, the author expects leverage to be correlated with tax avoidance.

Capital levels (CINT) are tangible assets (net assets, factories, equipment) divided by total assets. Enterprises will predict revenue and profit based on the operational situation, then choose the form of rapid or slow depreciation directly affecting taxable income. From there the author predicts correlation with the dependent variable (Richardson et al., 2013).

### 3.2. Research data

The research using secondary data is the financial report, the annual report collected from Thomson Reuters data source at the Center for Economic Analysis and Data Center with a total of 369 listed companies in the 2008–2020 period.

Statistical results describing variables in the model are shown in the results table below (Table 1 and 2).

**Table 1. Variable description**

Code	Measurement	Expected sign
TA	The ratio of profit before tax expresses the smaller which means greater tax avoidance behavior	
Zscore	$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5$ Zscore is bigger the firm, the more secure the capital	+
SIZE	Logarit total assets	+
LEV	Long—term liabilities/Total assets	-
CINT	Net assets, factory, equipment/ Total assets	+
MKTBK	The market value of shareholder equity/book value of shareholder	+
DITE	Temporary difference multiplied by the corporate income tax rate	-

**Table 2. Descriptive statistics of variables**

Variables	Obs	Mean	Standard Deviation	Min	Max
TA	4797	1.38.10 <sup>12</sup>	4.34.10 <sup>12</sup>	-3.54.10 <sup>12</sup>	1.08.10 <sup>14</sup>
Zscore	4797	3.137	7.409	-5.392	321.81
SIZE	4797	11.493	1.694	9.692	14.459
LEV	4797	0.08	0.131	0	0.91
CINT	4797	0.259	0.216	4.91.10 <sup>-5</sup>	0.967
MKTBK	4797	1.114	6.03	-60.875	402
DITE	4797	6.25.10 <sup>8</sup>	8.43.10 <sup>10</sup>	-4.89.10 <sup>12</sup>	5.84.10 <sup>11</sup>

Source: author's calculation

**Table 3. Pearson correlation matrix**

	TA	Zscore	SIZE	LEV	CINT	MKTBK
Zscore	0.0239					
SIZE	0.0268	0.0109				
LEV	0.0464	-0.1433	0.1984			
CINT	0.0342	-0.0566	0.1882	0.5687		
MKTBK	0.1161	0.2738	0.0957	-0.0265	-0.0034	
DITE	-0.3008	0.0338	-0.0089	-0.0343	-0.0040	0.0364

Table 3 describes the correlation between variables in the model, the correlation coefficients are less than 0.8, so multicollinearity between variables. The sign of the explanatory variables is by the expectation of the sign, except for the LEV variable.

### 3.3. Research methodology

In this study, the author used data obtained from 369 listed companies over the 2008–2020 period, including 4,797 observations. These are balanced table data, and the paper uses fixed effect model (FEM) and random effect model (REM) for panel data (Table 4).

**Table 4. Empirical results**

	Predicted sign	FEM	REM
Zscore	+	4.89.10 <sup>9**</sup>	4.71.10 <sup>9**</sup>
SIZE	+	2.39.10 <sup>11***</sup>	2.21.10 <sup>11***</sup>
LEV	-	-10.3.10 <sup>11**</sup>	-9.1.10 <sup>11**</sup>
CINT	+	1.34.10 <sup>11*</sup>	1.29.10 <sup>11*</sup>
MKTBK	+	-5.97.10 <sup>8</sup>	1.42.10 <sup>10</sup>
DITE	-	-18.77***	-18.58***
N		4797	4797
R- square		11.73%	12.09%
Hausman-test		0.0000	

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



#### 4. Empirical results

The study conducted regression according to the FEM and REM method of Z score explanatory variables and control variables to TA dependent variables. The Hausman test result with a value of  $P = 0.0000$  indicates that the FEM estimate is more suitable to explain the model.

Results showed that the variable Z score had a positive impact and was statistically significant. Specifically, as the Z score value increases, the TA value also increases. This shows that financial distress has an impact on tax avoidance at survey companies. This result is also consistent with many previous studies of Richardson et al. (2013), Q. Q. Nguyen and Dang (2020). Thus, this result once again confirms the existence of the relationship between financial distress and tax avoidance at listed companies in Vietnam. Empirical results show that with more capital (as shown by the larger Z score), the less tax evasion a firm will show (the higher the actual tax paid against profits). In other words, the more dangerous a company is in a capital position, the more it will engage in tax avoidance (Edwards et al., 2013). Hence, our results provide additional support for H.

The SIZE variable is also positive, which suggests that larger firms are less likely to avoid taxes. In contrast, smaller firms will tend to avoid taxes more. This is contrary to the theoretical framework and contrary to the research results of Tandean and Winnie (2016). However, this issue may be appropriate in the Vietnamese context. Smaller firms can often be dominated by a group of owners with family ties who can find consensus for illegal activities to achieve profit targets.

The negative LEV variable indicates a positive relationship between firm leverage and tax avoidance. The borrowing company will incur a financial expense from the interest, which is considered a tax shield to help the company reduce its tax liability. In other words, the more leverage the company shows, the more it is avoiding tax through increasing interest payments. Therefore, this result is entirely consistent with the theory and also consistent with the results of previous studies by Richardson, Taylor et al. (2015).

The variable CINT is positive and statistically significant at 10%. This is also explained similarly for firm asset size variables. Companies with large long-term assets tend to make long-term investments so managers are less likely to avoid taxes than companies with little long-term assets. This result is also consistent with Richardson et al. (2013).

The variable DITE is negative and statistically significant. This shows that the greater the temporary difference between firms (the tax accounting gap), the greater the tax avoidance. In other words, the greater the tax-accounting discrepancy the company shows, the more it is pursuing tax avoidance activities (Richardson et al., 2013).

The impact variable MKTBK has no statistical significance. This means that the empirical results do not prove that the capitalization of the company affects tax avoidance.

#### 5. Conclusions

The paper uses data obtained from 369 listed companies in the 2008–2020 period. Experimental results show the existence of a positive relationship between financial distress and tax avoidance in surveyed companies. In particular, the higher the capital adequacy ratio companies have, the less they can avoid taxation. And conversely, the more the company is in danger of capital, the more tax avoidance it will take.

Besides, the results also show that firm size, debt leverage, net asset value, and tax—accounting book disparities have an impact on tax avoidance. First, small firms will tend to avoid taxes more. Smaller firms can often be dominated by a group of owners with family ties who can find consensus for illegal activities to achieve bigger profit targets. Second, firms that use leverage through debt instruments will incur financial costs from interest, which is considered a tax shield to help companies reduce their tax liability. In other words, the more leverage the company shows,

the more it will avoid tax through increasing interest payments. Third, companies with large long-term assets tend to invest in long-term investments, so managers are less likely to avoid taxes than firms with little long-term assets. And finally, the study also shows that the more the company has a big difference in book-tax, the more tax avoidance activities it will implement.

From the research results, we draw the following to improve financial exhaustion and tax avoidance:

First, the Vietnamese tax authority should set the top tasks in strictly managing, filling legal loopholes, monitoring tax avoidance, and imposing strict measures on tax avoidance cases. Besides, it will disseminate knowledge to business organizations to understand the importance, rights, and obligations of paying taxes to the government. The government should also create and reinforce trust, demonstrate results for people to see the effectiveness of using tax revenue.

Second, business organizations should understand and be aware of their rights and obligations to their tax obligations. The enterprises should aim to develop the management's capacity and governance ability to avoid bringing the company into financial exhaustion leading to bankruptcy. The business organizations should be aware of that tax avoidance is a bad, irresponsible act and detrimentally affects the state budget. Consequently, the enterprises will be subject to the areas of the evaded tax, pay fines, and disqualification of incentives tax and may be subject to criminal prosecution. Therefore, when facing financial exhaustion instead of avoiding corporate tax, they should look for other solutions such as relying on external support. But most of all, businesses should focus on building strict and reasonable long-term management strategies so as not to get caught in the whirlwind of financial exhaustion.

#### Funding

The authors received no direct funding for this research.

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#### Citation information

Cite this article as: The impact of financial distress on tax avoidance: An empirical analysis of the Vietnamese listed companies, Van Cuong Dang & Xuan Hang Tran, *Cogent Business & Management* (2021), 8: 1953678.

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