



# SOCIAL SECURITY CONTRIBUTION INDEBTED FIRMS IN VIETNAM: CHARACTERISTICS AND MARKET VALUE

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**Abstract:** This research is the first to empirically analyse the characteristics of firms that defer the social security contribution for their employees to the Vietnam Social Security Agency, which is a chargeable offense starting 2018 as the Vietnam government focuses on ensuring worker welfare. Using data on 873 public firms headquartered in four major cities (Ha Noi, Ho Chi Minh, Da Nang, and Hai Phong), we find that non-state-owned firms and firms with lower profitability and higher debts are more likely to be in arrears on social security contribution. On the other hand, the roles of foreign ownership, size, number of employees, and number of branches/offices are insignificant. We further show that being social security contribution indebted would negatively affect shareholders' interest as it is associated with lower firm market values.

**Keywords:** social security contribution, worker welfare, state ownership, foreign ownership, firm market value

## 1 Introduction

Firms failing to comply with their social security contribution scheme poses a serious threat to both employees and government [8, 15]. Such failure affects the ability of the state's pension fund to ensure the retirement income for workers and their dependents. It may also lead to the government having to subsidize the pension fund by using other sources of revenue. As a result, there have been a number of studies on the important topic of which types of firms are more likely to evade contribution and what are the underlying reasons [1, 8, 15]. Yet, to the best of our knowledge, there has been virtually no empirical study at the firm level. The reason, as McGillivray points out, is the lack of consistent data since contribution evasion is designated illegal by most governments [15]. One exception is the study by Nyland et al., which investigates the characteristics of firms that underpay their contribution [17]. The analysis, however, is limited to three explaining variables (the type of ownership, industry, and number of employees). This paper aims to fill the gap in the literature by expanding the empirical test to other firm-level factors that influence social security contribution.

After Doi Moi 1986, when the transformation to the market economy has drawn so many changes, including the social security system for employees, Vietnam's government declared its determination to build a strong social security system. The 2006 social security law and 2009

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health insurance law were passed to achieve universal coverage in 2015. As a result, the number of contributors has grown quickly from 3.2 million in 1996 to 8.1 million in 2009 [4]. Still, social security coverage remains low at 38.8% [4]. According to the Vietnam Social Security Agency (VSS), unpaid social security amounted to 12,960 billion VND in 2017 <sup>1</sup>.

The context of Vietnam offers a unique firm-level dataset on one particular type of contribution evasion: deferment. The VSS has been facing the issue of many firms falling behind on their social security contribution. The VSS dubs them “social security contribution indebted” (hereafter SSCI for brevity) firms. As part of its effort to ensure worker welfare, the government passed the 2014 Vietnam Social Security Law, making contribution deferment a chargeable offense starting January 1st, 2018, and has vowed to step up on the legal enforcement effort. Consequently, the amount of contribution owed to the VSS declined in 2018 but remained significant at 7,000 billion VND <sup>2</sup>. As a warning, the VSS offices in the four major cities (Ha Noi, Ho Chi Minh City, Da Nang, and Hai Phong) have made public the lists of local SSCI firms. This study uses such lists to identify the SSCI firms among the 873 public firms headquartered in those cities that have firm-level data available as of December 2018. Using these data, we are able to empirically test whether state and foreign ownerships, profitability, level of debt, size, number of employees, and number of branches influence contribution deferment <sup>3</sup>. The extant literature suggests that these are important factors related to corporate misconduct such as tax avoidance, accounting fraud, earnings management, and contribution evasion specifically [4, 9, 11, 16, 19, 23]. There have been several studies that examine whether Vietnamese small and medium enterprises (SMEs) benefit from expanding or evading contribution [3, 4, 14, 21]. However, the characteristics of firms evading social security contributions remain unexplored. Our analysis would help draw a better picture of SSCI firms.

In the second part of our analysis, we proceed to examine the impact of being SSCI on firm market value. An SSCI firm may benefit from delaying the social security contribution and using the cash for other more urgent or beneficial purposes. This could lead to an increase in the firm’s value. However, if the firm is charged and persecuted by the government due to contribution deferment, the related cost (such as legal fee, penalty, and operation disruption) would be significant. In this case, the firm could face a decline in market value. Moreover, the operating performance of SSCI firms may suffer from declined motivation and productivity of employees [3, 4, 14, 21]. Thus, it is important to examine the effect of being SSCI on firm market value. A positive (negative) relationship between being SSCI and firm market value would suggest that it is (is not) in the interest of the shareholders that a firm defers its social security contribution.

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<sup>1</sup> <http://thoibaotaichinhvietnam.vn/pages/tien-te-bao-hiem/2018-04-11/no-bao-hiem-xa-hoi-da-len-toi-12960-ty-dong-56013.aspx>

<sup>2</sup> <http://cafef.vn/no-bao-hiem-xa-hoi-thap-nhat-tu-truoc-toi-nay-2019011515102314.chn>

<sup>3</sup> We detail our hypotheses development in part 2 of this paper.

Our study makes several important contributions. First, we add to the literature on social security contribution evasion as the first to provide further empirical analysis to Nyland et al. on the characteristics of firms that evade contribution [17]. More generally, by investigating contribution deferment, we contribute to the literature on corporate misconduct, which has mainly focused on other activities such as tax avoidance, accounting fraud, and earnings management [1, 9, 10, 11, 13, 16, 23]. Second, previous studies have documented the positive effect of increasing social security coverage on long-term firm operating performance in Vietnam [14, 21]. We complement these studies by investigating the Price-to-Book ratio and total market value of SSCI firms. Our analysis also adds to the huge literature on factors influencing firm value by identifying SSCI as a potential factor [2, 7, 22].

This paper proceeds as follows. We review the related literature and develop our hypotheses in part 2. We describe the research methods and data in parts 3 and 4. In part 5, we present and discuss the results. Part 6 concludes this paper.

## 2 Related literature and hypotheses development

### 2.1 Characteristics of SSCI firms

As social contribution deferment is a form of corporate wrongdoing, we develop our hypotheses regarding the characteristics of SSCI firms according to the literature related to corporate wrongdoing. From the literature, we identify four main attributes that could influence a firm to engage in social security contribution deferment. The attributes are state ownership, foreign ownership, profitability, and the level of debt.

#### State ownership

The extant literature suggests a mixed relationship between state ownership and corporate wrongdoing. On the one hand, a state-owned firm is likely to be scrutinized more by the government. Besides, they could be under the pressure of the government to set good examples. As a result, state-owned firms may refrain from wrongdoings. Furthermore, state-owned firms have certain privileges and better access to resources, leading to less need to get involved in misconduct to boost their financial results. Wang & Yung find a lower probability of corporate fraud and earnings management for state-owned firms [23]. Analysing the effective tax rate of listed firms in Vietnam, Nguyen Tran Thai Ha & Phan Gia Quyen show that higher state ownership is associated with lower tax avoidance [16]. Nyland et al. document that state-owned firms are less likely to evade social security contribution [17]. This leads to our first hypothesis:

*Hypothesis 1a:* State-owned firms are less likely to be SSCI

On the other hand, political connection plays an important role in developing countries where laws and regulations may not be effectively enforced when firms have powerful political

allies [10]. Hou & Moore [10] and Shi et al. [20] find fewer incidents of enforcement against fraudulent in state-owned firms. This could lead to a higher propensity for misconduct in state-owned firms. In the case of social security deferment, state-owned firms may count on the government to be more tolerant to them (for example, giving them more time to catch up with the contribution requirement). This leads to our alternative hypothesis:

*Hypothesis 1b:* State-owned firms are more likely to be SSCI

### **Foreign ownership**

Kim & Yoon [9] and Hasnan et al. [13] find that firms with increased foreign ownership are less likely to be involved in earnings management and financial reporting frauds. In contrast, Salihu et al. document a positive relationship between foreign ownership and tax avoidance in Malaysia [19]. This suggests a non-conclusive role of foreign investors in monitoring and keeping firms from misconduct. In the context of Vietnam, a foreign-owned SSCI firm that has not paid the social security contribution may leave the country without paying it. The government can pursue international legal actions against such firms, but it would be difficult and costly. This leads us to form Hypothesis 2a that foreign-owned firms are more likely to defer the contribution. On the contrary, foreign-owned entities who wish to operate in the long-term in Vietnam are expected to comply with the contribution scheme since they cannot count on the political connection as the local firms to buffer against law enforcement. Furthermore, they may have the code of conduct of the parent firms to adhere to. As a result, we also propose Hypothesis 2b that firms with foreign ownership are less likely to be SSCI.

*Hypothesis 2a:* Firms with foreign ownership are more likely to be SSCI.

*Hypothesis 2b:* Firms with foreign ownership are less likely to be SSCI.

### **Profitability and level of debt**

It is evident that firms struggling with low profitability and/or high debt are more likely to be SSCI. In fact, these could be the two most important factors influencing a firm being SSCI. The reason is that such firms are probably running low on cash/liquidity. As a result, they might resort to options such as tax avoidance or social security contribution deferment to conserve cash. In fact, Richardson et al. [16] and Nguyen Tran Thai Ha & Phan Gia Quyen [18] show a positive relationship between tax avoidance and financial distress. Thus, we propose the following hypotheses:

*Hypothesis 3:* Firms with lower profitability are more likely to be SSCI.

*Hypothesis 4:* Firms with higher debt are more likely to be SSCI.

## Control variables

We follow Nyland et al. and control for firm size and the number of employees [17]. While larger firms could be more financially sound, they also have more employees, thus bearing a bigger social security contribution obligation. Furthermore, we also control for the number of branches/offices. The reason is that if one of the branches or offices defers its contribution, the firm is listed as SSCI. Therefore, having more branches/offices might increase the risk of being SSCI.

### 2.2 Market value of SSCI firms

Having identified the characteristics of SSCI firms, the second part of our analysis investigates their market values. Similar to other corporate misconduct, such as tax avoidance and earnings management, social security contribution deferment has both advantages and disadvantages [5, 6, 12]. On the one hand, the firm could direct the deferred contribution to projects that are more urgent or beneficial. This will increase the market value of the firm. However, if the firm is persecuted by the government, the cost (legal fee, fines, operation disruption, reputation, etc.) will be considerable and firm value will be hammered. Besides, firms failing to enhance labour welfare, such as social security coverage, are shown to have poorer performance in the long-term due to deteriorated worker satisfaction and productivity [4, 14, 21]. Considering these opposing forces that influence the market value of SSCI firms, we propose the two alternative hypotheses:

*Hypothesis 5a:* Market values are higher for SSCI firms.

*Hypothesis 5b:* Market values are lower for SSCI firms.

## 3 Methods

### 3.1 Characteristics of SSCI firms

We employ a probit regression model to test the relationship of our explaining variables and a firm's probability of being SSCI:

$$SSCI_i = \alpha + \beta_1 \times SO_i + \beta_2 \times FO_i + \beta_3 \times PROFIT_i + \beta_4 \times DEBT_i + \beta_5 \times SIZE_i + \beta_6 \times EMPL_i + \beta_7 \times BRANCH_i \quad (1)$$

where  $i$  denotes the firm. Our dependent variable is SSCI, which takes the value of 1 if a firm is SSCI and 0 otherwise. State-owned firms are indicated by dummy variable SO, which takes a value of 1 if the state ownership in the firm is at least 20% and 0 otherwise. The 20% threshold is used by the International Financial Reporting Standards (IFRS) as an indication for influential

ownership<sup>4</sup>. Similarly, foreign-owned firms are indicated by dummy variable FO, which takes a value of 1 if foreign investors own 20% of the firm or higher and 0 otherwise<sup>5</sup>. Profitability (PROFIT) is measured by the net profit margin in percentage. The level of debt (DEBT) is the total debt over total assets ratio. Control variables include SIZE, the natural logarithm of the firm's total assets in billion VND; EMPL, the natural logarithm of the number of employees; and BRANCH, the number of branches/offices a firm has.

### 3.2 Market value of SSCI firms

To test the impact of being SSCI on firm market value, we run the following OLS regression:

$$\text{VALUE}_i = \alpha + \beta_1 \times \text{SSCI}_i + \beta_2 \times \text{SO}_i + \beta_3 \times \text{FO}_i + \beta_4 \times \text{PROFIT}_i + \beta_5 \times \text{DEBT}_i + \beta_6 \times \text{SIZE}_i + \beta_7 \times \text{EMPL}_i + \beta_8 \times \text{BRANCH}_i \quad (2)$$

where the firm market value (VALUE) is proxied by the Price-to-Book ratio (PB) and the natural logarithm of the total market value in VND billion (MKTVAL), respectively. We also include the exchange- and industry-fixed effects in this model. The firms in our sample are traded in four exchange venues (the Ho Chi Minh Stock Exchange, the Hanoi Stock Exchange, the Unlisted Public Companies Exchange – UpCom, and the OTC market). Each venue or industry may have distinctive features that affect the level of the Price-to-Book ratio and total market value of traded firms. Industry classification follows Vietnam's Standard Industrial Classification.

## 4 Data summary and univariate tests

Our data include 873 public firms headquartered in Ho Chi Minh, Ha Noi, Da Nang, and Hai Phong, of which 4.12% are SSCI firms. We identify SSCI firms by using the lists published by the VSS offices in these cities. We collect the firm-level data for the fiscal year 2018 from Stoxplus. The fiscal year-end market price used to calculate PB and MKTVAL is available from Stoxplus. Table 1 summarizes the data. It also includes the results of the *t*-test of the difference in means between the SSCI and non-SSCI firms for each variable as a univariate test for our hypotheses. The *t*-test results reveal that the mean SO of SSCI firms is lower (statistically significant at the 10% level) than that of non-SSCI firms; the mean PROFIT is lower (significant at the 1% level); and the mean DEBT is higher (significant at the 1% level). This suggests that, on average, SSCI firms are less likely to be state-owned, and have lower profit, and higher debt. The *t*-test results for PB and MKTVAL imply a lower market value (statistically significant at the 1% level) of SSCI firms in general.

<sup>4</sup> <https://www.ifrs.org/issued-standards/list-of-standards/ias-28-investments-in-associates-and-joint-ventures/>

<sup>5</sup> Our results are qualitatively similar when we use the 25% or 15% threshold.

**Table 1.** Summary of data

Variable	Num. Obs.	Mean	Std. Dev.	Difference between SSCI and non-SSCI firms
SSCI	873	0.041	0.199	
<b>Firm characteristics variables</b>				
SO	873	0.467	0.499	-0.140* (-1.65)
FO	873	0.109	0.312	-0.056 (-1.05)
PROFIT	873	3.918	25.843	-19.930*** (-4.58)
DEBT	873	0.510	0.238	0.216*** (5.41)
SIZE	873	6.414	1.913	0.056 (0.20)
EMPL	873	5.438	1.455	-0.061 (-0.25)
BRANCH	873	2.200	5.917	0.197 (0.20)
<b>Firm market value variables</b>				
PB	873	1.243	1.127	-0.591*** (-3.10)
MKTVAL	873	5.327	1.968	-1.112*** (-3.34)

\*, \*\*, and \*\*\* denote statistical significance at the 10, 5, and 1% level, respectively, *t*-statistics are in parentheses.

Table 2 shows the correlations between the variables. The sign and significance of the correlation coefficients between SSCI and SO, PROFIT, DEBT, PB, and MKTVAL further support the *t*-test results in Table 1.

**Table 2.** Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
SSCI (1)	1									
SO (2)	-0.056 <sup>a</sup>	1								
FO (3)	-0.036	-0.106 <sup>c</sup>	1							
PROFIT (4)	-0.153 <sup>c</sup>	0.027	0.049	1						
DEBT (5)	0.181 <sup>c</sup>	0.097 <sup>c</sup>	-0.032	-0.245 <sup>c</sup>	1					
SIZE (6)	0.007	-0.058 <sup>a</sup>	0.227 <sup>c</sup>	0.168 <sup>c</sup>	0.236 <sup>c</sup>	1				
EMPL (7)	-0.008	0.205 <sup>c</sup>	0.119 <sup>c</sup>	0.092 <sup>c</sup>	0.212 <sup>c</sup>	0.469 <sup>c</sup>	1			
BRANCH (8)	0.007	-0.013	0.105 <sup>c</sup>	-0.009	0.033	0.135 <sup>c</sup>	0.116 <sup>c</sup>	1		
PB (9)	-0.104 <sup>c</sup>	0.027	0.110 <sup>c</sup>	-0.072 <sup>b</sup>	-0.005	0.142 <sup>c</sup>	0.173 <sup>c</sup>	0.089 <sup>c</sup>	1	
MKTVAL (10)	-0.112 <sup>c</sup>	-0.028	0.261 <sup>c</sup>	0.323 <sup>c</sup>	-0.095 <sup>c</sup>	0.084 <sup>c</sup>	0.445 <sup>c</sup>	0.137 <sup>c</sup>	0.471 <sup>c</sup>	1

a, b, and c denote statistical significance at the 10, 5, and 1% level, respectively

## 5 Results and discussion

### 5.1 Multivariate test results on the characteristics of SSCI firms

Table 3 presents the results of the probit regression detailed in Equation (1). Columns (1) to (4) show the results for each of the four main variables (SO, FO, PROFIT, and DEBT) without controls. Column (5) presents the result of the full model. We discuss the result in column (5). The coefficient for SO is negative and significant at the 5% level. This suggests that state-owned firms are less likely to defer their social security contribution, supporting Hypothesis 1a over Hypothesis 1b. Because the government considers contribution deferment a severe offense and makes the list of SSCI firms public, it is reasonable that state-owned firms will try to comply with the contribution schedule. Political connection does not help in this case since fencing a state-owned firm from the government's charge will draw much publicity and political risk. Moreover, state-owned firms may have better access to resources (finance, customers, etc.) than non-state-owned firms. Therefore, they could be in better shape financially, making it less likely that they will need to defer their contribution for liquidity reasons.

The coefficient for FO is insignificant, supporting neither Hypothesis 2a nor 2b. This indicates that foreign investors play an insignificant role in whether a firm delays its social security contribution. The reason could be that the two opposite factors underlying Hypothesis 2a and 2b cancel out each other, or it could simply be that foreign investors are not actively involved in this matter. The coefficients for PROFIT and DEBT back our Hypothesis 3 and 4. The

**Table 3.** Probit regression results on the characteristics of SSCI firms

	Dependent variable: SSCI				
	(1)	(2)	(3)	(4)	(5)
SO	-0.260* (-1.65)				-0.357** (-1.98)
FO		-0.323 (-1.07)			-0.265 (-0.78)
PROFIT			-0.008*** (-3.76)		-0.005** (-2.06)
DEBT				2.209*** (4.99)	2.123*** (4.56)
SIZE					-0.032 (-0.51)
EMPL					0.019 (0.27)
BRANCH					0.005 (0.33)
Constant	-1.629*** (-16.80)	-1.709*** (-21.59)	-1.749*** (-22.27)	-3.079*** (-10.02)	-2.775*** (-5.74)
N	873	873	873	873	873
Pseudo R <sup>2</sup>	0.009	0.004	0.042	0.109	0.144

\*, \*\*, and \*\*\* denote statistical significance at the 10, 5, and 1% level, respectively, *t*-statistics are in parentheses

coefficient for PROFIT is negative and significant at the 5% level. The coefficient for DEBT is positive and highly significant at the 1% level. This implies that a firm's financial status strongly influences it being SSCI. Evidently, if a firm is struggling with low profit and high debt, it may consider deferring the social security contribution and use the money for other urgent purposes. Despite the risk of being persecuted by the government, the firm could be hoping that it could turn the money around and pay the contribution debt before it is persecuted.

The coefficients for the control variables are insignificant, suggesting that firm size, number of employees, and number of branches/offices do not critically affect firms' propensity to defer their social security contributions. The pseudo  $R^2$  for columns (1) to (4) is 0.9, 0.4, 4.2, and 10.9%, respectively. This indicates that PROFIT and DEBT have the most explaining power for SSCI. The pseudo  $R^2$  for the full model in column (5) is 14.4%.

## 5.2 Multivariate test results on the impact of being SSCI on firm market value

The results of the OLS regression on the impact of being SSCI on firm market value, detailed in Equation (2), are shown in Table 4. Columns (1) and (2) present the results when using PB as the measure for market value, and columns (3) and (4) present the results when using MKTVAL. The coefficient for SSCI is consistently negative and significant, at least at the 5% level across the four columns. A coefficient of  $-0.422$  for SSCI in column (2) means that PB is 0.422

**Table 4.** OLS regression results on the market values of SSCI firms

	Dependent variable: PB		Dependent variable: MKTVAL	
	(1)	(2)	(3)	(4)
SSCI	-0.393** (-2.06)	-0.422** (-2.22)	-0.055** (-2.03)	-0.388*** (-2.80)
SO		-0.015 (-0.19)		0.097* (1.67)
FO		0.275** (2.22)		0.271*** (3.01)
PROFIT		0.002 (0.98)		0.006*** (5.77)
DEBT		0.125 (0.69)		-1.972*** (-14.90)
SIZE		0.054* (1.75)		0.931*** (41.44)
EMPL		0.084*** (2.61)		0.101*** (4.35)
BRANCH		0.012* (1.56)		0.006 (1.36)
Fixed effects	Exchange, Industry	Exchange, Industry	Exchange, Industry	Exchange, Industry
Constant	1.084*** (3.47)	0.221 (0.62)	5.333*** (11.63)	-0.411 (-1.60)
N	873	873	873	873
Adjusted $R^2$	0.056	0.089	0.291	0.833

\*, \*\*, and \*\*\* denote statistical significance at the 10, 5, and 1% level, respectively,  $t$ -statistics are in parentheses

lower when the firm is SSCI. Consider that the mean PB in our sample is 1.243 (see Table 1), and this implies an average decrease of 34% in the Price-to-Book ratio for SSCI firms. A similar analysis shows that a coefficient of  $-0.388$  for SSCI in column (4) indicates a 32% decline in market value for SSCI firms<sup>6</sup>. Overall, we find substantially lower values for SSCI firms, supporting Hypothesis 5b over Hypothesis 5a. The adjusted  $R^2$  in the full models in columns (2) and (4) is 8.9% and 83.3%, respectively.

## 6 Conclusions

This paper analyses the characteristics of firms engaging in social security contribution deferment. The context of Vietnam allows the empirical analysis of 873 public firms. We find that firms with deteriorated financial status, i.e., low profit and high debt, are more likely to be social-security-contribution-indebted firms. Furthermore, state-owned firms generally comply with their contribution requirement. Other firm-level characteristics, including foreign ownership, size, number of employees, and number of branches/offices, have insignificant relationships with the probability of a firm being social security contribution indebted. Our findings have important implications for regulators, investors, and shareholders. First, our results indicate that, in the context of Vietnam, financially struggling firms may consider contribution deferment as an option to cope with their financial distress. To prevent this, the government should employ stricter policies on social security contribution collection that would preclude firms from accumulating large contribution debts. For example, the government could impose interest or penalties on contribution debts. Second, the lower market value and the Price-to-Book ratio of SSCI firms imply that the risk of being persecuted is reflected in the market price of the firm equity. It outweighs any potential benefit from using the contribution money for other purposes. Stakeholders of SSCI firms should carefully consider this risk.

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<sup>6</sup> The economic significance is calculated as  $(e^{5.327} - e^{(5.327-0.388)})/e^{5.327}$  since the market value variable, MKTVAL, is measured in natural logarithm.

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