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Article

Does corporate tax avoidance explain firm performance? Evidence from an emerging economy

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ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

Does corporate tax avoidance explain firm performance? Evidence from an emerging economy

Nguyen Vinh Khuong^{1,2}, Nguyen Thanh Liem^{1,2}, Phung Anh Thu^{3*} and Thai Hong Thuy Khanh³

Abstract: Corporate tax avoidance is an act aiming at reducing tax amount liable to the government, which is expected to raise firm value. However, agency theory postulates that opportunistic managers can lower tax liabilities through the arrangement of complex transactions, enabling them to shirk or pursue own interests. Therefore, the need to examine the link between corporate tax avoidance and firm performance is evident, yet there has not been any research on this in the context of Vietnam, a country plagued with tax-avoiding cases. We are the first to examine the empirical link using a sample of Vietnamese listed firms over the period from 2010 to 2016, using a wide-ranging set of performance and tax-sheltering indicators. Overall, the results indicate a mixed relationship between corporate tax avoidance and firm performance in Vietnam.

Subjects: Statistics for Business, Finance & Economics; Asian Economics; Economic Forecasting

Keywords: Corporate tax avoidance; firm performance; Vietnam
JEL: M40; M48; K34



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PUBLIC INTEREST STATEMENT

Normally if the true motive is to reduce the tax and protect shareholder's value, firm performance should improve. Nonetheless, complex transactions masked as managerial efforts to perform tax planning could end up being tools and means for managers to pursue their own interests, and it might be difficult to uncover such incentives due to the increased complexity and loss of information transparency. Consistently, the empirical literature tends to offer inconclusive evidence on the link between corporate tax avoidance and firm performance, but the findings may be different in different settings. In this study, using a sample of 125 listed firms in Vietnam, a country with increased tax fraudulence, from 2010 to 2016, we find that the impact of tax avoidance on firm performance also varies, depending on how performance and tax avoidance are measured. This result suggests more vigilance in examining the well-rounded significance of tax avoidance.

1. Introduction

Corporate tax contributes to economic development and this is an aspect of corporate social responsibility; nonetheless, firms could avoid tax to retain extra profits (Chen & Tsai, 2018; OECD, 2013). Practically, corporate tax avoidance enhances shareholder's wealth and plays a significant role as a corporate strategy, especially for large firms (Armstrong et al., 2015; Desai & Dharmapala, 2009; Hanlon & Heitzman, 2010; Wilson, 2009). Tax-reducing strategies lead to a significant shrink in the government's fiscal revenue, thus affecting its ability to administer welfare policy and social public services, crippling the functioning of the government in maintaining a normal social and economic order. Governments are certainly aware of the possible incentives to perform tax sheltering, but introducing policies to discourage the behavior and to improve the state budget is not a straightforward issue (Sayidah & Assagaf, 2019). Since tax avoidance affects both the focal firm and the society, it is important to explore this field in more depth.

Traditionally, tax avoidance is considered as a tactic to transfer wealth from government to corporations, which should efficiently enhance firm value. For this reason, it is expected that that corporate tax avoidance is positively related to firm performance, at least due to the wealth effect. On the other hand, tax avoidance has its own costs, including the implementation cost, reputational damage and punishments from the state if uncovered (Chen et al., 2014). It should be, therefore, the firm's decision to avail itself of tax avoidance as a result of the balancing between the benefits and disadvantages associated with this strategy.

Interestingly, the link between tax avoidance and firm value has been under-researched, especially in the context of developing countries. Furthermore, current empirical evidence on the relationship is inconclusive, even though the mainstream findings suggest that well-governed firms should benefit more from tax sheltering (Desai & Dharmapala, 2009; Jimenez-Angueira, 2018; Kim et al., 2011). In the present study, we examine the effects of tax avoidance on firm performance in Vietnam, a developing economy. This study is crucial because Vietnam offers an interesting setting for three reasons. First, the volume of tax avoidance, or even tax evasion, has been skyrocketing, leading to challenges in tax collection for years. Second, the relationship between agency conflicts and earnings management is important in Vietnam (Hai & Nunoj, 2008; Hoang et al., 2017; Nguyen & Van Dijk, 2012), while tax planning is expected to induce earnings manipulations. Third, little or even no empirical evidence has been offered in Vietnamese context on the relationship between tax avoidance and firm performance.

In this study, we utilize System Generalized Method of Moments (GMM) estimation to solve the potential endogeneity problem, as well as to control for issues such as heteroskedasticity and autocorrelation to achieve reliable estimates for valid inferences. We use a sample comprising 125 firms listed on the Ho Chi Minh City Stock Exchange and the Ha Noi Stock Exchange from 2010 to 2016. We measure corporate tax avoidance in three ways, namely the current effective tax rate (Current ETR), the cash effective tax rate (Cash ETR), and the permanent book-tax difference (BTD). We measure firm performance using three proxies including return on total assets (ROA), return on equity (ROE), and the ratio of market value of total assets to book value of total assets (TOBINQ).

Our research contributes to the literature on the agency cost of corporate tax avoidance in Vietnamese context. We add to the scant empirical literature that examines the link between corporate tax avoidance and firm performance in Vietnam with different measures of both factors. We find that tax avoidance has different impacts on firm performance, depending on how the two factors are gauged. This result is enlightening since the majority of previous literature only dissects this link using either accounting or market performance measures, not both. The research proceeds with the discussion on the status of corporate tax avoidance in Vietnam, the theoretical and empirical literature, methodology and the estimation results. Finally, we offer relevant implications based on the research findings.

2. Tax avoidance in Vietnam

Vietnam is a potential ASEAN economy with robust economic growth rates, but the nation has been hindered by one of the most complex and time-consuming tax systems within the region (Brown, 2020). Heavy punishments are to be administered when businesses miss deadlines of tax report submission or fail to honour tax payments on time or under-declare their tax liabilities.

For firms with dominant state capital, the state audit has found that corporations tend to perform cost estimations inappropriately, leading to the underestimation of their revenue and income tax. For the fiscal year of 2016, state audit demanded that firms pay an extra amount of over VND 13 thousand billion. This number increased to over VND 20 thousand billion in the fiscal year 2017. Therefore, through the state audit reports, it is clear that this trend is quite prevalent and shows no sign of contraction recently.

For private sector, tax-avoiding cases of large multinational firms such as Coca-Cola serve as iconic examples. Coca-Cola declared its perennial losses ever since its entry in Vietnam in 1994 and only broke even in 2013, despite its strong average double-digit sales growth rate. As the firm continuously reported its losses, it received tax exemption. The company was later suspected to evade tax by means of transfer pricing and was subject to heavy penalty for incorrect tax report filing. According to Nguyen and Phan (2017), firms with higher portions of state ownership have lower tax avoidance level, as these firms are liable to support social and political objects. This should point to even worse violations of private firms in terms of tax avoidance incentives, and provide valid reasons for us to conduct research on corporate tax avoidance in Vietnam.

3. Theoretical framework

Hanlon and Heitzman (2010) equate tax avoidance to the reduction of “explicit taxes per dollar of pre-tax accounting earnings or cash flows”. By avoiding taxes, higher cash flows can be ascertained, creating higher firm value. Also, firms can lower risk due to increased size and growth with higher cash flows, and this should consolidate the creditworthiness of the firms, reducing the cost of capital. However, it should be noted that the positive linkage between tax avoidance and firm value only exists in firms whose manager’s interests are well aligned with those of shareholders, and managers do not expropriate firm cash flows to pursue their own benefits. This implies that firms with strong and appropriate incentive scheme are in better position to reap the benefits from tax sheltering.

Tax avoidance is affected by the agency conflict between managers and shareholders. Managers can be opportunistic and divert resource when engaging in tax avoidance (Desai & Dharmapala, 2009). The free cash flow from tax-avoiding activities may end up being misused by managers in the form of personal empire building, which certainly will decrease firm value.

Tax sheltering is potentially inducive to Internal Revenue Service (IRS) audit risk (Mills, 1998). The resulting tax litigations with IRS are prone to cause higher direct expenses, e.g., penalties, attorney fees (Guenther et al. (2017)), and indirect expenses (reputational damages). The research by Drake et al. (2017) confirms that tax strategies are risky and investors require a discount on firm value due to these strategies. Desai and Dharmapala (2006) suggest that firms should design incentive schemes in order to lower the moral hazard risk, thus discouraging managers from engaging in tax avoidance, as an effort to preserve firm value.

A number of studies on costs of capital have provided evidence supporting the view that tax avoidance can increase risks. Shevlin et al. (2019) investigate public debt, and document that bond yields are higher for tax-avoiding firms, especially when firms are subject to a high possibility of an IRS audit. Hasan et al. (2014) show that bank loan spreads are positively associated with tax-sheltering activities, and lenders are more likely to put in place more stringent loan covenants. Goh et al. (2016) argue that tax-avoiding firms find themselves pay higher cost of equity, and this relationship is more pronounced for those with inferior outside

monitoring and information transparency. Consequently, these studies imply that creditors seem to equate tax avoidance to risk-generating activities, thus demanding higher premium for their loans.

One channel that tax avoidance facilitates managerial shirking is through the complexity and low information transparency due to earnings management, arrangement of related party transactions, failure to provide detailed disclosures (Balakrishnan et al., 2019; Desai & Dharmapala, 2006; Frank et al., 2009), etc. Complexity and low information quality associated with tax avoidance provide managers with opportunities to reap own benefits. These conditions further exacerbate the agency cost between managers and shareholders.

The agency-related view of tax avoidance is well researched and tends to receive support in the literature (Hanlon & Heitzman, 2010). According to the review of tax research by Hanlon and Heitzman (2010), more well-governed mechanism, e.g., with appropriate equity incentives, helps deter tax avoidance and thus managerial resource diversion. Desai and Dharmapala (2009) and Wilson (2009) find that tax sheltering is positively related to firm value, but primarily for well-governed firms.

4. Empirical literature review and hypothesis development

The impact of tax avoidance on firm performance is important but under-researched, and current empirical literature provides mixed findings at best (Chen et al., 2014). Tax avoidance can impose both direct and indirect influences on corporate current and future cash flows because it can boost cash flows through reducing (current and/or future) tax liabilities. As taxes account for a considerable portion of the focal firm's cash flow, the diversion of money from state to shareholders should increase the shareholders' wealth. Intriguingly, other corporate strategies, such as corporate social responsibility, can interfere and interact with tax planning, moderating the individually potential impact of tax avoidance on firm value (Ling & Wahab, 2018, 2019).

Wang (2010) supports the positive link between tax planning and firm performance by showing that more information-transparent firms are prone to engage in tax avoidance. Wang (2010) further investigates the reaction of investors to tax avoidance and documents positive reaction to this corporate strategy. Inger (2013) also finds a robust and positive association between firm performance and tax avoidance with different measures of tax-reducing tactics.

However, it appears that negative consequences of tax avoidance are abundant. These include the overly complicated business transactions involved to prepare for the avoidance, which clouds the genuine financial performance, increasing information asymmetry. In turn, this condition stimulates the empire-building activities of managers. Additionally, tax avoidance can increase risks of litigation, reputational losses and reception of penalties from tax authorities if detected (Cook et al., 2017; Dyreng et al., 2016; Graham et al., 2014).

The negative link between tax avoidance and firm performance has been pervasive in the literature, due to the issues of increased agency cost and information asymmetry (Chen et al., 2014; Hanlon & Slemrod, 2009; Zhang et al., 2017). Desai and Dharmapala (2009) find an insignificant impact of tax avoidance on firm value, but emphasized that only tax avoidance of firms with higher levels of institutional ownership (thus better governance mechanism) is positively related to firm value. The authors argue that the agency conflicts arising from tax reduction are contained with more institutional ownership, which increases firm value. Ling and Wahab (2019) suggest that corporate social responsibility favorably moderates the impact of book-tax differences on firm value.

Hanlon and Slemrod (2009) document a negative reaction of investors to tax shelter disclosure, implying that investors disprove the managerial diversion and earnings management associated

with tax avoidance. Consistent with Desai and Dharmapala (2009), Hanlon and Slemrod (2009) find that firms with better governance can temper the negative link. Similarly, Jimenez-Angueira (2018) argues that as external monitoring improves, tax avoidance decreases.

Using a large sample of U.S. firms from 1995 to 2008, Kim et al. (2011) find that corporate tax avoidance increases firm-specific stock price crash risk. The authors argue that tax avoidance provides tools for the hoarding of bad news. When bad news is over accumulated and cannot be held back, firm stock price crashes. Kim et al. (2011) also postulate that the positive association between tax avoidance and stock price crash risk is weaker for firms with stronger external monitoring, such as higher levels of analyst coverage and higher risk of takeover threat.

Employing a sample of 4,104 Chinese firm-year observations from 2001 to 2009, Chen et al. (2014) find that tax avoidance is negatively related to firm value measured by Tobin Q. Accordingly, Chinese investors do not appreciate firms that avoid tax liabilities since these activities can help managers cover their rent-seeking behavior. Furthermore, information transparency can alleviate negative impact of tax avoidance on firm value. Also, using data covering Chinese firms, Tang et al. (2019) add that managerial power reduces tax avoidance.

A number of studies find that firms with opaque financial reporting increase the complexity in their operations (Bushman et al., 2004; Frank et al., 2009). In line with the above theme, Majeed and Yan (2019) find a commendable effect of information transparency in terms of financial reporting comparability in reducing tax avoidance. The authors argue that with better reporting comparability managerial activities are monitored more effectively, therefore increasing the likelihood of aggressive avoidance being detected. Majeed and Yan (2019) opine that analyst coverage serves as a substitute for comparability, confirming the importance of information transparency. The findings are robust to various measures of comparability and tax avoidance, as well as methodological approaches. In general, lower information asymmetry helps monitor managerial activities more efficiently.

In summary, the empirical evidence suggests that tax avoidance is negatively associated with firm performance because it complicates the organizational operations, and facilitates managerial opportunism and agency slack. However, in the presence of proper governance mechanisms, agency conflicts and managerial opportunism are curbed, thus helping firms to benefit more from tax avoidance (Desai & Dharmapala, 2009; Jimenez-Angueira, 2018; Kim et al., 2011). In line with previous literature, we establish the following hypothesis:

Hypothesis: Corporate tax avoidance is negatively related to firm performance.

5. Research design

We introduce the dependent variable (firm performance—FV), the independent variable of interest (corporate tax avoidance—CTA), and control variables (firm size (SIZE), capital structure (LEV), sales growth rate (GROWTH), cash flow from operating activities (OCF), and tangible assets (PPE)). The formulae to calculate these variables and the expected relationship between explanatory variables and firm performance based on different theories are discussed below.

5.1. Measuring corporate tax avoidance

According to Dyreng et al. (2010) and Frank et al. (2009), there is a lack of consensus on tax avoidance measures. Nevertheless, there are three frequently employed measures of corporate tax avoidance. Both the first and second measures are based on the view that corporate tax avoidance is considered as a firm's tax burden (Dyreng et al., 2008). Two measures are based on effective tax rate (ETR), including current effective tax rate (Current ETR) and cash effective tax rate (Cash ETR) (Salihu et al., 2013; Wu et al., 2012).

In line with Cheng et al. (2012), the first measure—Current ETR—is calculated as follows:

$$\text{Current ETR}_{i,t} = \frac{(\text{Total Tax Expense}_{i,t} - \text{Deferred Tax Expense}_{i,t})}{\text{Pretax Income}_{i,t}}$$

Current ETR is an inverse measure of corporate tax avoidance, as lower rates of effective tax rate imply bolder engagement in corporate tax avoidance (Frank et al., 2009). Consistent with prior literature, we restrict Current ETR to lie in the interval of [0, 1].

In line with Cheng et al. (2012), Dyreng et al. (2008, 2010), and McGuire et al. (2014), the second measure—Cash ETR, is calculated as follows:

$$\text{Cash ETR}_{i,t} = \frac{\text{Cash Taxes Paid}_{i,t}}{\text{Pretax Income}_{i,t}}$$

Cash ETR is based on the numbers from the statement of cash flow, thus avoiding the use of tax avoidance measures subject to accrual-based earnings management (Chen et al., 2014).

We obtain the third tax avoidance measure by modifying the method of Desai and Dharmapala (2006), which uses total accruals to represent accrual-based earnings management. Following Kothari et al. (2005), we use discretionary accruals rather than total accruals, because the former is more accurate and is consistent with the orthogonal components of the book-tax difference that cannot be explained by earnings management, thus acting as a more proper measure of tax avoidance.

To measure the corporate tax avoidance related to accrual-based earnings management, we perform two-step approach. First, following Kothari et al. (2005), we obtain discretionary accruals $DA_{i,t}$ for each firm i in year t . The discretionary accruals (DA) are calculated as the residuals from estimating Equation (1):

$$\frac{TAC_{i,t}}{A_{i,t-1}} = \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{\Delta(REV_{i,t} - AR_{i,t})}{A_{i,t-1}} + \beta_3 \frac{PPE_{i,t}}{A_{i,t-1}} + \beta_4 \frac{ROA_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} \quad (1)$$

$$DA_{i,t} = TAC_{i,t} - NDA_{i,t} \quad (2)$$

Where: TAC : total accruals, DA : discretionary accruals, $NDA_{i,t}$: Non-discretionary accruals for firm i in year t , A_{t-1} : Total assets for firm j in year $t-1$, $\Delta REV_{i,t}$: Change in the revenues for firm i in year t less revenue in year $t-1$, $\Delta AR_{i,t}$: Change in accounts receivables for firm i in year t less receivable in year $t-1$, $PPE_{i,t}$: Gross properties, plants and equipment for firm i in year t , $ROA_{i,t}$ is the net income of firm i in year t scaled by the lagged total assets.

Subsequently, we regress model (3) to measure the level of accrual-based earnings management. The part that cannot be explained by accrual-based earnings management—the residual in Equation (4)—is our third corporate tax avoidance measure:

$$BTD_{i,t} = \beta_1 DA_{i,t} + u_j + e_{i,t} \quad (3)$$

$$CTA_{i,t} = u_j + e_{i,t} \quad (4)$$

Where: $BTD_{i,t}$ is the book-tax difference for firm i in year t scaled by lagged total assets; $DA_{i,t}$ represents the discretionary accruals for firm i in year t scaled by the lagged total assets; u_j is the average value of the residual for firm i over the sample period; and $e_{i,t}$ is the deviation from the average residual u_j of firm i in year t . $CTA_{i,t}$ estimated from Eq. (4) is the third proxy for corporate tax avoidance.

Following Desai and Dharmapala (2009), we build the model on the impact of tax avoidance on firm value as follows:

$$FV_{i,t} = \delta_0 FV_{i,t-1} + \delta_1 CTA_{i,t} + \delta_2 SIZE_{i,t} + \delta_3 LEV_{i,t} + \delta_4 GROWTH_{i,t} + \delta_5 OCF_{i,t} + \delta_6 PPE_{i,t} + \varepsilon_{i,t}$$

Where: FV is the measure of firm performance, proxied by return on total assets (ROA), return on total equity (ROE) and Tobin's Q (Desai & Dharmapala, 2009; Eisenberg et al., 1998; Yu, 2013). Return on total assets (ROA) is defined as the ratio of net income to total assets; Return on equity (ROE) is calculated as the ratio of net income to equity and Tobin's Q is measured as the ratio of market value of total assets and total debt to book value of total assets. Control variables include firm size (SIZE), capital structure (LEV), sales growth rate (GROWTH), cash flow from operating activities (OCF), and tangible asset (PPE).

5.2. Control variables

Firm size (SIZE) is calculated as the natural logarithm of the book value of total assets (Chen et al., 2014; Desai & Dharmapala, 2009; Gaaya et al., 2017). We expect a negative sign of this variable, in line with Morck et al. (1988), Desai and Dharmapala (2009).

SIZE = The natural logarithm of the book value of total assets at year-end

Capital structure (LEV) is calculated as the sum of short- and long-term debt to total assets (Chen et al., 2014; Desai & Dharmapala, 2009; Gaaya et al., 2017). We expect a negative sign of this variable, in accordance with Gompers et al. (2003) and Desai and Dharmapala (2009).

LEV = (the sum of short- and long-term debt)/Total assets

Sales growth rate (GROWTH) is calculated as current operating revenue—prior operating revenue divided by operating revenue of prior year (Anthony & Ramesh, 1992; Serrasqueiro, 2009). In line with Desai and Dharmapala (2009), we expect a positive sign of this variable.

GROWTH = (Current operating revenue—Prior operating revenue)/Beginning operating revenue.

Tangible asset (PPE) is calculated as Net Property, Plant and Equipment divided by total assets (Chen et al., 2014; Desai & Dharmapala, 2009). Following Chen et al. (2014), we expect a negative relationship between firm performance and tangible assets.

PPE = Net Property, Plant and Equipment/Total assets.

Cash flow from operating activities (OCF) is calculated as cash flow from operations divided by total assets (Chen et al., 2014; Desai & Dharmapala, 2009). According to Gompers et al. (2003) and Desai and Dharmapala (2009), there could be both positive and negative effects of net cash from operating activities on firm performance. Accordingly, we do not provide expected sign for this variable.

OCF = Cash flow from operations/Total assets

5.3. Estimation strategy

We employ linear dynamic GMM to control for the possibility of two-way relationship between dependent and independent variables, and to allow for the dynamic modelling of firm performance as in previous literature. This method is capable of resolving issues such as heteroskedasticity and autocorrelation which are prevalent in the context of panel data.

6. Empirical results and discussion

6.1. Descriptive statistics

All the research data were retrieved from Thomson Reuters EIKON. We remove banks, insurance companies and financial companies from the research sample (Gaaya et al., 2017; Yorke et al., 2016). This is because financial firms have different business nature and regulations compared to

firms of other industries (Jiraporn et al., 2008; King & Santor, 2008). After the elimination of missing or incomplete data, the sample comprises 125 companies in the period from 2010 to 2016, totaling 875 observations.

Figure 1 displays mean values of firm performance proxies (ROA, ROE, TOBINQ) from 2010 to 2016. There was a downward trend of three variables during 2010 to 2012 for all the three variables, while these measures experienced an upward trend from 2013 to 2016.

Figure 2 displays the mean values of corporate tax avoidance proxies (Current ETR, Cash ETR, BTD) from 2010 to 2016. It is obvious that the patterns of all the three variables are similar. Due to the financial crisis in 2012, the trends were upward during the first half of this period, and these proxies reached their peaks in 2013. Then, the values of these factors decreased significantly from 2013 to 2016. BTD was higher than Current ETR and Cash ETR during the period.

Table 1 presents the summary statistics of variables used in this study over the period from 2010 to 2016. The mean value of Tobin's Q of sample firms is 1.080, which is relatively lower than 1.782 in China (Chen et al., 2014) and 1.79 in USA (Inger, 2013) and 1.9612 in Ghana (Yorke et al., 2016). The standard deviation of Tobin's Q is 0.482, which is lower than 1.148 in China (Chen et al., 2014) and 1.11 in USA (Inger, 2013) and 1.3047 in Ghana (Yorke et al., 2016).

The mean value of BTD of sample firms is 0.3701, which is higher than -0.0009 in China (Chen et al., 2014) and -0.008 in Korea (Lim, 2011). The standard deviation of BTD is 0.3165, which is higher than 0.104 in China (Chen et al., 2014) and 0.077 in Korea (Lim, 2011).

Figure 1. Average value of firm performance from 2010 to 2016.

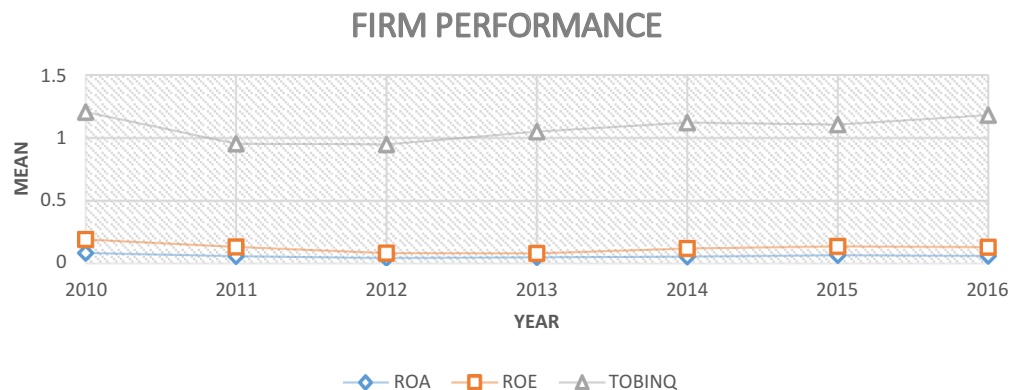


Figure 2. Average value of corporate tax avoidance from 2010 to 2016.

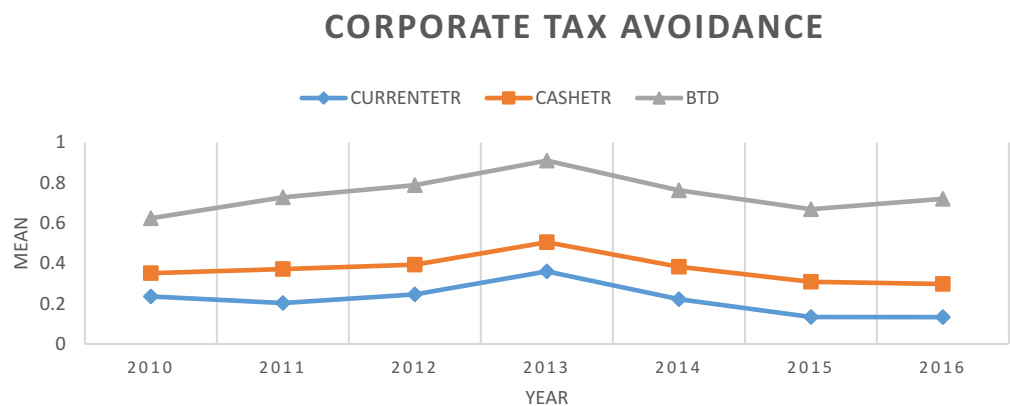


Table 1. Descriptive statistics of variables

Variable	ROA	ROE	TOBINQ	Current ETR	Cash ETR	BTD	LEV	OCF	SIZE	PPE	GROWTH
Mean	0.059	0.125	1.080	0.219	0.154	0.370	0.559	0.050	28.097	0.245	1.907
Std. Dev.	0.071	0.168	0.482	0.307	0.195	0.317	0.194	0.121	1.431	0.195	16.872
Min	-0.646	-2.061	0.446	0.000	0.000	0.000	0.040	-0.696	24,690	0.001	-0.997
Max	0.784	1.001	6.4506	1.000	0.971	1.000	0.935	1.189	32.826	0.884	328.897
Obs	875	875	875	875	875	875	875	875	875	875	875

ROA is computed as the ratio of net income to total assets. ROE is measured as ratio of net income to equity. Tobin's Q is measured as ratio of total market value of firm divided by book value of over total assets. Current ETR is computed as ratio of total tax expense minus deferred tax expense over Pretax Income. Cash ETR is calculated as ratio of taxes paid in cash over pretax income. BTD is Book-tax difference. LEV is firm leverage, measured as ratio of total debt over total assets. OCF is net operating cash flow over total assets. SIZE is firm size, that is, natural log of assets. PPE is the ratio of net plant, property and equipment to total assets. GROWTH is sale growth rate.

6.2. Results and discussion of results

Table 2 presents the Pearson's correlation matrix of variables. The Pearson's correlation between independent variables should not exceed 0.8 to ascertain that there is no serious multicollinearity problem among the variables.

ROA, ROE and TOBINQ are negatively correlated with Current ETR and BTD. However, ROA and ROE are positively correlated with Cash ETR. The Pearson pairwise correlation coefficients do not constitute valid statistical inference on the relationship between tax avoidance and firm performance. Multivariate regressions are more suitable to perform this task, because in such procedures other variables that explain firm performance are controlled, and if properly handled other issues such as endogeneity is tackled. All of these result in a more reliable base for inferences.

$$FV_{i,t} = \delta_0 FV_{i,t-1} + \delta_1 CTA_{i,t} + \delta_2 SIZE_{i,t} + \delta_3 LEV_{i,t} + \delta_4 GROWTH_{i,t} + \delta_5 OCF_{i,t} + \delta_6 PPE_{i,t} + \varepsilon_{i,t}$$

Where: FV is the firm performance indicator. CTA is the corporate tax avoidance indicator. LEV is firm leverage, measured as ratio of total debt over total assets. OCF is net operating cash flow and total assets. SIZE is firm size, that is, natural log of assets. PPE is the ratio of net plant, property and equipment to total assets. GROWTH is sale growth rate. *, **, *** denote the level of significance of 10%; 5% and 1%, respectively;

Overall, the results suggest that there are both negative and positive effects of corporate tax avoidance on firm performance, depending on how tax avoidance and firm performance are measured. ROA and ROE are the accounting performance measures, while TOBINQ provides the market-based one reflecting the investors' valuation of the focal firm.

Tables 3, 4 and 5 present the results of the effect of corporate tax avoidance on firm performance using three alternative proxies for corporate tax avoidance: Current ETR, Cash ETR and BTD.

Interestingly, we document the same pattern of impacts of tax avoidance measured by Current ETR and BTD (Tables 3 and 5). To be specific, we find a negative and statistically significant association between Current ETR and BTD and firm accounting performance (ROA, ROE) (Table 3), suggesting that lower tax rates, or more corporate tax avoidance conducted, are likely to enhance firm accounting performance.

However, Current ETR and BTD are positively related to firm market performance (TOBINQ), in line with our hypothesis, implying that market players disprove of the tax-avoiding behavior of firms. The results are in accordance with previous studies, e.g., Chen et al. (2014), and Zhang et al. (2017).

Our results that tax avoidance is positively related to firm accounting measures while exerting negative consequences on market performance are highly consistent with those in Zhang et al. (2017). These authors find that, for a sample of Chinese listed firms, there is a significant negative direct association between tax avoidance and market value, in line with agency cost theory with emphasis on managerial rent extraction. Consistently, Hanlon and Slemrod (2009) and Chen et al. (2014) find that firms engaging in tax sheltering see their stock prices decline.

Using Structural Equation Modeling, Zhang et al. (2017) find that in addition to a negative direct relationship between tax avoidance and firm value, tax avoidance has a positive indirect relationship with market value thanks to its stimulation of growth and profitability. This is because tax avoidance increases after-tax cash, implying that tax avoidance can add value to firms. However, Zhang et al. (2017) suggest that for firms to garner benefits from tax avoidance, strengthening internal governance and management capability is prerequisite in order to prevent managerial rent extraction.

Managers have the incentive to reduce earnings through earnings manipulation to avoid taxes liable to the government. This practice has an adverse effect on the transparency and reliability of

Table 2. Pearson's correlation coefficient matrix

	ROA	ROE	TOBINQ	Current ETR	Cash ETR	BTD	LEV	OCF	SIZE	PPE	GROWTH
ROA	1										
ROE	0.766	1									
TOBINQ	0.098	-0.149	1								
Current ETR	-0.228	-0.173	-0.209	1							
Cash ETR	0.207	0.189	0.211	-0.211	1						
BTD	-0.194	-0.100	-0.124	0.025	0.057	1					
LEV	-0.490	-0.139	-0.187	0.015	-0.071	0.143	1				
OCF	0.198	0.013	0.230	-0.103	0.087	-0.117	-0.238	1			
SIZE	0.041	0.048	0.293	-0.028	0.159	0.036	0.185	-0.013	1		
PPE	-0.016	-0.037	0.028	-0.021	-0.010	0.022	-0.035	0.233	0.120	1	
GROWTH	0.043	0.067	0.122	-0.048	0.096	-0.014	0.031	-0.02	0.069	0.007	1

ROA is computed as ratio of net income to total assets. ROE is measured as ratio of net income to equity. Tobin's Q is measured as ratio of total market value and total debt of firm divided by book value of over total assets. Current ETR is computed as ratio of total tax expense minus deferred tax expense over Pretax Income. Cash ETR is calculated as ratio of taxes paid in cash over pretax income. BTD is Book-tax difference. LEV is firm leverage, measured as ratio of total debt over total assets. OCF is net operating cash flow over total assets. SIZE is firm size, that is, natural log of assets. PPE is the ratio of net plant, property and equipment to total assets. GROWTH is sale growth rate.

Table 3. Dynamic GMM results of effect of current ETR on firm value

Variables	ROA		ROE		TOBINQ	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Lag of Dep. Var	-0.407**	0.036	-0.1556	0.265	-0.3145	0.055
Current ETR	-0.106***	0.004	-0.1825*	0.065	0.1862*	0.097
LEV	0.009	0.961	0.3062	0.718	-2.3215***	0.001
OCF	-0.183***	0.01	0.0534	0.831	-0.4393	0.220
SIZE	-0.011	0.574	0.0647	0.442	0.5876***	0.000
PPE	-0.171	0.4	0.1729	0.77	0.7597	0.289
GROWTH	0.0128*	0.056	0.0164	0.619	-0.001	0.624
J- statistic	29.81		9.34		16.79	
Prob J-statistic	0.054		0.747		0.339	

The table reports parameter estimates of the model:

Table 4. Dynamic GMM results of effect of cash ETR on firm value

Variables	ROA		ROE		TOBINQ	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Lag of Dep. Var	-0.178	0.277	-0.118	0.493	-0.0012	0.996
Cash ETR	0.2203**	0.048	0.5864*	0.082	-0.8551*	0.057
LEV	-0.74	0.168	1.5251	0.238	0.8781	0.660
OCF	-0.331***	0.001	0.0844	0.792	-0.6097*	0.078
SIZE	-0.006	0.861	0.1811**	0.05	0.231	0.122
PPE	-0.202	0.631	0.1808	0.81	2.5147	0.284
GROWTH	-5E-05	0.997	0.008	0.826	0.0117	0.407
J- statistic	6.85		4.79		17.03	
Prob J-statistic	0.739		0.979		0.074	

The table reports parameter estimates of the model:

Where: FV is the firm performance indicator. CTA is the corporate tax avoidance indicator. LEV is firm leverage, measured as the ratio of total debt over total assets. OCF is net operating cash flow and total assets. SIZE is firm size, that is, natural log of assets. PPE is the ratio of net plant, property and equipment to total assets. GROWTH is sale growth rate.

*, **, *** denote the level of significance of 10%; 5% and 1% respectively;

financial statements, and creates unnecessary complexity for the users. In addition, corporate tax avoidance can be a channel for managers to engage in shirking. However, corporate tax avoidance is legitimate as long as the managers use methods allowed under accounting standards. Intriguingly, the relationship between corporate tax avoidance and firm performance is mixed in the present study.

The impact of Cash ETR on firm performance differs depending on whether the performance measures are accounting-based or market based (Table 4). More specifically, Cash ETR has a significantly positive correlation with ROA and ROE, while having a negative association with TOBINQ. The negative impact of Cash ETR on accounting performance is consistent with prior research using U.S. data (Desai & Dharmapala, 2009; Inger, 2013; Wang, 2010), which find that higher tax payment is associated with better firm performance. Nonetheless, cash tax avoidance has a positive influence on corporate market performance. Yorke et al. (2016) argue that high cash payment of corporate tax results in lower dividend streams in the future, leading to a reduction in firm value.

Table 5. Dynamic GMM results of effect of BTD on firm value

Variables	ROA		ROE		TOBINQ	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Lag of Dep. Var	-0.7423***	0.001	0.1165	0.66	-0.5032	0.2997
BTD	-0.0862*	0.056	-0.254*	0.097	0.726**	0.014
LEV	0.2262	0.42	-0.1714	0.889	-0.0875	0.962
OCF	0.0303	0.717	-0.2866	0.371	-0.0601	0.904
SIZE	0.1065***	0.000	0.1278	0.156	0.2301	0.266
PPE	-0.0805	0.635	0.2874	0.732	-0.9682	0.461
GROWTH	-0.0002	0.946	0.0006	0.935	-0.0183	0.220
J- statistic	15.97		3.12		2.45	
Prob J-statistic	0.659		0.681		0.783	

The table reports parameter estimates of the model:

Where: *FV* is the firm performance indicator. *CTA* is the corporate tax avoidance indicator. *LEV* is firm leverage, measured as ratio of total debt over total assets. *OCF* is net operating cash flow and total assets. *SIZE* is firm size, that is, natural log of assets. *PPE* is the ratio of net plant, property and equipment to total assets. *GROWTH* is sale growth rate.

*, **, *** denote the level of significance of 10%; 5% and 1% respectively;

The difference in the results of the impact of Current ETR and BTD versus cash ETR on firm value calls for more vigilant peruse over the use of different measures of tax avoidance. Previous literature conducts research using limited number of measures, e.g., Yorke et al. (2016), Chen et al. (2014), which could affect the comprehensive evaluation of tax avoidance on firm value. Several studies suggest that the variation in BTDs could reflect tax management, with the underlying idea that tax planning is destined to lower tax payments, leading to differences in financial accounting and tax reporting (Desai & Dharmapala, 2006; Plesko, 2004). However, using cash taxes paid as the numerator in the calculation of tax avoidance proxies instead of current tax expense enhances the robustness to changes in accounting estimates, e.g., for allowances (Dyregang et al., 2008). Nonetheless, cash taxes paid potentially comprise the amounts of tax payments of previous periods, leading to a mismatch of numerator and denominator, thus providing a potentially distorted proxy for tax avoidance (Dyregang et al., 2008; Hanlon & Heitzman, 2010).

7. Conclusions and implications

Tax planning is an important financial decision made by managers. More tax avoidance can enhance shareholders' interests while increasing the risks to managers. Therefore, it is unlikely for managers to engage in corporate tax avoidance unless they can derive private benefit. According to Desai and Dharmapala (2009), more research on developing countries should be conducted to attain more insight into the impact of corporate tax avoidance. In response to this call, this research is the first of its kind to provide empirical evidence on the impact of corporate tax avoidance on firm performance in Vietnam, which should enrich the literature in the context of developing countries.

The purpose of this research is to investigate the effect of corporate tax avoidance on firm performance in Vietnamese context. Using dynamic panel data method for a sample of 125 Vietnamese listed firms from 2010 to 2016, we find that the effect of corporate tax avoidance on firm performance is mixed. Specifically, Cash ETR has a positive correlation on accounting measures of firm performance, while having a negative association with market measure. Meanwhile, Current ETR and BTD have the opposite pattern. The results on the link between Current ETR and BTD on accounting measures and market-based measure of performance are highly consistent with those in Zhang et al. (2017). On the other hand, the impact of Cash ETR is

different from that of Current ETR and BTD, in line with the argument that Cash ETR could be a potentially distorted proxy for tax avoidance.

The results of our study contribute to the literature by pointing to the need to theoretically and carefully consider the proxies of tax avoidance measures when empirically examining its impact on firm value. This is to examine which proxies may be potentially biased. This paper extends the literature by specifying the very contrasting pattern of the impact of Current ETR, BTD and Cash ETR on both accounting and market firm performance measures. Therefore, it should be interesting to investigate the differences. Furthermore, through using a sample of listed firms in Vietnam, we provide a robustness test to Zhang et al. (2017), which claims that tax avoidance could exert positive impact on firm value, as long as the incentive schemes for managers are well designed to align their interests with those of shareholders. Finally, we are the first to empirically examine the link between tax avoidance and firm performance using a sample of Vietnamese listed firms over the period from 2010 to 2016, using a wide-range set of tax avoidance proxies and performance indicators.

The findings from this study imply that tax avoidance could add more value to firms due to enhanced cash flows which facilitate investments. However, the governance mechanisms should be in place to ascertain that the resulting increased cash flows as well as complexity are not subject to being misused by managers. Furthermore, empirical studies need to be more vigilant and provide concrete justifications for the use of specific tax avoidance proxies, since each proxy can play a different role in exemplifying the behavior.

Our limitation of our study is that we focus on corporate tax avoidance by non-financial firms only in Vietnam. We have not considered variables related to ownership or other non-ownership governance mechanisms, to verify whether firms with better governance mechanisms enjoy more benefits associated with tax avoidance. Therefore, future studies can introduce variables related to governance mechanisms to ascertain whether well-governed firms, judged by different aspects of governance, can garner the benefits of agency cost management. In addition, further studies can compare the links between corporate tax avoidance and firm performance in Vietnam and other ASEAN countries. In addition, tax avoidance and performance in financial industry has not been adequately delved, see Chen et al. (2014), Yorke et al. (2016), & Zhu et al. (2019) for example, which serves as a significant avenue for future research.

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