ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

The impact of tax avoidance on the value of listed firms in Vietnam

Nguyen Minh Ha¹,²,³*, Pham Tuan Anh⁴, Xiao-Guang Yue⁵,⁶,⁷ and Nguyen Hoang Phi Nam⁸

Abstract: The study aims to examine the impact of tax avoidance on the value of listed firms in Vietnam. Using a sample of 209 non-financial businesses listed on the Ho Chi Minh Stock Exchange (HOSE) in Vietnam for the period 2010–2018 and the Panel-Corrected Standard Errors (PCSE) to overcome the model’s errors, we show that tax avoidance has a negative impact on the value of businesses at a 10% significance level. In addition, other variables, such as foreign ownership, investment, return on assets, leverage, the growth rate, firm size, sales index, and age of the firm, have a positive impact on firm value. In addition, variables such as state ownership and total accruals have a negative impact on firm value, and most of them are highly robust. However, firm size and the firm growth rate are not statistically significant in the study.

Subjects: Economics; Finance; Business, Management and Accounting; Industry & Industrial Studies

Keywords: firm value; HOSE; PCSE; tax avoidance

ABOUT THE AUTHOR

Nguyen Minh Ha is a Professor of Economics at Ho Chi Minh City Open University, Vietnam. His research interest includes economics, development economics, entrepreneurship, corporate finance, investment project analysis, applied economics.

Pham Tuan Anh got the master degree of finance – banking from Ho Chi Minh City Open University. His interest is subjects related to corporate finance.

Xiao-Guang Yue is lecturer of Department of Computer Science and Engineering, School of Sciences, European University Cyprus, Portugal; and School of Domestic and International Business, Banking and Finance, Romanian-American University, Romania. His interests are finance, international business and computer science.

Nam Phi Hoang Nguyen is currently a lecturer of Faculty of Accounting and Auditing, Ho Chi Minh City Open University, Vietnam. His main research interests include issues on both accounting and finance.

PUBLIC INTEREST STATEMENT

The study aims to examine the impact of tax avoidance on the value of listed firms in Vietnam. Using a sample of 209 non-financial businesses listed on the Ho Chi Minh Stock Exchange (HOSE) in Vietnam for the period 2010–2018 and the Panel-Corrected Standard Errors (PCSE) to overcome the model’s errors, we show that tax avoidance has a negative impact on the value of businesses at a 10% significance level. In addition, other variables, such as foreign ownership, investment, return on assets, leverage, the growth rate, firm size, sales index, and age of the firm, have a positive impact on firm value. In addition, variables such as state ownership and total accruals have a negative impact on firm value, and most of them are highly robust. However, firm size and the firm growth rate are not statistically significant in the study.
1. Introduction
One important factor that influences corporate financial decisions is taxes, such as decisions related to a company’s risk management or organizational formation and restructuring (Desai & Dharmapala., 2006; Graham, 2003), and firm managers have become interested in using tax avoidance as a source of funding. Tax avoidance, a temporary but lawful capital appropriation of businesses (unlike tax evasion), is one of the important sources of capital for business activities. From the research results of Desai et al. (2007) and Lisowsky (2010), tax avoidance helps companies save up tax which should be paid to the government. These tax savings are temporarily used as capital for the company to finance its businesses and increase investment opportunities with the aim of increasing corporate value. From these arguments, it can be seen that tax avoidance brings benefits from many different angles, such as shareholders would increase their assets in the form of dividends and company would have more fund to cover the debt and increase working capital.

Along with the benefits of tax avoidance, there will be costs for engaging it. According to Chen et al. (2014), tax avoidance both reduces corporate value and increases agency costs. In the same light with this result, Desai et al. (2007) argued that agency cost is immense for companies participating in tax avoidance as it would increase information asymmetry problem between investors and managers. From another aspect, the research results of Hoang et al. (2017), suggest that state-owned enterprises, when implementing tax avoidance activities, will reduce corporate value, while the foreign owned enterprises, the act of tax avoidance will increase the value of the business.

With different results from previous researchers, the paper is with the aim to study the impact of tax avoidance on corporate value of firms listed on HOSE as well as to provide recommendations on useful policy implications to business managers in using tax avoidance to increase business value. The paper is with two specific research questions including: (1) How does tax avoidance affect corporate value? (2) What are the recommendations as well as policy implications to improve business value through tax avoidance?

Consequently, the current paper seeks to make the following contributions to the existing literature. First, paper aims to provide an overview of the impact of tax avoidance on corporate value of listed firms on HOSE. Second, from the research results, the paper is to offer businesses with recommendations as well as policy implications on tax avoidance activities to increase business value. Finally, it backs new perspectives on tax avoidance issues in Vietnam, thereby serving other studies in proposing appropriate policies and methods to help businesses increase their business value based on tax avoidance activities.

Tax avoidance is very common, especially in Vietnam. If businesses make good use of tax avoidance, the cost of taxes is reduced, thereby increasing profits as well as increasing the value of the business. For businesses listed on the Ho Chi Minh Stock Exchange (HOSE), tax avoidance is also an indispensable activity in their operating plans. In Vietnam, all businesses have a responsibility and a duty to pay their taxes, which generate revenue for the government, stimulating economic growth and distributing income. Therefore, Vietnamese businesses must abide by tax policies and pay their taxes, which means affect firm value. Although businesses attempt to minimize their tax burden through tax avoidance, they also face other non-tax-related expenses. As a result, to increase income and firm value, businesses in Vietnam often actively avoid taxation.

The World Bank report in 2019 provides an after-tax declaration index in which Vietnam is only at 49.08 (out of 100 points), while that of Thailand is 73.41, Singapore is 71.97, Malaysia is 52.65 and the Philippines is 50. In addition, the index of total tax on profit of Vietnam is also ranked quite low. Conflicting results emerge in previous research—such as Desai and Dharmapala. (2006) and Nugroho and Agustia (2017)—which argue that businesses that avoid tax increase firm value. The results in other studies—including Chen et al. (2014), Black et al. (2015), and Santana and Rezende
—suggest that tax avoidance reduces firm value. For these reasons, we study the impact of tax avoidance on the firm value of enterprises listed on the HOSE to provide empirical evidence in Vietnam and offer managers, investors, and the government a new perspective on tax avoidance.

2. Literature review and hypotheses development

2.1. Literature review
Tax avoidance is a legal activity to reduce the cost of taxes and transfer that value to shareholders in order to increase firm value. Tax evasion also aims to reduce the amount of tax payable and transfer that value to shareholders. However, unlike tax avoidance, tax evasion is a violation of the law. In addition to increasing corporate value, previous empirical evidence shows that tax avoidance can reduce firm value. Tax avoidance is also beneficial in many ways, for example, shareholders have an opportunity to obtain more assets in the form of dividends, so the company will have more capital for paying debts, and managers obtain their own benefits.

However, according to Desai and Dharmapala, (2006), and Chen et al. (2014), tax avoidance increases agency costs, and according to Hutchens and Rego (2013), tax avoidance also increases equity costs. Tax avoidance is identified through various methods, such as the effective tax rate (ETR), effective cash tax rate (CETR), and book-tax differences (BTD). This study used the BTD method to determine tax avoidance, which distinguishes this study from previous empirical studies.

Firm value is the tangible value or potential value that an enterprise may create in the future, calculated with different valuation models or methods, so it is possible to arrive at different results. According to Jensen (1986) and John and John (1993), firm value is the value of its total assets, determined using different methods for measuring firm value based on the discounted cash flow model, based on the value of assets, using only Tobin's Q, and based on the market value of assets divided by the ratio of the book value of assets (MKB). In this study, we used the MKB ratio to determine firm value, which is another point of difference with previous studies.

2.2. Hypotheses development
Previous empirical studies have not arrived at any consensus on the impact of tax avoidance on corporate value, although they suggested that tax avoidance is one of the most important activities used for determining business value. For example, according to Desai and Dharmapala, (2006), companies that engage in optimal corporate governance have a significant impact on management policies regarding tax avoidance to increase firm value. In addition, M.A. Desai and Dharmapala (2011) also argue that tax avoidance raises firm value. Moreover, Kutcher, Guenther, and Jackson (2012) showed that interested managers optimize taxes to reduce the tax burden and maximize the profit level. Therefore, any change in firm value usually comes from the cost of corporate income tax, and corporate executives devise strategies to minimize the tax burden and raise after-tax profits, thereby increasing shareholder assets and corporate value (Abdul-Wahab & Holland, 2012). Therefore, to achieve our research objectives as well as to provide more evidence on the impact of tax avoidance on firm value, we propose the following research hypotheses.

Tax avoidance helps businesses minimize their tax burden but their financial difficulties remain because they cannot foresee other non-tax-related expenses; in addition, optimizing taxable income affects stakeholder benefits. In addition, tax avoidance increases agency costs and reduces firm value (Chen et al., 2014), which is consistent with Black et al. (2015), who indicates that a negative relationship is found between tax avoidance and firm value and the ability to manage and tax avoidance.

It can be seen that tax avoidance can increase the value of business value or reduce the effect of business value. Also, according to the inconsistency of the results about the impact of tax avoidance on the enterprise value of previous studies, we expect that tax avoidance will have
a negative impact on the value of business value, agreeing with the result of Chen et al. (2014). Thereby, the first research hypothesis is as follows:

**Hypothesis 1: Tax avoidance has a negative impact on the firm value of enterprises listed on the HOSE.**

In countries, state ownership is evident when the state engages in great deal of intervention in economic activities. It is believed that state ownership can provide businesses with financial resources as well as legal support which can improve corporate performance (Le & Phung, 2012). According to Le and Phung (2012), state ownership and price book values have a positive impact on each other.

However, some suggest that the state ownership has a negative impact on firm performance and firm value (Chen et al., 2014). In addition, enterprises with state shareholders employ fewer tax avoidance measures than other firms because they are often not focused on maximizing profits. However, these businesses focus on social and political goals, so they place little emphasis on strategies to avoid taxes (Chen et al., 2014). Thereby, the second research hypothesis is as follows:

**Hypothesis 2: State ownership has a negative impact on the firm value of enterprises listed on the HOSE.**

One important financial resource for developed countries that cannot be ignored is inflows of foreign investment, and the possible problems that arise from increases in foreign capital flows. The increasing amount of foreign capital in developed countries merits more attention. As Wu et al. (2013) point out, foreign-owned private companies in China generally have more efficient operations and contribute more to local gross domestic product (GDP), whereas the economic and political environment is more beneficial for state-owned enterprises. Therefore, local governments often use local policies to support private businesses, and those policies are often related to taxes. Thereby, the third research hypothesis is as follows:

**Hypothesis 3: Foreign ownership has a positive impact on the firm value of companies listed on the HOSE.**

One important influencing factor in firm operations and firm value is firm size. Accordingly, Serrasqueiro and Nunes. (2008) and Black et al. (2015) argue that a larger surplus of internal cash flow is related to firm size and better investment opportunities than firms with smaller scale. At the same time, Antoniou et al. (2008) also point out that larger firms often have a lower bankruptcy risk and highly transparent information as they can access the external capital market more easily at lower borrowing cost to maximize profits by employing a tax shield. As a result, large businesses can achieve greater firm value. The final research hypothesis is as follows:

**Hypothesis 4: Firm size has a positive impact on the firm value of companies listed on the HOSE.**

### 3. Research design

#### 3.1. Data collection

We collected secondary data from the annual financial statements of joint stock companies listed on the HOSE in Vietnam from 2010 to 2018, forming a sample of 209 enterprises with a total of 1,881 observations. The research data excludes businesses that do not ensure the continuity of financial information disclosure during research period and businesses operating in specific industries (financial companies) such as insurance companies, banks, securities companies or investment funds.
Table 1. Summary of variables in the model

| Variables | Type of variable | Definition | Previous studies | Expected Sign with dependent variable |
|-----------|-----------------|------------|-----------------|----------------------------------------|
| MKB       | Dependent       | Business market value/Business book value | Tiago and Calderia (2013) | NA                                     |
| TA        | Independent     | Tax avoidance (Book-tax differences) | Desai et al. (2007) | -                                      |
| STATE     | Independent     | Percentage of state ownership in the company | Goh. et al. (2016) | -                                      |
| FOREIGN   | Independent     | Percentage of foreign ownership in the company | Goh. et al. (2016) | +                                      |
| SIZE      | Independent     | Ln (Total assets) | Chen et al. (2014) | +                                      |
| ACCT      | Control         | (Profit after tax—operating cash flow)/Total assets | Frank et al. (2009) | +                                      |
| INV       | Control         | (Fixed assets<sub>t—1</sub>—Fixed assets<sub>t</sub>) /Total assets<sub>t</sub> | Assidi et al. (2016) | +                                      |
| FAGE      | Control         | The number of years of operation of the company since its establishment | Assidi et al. (2016) | +                                      |
| ROA       | Control         | Profit after tax/Total average assets | Chen et al. (2014) | +                                      |
| DEBT      | Control         | Total debt divided by total equity | Assidi et al. (2016) | -                                      |
| GROWTH    | Control         | (Net sales<sub>t</sub>—Net sales<sub>t—1</sub>)/Net sales<sub>t—1</sub> | Chen et al. (2014) | +                                      |
| SALES     | Control         | Natural logarithm of total sales revenue in the fiscal year | Vo (2014) | +                                      |

3.2. Research model and measurement
Based on the theory and empirical model in previous papers, such as Desai and Dharmapala (2011), Chen et al. (2014), and Assidi et al. (2016), we propose the following research model to test the impact of tax avoidance on firm value, the summary of variable in the model is showed at Table 1:

\[
MKB_t = \beta_0 + \beta_1 TA_{it} + \beta_2 STATE_{it} + \beta_3 FOREIGN_{it} + \beta_4 SIZE_{it} + \beta_5 ACCT_{it} + \beta_6 INV_{it} + \beta_7 FAGE_{it} + \beta_8 ROA_{it} + \beta_9 DEBT_{it} + \beta_{10} GROWTH_{it} + \beta_{11} SALES_{it} + \epsilon_{it}
\]

4. Empirical results and discussion
Table 2 shows that tax avoidance by firm is very high: the highest taxes avoided total VND 2,700 billion, while the lowest totals VND 22,512 billion. This is explained simply by heterogeneous firm characteristics and different factors, such as state ownership, foreign ownership, and firm size as well as variation in tax avoidance decisions. Enterprises with state ownership take fewer tax avoidance measures than other firms, because they often focus on social and political strategies, not maximizing corporate profits. In the sample, the highest proportion of state ownership of firms is 82.38%, and the lowest is 0%.
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| Variables | Observations | Mean  | Maximum | Minimum | Unit of measurement |
|-----------|--------------|-------|---------|---------|---------------------|
| MKB       | 1881         | 1.1808| 12.9525 | 0       | %                   |
| TA        | 1881         | 19.4892| 2700.226| -22,512.01 | Bill. VND         |
| STATE     | 1881         | 20.2873| 82.38  | 0       | %                   |
| FOREIGN   | 1881         | 14.2362| 77.5796| 0       | %                   |
| ACCT      | 1881         | 0.0103| 0.8067  | -1.8348 | %                   |
| INV       | 1881         | 0.0111| 0.8225  | -0.5483 | %                   |
| GROWTH    | 1881         | 0.2944| 102.1511| -24.1617 | Bill. VND         |
| SIZE      | 1881         | 27.9529| 33.2978| 25.4219 | Logarithm         |
| ROA       | 1881         | 0.0699| 0.7219  | -0.4922 | %                   |
| DEBT      | 1881         | 1.5886| 42.22   | 0.03    | %                   |
| FAGE      | 1881         | 33.0191| 100    | 11      | Year               |
| SALES     | 1881         | 11.9679| 14.0863| 9.8654  | Logarithm         |

Foreign-owned enterprises often achieve more operational efficiency and contribute more to local GDP, whereas the economic and political environment is more beneficial for state-owned enterprises. Therefore, local governments often use local policies to support these businesses, and these policies are often related to taxes. In the sample, the highest foreign ownership of firms is 77.58%, and the lowest is 0%.

Larger businesses can achieve a better surplus of internal cash flows, as the larger the business is, the better the investment opportunities will be compared to those for smaller firms. At the same time, larger businesses often have less bankruptcy risk and more transparent information than small businesses, so they have easier access to external capital markets with lower borrowing costs to maximize profits by using a tax shield. The average value is 27.9529, which means that enterprises have total assets of VND 1,379 billion.

Table 3 shows a correlation matrix between the independent and dependent variables. If the correlation coefficient between variables exceeds 0.5, the research model will have serious multicollinearity problems. In Table 3, firm size (SIZE) and the total sales revenue (SALES) are the only pair with a correlation that is greater than 0.5, but only slightly. These results enable us to conclude that the research model does not have multicollinearity. However, to enhance the robustness of our results, we conduct a VIF coefficient test to confirm whether the model has any multicollinearity. The results are in Table 4.

The regression methods used in this study include pooled OLS, FEM, and REM. Then, we use F and Hausman tests to choose which model is most suitable for our research objectives (Table 5).

Table 5 shows that the FEM model is consistent with our research objectives. In Table 6, we conduct further tests to check for possible errors in the model, such as change in the variance, autocorrelation, and multicollinearity. If errors are found in the model, we overcome them using standard errors of adjustment (PCSE).

The results in Table 6 show that the model has no multicollinearity, but it does have change in the variance and autocorrelation. To overcome the model's defects, we use PCSE (Table 7).
### Table 3. Correlation matrix

|        | MKB  | TA    | STATE  | FOREIGN | ACCT  | INV   | GROWTH | SIZE   | ROA    | DEBT   | FAGE   | SALES  |
|--------|------|-------|--------|---------|-------|-------|--------|--------|--------|--------|--------|--------|
| MKB    | 1    |       |        |         |       |       |        |        |        |        |        |        |
| TA     | -0.0506 | 1      |        |         |       |       |        |        |        |        |        |        |
| STATE  | -0.0392 | 0.0447 | 1      |         |       |       |        |        |        |        |        |        |
| FOREIGN | 0.2893 | 0.1114 | -0.1381 | 1      |       |       |        |        |        |        |        |        |
| ACCT   | 0.0531 | 0.0436 | -0.0910 | 0.0429 | 1      |       |        |        |        |        |        |        |
| INV    | 0.0887 | -0.0034 | -0.0258 | 0.0631 | 0.0061 | 1      |        |        |        |        |        |        |
| GROWTH | -0.0064 | -0.0031 | -0.0029 | -0.0039 | 0.0387 | 0.0178 | 1      |        |        |        |        |        |
| SIZE   | 0.2199 | -0.0385 | -0.1033 | 0.3262 | 0.0485 | 0.0644 | 0.0343 | 1      |        |        |        |        |
| ROA    | 0.4242 | 0.1611 | 0.1083 | 0.2238 | 0.3047 | 0.0302 | 0.0023 | -0.1111 | 1      |        |        |        |
| DEBT   | 0.0584 | -0.0660 | -0.0433 | -0.1765 | -0.0738 | 0.0107 | -0.0108 | 0.1541 | -0.3173 | 1      |        |        |
| FAGE   | 0.1084 | 0.0397 | 0.0912 | 0.0087 | 0.0295 | 0.0083 | -0.0636 | -0.0786 | 0.0911 | 0.0024 | 1      |        |
| SALES  | 0.3018 | -0.0056 | -0.0205 | 0.3126 | 0.0171 | 0.0708 | 0.0056 | 0.6859 | 0.0739 | 0.1820 | 0.0926 | 1      |

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4.1. Tax Avoidance (TA) and firm value (MKB)

Tax avoidance has a negative impact on firm value, which is consistent with the original hypothesis. This result is consistent with Chen et al. (2014) and Black et al. (2015), but not Desai and Dharmapala. (2006). Avoiding taxes helps businesses minimize their tax burden but not to solve their financial problems because it is impossible to foresee other non-tax-related expenses; in addition, optimizing taxable income affects the interests of stakeholders. In Vietnam, tax avoidance has become more widespread, as foreign-owned enterprises and domestic enterprises both take advantage of loopholes and incentives in Vietnam’s corporate income tax law to find ways to

| Variable | VIF | 1/VIF |
|----------|-----|--------|
| SIZE     | 2.20 | 0.454688 |
| SALES    | 2.16 | 0.462919 |
| ROA      | 1.43 | 0.700694 |
| FOREIGN  | 1.32 | 0.759772 |
| DEBT     | 1.22 | 0.822793 |
| ACCT     | 1.15 | 0.872475 |
| STATE    | 1.07 | 0.932583 |
| FAGE     | 1.06 | 0.942495 |
| TA       | 1.04 | 0.962959 |
| INV      | 1.01 | 0.991392 |
| GROWTH   | 1.01 | 0.992923 |

Mean VIF 1.33

| Variables | Pooled OLS | FEM | REM |
|-----------|-------------|-----|-----|
| β         | P-value     | β   | P-value | β   | P-value |
| TA        | -.0002      | 0.000 | -.0000473 | 0.066 | -.0000794 | 0.002 |
| STATE     | -.0023      | 0.003 | -.0041 | 0.001 | -.0039 | 0.000 |
| FOREIGN   | .0089       | 0.000 | .0132 | 0.000 | .01358 | 0.000 |
| SIZE      | -.7647      | 0.000 | -.1058 | 0.394 | -.3581 | 0.004 |
| ACCT      | .5810       | 0.016 | .1547 | 0.405 | .1765 | 0.351 |
| INV       | -.0011      | 0.860 | .0101 | 0.827 | .0003 | 0.953 |
| FAGE      | .1131       | 0.000 | -.0931 | 0.067 | 3.6589 | 0.000 |
| ROA       | 5.8513      | 0.000 | 2.8143 | 0.000 | .1282 | 0.000 |
| DEBT      | .0714       | 0.000 | .1664 | 0.000 | .0542 | 0.093 |
| GROWTH    | .0049       | 0.000 | .0323 | 0.000 | .1423 | 0.025 |
| SALES     | .1183       | 0.008 | .2442 | 0.003 | .0093 | 0.000 |
| _cons     | -.41578     | 0.000 | -.7713 | 0.497 | -.29128 | 0.000 |

Prob>F 0.0000 0.0000 0.0000

Verify the selection of suitable models

| F        | FEM | 0.0000 | FEM |
|----------|-----|--------|-----|
| Conclude |     |        |     |
| Hausman  | 0.0000 | FEM |
reduce tax obligations. This result shrinks state revenue, which can lead to inequality in the allocation of social resources and can have negative effects on the economy. Common tax avoidance practices in Vietnam are income conversion, capital thinning, and price transfer. Some Vietnamese businesses also intentionally inflate the cost of inputs and take advantage of government incentives for newly established businesses, such as the time allowed for losses and associated costs for advertising and marketing. In sum, many practices in Vietnam take advantage of the holes and government incentives in general tax law and corporate income tax to reduce the amount of taxes paid.

4.2. Other factors that affect firm value

State ownership (STATE) and firm value (MKB): State ownership has a negative effect on firm value, which is consistent with our hypothesis as well as Chen et al. (2014). Enterprises with the state as the controlling shareholder are less likely than other businesses to avoid paying taxes. These shareholders often focus on social and political policies, rather than maximizing corporate profits. Therefore, they pay little attention to policies to avoid taxes. In Vietnam, according to government policy, state-owned enterprises are gradually privatizing and becoming profit incentivized.

Foreign ownership (FOREIGN) and firm value (MKB): Foreign ownership has a positive effect on firm value, which is consistent with our hypothesis and Wu et al. (2013), but not Le and Phung (2012). Private enterprises, especially those with foreign ownership, are often more efficient and contribute more to local GDP, though the economic and political environment is more beneficial for state-owned enterprises. Therefore, local governments often use local policies to support private businesses, and those policies are often related to taxes. In Vietnam, the number of enterprises that are either wholly or partly foreign owned has increased. This demonstrates the great transformation in the Vietnamese market but, at the same time, the underdevelopment of domestic enterprises.

Firm size (SIZE) and firm value (MKB): Firm size has a positive effect on firm value, which is consistent with our hypothesis as well as Serrasqueiro and Nunes. (2008) and Black et al. (2015). Larger businesses can achieve larger surplus internal cash flows and obtain better investment opportunities smaller firms. The size of the business has a significant impact on the value of the business and is considered an important factor in business processes. A large firm often has a lower risk of bankruptcy and more transparency in information than small businesses, so they have easier access to external capital markets with lower borrowing costs, enabling them to maximize profits by using a tax shield. However, 98% of enterprises in Vietnam are small and micro (World Bank data). These enterprises are the lifeblood of the Vietnamese economy, but they are not large in scale, have poor access to finance, and lack technology, so they are not effective.

Total accrual (ACCT) and firm value (MKB): The business total accrual has a negative effect on firm value, which is not consistent with our initial expectations and contrasts with the results of other researchers, such as Frank et al. (2009) and Assidi et al. (2016). This suggests that a high level of total accrual is synonymous with reducing business value.

Table 6. Tests for model errors

| Error            | Test          | Value     | Result          |
|------------------|---------------|-----------|-----------------|
| Heteroscedasticity | Modified Wald | Prob>ch2 = 0.0000 | Errors identified |
| Autocorrelation  | Wooldridge    | Prob>F = 0.0000 | Errors identified |
| Multicollinearity| VIF           | VIF<5     | No errors found |
Table 7. Regression results using the PCSE method

| Independent variables | Coefficient | P-value |
|-----------------------|-------------|---------|
| TA                    | -0.0001*    | 0.093   |
| STATE                 | -0.0026**   | 0.011   |
| FOREIGN               | 0.0132***   | 0.000   |
| SIZE                  | 0.0234      | 0.551   |
| ACCT                  | -0.4438***  | 0.002   |
| INV                   | 0.2669*     | 0.086   |
| FAGE                  | 0.0074***   | 0.002   |
| ROA                   | 4.2356***   | 0.000   |
| DEBT                  | 0.1430***   | 0.000   |
| GROWTH                | 0.0013      | 0.616   |
| SALES                 | 0.0899**    | 0.046   |
| VIF                   | 1.33        |         |
| R-squared             | 41.08%      |         |
| PrProb>chi2           | 0.0000      |         |

Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

**Investment (INV) and firm value (MKB):** Investment has a positive effect on firm, which is consistent with our initial expectations as well as previous studies, such as Frank et al. (2009) and Assidi et al. (2016). A higher level of investment in fixed assets corresponds to a higher depreciation cost. This helps businesses enhance the advantage from using a tax shield. Thus, business profits and the assets of shareholders also increase, leading to an increase in firm value.

**Firm age (FAGE) and firm value (MKB):** Firm age has a positive impact on firm value, which is consistent with our expectations and with Hoque et al. (2014). The older the business, the more profit it has accumulated, which is a stable source of funding for business performance. In addition, certain advantages are related to firm age, such as prestige, brand, and market share.

**Return on assets (ROA) and firm value (MKB):** The return on total assets has a positive impact on firm value, which is consistent with our expectation and with Le and Phuong (2012). The higher the return on assets, the more that investors can expect to earn. This is an indicator of the health status of businesses in the capital market, which is of concern to investors when deciding to invest in a company. Therefore, good control of ROA is the main responsibility of business managers.

**Leverage (DEBT) and firm value (MKB):** Leverage has a positive effect on firm value, which is inconsistent with our expectations as well as Assidi et al. (2016) but is in line with the results of Miller and Modigliani (1963) and Davies et al. (2005). The more debt that businesses include in their capital structure, the more incentives they receive from a tax shield, which thus increases the value of the business.

**Business growth (GROWTH) and firm value (MKB):** Business growth is positively correlated with its own value. This result is consistent with our expectations and Chen et al. (2014). It is assumed that the growth rate of an enterprise assesses its performance, which affects its value. However, the growth rate of enterprises is not statistically significant in our sample.

**Sales (SALES) and firm value (MKB):** Sales has a positive impact on firm value. This result is consistent with Vo (2014). Sales directly affect firm profitability and thereby has an impact on firm value. If revenue increases, business profits also increase and lead to an increase in firm value. The ultimate goal of business is profit, and to reach that goal, the business must achieve the initial expected revenue.
5. Summary and conclusion

With the research aim for the impact as well as the degree of impact of tax avoidance on the firm value of listed companies on HOSE, we used a dataset of 209 non-finance enterprises in the period 2010–2018 with a total of 1,881. In addition, we used the method of PCSE for such research purpose. We conclude that tax avoidance has a negative impact on firm value, at a statistical significance of 10%. In addition, variables such as foreign ownership, firm size, firm investment, firm age, return on assets, leverage, firm growth rate, and firm revenue index have a positive correlation with firm value; however, variables such as state ownership and cumulative sum have a negative impact on firm value. In our sample, firm size and the firm growth rate are not statistically significant.

The particular characteristic of this result, compared with the previous research results, is that firms with high state ownership often have little or no tax avoidance but still have a negative impact on firm value. In contrast, firms with high foreign ownership often actively avoid taxes and increase firm value. Another particular characteristic of this research is that the firm size and the firm growth rate are not statistically significant, unlike the results in previous studies, in which these two variables are highly significant.

The government would be well advised to reduce taxable income as well as import and export taxes, allow businesses to account for deductible expenses when determining taxable income, and permit tax refunds for reinvesting purposes or a rapid depreciation mechanism for businesses. In particular, the government needs to comprehensively reform the current tax activities, such as electronic tax administration, building an effective and transparent tax administration system. In addition, the government needs to increase cooperation in international taxation, such as tax treaties and tax policies with countries in the region as well as in the world. Also, the government needs to exempt high-tech businesses and those manufacturing software technology, digital information, businesses in the R&D sector, and so on, from tax liability. In addition, the government needs to encourage investment in technology transfer, human resource training, high-tech zones, and so forth.

Business management should work closely with operational managers to assess corporate tax administration in order to determine their tax avoidance policy in. In addition, business managers need to forecast, design strategies, and direct and implement plans for tax activities to improve firm value, as well as their true responsibility to create sustainable value for shareholders in the short and long term.

Investors should pay close attention to business tax targets in annual financial statements so that they can more accurately assess tax avoidance behavior by the business. At the same time, investors can rely on business characteristics to accurately assess the value of a business and make better decisions.

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Author details
Nguyen Minh Ha1,2,3, E-mail: ha.nm@ou.edu.vn
Pham Tuan Anh4
Xiao-Guang Yue5,6,7
Nguyen Hoang Phi Nam8
1 Business and Economics Research Group, Ho Chi Minh City Open University, Ho Chi Minh City, Vietnam.
2 Finance, Economics and Management Research Group, Ho Chi Minh City Open University, Ho Chi Minh City, Vietnam.
3 Faculty of Economics and Public Management, Ho Chi Minh City Open University, Ho Chi Minh City, Vietnam.
4 Graduate School, Ho Chi Minh City Open University, Ho Chi Minh City, Vietnam.
5 Department of Computer Science and Engineering, School of Sciences, European University Cyprus, Nicosia, 1516, Cyprus.
6 CIICESI, ESTG, Politécnico Do Porto, Felgueiras, 4610-156, Portugal.
7 School of Domestic and International Business, Banking and Finance, Romanian-American University, Bucharest, 012101, Romania.
8 Faculty of Accounting and Auditing, Ho Chi Minh City Open University, Ho Chi Minh City, Vietnam.

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