The Effect of Tax Avoidance on Enterprise Value from the Perspective of Agency Cost

Dan LIU, Yu-fang DING* and Wei ZHENG
Northwest Minzu University, Lanzhou City, Gansu Province, China
*Corresponding author

Keywords: Tax avoidance, Enterprise value, Agency cost.

Abstract. Tax planning helps a company reduce tax burdens, increase after-tax cash flow and ultimately affect corporate value. This paper selected the data of the A-share listed companies in Northwest China from 2010 to 2017 to establish the panel data model, and discussed the impact of tax avoidance on enterprise value from the perspective of agency cost through multiple regression analysis. The results show that the company's tax avoidance degree has an inverted U-shaped relationship with the enterprise value, because the tax avoidance generates agency cost, when the agency cost is greater than the tax avoidance income, the enterprise value gradually decreases.

Introduction
In the new era of Chinese socialism, with the continuous development of the market economy, enterprises have gradually established the awareness of creating micro economic entities and improving the cost constraint system. The advanced modern enterprise system has become the foundation for corporate management. Enterprises no longer only focus on rich financial resources, but also focus on effective control of internal and external costs. As a non-repayable expenditure, taxation inevitably reduces the net income and operating results of enterprises. Therefore, many companies use tax planning to reduce tax expenditures to maximize value. Tax avoidance refers to the taxpayer’s use of loopholes and defects of the existing tax law to reduce the amount of tax paid by legal means. It is based on a comprehensive understanding, analysis, and research of tax law. Corporate value is the most accurate and comprehensive indicator of business performance and overall quality. Because of the ease of considering the influence of tax avoidance behavior on company's taxes paid, early research scholars have generally shown that tax avoidance can be used as an effective way to enhance corporate value.

However, with the formation of effective tax planning theory, companies gradually began to focus on the impact of non-tax costs generated in the tax avoidance process. Desai and Dharmapala1 (2006) argue that only when the company has a sound structure and perfect internal governance, can the company's tax avoidance behavior effectively enhance corporate value. Chen Xudong and Wang Xue’s2 (2011) empirical study results show that tax avoidance is a double-edged sword that brings higher damages than interest to shareholders. Li Lanyun, Hou Chunli, and Cao Zhipeng3 (2019) found that the tax avoidance behaviors with different life cycles and different property rights have different effects on corporate value. This paper will study whether tax avoidance can really be an effective way to increase the value of enterprises and whether the relationship between corporate tax avoidance and corporate value will change due to agency costs.

Data and Variable Definition
This paper selected the A-share listed company data of Northwest China from 2010 to 2017 as a sample from the CSMAR database, and used Excel to process the sample as follows: (1) Excluded ST, *ST, PT companies; (2) Excluded financial industry listed companies; (3) Excluded company sample points with missing required data for each year; (4) Excluded company sample points with current income tax equal to or less than zero. After screening, 795 unbalanced panel data were obtained.
Referring to the existing literature, the variables designed in this paper are shown in Table 1.

Table 1. Variable Definition.

| Variable type          | Variable | Symbol | Calculation method                                                                 |
|------------------------|----------|--------|-----------------------------------------------------------------------------------|
| Explained variable     | Tobin Q  | Q      | Market value / final assets                                                        |
| Tax avoidance          | BTD      |        | Accounting surplus - Tax surplus difference = (Pre-tax accounting profit - taxable income) / Total assets at the end of the period |
| Agency cost            | AC       |        | AC₁ = Management fee / Total operating income                                       |
|                        |          |        | AC₂ = Other receivables / Total assets                                              |
| Profitability          | ROA      |        | (Total profit + financial expenses) / Average total assets                          |
| Capital structure      | LEV      |        | Total liabilities / Total assets                                                    |
| Company size           | SIZE     |        | Ln(Final assets)                                                                   |
| Business growth        | GROWTH   |        | (Current operating income - previous operating income) / Previous operating income  |

Methodology

The theory of effective tax planning emphasizes the existence of non-tax costs. The author believes that there is no simple positive or negative linear relationship between corporate tax avoidance and corporate value, because tax planning will increase various non-tax costs. From the perspective of the agency cost—one of the non-tax costs is that the first type of agency cost will increase because of a amount of human and financial resources when firms imply the tax avoidance decision; If the major shareholders use the relationship with the manager and their position to infringe the interests of the small and medium shareholders, the second type of agency cost will increase. So corporate value will be improved initially, but as the cost of agency increases, the corporate value will gradually decrease. According to the above analysis, two models are established as follows.

\[ Q_{t,i} = \alpha_0 + \alpha_1 BTD_{t,i} + \alpha_2 BTD^2_{t,i} + \alpha_3 ROA_{t,i} + \alpha_4 LEV_{t,i} + \alpha_5 SIZE_{t,i} + \alpha_6 GROWTH_{t,i} + \epsilon_{t,i} \] (1)

\[ Q_{t,i} = \beta_0 + \beta_1 BTD_{t,i} + \beta_2 AC_{t,i} + \beta_3 BTD_{t,i} \times AC_{t,i} + \beta_4 ROA_{t,i} + \beta_5 LEV_{t,i} + \beta_6 SIZE_{t,i} + \beta_7 GROWTH_{t,i} + \epsilon_{t,i} \] (2)

Model (1) is a multiple regression model used to verify the relationship between corporate tax avoidance and firm value. The dependent variable is the Tobin Q value representing the enterprise value, and the independent variable is the tax avoidance level (BTD)—the larger the value, the higher the tax avoidance degree of the enterprise. The squared term of BTD is added to the model to study whether there is an inverted U-shaped relationship between the dependent variable and the independent variable. In addition, the model (1) adds four control variables: profitability (ROA), capital structure (LEV), company size (SIZE), and business growth (GROWTH), so as to control influencing factors and obtain real results. Model (2) adds the intersection of tax avoidance and agency cost (BTD*AC) to examine the impact of agency costs on corporate tax avoidance and firm value relationships, and adds the same control variables as Model (1), this model performs multiple regression analysis on the two types of agency costs.

Empirical Results

Descriptive analysis is the static description analysis of the data. This paper used the software Stata13.1 to descriptively analyze all the variables in Table 1 from the four indicators: minimum value, maximum value, mean value and standard deviation. The results are shown in Table 2:
Table 2. Descriptive statistics of variables.

| Variables | Observations | Mean value | Standard deviation | Minimum value | Maximum value |
|-----------|--------------|------------|--------------------|---------------|---------------|
| Q         | 795          | 2.057      | 2.415              | 0.119         | 45.976        |
| BTD       | 795          | 0.001      | 0.057              | -0.681        | 0.492         |
| AC1       | 795          | 0.1        | 0.109              | 0.006         | 1.749         |
| AC2       | 795          | 0.019      | 0.04               | 0             | 0.681         |
| ROA       | 795          | 0.052      | 0.113              | -0.55         | 2.581         |
| LEV       | 795          | 0.488      | 0.229              | 0.045         | 2.529         |
| SIZE      | 795          | 22.089     | 1.297              | 17.426        | 26.428        |
| GROWTH    | 795          | 1.085      | 1.14               | -0.848        | 349.456       |

The average enterprise value (Q) of the listed companies in the northwest is 2.057, which indicates the development of listed companies in the northwest region is generally better; The maximum value is 45.976, and the minimum value is only 0.119. Obviously there is a large difference between enterprise values. The average BTD (0.001) is close to 0, it suggests that there are fewer tax avoidance behaviors in listed companies in the Northwest. The maximum value of the first type of agency cost (AC1) is 1.749 greater than 1, reflecting company’s management costs are not effectively suppressed. Combined with the standard deviation (0.109) and the minimum value (0.006) of AC1, it can be seen that the gap between AC1 in the sample companies is large, and there are different levels of agency problems. The second type of agency cost (AC2) has an average value of 0.019 and a standard deviation of 0.04. The AC2 is not very high overall compared to AC1. In addition, there is a certain gap between the variables from the descriptive statistics of other variables, so selected samples are representative and have the conditions for further regression analysis.

Table 3. Pearson correlation coefficient table of variables.

|       | Q   | BTD | AC1    | AC2   | ROA  | LEV  | SIZE  | GROWTH |
|-------|-----|-----|--------|-------|------|------|-------|--------|
| Q     | 1   |     |        |       |      |      |       |        |
| BTD   | .057| 1   |        |       |      |      |       |        |
| AC1   | .397**| .090*| 1      |       |      |      |       |        |
| AC2   | .076*| .023| .054   | 1     |      |      |       |        |
| ROA   | .010*| .420**| -.100**| .038  | 1   |      |       |        |
| LEV   | -.083*| -.206**| .083*  | .233**| -.059| 1   |       |        |
| SIZE  | -.505**| .028| -.308**| -.132**| .047| .316**| 1    |        |
| GROWTH| -.024*| -.037| -.001  | .005  | .563**| .049| .047 | 1      |

Before performing multiple regression analysis, this paper first performed Pearson correlation coefficient test on the data. The results are shown in Table 3. The correlation coefficient between the interpreted variable Q and the explanatory variable BTD is 0.057, but it is not significant, indicating that the tax avoidance behavior is not a simple linear relationship with the enterprise value. The regression analysis will further test whether it is an inverted U-type relationship. For the correlation between the two explanatory variables, the tax avoidance behavior is positively correlated with the two types of agency costs, which means the tax avoidance behavior will induce certain agency costs. Besides, if the Pearson correlation coefficient is less than 0.3, it indicates a low correlation between variables; the medium correlation is between 0.3 and 0.7; Correlation coefficients greater than 0.7 indicate a high correlation. The data in Table 3 shows that the correlation coefficients between all variables are less than 0.6. There is no multidisciplinary problem between the variables, and regression analysis can be performed according to the model.
According to the model settings, the paper performed multiple linear regression analysis. The results are shown in Table 4. The regression coefficient $\alpha_1$ (11.30) of BTD and Q is positive and significantly correlated at 1%, while coefficient $\alpha_2$ (-9.413) of BTD and Q is significantly negative. It reflects that the relationship between corporate tax avoidance and corporate value is a U-shaped relationship. That is to say, the tax avoidance will increase the value of the enterprise at first, but when this behavior reaches a certain level, it will reduce the value of the company. The multivariate linear regression results of Model (2) show that the regression coefficient $\beta_3$ (-133.9) of the BTD and AC1 is significantly negative at the 0.001 level; BTD and AC2 is not significant. It shows that the increase of the first type of agency cost will inhibit the promotion of corporate tax avoidance behavior to the enterprise value. It is further explains that as the degree of tax avoidance increases, there will be certain agency problems within the enterprise: the loss caused by the agency problem to the enterprise value is greater than the benefit brought by tax avoidance, which leads to the decline of the enterprise value.

### Conclusion

Based on the data of listed companies in Northwest China, this paper studied the impact of corporate tax avoidance behavior on corporate value through multiple linear regression analysis. The results show that the traditional view is insufficient to explain the relationship between tax avoidance behavior and corporate value of listed companies in the Northwest and enterprise value will not always increase with the increase of tax avoidance. The two are inverted U-shaped relationships like a parabola. This shows that the company's tax avoidance behavior will initially bring about the improvement of corporate value, but when the corporate tax avoidance behavior reaches a certain level, corporate value will decrease as tax avoidance increases. This paper further studied the reasons for the inverted U-shaped relationship from the perspective of agency cost: the realization of the goal of “minimizing the tax burden” often causes the agency cost to rise while firms also obtain more tax benefits. When the agency cost is greater than the gains from tax avoidance, the enterprise value will gradually decrease. To reduce agency costs and increase the value of listed companies in the Northwest, enterprises should grasp the new policy of “tax reduction and fee reduction”, establish a new concept of tax planning that takes into account non-tax costs, strengthen information disclosure, and cultivate a culture of corporate transparency. In addition, the regulatory authorities need to use the “block-chain” technology to innovate governance models and strengthen supervision of the company.
Acknowledgement

This research was financially supported by the Research Project on Graduate Education and Teaching Reform of Northwest Minzu University (Grant NO.1671280501)

Reference

[1] Desai, M. A. and D. Dharmapala. Corporate Tax Avoidance and High-Powered Incentives [J]. Journal of Financial Economics, 2006 (1):67-85.

[2] Chen Xudong and Wang Xue. Does Tax Avoidance Improve Corporate Value? An Empirical Study Based on Chinese Listed Companies [J]. 2011 Annual Academic Conference of Accounting of Society of China, 2011:956-970.

[3] Li Lanyun, Hou Chunli and Cao Zhipeng. Does Tax Avoidance Affect Corporate Value?[J]. Communication of Finance and Accounting, 2019(06):119-123.

[4] Reijo Knuutinen, Corporate Social Responsibility, Taxation and Aggressive Tax Planning [J]. Nordic Tax Journal, 2014(01): 37-75.

[5] Zou Linhai. An Empirical Study on the Impact of Reasonable Tax Avoidance on Enterprise Value [J]. Journal of Hangzhou Dianzi University (Social Sciences), 2012(01): 17-22.