



Strategic Alliances and Corporate Tax Avoidance

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Abstract. Strategic alliances, which are rapidly emerging worldwide, are one of the important ways for companies to gain a competitive advantage. This article examines the impact of companies' participation in strategic alliances on their tax avoidance behavior, using Chinese A-share listed companies from 2009 to 2023 as a research sample. Through the examination of these extensive data sets of Chinese listed companies, we found that participating in strategic alliances has no significant impact on corporate tax avoidance behavior in China. This finding holds even after controlling for various other factors that may affect corporate tax avoidance behavior. Our research results enrich the existing literature on tax avoidance.

Keywords: Strategic Alliance; Knowledge Diffusion; Tax Avoidance; Operational Risk.

1 Introduction

A strategic alliance is a spontaneous activity in which two or more firms exchange, share, or jointly develop new products or services in order to achieve strategic goals such as sharing resources or enhancing competitiveness. With the continuous improvement of China's marketization, strategic alliances have become an important strategic arrangement for firms to explore in order to gain competitive advantages from external sources. When transaction costs for acquiring resources through internal firm operations or the market are high, strategic alliances can serve as an optimal mechanism for resource allocation. According to resource dependency theory, participating in strategic alliances can help firms reduce the risks brought by fluctuations in the external environment, achieve technological synergies, enhance their own management and innovation capabilities, and ultimately increase the firm value. Extant research indicates that most world-class firms participate in more than 30 strategic alliances, and some firms even participate in over 100 strategic alliances simultaneously. Especially after China's introduction of the national "One Belt One Road" strategy, many Chinese firms have chosen to venture abroad to forge strategic alliances, resulting in an expanding trend in the depth and breadth of participation in strategic alliances. Unlike mergers and acquisitions between firms, strategic alliances do not involve a one-time complete

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transfer of control rights; rather, firms participating in strategic alliances maintain their independence. Signing alliance agreements allows all parties in the alliance to achieve resource sharing, risk sharing, and enhanced competitiveness.

As ever more firms establish and participate in strategic alliances, the academic community has been conducting thorough and deep explorations into the organizational form characteristics of strategic alliances and alliance governance. In recent years, the impact and consequences of corporate strategic alliance cooperation have become a focal point of academic attention. Regarding the economic consequences of strategic alliances, scholars have mainly focused on the spillover effects, the information intermediation role of strategic alliances, and their impacts on audit fees, alliance performance, agency costs, and earnings management.^[1-7] However, little research has focused on the impact of strategic alliances on corporate tax avoidance.

Tax expenditures represent a significant cost for firms and are a crucial factor that affects corporate value and development space. Moreover, the preferential tax policies applicable to alliance partners and the low tax rates in their registration locations provide tax planning opportunities for firms. Thus, it is reasonable to ask whether firms participating in strategic alliances engage in tax avoidance behaviors to reduce tax costs. The present study uses a sample of Chinese A-share listed non-financial firms from 2009 to 2023 and employs the differences-in-differences (DID) method to empirically test the impact of forming strategic alliances on corporate tax avoidance. This study's conclusions enrich the research on the economic consequences of strategic alliances and the influencing factors for corporate tax avoidance, and they provide a policy reference for improving the regulation of strategic alliances.

2 Method

2.1 Hypothesis Development

Firms can not only accomplish resource exchanges and information sharing with alliance partners through strategic alliances; they can also engage in tax planning by capitalizing on differences in tax rates and tax incentives between firms. Therefore, participating in strategic alliances may prompt firms to engage in more tax avoidance activities. First, from an institutional perspective, current accounting standards do not require firms to fully disclose relevant accounting information about their strategic alliances, which gives firms' management and accountants more discretionary power. As a consequence, strategic alliances can obscure various opportunistic and short-term earnings management activities and thereby reduce the transparency of firms' corporate accounting information. Investors, tax authorities, and external auditors may find it difficult to identify the resource exchanges and related economic transactions between firms and their alliance partners using publicly available financial information, which creates opportunities for firms to engage in tax avoidance. Moreover, the implicit-contract nature of alliance agreements reduces the risks and costs associated with tax avoidance, thereby providing firms with opportunities to implement such behavior. Second, from a practical standpoint, firms involved in strategic alliances can adopt more flexible and diverse tax planning methods through resource exchanges and

business cooperation with alliance entities or partners. Specifically, firms involved in equity alliances can reduce their overall tax burden through related-party transactions with alliance entities, while those involved in contractual alliances tend to reduce their tax burden by increasing capital expenditures. Furthermore, strategic alliances can also serve as channels for the diffusion of tax knowledge among firms. The close connections between firms and their alliance partners provide learning opportunities, enabling firms to learn effective tax avoidance methods from their partners and thereby enhance their ability to avoid taxes.

However, corporate tax avoidance is a double-edged sword, as firms forming strategic alliances may also choose to reduce their tax avoidance activities to mitigate the negative impacts of such behavior. Bankman^[8] suggests that a firm that engages aggressively in tax avoidance might be considered a “poor corporate citizen,” as such behavior can potentially result in reduced income and increased operational risks. Specifically, in a system where ownership and control are separated, the principal–agent relationship can lead to non-tax costs surrounding corporate tax avoidance. First, while implementing complex tax avoidance schemes can increase a firm’s financial complexity and opacity and thus reduce the risk of tax avoidance activities being disclosed by auditors or penalized by tax authorities, such schemes also make it difficult to detect managerial rent-seeking behavior, effectively concealing managers’ opportunistic motives and ultimately harming the corporate value. Second, tax avoidance can diminish shareholders’ control over management. If the distorted information fabricated by management during a tax avoidance process is not revealed by external supervisory bodies, this may conceal the firm’s true condition. Management, motivated by self-interest that includes concerns about their career and short-term bonus incentives, has a strong motive to conceal bad news, thereby increasing the risk of a future stock price crash. Since firms that form strategic alliances have close business relationships and invest heavily in each other, one party facing difficulties or even bankruptcy can cause immense losses for the other party in an alliance. Therefore, firms will assess the risks associated with their alliance partners. Tax avoidance activities can increase corporate risk, and alliance partners may prematurely terminate their cooperation with a firm to avoid losses, and this will lead firms involved in strategic alliances to potentially reduce their tax avoidance activities.

Based on the above analysis, we expect that although participating in strategic alliances can provide firms with more favorable tax environments and enhance their ability to engage in tax avoidance, firms may choose not to engage in substantial tax avoidance activities in order to reduce their own risks. Therefore, we propose the following hypothesis:

Participation in strategic alliances does not significantly affect corporate tax avoidance behavior.

2.2 Sample Selection

This study employs a DID model, using firms listed on the Shanghai and Shenzhen A-share markets from 2009 to 2023 as the research sample. China implemented income tax reform on January 1, 2008, that unified the income tax rates for domestic and foreign

companies at 25%. Beginning in 2009, China initiated a series of structural tax reduction policies that included transformation of the value-added tax system. These significant changes in the tax environment have had a crucial impact on corporate decision-making. To ensure the stability of the tax environment, we set the starting year for the sample to be 2009. We collect all financial data and corporate ownership information for this period, and after excluding observations from financial industry firms and firms with any missing data, this study is left with 9695 sample observations involving firms from various industries, predominantly manufacturing and ICT. We adopt the practice of winsorizing the upper and lower 1% quantiles of all continuous variables to eliminate the influence of outliers.

2.3 Variable Definitions

We use the comprehensive definition of tax avoidance proposed by Hanlon and Heitzman^[9], which encompasses all activities that reduce a firm's explicit tax obligations, and we use the most common method, the effective tax rate (*ETR*), to measure tax avoidance. This measure not only reflects the tax planning strategies employed by management but is also considered by shareholders to be an indicator of a firm's tax burden and its overall level of tax avoidance. Following prior research, we calculate *ETR* as the ratio of total tax expenses (*TTE*) to pre-tax income (*PI*), as shown in Eq. (1):

$$ETR = TTE / PI \quad (1)$$

We exclude observations with negative pre-tax income from our analysis, because effective tax rates are difficult to interpret when the denominator is negative. With this exclusion, lower *ETR* values indicate more aggressive tax avoidance.

To enhance the robustness of the conclusion, we also employed an alternative method to measure corporate tax avoidance. Specifically, we measure the extent of tax avoidance by calculating the difference between the nominal income tax rate and the actual income tax rate, denoted as *RATE*. The larger the *RATE* value, the higher the degree of tax avoidance.

The dummy variable *SA* indicates whether a firm has participated in a strategic alliance during a given year this dummy variable equals 1 if it has done so, and 0 otherwise. The variable *Post* is a dummy variable that equals 1 for the 3 years following the firm's participation in a strategic alliance, and 0 otherwise.

Based on previous research^[10], we control for related variables such as a firm's financial status and its corporate governance in our model. All variables are defined in Table 1.

Table 1. Variable definitions

| Variable | Description |
|-------------|--|
| <i>ETR</i> | The ratio of total tax expenses to pre-tax income |
| <i>Post</i> | A binary variable that equals 1 for the three years after a firm participates in a strategic alliance, and 0 otherwise |

| | |
|----------------|--|
| <i>SA</i> | A binary variable that equals 1 if a firm participates in a strategic alliance, and 0 otherwise |
| <i>BM</i> | The shareholder equity/firm market value |
| <i>SOE</i> | A binary variable that equals 1 if the firm is state-owned, and 0 otherwise |
| <i>Lev</i> | Total liabilities divided by total assets |
| <i>Age</i> | Natural logarithm of the duration of the firm's listing |
| <i>Size</i> | Natural logarithm of the firm's total assets |
| <i>InstOwn</i> | The proportion of the firm's shares that are held by institutional investors |
| <i>Dual</i> | A binary variable that equals 1 if the chairman and the general manager of the firm are the same individual, and 0 otherwise |
| <i>Grow</i> | The annual revenue growth rate |
| <i>ROA</i> | The net profit ratio of total assets, defined as net profit divided by total assets |
| <i>PPE</i> | Fixed assets divided by total assets |
| <i>Intang</i> | Intangible assets scaled by lagged total assets |
| <i>Invent</i> | Inventory-to-total assets ratio at the end of the year |

2.4 Regression Model

To test this study's hypothesis, we construct a panel data model to test the impact of participation in a strategic alliance on a firm's tax avoidance:

$$\begin{aligned}
 ETR_t = & \beta_0 + \beta_1 SA_t + \beta_2 Post_t + \beta_3 SA_t * Post_t + \beta_4 BM_t + \beta_5 SOE_t + \beta_6 Lev_t + \\
 & \beta_7 Age_t + \beta_8 Size_t + \beta_9 InstOwn_t + \beta_{10} Dual_t + \beta_{11} Grow_t + \beta_{12} ROA_t + \\
 & \beta_{13} PPE_t + \beta_{14} Intang_t + \beta_{15} Invent_t + \Sigma Year + \Sigma Industry + \varepsilon_t
 \end{aligned} \quad (2)$$

where ETR represents the degree of tax avoidance, $\Sigma Year$ and $\Sigma Industry$ represent the year and industry fixed effects, respectively, and ε represents the random error. In this model, we create an embargo period of six years around a SA observation during which no further network may occur, which reduces the number of observations in the sample. The embargo period contains the three years preceding and three years subsequent to alliance initiation. Our sample allows firms to participate in a strategic alliance at any point in time of their discretion. We therefore compose a matched panel by matching control observations ($SA = 0$) to treatment observations ($SA = 1$) based on year and industry affiliation. SA measures the baseline difference in firm's ETR that is not due to the participation in a strategic alliance. The parameter $Post$ captures changes in ETR from before to after participation. The parameter of interest is the interaction $SA * Post$. It measures the effect on ETR that is due to the participation.

3 Empirical Results

3.1 Descriptive Statistics

Table 2 reports the descriptive statistics for the dataset utilized in this study. The average effective tax rate (*ETR*) across the sample is 0.162, with a minimum of 0.009 and a maximum of 0.882. This wide range indicates a substantial disparity in tax avoidance practices among the firms, with some paying minimal taxes and others paying amounts that constitute over half of their income. To reduce the impact of extreme outliers, we winsorize all continuous variables at the 1% and 99% percentiles annually on a firm-year basis.

Table 2. Descriptive statistics

| Variable | Obs | Mean | Std | Min | Max |
|----------------|-------|--------|--------|--------|--------|
| <i>ETR</i> | 9,695 | 0.162 | 0.174 | 0.009 | 0.882 |
| <i>SA</i> | 9,695 | 0.499 | 0.500 | 0.000 | 1.000 |
| <i>Post</i> | 9,695 | 0.542 | 0.498 | 0.000 | 1.000 |
| <i>BM</i> | 9,695 | 0.610 | 0.243 | 0.126 | 1.161 |
| <i>SOE</i> | 9,695 | 0.405 | 0.491 | 0.000 | 1.000 |
| <i>Lev</i> | 9,695 | 0.440 | 0.204 | 0.068 | 0.924 |
| <i>Age</i> | 9,695 | 2.379 | 0.600 | 1.099 | 3.332 |
| <i>Size</i> | 9,695 | 22.280 | 1.164 | 19.980 | 25.740 |
| <i>Instown</i> | 9,695 | 44.830 | 23.760 | 0.411 | 90.000 |
| <i>Dual</i> | 9,695 | 0.245 | 0.430 | 0.000 | 1.000 |
| <i>Grow</i> | 9,695 | 0.181 | 0.460 | -0.572 | 3.103 |
| <i>ROA</i> | 9,695 | 0.034 | 0.064 | -0.297 | 0.187 |
| <i>PPE</i> | 9,695 | 0.225 | 0.164 | 0.002 | 0.717 |
| <i>Intang</i> | 9,695 | 0.050 | 0.054 | 0.000 | 0.355 |
| <i>Invent</i> | 9,695 | 0.153 | 0.145 | 0.000 | 0.763 |

3.2 Results of the Regression Analysis

Table 3 displays the regression results for Model (2). The t-statistics are derived from standard errors that have been adjusted for clustering at the firm level. The coefficient for *SA*Post* in column (1) is not significant, and the coefficient for *SA*Post* in column (2) is also not significant, suggesting that participation in a strategic alliance has no impact on *ETR* and *RATE*, which means that there is no impact on the corporate tax avoidance behavior, and the result is robust. The hypothesis we proposed is therefore verified. Regarding the control variables, a positive correlation is observed between the corporate inventory (*Invent*) and corporate tax avoidance. The remaining findings align well with previous studies.

Table 3. Strategic alliances and tax avoidance

| | (1) | (2) |
|-------------------------|------------|-------------|
| | <i>ETR</i> | <i>RATE</i> |
| <i>SA* Post</i> | -0.004 | 0.006 |
| | (-0.56) | (0.53) |
| <i>SA</i> | 0.008 | -0.012 |
| | (1.35) | (-1.47) |
| <i>Post</i> | 0.010* | -0.010 |
| | (1.66) | (-1.14) |
| <i>BM</i> | 0.102*** | -0.112*** |
| | (7.48) | (-5.72) |
| <i>SOE</i> | 0.014** | -0.024*** |
| | (2.26) | (-2.90) |
| <i>Lev</i> | 0.028* | -0.084*** |
| | (1.67) | (-3.39) |
| <i>Age</i> | 0.008* | 0.014** |
| | (1.71) | (2.04) |
| <i>Size</i> | -0.009*** | 0.017*** |
| | (-3.04) | (3.85) |
| <i>InstOwn</i> | 0.000 | 0.000 |
| | (0.66) | (1.49) |
| <i>Dual</i> | 0.003 | 0.004 |
| | (0.56) | (0.50) |
| <i>Grow</i> | -0.001 | -0.012 |
| | (-0.15) | (-1.32) |
| <i>ROA</i> | 0.459*** | -0.483*** |
| | (14.65) | (-9.25) |
| <i>PPE</i> | 0.002 | 0.022 |
| | (0.09) | (0.76) |
| <i>Intang</i> | 0.142*** | 0.060 |
| | (3.18) | (0.79) |
| <i>Invent</i> | 0.095*** | -0.103*** |
| | (3.89) | (-2.96) |
| <i>Year</i> | control | control |
| <i>Industry</i> | control | control |
| Constant | 0.215*** | -0.268*** |
| | (3.62) | (-3.00) |
| Observations | 9,695 | 9,695 |
| Adjusted R ² | 0.138 | 0.040 |

***, **, and * indicate two-tailed significance at the 1%, 5%, and 10% significance levels, respectively.

4 Conclusion

Although prior research has devoted substantial attention to corporate cooperation and firms' tax avoidance, there are a number of unanswered questions regarding the interplay between the two. Our research explores how a firm's participation in strategic alliances influences its tax avoidance practices, and reveals that there is no significant correlation between participation in strategic alliances and tax avoidance. This study contributes to the academic discourse in several ways. First, it enhances the tax avoidance literature by exploring how strategic alliances can influence tax avoidance activities. The results indicate that variations in tax avoidance levels should be evaluated in considering the influence of strategic alliances on tax planning. Second, while taxes play a critical role in various corporate finance decisions, their impact has been noticeably underinvestigated in the finance literature concerning strategic alliances. Our research addresses this gap by analyzing how strategic alliances affect tax avoidance.

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