

Tax Avoidance and Earnings Management: Evidence from “Replacing Business Tax with VAT” in China

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Abstract: Tax avoidance has important implications when studying earnings management, especially when the tax avoidance is triggered by a tax reform. One such tax reform is the “Replacing Business Tax with VAT” policy reform. We predict that the more potential tax benefits a company obtains through the “Replacing Business Tax with VAT” policy reform, the more likely the company will delay revenue recognition and implement accrual-based earnings management before the reform. Meanwhile, companies which can reduce their VAT tax burden by increasing raw material purchases and labor outsourcing will be less likely to implement negative earnings management. Through our empirical analysis, we provide robust evidence that companies which stand to obtain tax benefits from the policy reform will delay their revenue recognition before the reform to carry out earnings management. Additionally, the companies’ negative earnings management is positively related to the potential tax benefits they gain through the tax reform. Furthermore, companies which can reduce their VAT burden after the reform by using tax avoidance behaviors have less incentive to conduct negative earnings management. By conducting subgroup analysis on stratified samples, we also find differences before and after the reform in the earnings management behaviors of different companies.

1. Introduction

The policy of “Replacing Business Tax with Value-Added Tax (VAT)”, is a tax system policy reform implemented by the Chinese government in recent years. This policy was launched on January 1st, 2012 and the policy came fully into force on May 1st, 2016.

The policy reform is not only an influential institutional innovation in China's economic development, but also a significant reform in China's taxation system. It plays a positive role in regulating the market behavior of companies while also promoting the transformation and upgrading of economic structure. This tax reform has also provided companies a new motivation—reducing tax

burden—to implement earnings management. Earnings management is the behavior of executives to adjust the companies' financial data, by using accounting standards, to maximize company interests.

At present, the research on the factors affecting corporate earnings management world-wide mainly focuses on corporate governance, supervision [1], market timing [2], etc., while few projects delve into the relationship between tax reform and earnings management, especially the quantitative impact and in-depth analysis of the policy reform on earnings management. In addition, the effect of the tax reform only slowly manifests itself over time and given the limitation of the data only available from a short period, it is difficult to draw objective conclusions of the long-term impact of this reform.

In order to solve the above-mentioned challenges, this paper selects publicly listed Chinese companies which participated in the “Replacing Business Tax with VAT” reform between 2009-2018 as samples to measure their accrual-based earnings management levels by using the Modified Jones Model [3]. Meanwhile, accrual-based earnings management is used as the explained variable, together with control variables such as company's scale, return on asset (ROA), asset-liability ratio, audit quality, etc., to analyze the impact of “Replacing Business Tax with VAT” on the company's accrual-based earnings management. Subgroup analysis was also conducted with the samples stratified according to scale of company, audit quality, and ROA of companies.

2. Literature Review and Research Hypothesis

2.1. The Impact of “Replacing Business Tax with VAT” on the Corporate Tax Burden

In theory, the “Replacing Business Tax with VAT” reform can reduce double taxation and corporate tax burden. However, this is not reflective of the actual situation highlighted in studies on tax burden changes in various industries. Tian et al. [4] concluded that even if the tax burden of the policy reform is balanced through tax rate design and other means in the short term, the tax burden of some industries will still rise in the long term. Li et al. [5] combined theoretical analysis and case analysis to conclude that the reform will increase tax burden for construction companies. Zhang et al. [6] analyzed publicly listed transportation companies and believed that over the long-term, the tax burden of most companies would be reduced after the reform.

In addition, after the reform, the VAT payable by the company is equal to the output VAT derived from the sales income, minus the input VAT amount derived from the deductible items such as costs relating to purchasing materials and updating fixed assets. Companies can therefore achieve a reduction in VAT by expanding the scale of deductible input tax, which increases the capacity for corporate VAT tax reduction and also lays the theoretical foundation for corporate tax avoidance. The same principle is re-iterated in the research conducted by Du Huan [7], which also proved that companies which expand their investment in raw materials after the reform can increase their deductible input tax, reducing the overall tax burden.

From a macro perspective, the production model and cost structure differ greatly from one industry to the other hence the effect of tax reduction in various industries will be different after the policy reform. From a micro perspective, companies can reduce VAT by expanding the scale of deductible input tax. Therefore, various factors should be fully considered when analyzing the effect of the policy reform on company tax burden.

2.2. “Replacing Business Tax with VAT” and Enterprise Earnings Management

Limited recent research exists on the impact of the "Replacing Business Tax with" policy reform on earnings management. Zhang et al. [8] used the policy reform as a qualitative variable to study the

impact of taxation systems on corporate tax avoidance and earnings management behavior. Adams et al. [9] studied the attitude of small businesses in the UK on VAT and found that the focus of small companies is on the rationality of tax burden. Tax planning can not only increase profits for companies, but also improve their perceptions of the tax system, which is advantageous to the government's macro-control. Li et al. [10] selected the Jones Model to estimate the quality of accounting information and focused on the impact of the policy reform on the quality of accounting information obtained from publicly listed transportation companies in Shanghai and Shenzhen. Yang Zhen [11] found that the companies with better VAT deduction had higher earnings management through measuring the accrual-based earnings management of companies by using the modified Jones model as well as comparing companies which paid VAT before the policy reform with those that began to pay VAT after the reform.

However, no literature has quantified the impact of “Replacing Business Tax with VAT” on companies to study its role in corporate earnings management behavior. Quantifying this factor would provide clearer evidence on the role and impact of the proposed policy reform on corporate earnings management. This paper will therefore investigate and quantitatively analyzes the relationship between “Replacing Business Tax with VAT” and corporate earnings management from the three following perspectives.

2.2.1. Tax Benefits Brought by “Replacing Business Tax with VAT”

The US Treasury Reform Act of 1986 (TRA1986) reduced the maximum corporate tax rate from 46% to 34%. This Reform Act has been confirmed by many scholars ([12-14]), as a mechanism which enabled companies to obtain larger potential tax benefits and ultimately bring significant profit delays. In addition, by analyzing data from the United States, Canada, and some Asian countries, Namryoung et al. [15] concluded that companies with large potential tax credits are more likely to manage their earnings by using earnings management practices. Chinese scholars Liu et al. [16] and Li et al. [17] studied the effects of 2007 income tax reform on earnings management behavior, and both concluded that companies with large potential tax benefits after expected reform tend to implement earnings management through profit transfer.

The implications of earnings management in policy reform are as follows. First, since the proportion of VAT is increased in the total tax burden after the reform, companies which stand to benefit through the reform can delay their income recognition and use other forms of accrual-based earnings management to gain large potential tax benefits, hence reducing their tax burden.

Second, if negative earnings management is carried out for income, the taxable income of the current period will also decrease, consequentially decreasing the company's income tax payable. Therefore, companies with large potential tax benefits from the reform will have a stronger incentive to use earnings management for tax planning to obtain the dual benefits of tax burden reduction and time value of money. Based on the above analysis, this paper proposes Hypothesis 1:

H1: The more potential tax benefits a company obtains through the reform of “replacing business tax with VAT”, the more likely it is to postpone income and implement accrual-based earnings management before the reform.

2.2.2. Possible Tax Avoidance Actions After the “Replacing Business Tax with VAT” Reform

Sun et al. [18] found that tax avoidance behavior and earnings management are strategically substituted or complemented. In terms of income tax, without changing the taxable income, the company can use earnings management to improve accounting profits. At the same time, without changing the accounting profit, the company can reduce the taxable income through tax avoidance.

Hu et al. [19] explained the impact of the policy reform on the earnings management of construction companies from the perspectives of investment, financing, and capital utilization, and indicated that after the reform, increasing the procurement of raw materials and expanding the purchase of fixed assets will allow companies to avoid tax. Meng Lingxun [20] selected transportation companies as samples to study corporate behavior after the implementation of the policy reform and found that transportation companies are likely to reduce their tax burden by purchasing a large number of real transaction activities such as fixed assets and which lowers their turnover tax expenditure.

In summary, after the implementation of the policy reform, the wages and salaries paid directly to employees cannot be deducted as input VAT. However, if the company increases its own business outsourcing and obtains VAT special invoices, it can obtain more deductibles, thereby reducing the tax burden. Based on the analysis above, this paper proposes Hypothesis 2:

H2: After the implementation of the "Replacing Business Tax with VAT" policy reform, companies which can reduce their VAT tax burden by increasing raw material investments and increasing labor outsourcing are less likely to carry out negative earnings management.

2.2.3. Differences in Earnings Management Behaviors Before and After the "Replacing Business Tax with VAT" Policy Reform

To further investigate the differences in the nature of earnings management behaviors of companies under the policy reform, this paper explores the differences in the accrual-based earnings management response to potential tax benefits and tax avoidance of different companies by conducting subgroup analyses on companies with different scales of operation, audit quality and ROA.

Watts et al. [21] found that as the size of the company increases, its earnings management behavior tends to increase. Based on the theoretical analysis above, this paper proposes Hypothesis 3:

H3: Compared with smaller companies, the potential tax benefits and tax avoidance of larger companies have a more substantial impact on their accrual-based earnings management behavior.

A company's earnings management behavior may also be impacted by the accounting firm responsible for their audit. When compared with non-"Big Four" accounting firms, the audit quality of "Big Four" firms is higher, offering more external regulatory oversight. Xiang Ying [22] believed that hiring the "Big Four" accounting firms for the company audit can inhibit companies from utilizing accrual-based earnings management. Thus, this paper proposes Hypothesis 4:

H4: Potential tax benefits and tax avoidance have a stronger impact on the accrual-based earnings management behavior of companies whose financial statements are audited by non-"Big Four" accounting firms, compared to companies audited by the "Big Four" accounting firms,

Return On Assets (ROA), can be used to measure a company's profitability. Dechow et al. [23] believed that the stronger the company's profitability, the higher its level of earnings management. However, more researchers [24] have found that companies have a stronger motivation to conduct earnings management during periods of weak profitability. Based on the theoretical analysis above, this paper proposes Hypothesis 5:

H5: Potential tax benefits and tax avoidance have a stronger impact on the accrual-based earnings management behavior of companies with weaker profitability.

3. Data and Sampling

3.1. Research Samples and Data Sources

The sample of the study comprises of A-share publicly listed companies in the transportation industry, modern service industry, construction industry and other industries involved in the policy reform.

This paper explores in depth the earnings management behavior before and after the policy reform. Since the full implementation of the policy reform occurred in different years in different industries, this paper determines the year of the policy change based on the reform time stipulated by the industry policy and the information disclosed the company's financial statements. The exclusion criteria are as follows: (1) Special Treatment (ST)-type companies; (2) companies with missing data; (3) financial and insurance industry companies. The first year of the policy reform was in 2012 while the last year was 2016. This paper studies a period of three years before the year of reform, the year of reform and the two years after the implementation of the reform. Only the data of listed companies which meet the corresponding conditions will be analyzed. The data in this paper is calculated manually based on the financial data disclosed in the publicly listed company's annual report. The remaining sample data is sourced from the Wind database. Stata software is used for the data processing in this paper.

3.2. Definition of Variable

3.2.1. Explained Variable

In this paper, the accrual-based earnings management (DA) of explained variables is measured by the Modified Jones Model which has been popular in the field of earnings management research for the past three decades. Dechow et al. [25] proposed the Modified Jones Model in 1995, which assumed that companies would manipulate the credit sales revenue, so the accounts receivable in the original Jones model was removed. The formula of the Modified Jones Model is:

$$DA_{(j,t)} = (TA_{j,t}) / [A_{j,t-1}] - \beta_1 1/A_{(j,t-1)} - \beta_2 \left((\Delta REV_{(j,t)}) / A_{(j,t-1)} - \frac{\Delta REC_{j,t}}{A_{j,t-1}} \right) - \beta_3 \frac{PPE_{(j,t)}}{A_{j,t-1}} \quad (1)$$

In the equation above, $TA_{j,t}$ is the total accrual profit of company j in the t year; $A_{j,t-1}$ is the total assets of company j in the previous year; $\Delta REV_{j,t}$ is the increase of annual sales income; $\Delta REC_{j,t}$ is the net increase of annual accounts receivable; and $PPE_{j,t}$ is fixed assets. Xia Lijun [26] concluded that accrual-based earnings management could be accurately measured by the Modified Jones Model when controlled for the year of policy implementation and industry. Therefore, this study selects the Modified Jones Model and controls for the year and industry to measure the degree of earnings management of the companies sampled.

3.2.2. Explanatory Variables

3.2.2.1 Potential Tax Benefits

The explanatory variable Ptb represents a potential tax benefit that a publicly listed company can obtain through the policy reform. In this paper, the tax burden of a company in the three years before the policy reform is defined as the sum of business tax and VAT in proportion to the business income. The tax burden of companies after the reform is defined as the mean value of the same proportion in the year of reform and two years following the reform. The difference between the former and the latter is used to describe the potential tax benefits of each company in the first three years after the

implementation of the policy reform. This method is used to manually measure the Ptb of each sampled company every year.

3.2.2.2 Tax Avoidance

The explanatory variable Bta represents the tax avoidance behavior of publicly listed companies after the implementation of the policy reform. After the implementation of the reform, companies can reduce the VAT tax burden by increasing material investment and increasing labor outsourcing. Therefore, this paper measures the degree of tax avoidance of a company by calculating the proportion of the cash flow used to purchase goods and labor services compared to its operating costs.

3.2.3 Control Variables

According to existing research, there are other variables that will affect the direction or magnitude of earnings management of publicly listed companies. Therefore, the following variables are controlled for in this paper:

Size measures the scale of a company and is the natural logarithm of the company's total assets. In general, the degree of earnings management will increase as the size of the company increases [21];

ROA (Return on Assets) is used to measure the profitability of a company. It is obtained by dividing the net profit by the total assets. The profitability of a company also affects the degree of earnings management [23][24];

Lev represents the asset-liability ratio that measures the solvency of a company. It is calculated by dividing total liabilities by total assets. It is widely believed that the weaker the solvency of the company, the stronger the benefits for a company to whitewash their performance;

Growth is a variable that measures the growth of a company. It can be expressed by the growth rate of operating income. Companies with high growth potential are more likely to have more earnings management due to their development potential and unstable operating conditions. [27];

Big4 represents the dummy variable of audit quality. The value of annual report is defined as 1 if the audit of the company is performed by a “Big Four” accounting firm while the value is defined as 0 if audited by a non-“Big Four” firm. Generally, audits from a “Big Four” accounting firm can inhibit the earnings management behavior of publicly listed companies [22].

CS represents the proportion of the largest shareholder. Various researchers have found that among companies with higher equity concentration, large shareholders are more likely to carry out earnings manipulation [28].

Table 1: Summary of Symbols and Definitions of Variables.

	Variable name	Variable symbol	Variable definitions
Explained variable	Earnings management	DA	Accrual-based earnings management measured by the Modified Jones Model
Explanatory variables	Potential tax benefits	Ptb	The difference between the proportion of the sum of business tax and value-added tax to the operating income in years before the “Replacing Business Tax with VAT” policy reform, and the mean value of the same proportion in the year of reform and two years following the reform
	Tax avoidance	Bta	The proportion of cash paid to goods and receive labor services as a percentage of operating costs

Control variable	Company Size	Size	The natural logarithm of the company's total assets
	Return On Assets	ROA	Accounting year net profit / total assets of the previous fiscal year
	Asset-Liability Ratio	Lev	Total annual liabilities / total assets
	Growth	Growth	The increase in operating income this year / the total operating income in the previous year
	Audit quality	Big4	The dummy variable, the value of the audit conducted by a “Big Four” accounting firm is 1 and is 0 for a non-“Big Four” firm
	The shareholding ratio of the largest shareholder	CS	The proportion of shares held by the largest shareholders

3.3. Empirical Model

In order to test the hypotheses H1, H2, H3, H4, H5, this paper constructs the following model:

$$DA_{j,t} = \alpha_0 + \alpha_1 P_{ti,j,t} + \alpha_2 Control_{j,t} + \varepsilon_{j,t} \quad (2)$$

$$DA_{j,t} = \alpha_0 + \alpha_1 B_{ta,j,t} + \alpha_2 Control_{j,t} + \varepsilon_{j,t} \quad (3)$$

Among them, $Control_{j,t}$ represents the control variable, and this study mainly uses the six control variables described above. Subgroup analyses conducted in this paper will further stratify the sampled companies by scale (larger scale and smaller scale), ROA (higher ROA and lower ROA), whether the financial report is audited by a “Big Four” accounting firm. These will be respectively regressed with DA to explore the impact of potential tax benefits and tax avoidance generated by replacing business tax with value-added tax on accrual-based earnings management behavior of companies with these different characteristics.

3.4. Descriptive Statistics

Table 2: Variable Descriptive Statistics.

Variable name	Average value	Standard deviation	Minimum value	Maximum value
DA	0.019	0.421	-3.281	22.031
Ptb	0.005	0.064	-1.161	0.315
Bta	1.066	0.790	0.166	5.995
Size	22.175	1.569	18.806	26.687
ROA	6.410	6.372	-18.470	28.116
Lev	47.864	23.373	4.603	94.895
Growth	20.595	49.646	-66.362	319.444
Big4	0.084	0.277	0	1
CS	37.813	16.414	8.780	79.470

Note: The statistical values of ROA, Lev, Growth, and CS in the table are percentages, that is, the unit is %.

Table 2 gives descriptive statistics for the variables contained in the model. To avoid the influence of extreme values, the data is winsorized on the 1% and 99% quantiles but this does not include the publicly listed company data involved in the earnings management calculation.

4. Empirical Results and Analysis

4.1. The Impact of Tax Benefits on Earnings Management Before the Policy Reform (Replacing Business Tax with VAT)

All control variables used are reported in Table 1. Statistical tests rely on Ordinary Least Squares (OLS) estimation. The time fixed effects and industry fixed effects accommodate for changes in regulation and other economic conditions. Robust t-statistics are reported in parentheses. *** and ** correspond to significance levels of 10%, 5%, and 1%, respectively.

Table 3 divides Model 1 into three levels: the effect of potential tax benefits on earnings management alone; the impact of potential tax benefits on earnings management after controlling for specific variables (for full list, see Table 1); and the impact of potential tax benefits on earnings management after controlling for related control variables as well as year and industry fixed effects on earnings management. Table 3 divides Model 1 into three levels: the effect of potential tax benefits on earnings management alone; the impact of potential tax benefits on earnings management after controlling for specific variables (for full list, see Table 1); and the impact of potential tax benefits on earnings management after controlling for related control variables as well as year and industry fixed effects on earnings management.

Table 3: Regression Results of Potential Tax Benefits (Ptb) on Accrual-Based Earnings Management.

Variable name	(1)	(2)	(3)
DA		Model 1	
Ptb	-0.289**	-0.147***	-0.162***
	(-2.161)	(-2.828)	(-3.143)
Size	0.040***	0.045***	0.042***
	(9.395)	(8.932)	(8.302)
ROA		0.011***	0.011***
		(7.478)	(7.945)
Lev		-0.000	-0.001**
		(-0.918)	(-2.143)
Growth		-0.000***	-0.000***
		(-4.304)	(-4.615)
Big4		-0.067***	-0.058***
		(-3.867)	(-3.831)
CS		-0.001**	-0.000
		(-2.111)	(-1.416)
Constant term	-0.884***	-1.030***	-1.008***
	(-9.242)	(-9.458)	(-9.025)
Year effect	Uncontrolled	Uncontrolled	Controlled
Industry effect	Uncontrolled	Uncontrolled	Controlled
Sample size	1322	1153	1153

R^2	0.192	0.526	0.562
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According to the regression results of Model 1, the regression coefficient of the explanatory variables (-0.162) is negative and statistically significant at the 1% level, indicating that the more tax benefits companies obtain through the "Replacing Business Tax with VAT" policy reform, the greater their motivation to postpone the implementation of negative accrual-based earnings management before the reform. Thus, Hypothesis 1 is verified through this analysis.

4.2. The Impact of Tax Avoidance on Earnings Management after the Policy Reform (Replacing Business Tax with VAT)

Table 4 shows the impact of tax avoidance behavior on corporate earnings management after the policy reform, and Model 2 is equally divided into three levels as in Table 3. According to the regression results of Model 2, the regression coefficient of the explanatory variables (0.005) is positive and statistically significant at the level of 5%. This indicates that companies which can conduct tax avoidance and reduce their own VAT tax burden after the reform have less incentive to carry out negative accrual earnings management. Therefore, we also accept Hypothesis 2.

Table 4: Regression Results of Tax Avoidance Behavior (Bta) on Accrual-Based Earnings Management (DA).

Variable name	(1)	(2)	(3)
DA		Model 2	
Bta	-0.001 (-0.302)	0.006** (2.270)	0.005** (2.005)
Size	0.035*** (5.909)	0.034*** (5.757)	0.034*** (5.679)
ROA		0.008*** (29.864)	0.008*** (28.900)
Lev		-0.000 (-0.226)	-0.000 (-0.167)
Growth		-0.000 (-0.917)	-0.000 (-1.063)
Big4		-0.053*** (-4.134)	-0.042*** (-3.327)
CS		-0.000 (-0.617)	-0.000 (-0.262)
Constant term	-0.763*** (-5.722)	-0.784*** (-6.637)	-0.837*** (-6.817)
Year effect	Uncontrolled	Uncontrolled	Controlled
Industry effect	Uncontrolled	Uncontrolled	Controlled
Sample size	1937	1620	1620
R^2	0.068	0.790	0.804

4.3. Differences in Earnings Management of Different Companies Before and After the Policy Reform

Table 5: Impact of “Replacing Business Tax with VAT” on Accrual-Based Earnings Management (DA) of Publicly Listed Companies of Different Sizes.

Variable name	(1)	(2)	(3)	(4)
DA	Size is less than the median		Size is greater than the median	
Ptb	-0.054		-0.051**	
	(-1.001)		(-2.151)	
Bta		-0.001		0.006**
		(-0.448)		(2.505)
ROA	0.009***	0.009***	0.016***	0.010***
	(16.075)	(22.990)	(15.771)	(12.909)
Lev	-0.000	0.000	0.000	-0.000
	(-0.457)	(0.909)	(1.641)	(-1.117)
Growth	-0.000**	-0.000*	-0.000***	-0.000
	(-2.340)	(-1.879)	(-8.182)	(-1.007)
Big4	-0.042*	0.007	-0.016**	-0.005
	(-1.784)	(0.395)	(-2.443)	(-1.058)
CS	-0.000*	-0.000	-0.000	-0.000
	(-1.655)	(-0.333)	(-0.353)	(-0.174)
Constant term	-3.410***	-3.193***	-0.180**	-0.193***
	(-14.205)	(-10.003)	(-2.410)	(-6.024)
Year effect	Controlled	Controlled	Controlled	Controlled
Industry effect	Controlled	Controlled	Controlled	Controlled
Sample size	492	616	661	1004
R ²	0.734	0.923	0.786	0.620

Specifications 1-2 present the results of companies whose company size is smaller than the median of the sample, and specifications 3-4 present the results of companies whose company size is larger than it.

Table 6: The impact of “Replacing Business Tax with VAT” on the Accrual-Based Earnings Management (DA) of Publicly Listed Companies with Different Audit Quality.

Variable name	(1)	(2)	(3)	(4)
DA	“Non-Big Four”		“Big Four”	
Ptb	-0.265***		0.005	
	(-3.258)		(0.302)	
Bta		0.004**		0.003
		(2.081)		(0.960)
Size	0.051***	0.040***	-0.002	0.004
	(9.078)	(6.032)	(-0.276)	(0.992)
ROA	0.011***	0.008***	0.010***	0.011***
	(8.062)	(27.905)	(4.412)	(6.191)
Lev	-0.001**	-0.000	-0.001	-0.000
	(-2.528)	(-0.133)	(-1.407)	(-0.656)
Growth	-0.000***	-0.000	0.000	0.000
	(-4.425)	(-1.046)	(0.678)	(1.027)
CS	-0.000*	-0.000	0.001	-0.000

	(-1.824)	(-0.357)	(1.191)	(-0.732)
Constant term	-1.198***	-0.963***	-0.026	-0.138*
	(-9.699)	(-7.123)	(-0.156)	(-1.747)
Year effect	Controlled	Controlled	Controlled	Controlled
Industry effect	Controlled	Controlled	Controlled	Controlled
Sample size	1059	1483	94	137
R ²	0.589	0.813	0.496	0.758

3-4 present the results of companies whose financial statements are audited by “Big Four” accounting firms, and specifications 1-2 present the results of companies audited by non-“Big Four” accounting firms.

Table 7: The Impact of the “Replacing Business Tax with VAT” Policy Reform on the Accrual-Based Earnings Management (DA) of Publicly Listed Companies with Different ROAs.

Variable name	(1)	(2)	(3)	(4)
DA	ROA is less than the median		ROA is greater than the median	
Ptb	-0.093**		-0.330	
	(-2.084)		(-1.376)	
Bta		0.002		0.013
		(1.432)		(1.537)
Size	0.030***	0.029***	0.074***	0.059***
	(5.072)	(4.569)	(7.932)	(6.881)
Lev	-0.001	-0.000	-0.001***	-0.001**
	(-1.516)	(-0.424)	(-2.869)	(-2.354)
Growth	-0.000***	-0.000***	-0.000	-0.000
	(-4.920)	(-3.570)	(-1.263)	(-0.554)
Big4	-0.050***	-0.038***	-0.063**	-0.045**
	(-3.556)	(-2.743)	(-2.198)	(-2.090)
CS	0.000*	0.000	-0.001**	-0.000
	(1.789)	(0.880)	(-1.980)	(-1.642)
Constant term	-0.743***	-0.716***	-1.743***	-1.345***
	(-6.041)	(-5.296)	(-8.117)	(-7.559)
Year effect	Controlled	Controlled	Controlled	Controlled
Industry effect	Controlled	Controlled	Controlled	Controlled
Sample size	675	975	478	645
R ²	0.620	0.572	0.591	0.896

Specifications 1-2 present the results of companies whose ROA is smaller than the median of the sample, and specifications 3-4 present the results of companies whose ROA is larger than the median. Robust t-statistics are reported in parentheses.

Tables 5, 6, and 7 show the results of group regression with company size, audit quality, and ROA. Comparing the regression results of Table 5, companies with a greater than median size, the regression coefficients of Ptb and Bta are both significant at 5%, while companies smaller than the median size do not show statistically significant coefficients in the analysis. This confirms Hypothesis 3, and that under the influence of potential tax benefits before the policy change or tax avoidance after the policy change, larger companies will implement or suppress negative accrual-based earnings management more significantly than smaller companies.

Comparing the regression results of Table 6, the empirical results show that the regression coefficients of Ptb and Bta in the financial statements from companies audited by non-“Big Four”

accounting firms are statistically significant at the 1% and 5% level, while the regression coefficients of Ptb and Bta of companies audited by the “Big Four” are not statistically significant. This shows that among the companies that receive more tax benefits due to the policy reform, companies audited by non-“Big Four” accounting firms are more likely to have negative accrual-based earnings management behavior. Simultaneously, amongst the companies that adopt tax avoidance after the policy change, those audited by non-“Big Four” are more likely to reduce their motivation for earnings management. Hence, we also confirm Hypothesis 4.

Comparing the regression results of Table 7, we find that only the regression coefficient of Ptb in column (1) is significant at 5%, while the impact factors of the tax avoidance behavior in column (2) and column (4) are not significant in different groups, indicating that only potential tax benefits obtained before the policy reform will make the earnings management behavior of the companies with lower ROA react to this reform. The reason for this phenomenon may be that the impact of tax avoidance after the policy change on the company’s earnings management mainly comes from the difference between the actions of the two groups of companies (those with larger ROA compared to those with smaller ROA), which has no internal impact within the groups.

As for Hypothesis 3, Hypothesis 4, Hypothesis 5, this paper verifies the interaction effect using the regression method, and the results are consistent with the above. For clarification, the regression results are listed using group regression.

5. Conclusion

5.1. Empirical Conclusion

Based on the background of “Replacing Business Tax with VAT” reform, this paper uses the data of eligible, publicly listed Chinese companies between 2009-2018 to study the impact of this tax reform on the company's earnings management behavior. The results show that the more potential tax benefits the companies will receive through the policy reform, the more likely the company is to postpone income recognition to implement accrual-based earnings management before the reform. However, after the implementation of said policy, companies which can reduce their VAT burden by using tax avoidance behaviors such as material investment and labor outsourcing have less incentive to conduct negative earnings management. In addition, there are differences in the earnings management behaviors of different types of companies before and after the reform. Compared with smaller companies, the potential tax benefits and tax avoidance of larger companies have a more significant impact on their accrual-based earnings management. At the same time, potential tax benefits and tax avoidance have a more pronounced impact on the accrual-based earnings management of companies audited by a non-“Big Four” accounting firm compared to the earnings management behavior of companies audited by “Big Four” accounting firms. For companies with different ROAs, only the potential tax benefits will affect the earnings management behavior of companies with low ROA. However, tax avoidance has no substantial impact on the earnings management behavior of both high and low ROA companies after the policy reform.

5.2. Social Implication

To leverage the desired effect, each reform should consider the response of the key stakeholders affected by the tax adjustment. Previously, the estimation of the impact of the policy reform by the State Administration of Taxation of China was calculated with the presumption that the behavior of the taxpayer would not change. However, this method does not consider the situation in which VAT taxpayers adjust their behavior to maximize profits, specifically adjusting their earnings management

behavior based on the reform policy. Furthermore, accounting information users such as investors and government agencies monitoring corporate earnings management behavior should focus their efforts on companies with small scale, low ROA and companies whose financial statements are audited by non-“Big Four” accounting firms, as their earnings management practices are more susceptible to be affected by the “Replacing Business Tax with VAT” policy reform.

References

- [1] Cohen, D. A., Dey, A., Lys, T. (2005) *Trends in Earnings Management and Informativeness of Earnings Announcements in the Pre-and Post-Sarbanes Oxley Periods*. *The Accounting Review*, 1, 1-4.
- [2] Badertscher, B. A. (2011) *Overvaluation and the Choice of Alternative Earnings Management Mechanisms*. *The Accounting Review*, 5, 1491-1518.
- [3] Jones, J. (1991) *Earnings Management During Important Relief Investigations*. *Journal of Accounting Research*, 29, 193-228.
- [4] Tian Zhiwei, Hu Yijian. (2013) *Dynamic Analysis of the Impact of “Replacing Business Tax with VAT” on Tax Burden in Various Industries—Based on CGE Model Analysis*. *Finance and Economics*, 7, 29-34. (in Chinese)
- [5] Li Mingjuan, Yang Hang. (2017) *Tax Change and Tax Management Suggestion after Replacing Business Tax with VAT in Construction industry*. *Friends of Accounting*, 15, 101-105. (in Chinese)
- [6] Zhang Dan, Yang Qiuqi. (2013) *The Impact of replacing business tax with VAT on Tax Burden of Transportation Enterprises—Based on the Analysis of Shanghai Reform Pilot Policy*. *Finance and Accounting Monthly*, 2, 15-18. (in Chinese)
- [7] Du Huan. (2012) *Research on the impact of replacing business tax with VAT reform on enterprises*. Shenyang: Liaoning University. (in Chinese)
- [8] Zhang Muyang, Liu Ye, Li Shuqi. (2018) *“Replacing Business Tax with VAT Reform” and Enterprise Tax Avoidance Management*. *Finance and Accounting Monthly*, 24, 64-73. (in Chinese)
- [9] Adams, C., & Webley, P. *Small Business Owners' Attitudes on VAT Compliance in the UK*. (2001) *Journal of Economic Psychology*, 2, 195-216.
- [10] Li Caixia, Han Xian. (2017) *Will the “Replacing Business Tax with VAT Reform” policy reduce the quality of corporate accounting information? — Evidence from listed companies in the transportation industry*. *Taxation and Economy*, 1, 94-102. (in Chinese)
- [11] Yang Zhen. (2015) *Research on the Impact of Replacing Business Tax with VAT on Enterprise Earnings Management*. *China Market*, 49, 178-180. (in Chinese)
- [12] Scholes, Myron S, Wilson, G. Peter, Wolfson, Mark A. (1992) *Firms' Responses to Anticipated Reductions in Tax Rates: The Tax Reform Act of 1986*. *Journal of Accounting Research*, 3, 161-185.
- [13] Guenther, David A. (1994) *Earnings Management in Response to Corporate Tax Rate Changes: Evidence from the 1986 Tax Reform Act*. *The Accounting Review*, 1, 230-243.
- [14] Thomas J. Lopez, Philip R. Regier and Tanye Lee. (1998) *Identifying Tax-Induced Earnings Management around TRA 86 as a Function of Prior Tax-Aggressive Behavior*. *Journal of the American Taxation Association*, 2, 37-56.
- [15] Namryoung Lee, Charles Swenson. (2011) *Earnings Management through Discretionary Expenditures in The U.S., Canada, and Asia*. *International Business Research*, 2, 257-266.
- [16] Liu Xing, Ye Kangtao. (2011) *Tax Collection and Management, Income Tax Cost and Earnings Management*. *Management World*, 5, 140-148. (in Chinese)
- [17] Li Zengfu, Dong Zhiqiang, Lian Yujun. (2011) *Accrual Project Earnings Management or Real Activity Earnings Management?-Based on China's 2007 Income Tax Reform Research*. *Management World*, 1, 121-134. (in Chinese)
- [18] Sun Xuejiao, Gai Di. (2016) *Earnings Management and Tax Avoidance Behavior: Strategic Substitution or Strategic Complementarity*. *Journal of Shanxi University of Finance and Economics*, 8, 114-124. (in Chinese)
- [19] Hu Jiao, Peng Hui. (2016) *Analysis of the Impact of “Replacing Business Tax with VAT Reform” on the Earnings Management of Construction Enterprises*. *Business*, 24, 155-156. (in Chinese)
- [20] Meng Lingxun. (2015) *The impact of the replacing business tax with VAT on the earnings management of listed companies in the transportation industry*. Qingdao: Qingdao Technological University. (in Chinese)
- [21] Watts R., Zimmerman J. (1978) *Toward A Positive Theory of Determination of Accounting Standards*. *The Accounting Review*, 1, 112-134.
- [22] Xiang Ying. (2017) *Audit quality, IPO earnings management methods and company performance*. *Finance Communications*, 36, 24-29. (in Chinese)

- [23] Dechow P. M., Skinner D. J. (2000) *Earnings Management: Reconciling the Views of Accounting Academics, Practitioners and Regulators*. *Accounting Horizons*, 2, 235~250.
- [24] Liang Feiyuan. (2006) *Economic Analysis and Enlightenment of International Convergence of Accounting Standards*. *Audit and Economic Research*, 5, 60~62. (in Chinese)
- [25] Dechow P.M., Sloan R.G. and Sweeney A.P. (1995) *Detecting Earnings Management*. *Accounting Review*, 2, 193-225.
- [26] Xia Lijun. (2002) *Review on Measurement Methods of Foreign Earnings Management*. *Foreign Economics and Management*, 10, 35~40. (in Chinese)
- [27] Wang Lizhi. (2017) *Corporate Value and Earnings Management of Growth Enterprises—Based on the Research of Financial Data of Company A*. Shanghai: Shanghai National Accounting Institute. (in Chinese)
- [28] Sun Guangguo, Niu Yongqin. (2008) *An Empirical Study on Earnings Management of Related Transactions of Listed Companies*. *Studies in Financial and Economic Issues*, 12, 67~72. (in Chinese)