State and Local Taxes Merger and Enterprise Rent-Seeking: Empirical Evidence Based on Differences-In-Differences

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Abstract: The merger of state and local taxes is a national reform of the tax collection and management mechanism, which improves China's taxation mechanism and the taxation environment further purified. With the help of this quasi-natural experiment, this paper selects A-share listed enterprises from 2015-2020 and explores the impact of the merger of state and local taxes on corporate rent-seeking by using the DID method. It is found that the merger of state and local taxes attenuates the rent-seeking behavior and reduces the excess administrative expenses of enterprises. Meanwhile, the negative effect of policy on rent-seeking behavior is more significant in private enterprises and enterprises in regions with high marketization. The above findings provide experiences and insights for the governance of enterprises by the reform of taxation mechanism in China.

Keywords: state and local taxes merger; rent-seeking; differences-in-differences

1 INTRODUCTION

Taxation is the process by which the state uses its power to redistribute corporate profits. A country's ability to collect taxes is an essential foundation for its prosperity [1]. China's previous taxation policy originated from the 1994 tax-sharing reform. The tax-sharing reform solved the revenue problem of the central government at that time and promoted the rapid development of the economy to a large extent. However, after decades of rapid growth, the drawbacks of the tax sharing system were gradually exposed, such as inefficient tax collection and administration, heavy workload of the state taxation department, and high costs for taxpayers [2] [3]. At the same time, because China's taxation mechanism is not perfect, local taxation bureaus have a sizeable discretionary power, leading to tax avoidance and evasion by enterprises. For example, the identification and implementation of many tax incentives are not rigid but flexible [4]. Therefore, local governments have greater discretion in deciding these tax incentives [5]. In such a context, many enterprises will seek rent from local governments to obtain more resources such as tax incentives. Local governments will also accept rent-seeking from enterprises to pursue their private interests, thus loosening the supervision of enterprise taxation. The result of rent-

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seeking by enterprises and rent-seeking by local governments is that enterprises and local governments gain, while the national tax revenue suffers [6].

The merger of state and local taxes has further improved the taxation environment in China. On the one hand, the merger of state and local taxes shortens the entire tax administration chain. It strengthens the rigidity of tax collection and administration, reducing the challenge of local governments to tax laws. Specifically, local governments no longer have a greater say over the merged tax authorities, and their dominance over tax incentives and tax plans is greatly reduced. On the other hand, the merger of national and local taxes and the upgrading of the tax collection and management system have enabled the state to have a more transparent and more accurate picture of the national tax situation and better play its macroeconomic control role. At the same time, the supervision and punishment of taxpayers have been strengthened, which makes the risk of tax evasion and avoidance by taxpayers significantly increased, thus contributing to the improvement of tax efficiency. So, with the rising cost of rent-seeking, what changes will companies make in their rent-seeking behavior to gain more benefits?

2 MATERIALS AND METHODS

2.1 Research hypothesis

2.1.1 State and Local Taxes Merger and Enterprise Rent Seeking

The merger of state and local taxes has further improved the taxation environment in China. On the one hand, after the merger of state and local taxes, the local taxation bureaus implement a management system under the dual leadership of the State Administration of Taxation and the provincial (district and municipal) people's governments. This shortens the overall tax administration chain, enhances the rigidity of tax collection and administration, and reduces the challenges of local governments to the tax law [7]. Specifically, local governments no longer have a greater say over the merged tax authorities and have much less discretion over tax incentives and tax plans, which they previously had more control over. On the other hand, the merger of state and local taxes and the upgrading of the tax collection and management system have enabled the state to have a clearer and more accurate picture of the national tax situation and better play state macro-control. At the same time, the supervision and punishment of taxpayers have been strengthened, which makes the risk of tax evasion and avoidance by taxpayers significantly increased, thus contributing to the improvement of tax efficiency. So, with the local government's dominance over tax incentives greatly diminished and the cost of tax avoidance for taxpayers significantly increased, what will happen to enterprises in terms of rent-seeking behavior to gain more benefits?

In rent-seeking theory, rent-seeking is an unproductive activity in which special interest groups influence government policies or officials for their economic benefit [8]. According to the literature, there are various ways for enterprises to engage in rent-seeking activities, including rent-seeking activities by hiring government officials and establishing political ties to local governments with resources [9] [10], and rent-seeking actions by directly bribing government officials [11]. Through rent-seeking, enterprises can obtain more resources, tax incentives,

relaxed financing constraints, and lower market competition. When the benefits of these resources are higher than the costs of rent-seeking, enterprises have sufficient incentives to engage in rent-seeking. Even during economic transformation, many local governments will take the initiative to provide rent-seeking to enterprises for their selfish interests, creating a severe problem of upper-level corruption [12]. Many scholars believe that rent-seeking by enterprises is detrimental to the development of enterprises and society. This is because enterprises use the resources obtained from rent-seeking for unproductive activities, which leads to insufficient resources for other activities such as investment and innovation [13] [14]. The rent-seeking of enterprises in taxation reduces the efficiency of tax, reduces the central government's revenue, and affects the development of the whole society.

The merger of state and local taxes makes it more costly for enterprises to avoid or even evade taxes by rent-seeking from local governments. Therefore, this paper predicts that after the merger of state and local taxes, the incentive for enterprises to seek rent from local governments will be weakened due to the increase of rent-seeking costs and the decrease of benefits and the reduction of rent-seeking expenses incurred. Based on the above analysis, Hypothesis 1 is proposed.

H1: After the merger of state and local taxes, the rent-seeking expenses of enterprises will drop significantly.

2.1.2 State and local tax merger, nature of property rights and rent-seeking of enterprises

There is a big gap between state-owned enterprises and private enterprises regarding the economic resources they enjoy and the social and economic responsibilities they bear. On the one hand, SOEs enjoy more political resources and tax benefits, and their tax burden is backed by the scale advantage of the national economy and monopoly interests [15]. Therefore, SOEs have less incentive to obtain resources and tax incentives through rent-seeking. On the other hand, it is common for private enterprises to establish political connections with local governments due to insufficient protection of property rights and difficulties in obtaining various capital and production factors [16]. Private enterprises carry out rent-seeking activities from local governments by establishing political connections to obtain more policy preferences, so private enterprises have greater motive and degree of rent-seeking from local governments. Therefore, when the state and local taxes are merged, the negative change in the rent-seeking cost of private enterprises is more significant because the cost of rent-seeking to private enterprises is greatly increased. In summary, hypothesis 2 is proposed.

H2: After the merger of state and local taxes, the negative change of rent-seeking expenses of private enterprises is more significant.

2.2 Research design and model construction

2.2.1 Sample selection and data sources

This paper selects A-share listed companies from 2015-2020 as the research sample and screens the sample as follows: (1) exclude ST class companies; (2) exclude observations with missing relevant financial data; and (3) exclude financial companies. After screening, 8,956

observations are finally obtained, and the corporate-level data are obtained from the Guotaian database.

2.2.2 Model construction and variable description

Since the national and local tax merger policy was proposed in 2018 and implemented nationwide, the policy is a better quasi-natural experiment. In order to test the effect of the state and local tax merger on the degree of rent-seeking of enterprises, this paper chooses the DID for analysis to test out the causal relationship between variables through the difference between the experimental and control groups. The baseline regression model is constructed as follows:

$$Rent=\alpha+\beta_1 After+\beta_2 Treat+\beta_3 Merge+\beta_4 X+\varepsilon \quad (1)$$

In model (1), Rent is the explained variable and the excess management cost of the enterprise, which is used to measure the degree of rent-seeking of the enterprise. After is the time variable. If the enterprise is after 2018, the value is 1; otherwise, the value is 0. Treat is the group classification. If the enterprise belongs to the experimental group, then Treat takes the value of 1; if the enterprise belongs to the control group, then Treat takes 0. Merge is the cross multiplication term of Treat and After, which indicates whether the national and local tax merger policy is implemented or not. The coefficient of Merge is the focus of the regression, reflecting the degree of change of the explanatory variables in the experimental group compared with the control group after the state and local tax merger policy, demonstrating the policy implementation's effect. X represents the control variables that change over time and individually. ε is a random disturbance term.

The following variables were selected as control variables regarding the studies of Shen Yu et al. (2015) [17]and Huang Jiu-Li et al. (2013) [18]. Enterprise size (Size), defined as the natural logarithm of the enterprise's total assets at the end of the period; gearing ratio (Lev), defined as the total liabilities divided by the enterprise's total assets at the end of the period; profitability (ROA), defined as the enterprise's current net income divided by total assets at the end of the period; the age of establishment (Age), defined as the natural logarithm of the number of years the enterprise has existed; executive compensation (Comp), defined as the natural logarithm of the compensation of the top three executives; the shareholding ratio of the first largest shareholder (Stockholders), defined as the ratio of shares held by the first largest shareholder of the enterprise to all shares; two positions in one (Dual), defined as the ratio of independent directors to the total number of directors, if the chairman and general manager of the enterprise are serving as the same person, then take the value of 1, otherwise 0; independence (Independent), defined as the ratio of independent directors to the total number of directors.

For the degree of rent-seeking of enterprises, this paper refers to the estimation model in the study of Richardson [19], Shen Yu et al. (2015) [16], and regressions are conducted by industry and by year to obtain the annual excess overhead of enterprises. The specific model is as follows.

$$ae=\beta_0+\beta_1 Insale+\beta_2 Lev+\beta_3 Growth+\beta_4 Board+\beta_5 Staff+\beta_6 Big4+\beta_7 Age+\beta_8 Magin+\beta_9 H5+\varepsilon \quad (2)$$

Ae is the administrative expenses of the enterprise divided by the operating revenue of the year. InSale is the natural logarithm of the enterprise's revenue; Lev is the enterprise's gearing ratio;

Growth is the growth rate of the enterprise's revenue; Board is the size of the enterprise's board of directors; Staff is the total number of employees; Big4 is the audit quality of the enterprise and takes the value of 1 if the enterprise responsible for the audit is a Big4 international accounting enterprise, otherwise it takes the value of 0; Age is the number of years the enterprise has been listed; Magin is the gross profit rate of the enterprise; H5 is the Herfindahl index of the top 5 shareholders of the enterprise. The continuous variables in the model (2) are scaled down according to the 1% and 99% quartiles, and the residual obtained from the model regression is the proxy variable of corporate rent-seeking-excess management cost.

For the classification of the experimental and control groups, this paper draws on the treatment of Xuesong Qian et al. (2021) [20]. Specifically, the total sample is grouped in enterprises' high or low effective tax rate (ETR). We calculate the mean value of the enterprises' effective tax rate before the merger of state and local taxes and divide them into three equal groups. The highest group in the triple-tier is used as the experimental group, and the lowest group is used as the control group.

2.2.3Descriptive statistics of the main variables

Table 1 reports the results of descriptive statistics for the main variables. As can be seen from Table 1, the mean value of the explanatory variable (Rent) is 0.002, indicating an overall positive excess overhead of listed enterprises; the standard deviation is 0.051, meaning that the differences between the excess overhead of listed enterprises are not significant. The median of other control variables is close to the mean data, indicating that the overall distribution of these control variables is reasonable.

Table 1 Descriptive statistics of the main variables

Variable	N	Mean	P50	SD	Min	Max
Merge	8956	0.260	0	0.439	0	1
Treat	8956	0.500	0.500	0.500	0	1
After	8956	0.515	1	0.500	0	1
Rent	8956	0.002	-0.004	0.051	-0.201	0.337
Size	8956	22.420	22.280	1.331	17.640	28.640
Lev	8956	0.452	0.443	0.216	0.008	3.119
ROA	8956	0.094	0.025	0.654	-8.996	20.270
Age	8956	2.932	2.944	0.298	1.792	3.970
Comp	8956	14.580	14.530	0.703	9.385	18.290
Stockholders	8956	0.336	0.308	0.147	0.034	0.990
Dual	8956	0.247	0	0.431	0	1
Independent	8956	0.379	0.364	0.056	0.167	0.800

3 EMPIRICAL RESULTS AND ANALYSIS

3.1 Baseline regression analysis

This paper uses DID for regression analysis, fixing both time and industry effects. The specific regression results are shown in Table 2. As can be seen from column (1) of Table 2, the

coefficient of Merge is -0.006 and is significant at the 1% level. This indicates that when the state and local taxes are merged, the rent-seeking costs of enterprises are significantly reduced, and the results verify hypothesis 1.

Table 2. Multiple Regression Results of State and Local Tax Merger and Corporate Rent Seeking

Variable	Rent	T value
	(1)	(2)
Merge	-0.006***	(-2.71)
Treat	0.003*	(1.84)
After	0.001	(0.27)
Size	0.002***	(4.76)
Lev	-0.004	(-1.49)
ROA	0.001	(0.44)
Age	-0.005***	(-2.63)
Comp	0.003***	(3.35)
Stockholders	-0.010***	(-2.72)
Independent	0.040***	(4.17)
Constant	-0.079***	(-5.05)
Year	Yes	
Industry	Yes	
Observations	8,956	
R-squared	0.015	

The results of the test for hypothesis 2 are shown in Table 3. From column (1) of Table 3, it can be seen that the coefficient of Merge is negative but not significant in state-owned enterprises; from column (2) of Table 3, it can be seen that the coefficient of Merge is -0.009 and significant at the 1% level in private enterprises. It indicates that the negative change of excess overhead in private enterprises is more significant after the state and local taxes merger, which verifies hypothesis 2.

Table 3. Multiple Regression Results of State and Local Tax Merger, Nature of Property Rights and Corporate Rent Seeking

Variable	Rent	
	State-owned enterprises	Private enterprises
	(1)	(2)
Merge	-0.001	-0.009***
	(-0.28)	(-3.24)
Treat	0.003	0.002
	(1.15)	(1.18)
After	-0.001	0.002
	(-0.33)	(0.59)
Size	0.002***	0.002***
	(2.97)	(3.02)
Lev	-0.001	-0.008**
	(-0.09)	(-2.06)
ROA	0.001	-0.002
	(0.89)	(-1.10)
Age	-0.005	-0.006**

	(-1.35)	(-2.36)
Comp	-0.001	0.006***
	(-0.59)	(5.30)
Stockholders	0.000	-0.025***
	(0.05)	(-4.45)
Independent	0.006	0.070***
	(0.42)	(5.20)
Constant	-0.023	-0.121***
	(-0.87)	(-5.79)
Year	Yes	Yes
Industry	Yes	Yes
Observations	3,774	5,182
R-squared	0.023	0.031

3.2 Parallel trend test and dynamic effect test

The parallel trend assumption is an essential premise of the DID method. The treatment and control groups satisfying the parallel trend assumption must have the same development trend before the policy is implemented. This paper uses the event study method to test the parallel trend hypothesis and dynamic effects. The test equations are specified as follows:

$$Rent=\alpha+\sum_{j=-M}^{N}\delta_j Treat_i \times Year_j+\beta_1 X+\mu+\gamma+\varepsilon \quad (3)$$

In model (3), Year is the year dummy variable; M and N are the number of periods before and after the state and local taxes merger; μ denotes individual fixed effects; γ denotes time fixed effects; the remaining variables are defined as in model (1).

Table 4. Test of parallel trends and dynamic effects of state and local tax merger

Variable	Rent	T value
	(1)	(2)
Pre_3	0.004	(1.64)
Pre_2	0.001	(0.37)
Current	-0.005**	(-2.33)
Post_1	-0.005**	(-1.98)
Post_2	-0.003	(-0.93)
Constant	0.052	(0.65)
Year	Yes	
Observations	8,956	
R-squared	0.004	

As shown in Table 4, the coefficient of the interaction term in each of the three periods before the policy implementation is not significantly different from 0, indicating that the parallel trend hypothesis is satisfied. The coefficient of the interaction term is significantly negative in the current period of policy implementation and the latter period, indicating a significant effect of the policy implementation on the negative change in the excess overhead of the enterprise. This effect persists until the third policy implementation period and disappears, indicating that the effect is short-term and challenging to sustain in the long run.

3.3 Robustness tests

3.3.1 Placebo test

This paper conducts a placebo test by constructing a dummy treatment group to verify the robustness of the previous findings. Specifically, the sample enterprises were divided into three equal groups based on the mean value of their total assets before implementing the national and local tax merger policy. The specific regression results are shown in Table 5.

Table 5 shows that the coefficient of Merge is not significant, indicating that the negative effect of the state and local tax consolidation policy on the excess overhead costs of enterprises in the fictitious treatment group is not significant. The placebo test further verifies the robustness of the findings.

Table 5 Placebo test

Variable	Rent	T value
	(1)	(2)
Merge	-0.001	(-0.11)
Treat	0.005**	(2.48)
After	-0.001	(-0.58)
Constant	0.052	(0.65)
Controls	Yes	
Year	Yes	
Industry	Yes	
Observations	8,956	
R-squared	0.015	

3.3.2 Analysis based on different degrees of marketization

The degree of marketization in China varies significantly from region to region. Generally speaking, the higher the degree of marketization, the weaker the barriers to the flow of factors and obstacles, the fairer the market mechanism, and the more orderly the market competition [21] [22]; while the lower the degree of marketization, the local government's dominance over various resources and intervention ability is more vital, and the legal system is also more imperfect. Therefore, enterprises located in less market-oriented regions are more likely to obtain resources through rent-seeking from local governments, and their dependence on rent-seeking activities is stronger. Therefore, the negative change in excess overhead costs of enterprises in more market-oriented regions is more significant after the state and local tax consolidation policy.

Referring to the study of Yu Minggui et al. (2010) [9], the total marketization index is selected to measure the degree of marketization among different regions. The larger the index is, the higher the degree of marketization is [23]. In this paper, the median of the total marketization index of different regions is used as the basis for grouping the sample, and when the total marketization index of the region where the enterprise is located is higher than the median, it will be classified as a high marketization degree group; conversely, the enterprise will be classified as a low marketization degree group. The regression results of the grouping are shown in Table 6.

Table 6. Regression results based on different degrees of marketization

Variable	Rent	
	High-marketing group	Low-marketing group
	(1)	(2)
Merge	-0.008**	-0.004
	(-2.44)	(-1.34)
Treat	0.005**	0.001
	(1.97)	(0.44)
After	0.001	0.001
	(0.25)	(0.21)
Constant	-0.108***	-0.052**
	(-4.73)	(-2.30)
Controls	Yes	Yes
Year	Yes	Yes
Industry	Yes	Yes
Observations	4162	4794
R-squared	0.036	0.024

As shown in Table 6, the coefficient of Merge is significantly negative in the high marketization degree group but not in the low marketization degree group. It indicates that implementing the state and local tax consolidation policy has a more significant negative effect on the excess overhead costs of enterprises in high marketization degree areas.

4 CONCLUSIONS

The merger of state and local taxes has further improved China's macro taxation environment, strengthened taxation efforts and supervision, and enhanced tax collection rates. It has also weakened the local government's dominance over tax resources and tax incentives. So what impact will this have on enterprises' behavior of obtaining more tax incentives through rent-seeking? To this end, this paper analyzes the effect of the merger of state and local taxes on corporate rent-seeking with the quasi-natural experiment of the merger of state and local taxes, using a sample of A-share listed companies in China from 2015 to 2020. It is found that the excess overhead costs of enterprises decline significantly after the merger of state and local taxes, while the decline is more significant among private enterprises. The finding remains significant after the robustness test.

From the conclusion of this paper, we can see that the improvement of tax collection and management mechanism is conducive to suppressing rent-seeking behavior of enterprises, weakening the collusion between enterprises and local governments in tax collection and management, purifying the tax collection and management environment, and facilitating the development and improvement of China's tax collection and management mechanism. For the government, in addition to improving the tax collection and management mechanism, it should also start from the root causes of rent-seeking by enterprises. For example, to improve the degree of marketization, reduce the intensity of local government intervention, make each enterprise have a fairer market competition environment, weaken the motive of enterprise rent-seeking, and reduce the possibility of official corruption. For enterprises, they should promptly adapt to the tax collection and management mechanism after the merger of state and local taxes,

take adequate measures to obtain tax incentives from the state to reduce taxes and fees, and actively cope with the possible adverse effects.

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