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Fiscal Decentralization, Territorial Competition, And Corruption

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Abstract: ***based on the 1997-2009 China And spatial Autoregressive panel data models, empirical vertical fiscal decentralization effect and transverse trophy competition on local corruption. Results showed that vertical degree of fiscal decentralization may deteriorate local corruption and horizontal trophy competition of corruption among local governments have some effect, but its calming effect is smaller than the deteriorating effect of the vertical decentralization. Accordingly, the direction of China's fiscal decentralization system should be: by perfecting the supervising mechanisms constrain resource allocation powers of the local government from top to bottom, compressed space for rent-seeking corruption of local officials and guide the horizontal trophy competition of local officials, strengthening the inhibitory effects of the promotion of official corruption, improve the inherent power of self-discipline of local officials.***

Keywords： ***fiscal decentralization; tournament competition; corruption; spatial autoregression model***

1Introduction

Corruption is the system expression of inefficiency in the public sector. The World Bank defines corruption as "the abuse of public power for personal gain." Precisely because of the lack of government compliance, self-interested economic subjects (official) by rent-seeking corruption of seeking personal gain possible. Therefore, in a country where corruption was rampant, corruption rife, its government system, and oversight mechanisms are possible irregularity of system, the low efficiency problem. This may be one of the causes of serious corruption in developing countries than developed countries. As to developing countries like China, official corruption has become an important obstacle to economic and social development. Through the system and norms to curb corruption in the public sector at the local level, become the hot issue of academics and policy makers. In recent years, the outpouring of literature, studying the relationship between fiscal decentralization and local public sector corruption, from the theoretical and empirical answers can pass the fiscal decentralization system arrangement of local Government Act suppressed the purpose of rent-seeking corruption of local officials.

This paper is devoted to empirical testing Chinese-style fiscal decentralization and local public sector corruption. And the existing studies, by constructing spatial econometric model and empirical analysis of the vertical and horizontal separation of powers into a single framework, also studied the vertical financial rights allocation and transverse trophy competition on the local impact of corruption. The remainder of this paper is structured as follows: the second part is variable and data on the third part reporting on empirical modeling and estimation results and finally the basic conclusions.

2 Variables and Data Illustration

2.1 Financial decentralization measurement index

Chinese financial decentralization has a characteristic of multiple dimensions, choosing a single index cannot reflect all its information. According to Gong Feng and Lei Xin(2010), we choose a multidimensional measure index system of fiscal decentralization, covering income rights configuration among Chinese government, apportion of expenditure responsibilities, distribution of transfer payments, budgetary revenues and expenditures, and financial management and various aspects of information, to comprehensively measure China's fiscal decentralization. Specific measures include: autonomous local fiscal revenue rate (measures the local fiscal revenue accounted for the proportion of total local fiscal revenue), local proportion of fiscal revenue (measures relative size of the local financial income), the rate of local fiscal expenditure self-determination (local-level fiscal spending accounted for the proportion of total local fiscal expenditure), the local fiscal expenditure proportion(measures the relative size of the local level of expenditure), local tax management decentralization (local taxation bureau staff number accounted for the proportion of the total number of employees of local tax system), local administrative decentralization (the number of employees of local public administration and social organizations accounted for the proportion of the total number of social organizations national public administration). In addition, we also use Shannon-Spearman measurement methods and Bootstrap sampling techniques, selected the most effective indicators aggregation method, the fiscal decentralization multidimensional indicators are combined to obtain a combination of fiscal decentralization measure. In the empirical analysis, we introduced the above 7 decentralization indicators (6 single dimension indicators and one

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combination indicator) into the regression model to obtain an estimate of the results of seven models. 6 single dimension indicators specific formulas and calculation methods in combination indicators refer to Gong Feng and Lei Xin (2010).

2.2 Measurement index of corruption

Choose a desired measure is the primary problem of corruption-related research. An empirical research based on country data, select some corruption index measure of international organizations, such as "Transparency International" provides the CPI index (corruption perception index); the World Bank WBC index (WB Corruption Index); ICRG index provides byPRS Group(International Country Risk guide corruption index) . These indices are based on surveys of residents in the microscopic level of corruption in their subjective assessment.Strictly speaking, it does not accurately reflect the objective corruption level of a country. Empirical studies based on a country's domestic data,it's usually choose filing number and other corruption offenses as a measure of corruption (Fishman and Gatti, 2002b).Wu Yiping (2008)used the corruption cases per million people filing numbers to indicate the extent of corruption, the corruption index is superior to mere filing several indicators, because it controls the impact of population size area of the corruption. However, using per million people filing numbers to indicate the corruption still has two problems: (1) the number of corruption filed is also relevant to the government crackdown on corruption, the use of the index assumes the necessary efforts to combat corruption in all areas of crime are the same, this assumption is clearly not in line with reality; (2) the number of corruption filing only shows disclosed corruption , but those who have not incident, concealed corruption is not being considered (Pan Chunyang,etc. 2011). The second issue cannot be avoided by all objective measures of corruption, so we assume that the proportion of covert acts of corruption in each region accounted for roughly the same total corruption.For the first problem, we make the following adjustments to the filing of corruption per million[1]:

$$Corruption = \frac{Corruption\ Case\ Number}{Regional\ Population\ Quantity} \times 10000 \times \left(1 - \frac{Public\ Security\ Organs\ Expenditure}{the\ Total\ Financial\ Expenditure}\right) \quad (1)$$

Among them, the number of corruption on file comes from "China's procuratorial Yearbook"1998-2010; total public security expenditure and expenditure data comes from calenderyear's "China Financial Yearbook" (from 2007 budget statistical becomes "public safety expenditure"); population data comes from calender year's"China statistical Yearbook."

2.3 The calculation of weighted corruption indicators

We also introduced the model weighted corruption indicators to examine local government lateral titlist competitive impact on local public sector corruption, this approach is the reference Dincer et al. (2010) approach. To calculate the weighted index of corruption, it must be set in advance the right of local governments to reflect the weight matrix interaction mode. Reference HUAZHONG and Gong Feng (2007) approach, we chose the following two spatial weights matrix:

①GDP gap weight matrix

We usethe reciprocal of GDP gap between two provinces as the reciprocal of the weight, to measurethe degree of "neighboring" between provinces assignment. The reasons for setting the weights includes the following: Currently, the higher levels of government promotion of junior officers are often based on the level of local economic development level, top-down Stakes competition (promotion of competition) generally occurs in the level of economic development of the provinces of closer between, such as Shanghai and Zhejiang two officials "trophy competition" is undoubtedly better than Shanghai and Tibet two officials of "trophy competition" to be more apparent. Therefore, the investigation "championship competition" effect of corruption among provinces and autonomous regions, the greater the gap between the two provinces per capita GDP, indicating the degree of similarity in the two provinces as well as the degree of economic development aspect of the economic environment in which officials of the smaller, its corruption the possibility of mutual influence behavior is relatively low. The weights to build our province interval regardless of whether geographically adjacent, but assumed that all provinces have an impact on corruption in specific provinces, but reverse calculation determines the degree of influence by their respective GDP per capita gap. GDP gap weight matrix expression is:

$$w_{ij} = \frac{1}{\left|AGDP_i - AGDP_j\right|} \quad (i \neq j)$$

[1]Under the same premise of filing several corruptions, the large corruption crackdown areas are clearly lower than the actual level of corruption crackdown small areas. We adjust corruption registered according to (1), and the purpose is to consider the situation. As an example to illustrate the thinking of the adjustment:if the number of corruption registered per ten thousand people is same, both 0.2, in which A district courts spending accounted for 5% of the financial expenditure, B area is 10%, we consider that under the condition of all other things being equal, the higher the minor department spending, the government to crack down on crimes, including embezzlement and bribery, strength is greater.So after(1) adjustment, the level of the region's corruption was reduced to 0.19, and the region's B under larger crackdown is reduced to 0.18,and the impact of combatto measuringcorruptionwill be taken into account.

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②Geographical proximity and the gap between GDP weighting matrix mixing. We take the reciprocal of per capita GDP gap of the geographic neighboring provinces as weights to assign the degree of adjacentlevel. When building this weight, we assume that only geography neighboring provinces will have an impact on corruption in specific provinces, but reverse calculation determines the degree of influence by their respective GDP per capita gap. Expression is:

$$\begin{cases} w_{ij} = \dfrac{1}{\left|AGDP_i - AGDP_j\right|} & \text{Ifiand j are in adjacent space} \\ w_{ij} = 0 & \text{If i and j are not in adjacent space} \end{cases}$$

In addition, following Case et al (1993) approach, GDP gap weight matrix in per capita GDP is the provinces (autonomous regions and municipalities) GDP per capita arithmetic mean of the sample period.

2.4 Other control variables

①The per capita GDP

We expect higher levels of economic development and income of the area, not only the construction of the system of local Government much more perfect, and people to supervise the Government's ability and willingness is also higher, which acts to curb endemic corruption. GDP and population data are from the calendar year of the China Statistical Yearbook.

②The degree of opening up

We have import and export amounted to GDP ratio as an indicator of the degree of opening up. Arikan(2004) said that trade barriers for officials to create a space for rent extraction, so as to provide a favorable environment for the rent-seeking corruption. Higher the degree of opening up, means that the higher the freer trade and less trade barriers, this helps reduce the official rent-seeking opportunities. Among them, the import and export data from the calendar year the total China Statistical Yearbook and on a calendar year basis the Yuan/dollar exchange rate (average annual), be converted into RMB-denominated.

③Level of education among residents

Generally, higher education level of residents of the area, the flow of information more frequently, and corruption are more likely to be found, the cost of corruption (the punishment of acts of corruption) and easier to understand, which can have a deterrent against potential corruption. Therefore, the higher the level of education, may suppress corrupt practices. Method of calculation of the level of education among residents see Gong Feng and Lu Hongyou (2009), the original data from the calendar year the China Statistical Yearbook and the Statistical Yearbook of China's population.

④The rate of urbanization

Government departments and officials are mainly concentrated in urban areas than in rural areas, urban areas is a corruption of "high risk". Therefore, the higher the rate of urbanization in a region, officials expected higher level of corruption. Urbanization rate is equal to the town's permanent population divided by the total population, urban population data comes from the new China 60 years Statistics compendium and the China population Statistical Yearbook of the calendar year.

⑤Relative wages in the public sector

Public sector wages were too low would encourage local officials to seek other additional payments. Wu Yiping (2008) found that relative wages in the public sector increased to lower the levels of corruption by local officials;Haque and Sahay(1996) found that higher government wages will attract more high-quality personnel to work in the public sector, Thereby reducing the level of corruption. Reference Arikan(2004) the practice of relative wages in the public sector is equal to State organs, political parties and social organizations to employees in addition to per capita GDP. Among them, State organs, political parties and social organization employees come from over the China Statistical Yearbook. All the descriptive statistics of the variables show in table 1.

Table1Descriptive statistics of the variables

	Average	Maximum value	Minimum value	Standard deviation
Adjusted million corruption case	0.3072	1.2724	0.0665	0.1435
Fiscal decentralization portfolio index	0.5837	0.863	0.368	0.0843
Administrative decentralization	1.0672	2.9309	0.6334	0.3118
Expenditure rate of self-determination	0.5025	0.8306	0.1017	0.1335
Percentage of fiscal expenditure	0.729	0.9206	0.5544	0.0784
Tax Administration Division	0.4535	0.6978	0.2967	0.0631
Rates of tax autonomy	0.5346	0.8328	0.1829	0.1365
Percentage of revenue	0.514	0.8573	0.306	0.1315
Per capita GDP	12095.3	65601.99	2199.057	9858.103
The degree of opening up	0.3127	1.7645	0.0316	0.4135
Level of education	7.8774	11.6878	4.7327	1.0595

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The rate of urbanization	0.4147	0.8451	0.1959	0.1437
Public sector wages	6.6606	49.2253	0.9776	8.7519

3. The model and empirical results

3.1 Estimated results of reference model

First we create a panel data regression model to test the relationship between longitudinal fiscal decentralization and corruption without considering transverse tournament competition between local governments. Then, we can get estimated results which can compare with contemporary research results. The data set we use is panel data including data from 29 provinces (without Tibet and Hainan) during the period of 1997 to 2009. The reference model is:

$$Corruption_{it} = c + \beta_1 \cdot decentralization_{it} + \beta_2 \cdot education_{it} + \beta_3 \cdot gdp_{it}$$

$$+\beta_4 \cdot openness_{it} + \beta_5 \cdot urban + \beta_6 \cdot wage_{it} + \varepsilon_{it} \quad (2)$$

In the model, Corruption is adjusted corruption put on board among 10000 cases, decentralization is the degree of fiscal decentralization, in the process of actual estimate, respectively introduces seven different decentralization index equation, to get seven equation estimation results; education is per capita level of education of residents; GDP is the per capita GDP; openness is the growingly opened; urban is the urbanization rate; wage is public sector relative wages. ε is the random error term. $\beta_1 \sim \beta_6$ is to be estimated coefficients.

Table 2 Benchmark model estimation results

independent variable	regression (1)	regression (2)	regression (3)	regression (4)	regression (5)	regression (6)	regression (7)
decentralization	combined indexes	Administrative decentralization degree	Fiscal expenditure rate of self-determination	Fiscal expenditure proportion	Revenue management decentralization degree	Fiscal revenue rate of autonomy	Fiscal revenue accounted for
	0.8678 (3.443)***	-0.0209 (-0.278)	0.2516 (2.065)**	1.0505 (3.745)***	0.1314 (0.507)	0.3098 (1.936)*	0.8687 (3.924)***
education	0.0336 (1.65)	0.0294 (1.452)	0.031 (1.542)	0.0251 (1.243)	0.0297 (1.455)	0.0279 (1.376)	0.0227 (1.136)
GDP	-0.000004 (-2.12)**	-0.000001 (-0.56)	-0.000004 (-1.685)*	0.0000001 (0.071)	-0.000001 (-0.594)	-0.000004 (-1.578)	-0.000004 (-1.781)*
openness	-0.1161 (-2.295)**	-0.0607 (-1.058)	-0.095 (-1.884)*	-0.073 (-1.536)	-0.0708 (-1.357)	-0.0833 (-1.673)*	-0.0832 (-1.688)*
urban	0.1521 (1.887)*	0.1523 (1.76)*	0.1483 (1.761)*	0.1486 (1.864)*	0.1604 (1.718)*	0.1522 (1.806)*	0.1328 (1.735)*
wage	0.0127 (1.38)	0.0088 (0.945)	0.0107 (1.182)	0.0063 (0.69)	0.0092 (0.991)	0.0109 (1.196)	0.0098 (1.051)
C	-0.5214 (-2.169)**	0.0128 (0.064)	-0.1203 (-0.655)	-0.7386 (-2.463)**	-0.0762 (-0.319)	-0.1426 (-0.732)	-0.3693 (-1.662)*
Whether the cross section and time fixed effects	yes	yes	yes	yes	yes	yes	yes
Whether the robust standard error	yes	yes	yes	yes	yes	yes	yes
adj_R2	0.488	475	0.479	0.488	0.475	0.478	0.492
DW	2.064	1.998	2.019	2.038	2.004	2.018	2.075

Note: "* * *, * *, mean in 1%, 5% and 10% significance level.

Hausman test results show that the * "points, should use fixed effect model to estimate (2). Table 2 reports the estimated results of benchmark model. In regression (1), what we introduce is a combination of fiscal decentralization index. According to the results of the regression (1), we found that:

①The per capita GDP and openness is significantly negative correlation with corruption. Which shows that the local government system construction is relatively developed economic regions is more perfect, it is beneficial to inhibit the corruption of local officials, on the other hand, the income level of resident relatively higher economic developed areas, they have the ability to more actively involved in political activities, thus become an important power constraints of rent-seeking local officials. Growingly opened the higher regions,

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trade barriers are relatively less, thus compressing the officials with the aid of trade barriers for readers or space; In addition, the frequent foreign economic exchanges, to enter the foreign advanced concept of the rule of law and good faith compliance, also help to curb official corruption.

②Urbanization rate is positively correlated with corruption. This indicates that corruption of local public sector in China is more occurred in urban areas. Local governments in urban areas mastered the most public resources, and held the right to allocation of public resources to infrastructure and other investment projects. Therefore, officials could seek more opportunities to commit corrupt. While in rural areas, the public resources that grass-roots government control are extremely limited, basically belong to payroll finance, whose expenditures are more rigid fiscal. Leaving officials to extract resource rents space is relatively small.

③ The per capita level of education and public sector wages which are relative correlation with corruption are not statistically significant. You can judge whether the residents are willing to actively participate in political activities, conduct effective oversight of the government, and education level of residents are not necessarily linked; increasing the average wage of local public sector and encourage local officials will not reduce corruption. Thus, "high salary" in Chinese local level is not obvious.

④ In summary, there is a significant positive correlation (significance level of 1%) between fiscal decentralization and corruption indicators. A higher level of fiscal decentralization will lead to the level of corruption of local officials more serious. In the Chinese style fiscal decentralization: ①Restricted by asymmetric information, central government supervision of local officials is the limited; ②Restricted by officials promoted model, constraints in area residents behavior of local officials efforts are extremely limited; ③Restricted by inadequate local infrastructure system construction and operation management system imperfect, local officials in the public sector constraints on institutional arrangements are inadequate. Therefore, when the central government gives local governments greater financial resources right, local officials are more likely to cooperate with local interest groups, the private interest groups to seek benefits, while seeking to benefit from corruption.

Regression (2) ~ regression (7) are respectively introduction of the single dimension of fiscal decentralization index model estimation results. Overall, the symbols of the latter six regression models are similar to the regression (1), just a slightly different significance. Taking the fiscal decentralization variable as an example, in these six models, there are five fiscal decentralization variable coefficient model is positive, of which four models are statistically significant. Among them, the coefficient accounting for expenditure and revenue accounted for two indicators are in the 1% significance level, and a magnitude of more than factor combinations indicators. Accordingly, you can judge that the improvement of using funds which local government actually configures and disposable financial scale can further expand the space rent-seeking corruption of local officials, which leading to more serious levels of corruption. Just the relativity between administrative decentralization and corruption are negative, but not statistically significant. Overall, the relationship between the regression (2) ~ (7) reflects the one-dimensional indicators of fiscal decentralization and corruption, which is basically same to the combination of fiscal decentralization indicators in the regression (1).

3.2the Championship competition models estimation results

In the baseline model (2)，based on weighted corruption indicators, taking into account the area Championship competition on the local impact of corruption in the public sector, we build the model:

$$Corruption_{it} = c + \beta_1 \cdot decentralization_{it} + \beta_2 \cdot education_{it} + \beta_3 \cdot gdp_{it} + \beta_4 \cdot openness_{it} + \beta_5 \cdot urban + \beta_6 \cdot wage_{it} + \beta_7 \cdot W \cdot corruption_{it} + \varepsilon_{it} \quad (3)$$

Among them, the $W \cdot corruption$ isweighted index of corruption, that is,the first province adjacent areas (the first in the province of "neighbors") ten thousand people registered a weighted average of the corruption.As mentioned above, we set up two weighting matrix. Selection of weight matrix is different, have different meanings:

①When W isthe weight matrix of GDP gap, we take all the rest of the province as the first province "neighbors", but each "neighbors" corruption the influence degree of the corruption of the province, with the first provincial economic development level, the greater the gap between the province gives you less weight, on the other hand, given the greater weight.

②When W isthe weight matrixof geographical proximity and GDP gap mixed, we take the first province in space with the adjacent provinces as its "neighbors", but each "neighbors" corruption the influence degree of the corruption of the province, with the first provincial economic development level, the greater the gap between the province gives you less weight, on the other hand, given the greater weight.

Equation (3) belongs to the first order spatial auto regression model. Due to the influenceof region corruption, $corruption$ and $W \cdot corruption$ are decided at the same time, as explanatory variables $W \cdot corruption$ is endogenous, and associated with the error. So OLS estimation results obtained is inconsistent and biased, we must select a different estimation methods. The methodwhich more commonly used at present is the maximum likelihood estimator (ML) and the method of instrumental variables (IV). Kelejian and Prucha(1999) considered that in estimating the

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model parameters, GMM (GMM) is consistent, unbiased, and relative to maximum likelihood estimation,GMM simpler algorithms, without the limitation of sample size. Therefore, we chose to use the generalized method of moments, with the remaining independent variables as well as spatially weighted variables as variables $W \cdot corruption$ instrumental variables (Brueckner , 2003), The model (3) Can be estimated.

Table3Spatial Autoregressive models estimation results (geographical proximity with theGDPgap blend weights matrix)

Independent variables	Return (1)	Return (2)	Return (3)	Return (4)	Return (5)	Return (6)	Return (7)
Fiscal decentralization Indicator	Combination Indicator	Degree of decentralization of public administration	Expenditure rate of self-determination	Percentage of fiscal expenditure	Degree of decentralization of tax administration	Financial revenue Autonomous rate	Percentage of revenue
	0.8657 (2.629)***	-0.0423 (0.539)	0.2296 (1.416)	1.108 (3.573)***	0.0201 (0.069)	0.2872 (1.551)	0.899 (3.434)***
Weight of corruption Index	-0.06713 (-1.919)*	0.1588 (1.51)	0.0225 (0.064)	-0.1557 (2.609)**	0.0755 (0.226)	-0.0088 (0.026)	-0.1 (1.945)*
Level of education	0.0358 (1.621)	0.0309 (1.391)	0.0335 (1.517)	0.0294 (1.369)	0.0316 (1.419)	0.031 (1.413)	0.0248 (1.158)
Per capita GDP	-0.000005 (-1.631)*	-0.000002 (-0.531)	-0.000004 (1.079)	0.0000004 (0.224)	-0.000001 (0.385)	-0.000004 (1.181)	-0.000004 (-1.63)*
External Open	-0.1149 (2.21)**	-0.0707 (1.165)	-0.1021 (-1.961)**	-0.065 (-1.273)	-0.0708 (-1.5)	-0.0905 (1737)*	-0.0766 (1.455)
The rate of urbanization	0.1725 (1.671)*	0.1749 (1.616)	0.1788 (1.683)*	0.181 (1.892)*	0.18 (1.594)	0.1839 (1.729)*	0.1473 (1.526)
The public sector Wage	0.0137 (1.328)	0.0129 (1.227)	0.0135 (1.315)	0.0067 (0.646)	0.0125 (1.185)	0.0136 (1.313)	0.01 (0.966)
C	-0.52 (2.117)**	0.0474 (0.223)	-0.1575 (-0.81)	-0.7747 (2.545)**	-0.0845 (-0.358)	-0.1729 (-0.851)	-0.3692 (1.658)*
Whether section And fixed-effects	Yeah	Yeah	Yeah	Yeah	Yeah	Yeah	Yeah
The soundness of Standard errors	Yeah	Yeah	Yeah	Yeah	Yeah	Yeah	Yeah
Estimation method	GMM	GMM	GMM	GMM	GMM	GMM	GMM
adj_R2	0.481	0.467	0.475	0.479	0.47	0.474	0.484
J Statistics	1.739	1.492	8.348	5.224	1.271	1.819	2.003
DW	2.056	2.033	2.027	2.016	2.02	2.021	2.062

Note: the "***,**, and*" respectively 1%、5%and 10% Levels significantly.

Table 3 is based on geographical proximity and GDP Difference blend weights matrix weighted spatial Autoregressive models estimation results. Table 4 is reported to GDP gap weight matrix weighted spatial Autoregressive models estimation results. In table 4 , all weighted coefficients of the corruption perceptions index is not significant, and the regression model j statistic ①values are far higher than table 3 (Only return (3)). From the point of view of statistical inference, we are inclined to accept table 3 estimated results. From the economic implications of tournament competition, geographical proximity and the GDP gap mix weight matrix is superior to GDP gap weight matrix. Geographic adjacent means with area between natural and social conditions compared close,GDP gap smaller is means with economic development level close, in such of provinces Zhijian, occurred trophy competition of possibilities only more big, like Zhejiang and Jiangsu two province natural, and social and economic conditions close, compared two province officials of ruling performance or behavior mode is meaning; instead, even Heilongjiang and Yunnan two province of economic developed degree compared close, But the gap in the natural and social environment are too big, two officials of performance or behavior patterns of comparability is not high, so the likelihood of tournament competition is also relatively low. For these reasons, we accept table 3 estimated results for effective results and analysis.

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Table4Spatial Autoregressive models estimation results (GDPgap weight matrices)

Independent variables	Regression (1)	Regression (2)	Regression (3)	Regression (4)	Regression (5)	Regression (6)	Regression (7)
Fiscal decentralization Indicator	Combination Indicator	Degree of decentralization of public administration	Expenditure rate of self-determination	Percentage of fiscal expenditure	Degree of decentralization of tax administration	Financial revenue Autonomous rate	Percentage of revenue
	0.8308 (2.907)***	-0.0413 (0.532)	0.2367 (1.88)*	0.965 (2.993)***	0.0149 (0.05)	0.2842 (1.721)*	0.864 (3.547)***
Weight of corruption Index	-0.0048 (0.013)	-0.045 (0.112)	0.0114 (0.031)	0.1995 (0.525)	-0.0604 (0.144)	-0.0663 (-1.703)	0.064 (0.181)
Level of education	0.0348 (1.622)	0.0336 (1.549)	0.0338 (1.572)	0.0266 (1.243)	0.0331 (1.528)	0.0313 (1.439)	0.0229 (1.108)
Per capita GDP	-0.000004 (-2.03)*	-0.000002 (0.784)	-0.000004 (-1.64)*	0.0000004 (-0.06)	-0.000001 (0.597)	-0.000004 (-1.582)	-0.000004 (-1.721)*
External Open	-0.1169 (2.239)**	-0.0616 (1.06)	-0.1018 (1.951)*	-0.0779 (1.551)	-0.0779 (1.435)	-0.09 (1726)*	-0.0832 (1.613)*
The rate of urbanization	0.1664 (1.877)*	0.19 (1.997)	0.1811 (1.966)**	0.171 (1.939)*	0.1868 (1.927)*	0.1819 (1.982)**	0.1407 (1.65)*
The public sector Wage	0.0139 (1.349)	0.0121 (1.445)	0.0134 (1.293)	0.0078 (0.736)	0.0121 (1.149)	0.0137 (1.317)	0.0105 (0.99)
C	-0.5122 (1.999)**	0.0068 (0.031)	-0.1591 (0.776)	-0.7614 (-2.519)**	-0.0518 (-0.192)	-0.1556 (-0.703)	-0.3919 (1.675)*
Whether section And period Fixed effects	Yeah	Yeah	Yeah	Yeah	Yeah	Yeah	Yeah
The soundness of Standard errors	Yeah	Yeah	Yeah	Yeah	Yeah	Yeah	Yeah
Estimation method	GMM	GMM	GMM	GMM	GMM	GMM	GMM
adj_R2	0.482	0.472	0.475	0.473	0.472	0.475	0.484
J Statistics	6.083	3.636	4.462	9.65	14.757	4.69	7.48
DW	2.063	2.001	2.025	2.052	2.001	2.016	2.079

Note: the "***, **, and*" respectivelyrepresent 1%, 5% and 10% Level Significantly on the flat.

According to the table 3 Return (1), the result of fiscal decentralization (combination indicator) will lead to corruption increased, but the adjacent levels of corruption in the area have negative impact on the level of corruption in the region in the 10 % Level significantly. In other words, for two local officials in similar environments, when official corruption behavior in a region increases, others district officials will get promoted much more possibly, and thus gain the upper hand in the promotion game. Rational officials will balance between corruption and promotion. When the promotion prospects are promising, officials will restrain their misconduct, inhibit their impulses of corruption.

As mentioned earlier, Shleifer and Vishny(1993) argued that vertical fiscal decentralization can lead to excessive extraction of local officials on the rent, and horizontal fiscal decentralization through the official political competition, helps to reduce corruption. The empirical results to some extent provide evidence to support this theory. In short, Under China's fiscal decentralization system, decentralization of

higher levels of Government to lower levels of government, will add to the degree of corruption by local officials. But trophy competition between Governments and officials at lower levels will have a certain effect on corruption, and the deteriorating effect of the alleviating effect of the latter is less than the former. Therefore, from the overall assessment, China's fiscal decentralization reduces the efficiency of the system of local government, triggered more serious local public sector corruption and misconduct.

Individually, only in the models of fiscal expenditure and revenue (table 3 regression (4) and regression (7), fiscal

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decentralization variable and weighted corruption is remarkable at the same time, but other 4 models are not significant. Fiscal decentralization indicators represent positive effect mainly because of the financial expenditure and revenue accounts. When considering the horizontal local district tournament competition, no matter how the autonomy of local fiscal expenditure or revenue, the higher the actual

disposal of capital and disposable financial resources and scope, the worse the corruption of local officials is.

4 Conclusions

Based on panel data of Chinese province, the purpose of the study was to empirically investigate the impact of vertical fiscal decentralization and transverse trophy competition on local public sector corruption ,by constructing and estimating a spatial econometric model. The results indicate that: (1) The degree of vertical fiscal decentralization higher, the corruption in local public sector more serious. Particularly, the corruption of local officials is more likely to be worsen if financial power is dominated and more funds can be used by them; (2) lateral trophy competition among local governments has certain inhibitory effect on the local public sector corruption, which can't offset the effect of the vertical fiscal decentralization thoroughly. On the whole, the fiscal decentralization in China reduces the efficiency of local government system, which has caused more serious local public sector corruption and behavior.

The policy implication of this paper is that the excessive configuration authority of financial resources shouldn't be blindly given to the local government to reduce the corruption and rent-seeking behavior of local officials. On the one hand, the fiscal decentralization is embedded in the administrative centralization system of Chinese fiscal decentralization system .On the other hand, the local government infrastructure system and the incentive and restraint mechanism have to be improved. Actually, we should further deepen the reform of the fiscal decentralization system and improve the transfer payment of the central government. In addition, the supervision and administration of the local public funds should be strengthened to compress the rent-seeking and corruption of local officials. At the same time, local officials remain to be appropriately guided to participate in the transverse championship competition and the benign stimulation of promotion incentives to local government behavior should be strengthened as well, thus improving the inherent power of local officials to circumvent corrupt and forming a long-term mechanism for the suppression of corruption.

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