

# Research on the Impact of Moderate Decentralization of Financial Power by Superior Governments on Local Economic Efficiency and Public Service

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**Abstract:** The article is based on a panel data model of 30 provinces in China from 2000 to 2020, and uses the System Generalized Moment Estimation (GMM) method to empirically test the impact of moderate decentralization of financial power by Chinese governments on economic operational efficiency. The results show that for every 1% increase in degree of decentralization of financial power by higher-level government, local economic efficiency will increase by 0.327%, confirming the positive role of moderate decentralization of financial power by higher-level governments. Under the premise of strict compliance with tax laws and the principle of "matching financial power, financial resources, and administrative power", the superior government moderately delegates a certain amount of financial power to local governments to re match financial and administrative power, which can mobilize the enthusiasm of local governments to develop and conserve tax resources, and ensure and enhance their ability to provide public services.

**Keywords:** Superior government; Decentralize financial power; Local economic efficiency; Public service supply capacity

## 1. Introduction

Affected by the global COVID-19 epidemic, the external environment facing China's economy and society has become more complex and severe, and the pressure it bears has suddenly increased. China has reviewed the situation and resolutely proposed to build a "new development pattern of domestic and international double circulation and mutual promotion" (that is, a new pattern of "double circulation") to cope with the difficulties, which also adds impetus to the high-quality development of China's economy. High quality development puts people first, adheres to putting the people at the center, and meets the needs of the people is the fundamental purpose of socialist production, and is also the fundamental force to promote high-quality development. In order to lay a solid foundation for economic and social development, the central government of China emphasized in the No. 1 central document of the central committee in 2023 that "improving the capacity of basic public services, promoting the sinking of basic public service resources, and focusing on strengthening weak links".<sup>[1]</sup> To improve the quality and efficiency of public services, the ability of local governments to provide public services is essential.

China began implementing the reform of the tax sharing fiscal system in 1994, laying the foundation for the centralized financial power of the central government. Local governments did not have enough financial resources to bear the increasing expenditure responsibility due to a lack of financial autonomy. For a long period of time, local governments often had to use less of their own fiscal revenue to bear public service authority expenditures that far exceeded their own capabilities. As a result, they had to rely on transfer payments from higher-level governments, with a long-term average of 44.19% dependence, and some provinces even exceeded 80%.<sup>[2]</sup> Due to the mismatch between the division of financial rights and the responsibility for public service expenditure, the contradiction between government fiscal relations has deepened, resulting in the increasingly serious problem of "land finance" and local debt risks caused by local governments borrowing heavily to fill the financial gap.

After the reform of the tax sharing system, a series of reforms centered on the division of tax power and financial power between governments have undergone a transformation from "tax sharing" to

"sharing".<sup>[3]</sup>The current "inclusive fiscal system" has to some extent made local government behavior compatible with economic growth incentives,<sup>[4]</sup>but it contradicts the principle of tax legality and is difficult to sustain. Therefore, there are constant calls for the legal redistribution of intergovernmental tax power and financial power. On the basis of ensuring that the financial power of the superior government occupies a dominant position, the excessively concentrated financial power of the superior government should be appropriately delegated to local governments, allowing local governments to obtain corresponding financial power while increasing their public service powers. Financial power refers to the power of governments at all levels to raise and dispose of fiscal revenue to meet certain expenditure needs, mainly including tax power, fee power, and creditor's rights. According to the structure of China's fiscal revenue projects, fiscal revenue mainly includes revenue from taxation, state-owned assets, government bonds, funds, fees, fines, and donations.<sup>[5]</sup>As tax revenue is the main source of income for governments at all levels, this article will mainly explore the adjustment of intergovernmental tax authority to enhance the ability of local governments to provide basic public services.

## **2. Analysis of the current situation of intergovernmental financial power division**

### ***2.1 Analysis of the Current Situation of Tax Division in China***

The main way to raise fiscal revenue for governments at all levels is to allocate tax revenue between the two through tax system settings. Based on the management authority of fiscal revenue, tax categories can be divided into central tax, local tax, and central local shared tax. Since the reform of the tax sharing system in 1994, there have been significant changes in the distribution of tax revenue among Chinese governments at all levels.

Comparing the current tax classification with the 1994 tax reform, it is not difficult to find many changes in China's tax system. Firstly, by eliminating outdated taxes such as agricultural tax, slaughter tax, banquet tax, and merging some similar taxes such as "vehicle and vessel use tax" and "vehicle and vessel use license tax", the tax settings have been greatly simplified and optimized; Secondly, through the comprehensive implementation of "replacing business tax with value-added tax", Value added tax has completely replaced business tax, and local governments have lost their main tax categories. Local income mainly comes from the sharing proportion of shared tax. Although the "business tax reform with value-added tax" has reduced the proportion of value-added tax shared by higher-level governments, in other aspects, income tax has been changed from local collection to central and local sharing, and securities transaction tax has been completely changed from central and local sharing tax to central tax. The number of shared tax types has increased, and the proportion of total shared tax revenue to total tax revenue has increased. The proportion of shared tax revenue belonging to higher-level governments has rapidly increased, and tax power tends to be concentrated by higher-level governments. This has greatly weakened the local tax system.

### ***2.2 Analysis of the current situation of intergovernmental fiscal revenue***

According to the main revenue and proportion of general public budgets between upper and lower levels of government in China in 2019 and 2020 (see Table 1), China's national fiscal revenue comes from over 51% of the tax revenue, mainly including domestic value-added tax and consumption tax, imported goods value-added tax and consumption tax, corporate and personal income tax, stamp duty, etc; Local fiscal revenue comes from less than 49% of the tax revenue, mainly including domestic value-added tax, corporate and personal income tax, urban maintenance and construction tax, resource tax, property tax, stamp tax, etc.

Less than 26% of China's superior government's fiscal revenue comes from non tax revenue, mainly from state-owned capital operations and administrative fees; Local fiscal revenue comes from over 74% of non tax revenue, mainly including special income, fines and confiscations, administrative fees, and paid use of state-owned resources (assets). Due to the fact that non tax income is not controlled by the higher-level government, local governments can rely on their authority to collect fees from society under various names, forming the secondary finance of local governments. Compared with 2019, the proportion of non tax revenue in local finance in China increased by nearly 15 percentage points in 2020, indicating that local governments' tax power is increasingly dependent on non tax revenue, and also reflecting the shortage of local tax entities and the precarious financial and financial situation of local governments.

Table 1: Main Revenue and Proportion of General Public Budget of Chinese Governments at All Levels from 2019 to 2020 (in billions of yuan)

project	2019				2020			
	superior amount	local amount	superior percentage	local percentage	superior amount	local amount	superior percentage	local percentage
<b>Tax revenue</b>	81020.33	76980.1	51.3	48.7	79644.23	74668.06	51.6	48.4
domestic VAT	31160.46	31186.9	50.0	50.0	28353.14	28438.10	50.0	50.0
domestic excise tax	12564.44		100	0	12028.10		100	0
value added tax on imported goods	15123.49		100	0	13914.52		100	0
consumption tax on imported consumer goods	688.85		100	0	620.98		100	0
refund of value-added tax on exported goods	-16480.8		100	0	-13611.6		100	0
refund of consumption tax on exported consumer goods	-22.43		100	0	-17.35		100	0
corporate income tax	23786.02	13517.8	63.8	36.2	23257.53	13168.28	63.8	36.2
individual income tax	6234.19	4154.34	60.0	40.0	6940.99	4627.27	60.0	40.0
resource tax	53.12	1768.52	2.9	97.1	48.23	1706.53	2.7	97.3
urban maintenance and construction tax	206.13	4614.44	4.3	95.7	164.48	4443.10	3.6	96.4
property tax		2988.43	0	100		2841.76	0	100
stamp duty	1229.38	1233.58	49.9	50.1	1773.65	1313.80	57.4	42.6
<b>Non-Tax Revenue</b>	8289.14	24100.5	25.6	74.4	3126.49	25475.10	10.9	89.1
special income	284.23	6849.93	4.0	96.0	196.28	6927.08	2.8	97.2
revenue from administrative fees	404.69	3483.38	10.4	89.6	419.22	3419.43	10.9	89.1
income from fines and confiscations	132.78	2929.31	4.3	95.7	144.81	2969.06	4.7	95.3
state owned capital operating income	6659.03	1061.49	86.3	13.7	972.89	966.06	50.2	49.8
income from paid use of state-owned resources	717.00	7344.01	8.9	91.1	1282.39	8651.94	12.9	87.1
other	91.41	2432.36	3.6	96.4	110.90	2541.53	4.2	95.8

Note: the data in the table are calculated from the relevant data in the China Statistical Yearbook from 2020 to 2021.

Looking at the trend of fiscal revenue decentralization between upper and lower levels of government in China from 2007 to 2020 (see Figure 1), overall, the proportion of local fiscal revenue

in China has shown a steady upward trend. After reaching a peak of about 51% in 2015, it has gradually decreased to around 48% in 2020; At the same time, the self-sufficiency rate of local fiscal revenue not only fluctuated around 2008 due to the impact of the international financial crisis, but also steadily increased to a peak of about 55% in 2014, and then slowly decreased to around 52% in 2020. This indicates that the proportion of local fiscal revenue in China is not only low, but also insufficient in growth. Local fiscal revenue has long been difficult to self-sufficient and highly relies on transfer payments from higher-level governments.

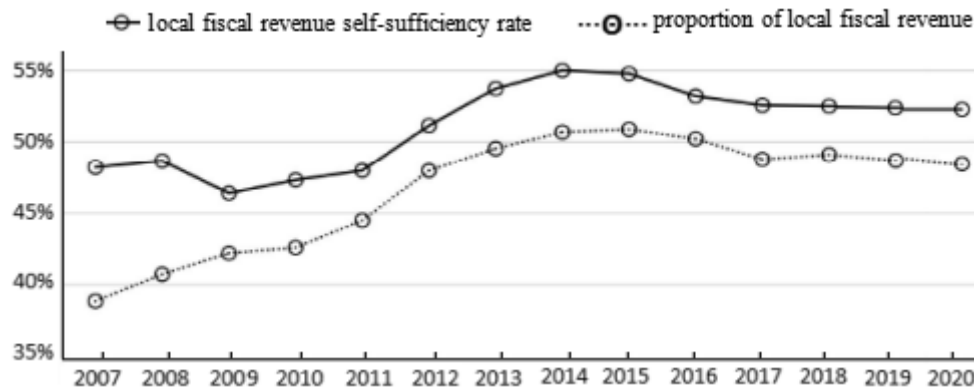


Figure 1: Changes in China's intergovernmental fiscal revenue from 2007 to 2020

### 3. Difficulties in the division of financial rights between governments

Exploring the division of financial power between governments cannot be solely about financial power. Financial power serves the political power, and possessing financial power is to assume good responsibilities and fulfill good governance. The use of financial power and the fulfillment of administrative power ultimately depend on financial resources. Therefore, the division of financial power between governments is inseparable and complementary to the division of administrative power and financial resources.

#### 3.1 Relationship between intergovernmental powers, financial power, and financial resources

Among the three elements of intergovernmental fiscal relations, administrative power is the foundation, core, and purpose, while financial power and financial resources are the two necessary means to ensure the smooth implementation of administrative power. Financial power involves the division and allocation of various taxes among various levels of government, that is, the power required by local authorities to choose tax types, adjust tax rates, and collect related fees; Financial resources refer to the total fiscal revenue expressed in monetary form that can be controlled and used by the government. They mainly come from two sources: one is the fiscal revenue that can be raised through one's own financial rights, and the other is the revenue obtained through transfer payments.<sup>[6]</sup>

There are both connections and differences between financial power and financial resources: on the one hand, if a government has financial power, it generally has corresponding financial resources, but having financial resources does not necessarily mean that it has corresponding financial power, as financial resources can also be obtained through transfer payments; On the other hand, the greater the financial power of the government, the greater its potential financial resources. However, whether it can become an equal amount of real financial resources depends on the resource endowment within the jurisdiction. Therefore, in some economically underdeveloped areas, even if they have obtained significant financial rights, the actual financial resources they can ultimately obtain are limited.<sup>[7]</sup>

#### 3.2 The dilemma of matching financial power, financial resources, and administrative powers

At present, it is particularly necessary to further clarify the powers of governments at all levels. The emphasis on "matching financial resources with powers" is closely related to the difficulties of local finance, especially county-level finance, and the failure to effectively implement or reliably guarantee local financial rights.<sup>[8]</sup> However, some scholars believe that "matching financial resources with administrative powers" is a setback in the reform of the tax sharing financial system. Given that financial resources and administrative powers are separated at two different levels of "money" and

"power", and the current matching method between financial resources and administrative powers of governments at all levels is not standardized, this has further distanced China's current financial system from the original design intention of implementing the tax sharing financial system reform.<sup>[9]</sup>

The debate over whether to prioritize the matching of financial and administrative power, or whether to prioritize the matching of financial and administrative power, is no longer limited to the academic field. In practice, this is also the case. Economically developed regions tend to emphasize financial power, while underdeveloped regions tend to emphasize financial resources. But whether it is emphasizing financial power or financial resources, it must ultimately match well with the power of affairs. Only by comprehensively balancing the matching of administrative power, financial power, and financial resources is a rational choice for correctly handling the financial relationship between governments.<sup>[10]</sup>

### ***3.3 Reasons for the difficulty of matching financial resources and powers***

Fiscal policies designed according to the concept of "matching power with financial resources" often encounter the following problems. One is that there may be a "short circuit" problem when designing policies, especially those that are urgent. Due to inadequate consideration of the actual situation in various regions, there is often a significant gap between the actual needs of the people and the implementation results are not satisfactory; Secondly, there is a lack of supervision mechanisms. Even under the current strict hierarchical administrative system, supervision cannot be achieved in all aspects without blind spots. Grassroots governments and their officials are in financial difficulties and have information advantages, which forces them to have pressure and measures to respond to higher-level requirements; The third reason is that the responsibility mechanism is not perfect, and the higher-level government tightly grasps financial power and pushes responsibility down, collecting financial power to unify government orders, and dispersing financial resources to carry out administrative governance. With this responsibility mechanism and its mechanism of action, the superior government actually assumes unlimited responsibility for all public affairs.<sup>[11]</sup>

The main reason for the improper matching of power and financial resources is also the unreasonable design of the following system: firstly, the superior government controls too much decision-making power; Secondly, the financial resources of local governments are often inadequate for the expenditure responsibilities assigned by higher-level governments; Thirdly, the reform of the tax sharing system has not been truly implemented, and there is a mismatch in the responsibilities of higher-level and local governments in providing public services; Fourthly, in the administrative management system, the contradictions between "blocks" still exist and have not been effectively resolved; The fifth is that the institutional mechanism that balances efficiency and fairness is not yet perfect; Sixth, the improvement measures of the transfer payment system are difficult to implement; Seventh, there is a lack of an institution to coordinate the financial resources of higher-level and local governments.<sup>[12]</sup>

The biggest difficulty in matching financial resources with administrative powers does not lie in how to divide administrative powers, but in the way governments at all levels fulfill their administrative powers. There are two main ways to fulfill administrative powers: one is to fulfill them in accordance with the law. No matter how the administrative powers are divided, if there are legal provisions, it is clear that the superior government makes decisions, and local governments only need to do so in accordance with the law. Another way to exercise authority is based on preferences. Due to the lack of relevant laws, governments at all levels can only fulfill their powers based on preferences, which vary greatly. As a result, the scope, quantity, and standards of financial expenditure are constantly changing, resulting in an uncoordinated and unstable match between financial resources and powers. This is the fundamental reason for the current dilemma of matching financial resources and powers between governments.<sup>[13]</sup>

## **4. Empirical analysis on the effect of moderate decentralization of financial power by higher government on local economic efficiency**

### ***4.1 Construction of econometric models and data explanation***

#### ***4.1.1 Construction of econometric models***

This section mainly examines the impact of moderate financial power under the superior

government on local economic efficiency. Referring to the analytical methods of Fan Ziyang and Zhang Jun (2009),<sup>[14]</sup>Build the following model:

$$Eceffi_{it} = \Pi_0 + \alpha Decfin_{it} + \sum_{j=1}^k \gamma X_{it} + \rho_i + v_t + \varepsilon_{it} \tag{1}$$

In formula (1),  $Eceffi_{it}$  is the dependent variable, specifically, it refers to the economic efficiency of province i in year t;  $Decfin_{it}$  is the core explanatory variable, specifically, it is the variable of fiscal decentralization in province i in year t, mainly measuring the degree of financial decentralization;  $X_{it}$  represents other control variables;  $\rho_i$  and  $v_t$  control the heterogeneity impact of time and region separately;  $\varepsilon_{it}$  is the residual term. In order to examine the impact of local economic development on the delegation of financial power by higher-level governments, we consider the impact of the interaction between the level of economic development and the decentralization of financial power on economic efficiency, and add a variable with a lag of one period in economic efficiency to formula (1). Therefore, the model is extended as follows:

$$Eceffi_{it} = \Pi_0 + \sigma Eceffi_{i(t-1)} + \alpha Decfin_{it} + \chi Decfin_{it} * Degeco_{it} + \sum_{j=1}^k \gamma X_{it} + \rho_i + v_t + \varepsilon_{it} \tag{2}$$

In formula (2),  $Eceffi_{i(t-1)}$  is the dependent variable with a lag of one period, specifically, it refers to the economic operating efficiency of province i in the t-1 year;  $\sigma$  represents the impact of the economic operation of province i in year t-1 on the economic operation of year t;  $Degeco_{it}$  is one of the interaction variables in the interaction term, which is the degree of economic development, expressed as the per capita GDP of province i in year t;  $\chi$  represents the impact of the interaction term on the efficiency of local economic operation.

**4.1.2 Variables and data**

Explanatory variable: This article mainly selects Total Factor Productivity (TFP) to measure the efficiency of economic operation, and the calculation method is mainly based on the method proposed by Yu Yongze (2017),<sup>[15]</sup>the specific calculation process is as follows:we choose the transcendental logarithmic function as the benchmark test formula and set:

$$LnY_{it} = \beta_0 + \beta_1 lnL_{it} + \beta_2 lnK_{it} + \beta_3 t + 1/2 \beta_4 (lnK_{it})^2 + 1/2 \beta_5 (lnL_{it})^2 + 1/2 \beta_6 t^2 + \beta_7 lnK_{it} lnL_{it} + \beta_8 t lnK_{it} + \beta_9 t lnL_{it} + v_{it} - u_{it} ,$$

$$u_{it} = \{u_{it} exp[\eta(t - T)]\} \sim iidN^+(\mu, \sigma_u^2) \tag{3}$$

In formula (3),  $Y_{it}$  represents the economic output of province i in year t,  $Ln$  and  $ln$  denote taking the natural logarithm;  $L_{it}$  represents the labor capital of province i in year t;  $K_{it}$  represents the material capital accumulation of province i in year t;  $u_{it}$  represents the technical inefficiency term;  $v_{it}$  represents random disturbance;  $\eta$  represents the time variation parameter;  $\beta_0$  represents the intercept term;  $\beta_i (i = 1, 2, \dots, 9)$  represents various influence coefficients;  $exp$  is an exponential function based on the natural constant of  $e$ ;  $T$  is the expiration year;  $\sim iid$  represents obeying independent identically distributed;  $N^+(\mu, \sigma_u^2)$  represents a normal distribution with expectation  $\mu$  and variance  $\sigma_u^2$ .

We refer to scholars for reference G.E.Battese and T.J.Coelli.(1995)<sup>[16]</sup>, Kumbhakar,S.C. and

Lovell,C.A.K.(2000)<sup>[17]</sup>et al's decomposition method,take the derivative of formula (3),after sorting, formulas (4) and (5) are obtained:

$$\begin{aligned} \frac{Y'}{Y} &= \frac{\partial \ln f(X,t)}{\partial t} + \sum_j \frac{\partial \ln f(X,t)}{\partial \ln X_j} \frac{\partial \ln X_j}{\partial X_j} \frac{dX_j}{dt} - \frac{\partial u}{\partial t} \\ &= \frac{\partial \ln f(X,t)}{\partial t} + \sum_j \varepsilon_j \frac{X'_j}{X_j} - \frac{\partial u}{\partial t} \end{aligned} \quad (4)$$

$$T \dot{F} P = \dot{T} E_{it} + TP_{it} + (E - 1) \sum_j \frac{E_j}{E} X'_j \quad (5)$$

In formula (5),  $T \dot{F} P$ ,  $\dot{T} E_{it}$ ,  $TP_{it}$  respectively represent the total factor productivity growth rate,production efficiency change rate, and technological progress rate of each sample province.According to formula (5),  $T \dot{F} P$  is decomposed and after sorting, formula (6) is obtained:

$$TP_{it} = \frac{\partial \ln Y_{it}}{\partial t} = \beta_3 + \beta_6 t + \beta_8 \ln L_{it} + \beta_9 \ln K_{it} \quad (6)$$

Core explanatory variables  $Decfin$ :the variable of financial power delegated by the higher-level government is the proportion of local financial revenue to total expenditure of each provincial-level unit. If the data is larger,it indicates that the higher-level government needs to delegate more financial power.The indicators for the delegation of financial power by higher-level governments mainly refer to the calculation methods of Zhao Weimin and Li Guanglong (2016),<sup>[18]</sup>Quantitative calculation of the degree to which superior governments in 30 provincial-level units in China should delegate financial power (see Table 2).

Table 2: Definition and statistical description of main variables

types	variable symbol	name	minimum value	maximum value	standard deviation	mean value
dependent variable	$TFP$	economic efficiency	-0.0887	0.0782	0.0216	-0.0057
core explanatory variables	$Decfin$	degree of financial decentralization	0.0656	0.8518	0.0916	0.4395
control variable group	$Capd$	capital intensity	7.5986	12.1562	1.2356	9.8863
	$Dind$	proportion of secondary industry	0.1485	0.5514	0.1134	0.3802
	$Eo$	extent of openness to the outside world	0.0443	1.9156	0.4206	0.3302
	$Dmark$	marketization process	1.5636	16.5683	2.7602	6.9032
	$File$	financial deepening degree	0.6156	2.9108	0.5246	1.2169
	$Urb$	urbanization rate	0.0000	0.9084	0.2182	0.4736
	$Hedu$	higher education level	0.0351	0.4163	0.0641	0.0972
interactive variable	$Degeco$	per capita GDP	8.5468	12.9662	0.7122	10.8528

Note: The symbols for each variable in the table are defined by the author themselves.

The specific situation of the control variable group is as follows:Urb represents the urbanization rate;Capd represents the degree of capital intensity;Eo represents the degree of economic openness;Dind represents the degree of industrialization;Hedu represents the level of higher education;Dmark represents the degree of marketization;File represents the degree of financial

deepening.

In order to better examine the impact of financial decentralization by higher governments on local economic efficiency, we positioned the sample year between 2000 and 2020. Except for the Tibet Autonomous Region, we mainly selected data from 30 sample provinces for analysis. The measurement data of total factor productivity indicators are mainly from China Statistical Yearbook, China fixed assets investment Yearbook and Wind database. The data on the delegation of financial power by higher-level governments mainly comes from the China Statistical Yearbook, China Financial Yearbook, and China Tax Yearbook over the years. The other control variable group data mainly comes from the China Statistical Yearbook, China Labor Statistical Yearbook, China Industrial Economy Statistical Yearbook, China Population Yearbook, and Wind database over the years. The marketization process variable adopts the marketization index of provincial-level units in China disclosed in the "China Provincial Marketization Index Report (2018)" compiled by Wang Xiaolu, Fan Gang, and Hu Lipeng.

## 4.2 Main regression results and robustness testing

### 4.2.1 Benchmark analysis results

Table 3: Results of the impact of financial decentralization by higher-level governments on local economic efficiency

explanatory variable	explained variable					
	economic efficiency(TFP)					
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
<i>Decfin</i>	0.327***	0.232***	0.316***	0.187***	0.266***	0.154***
	(7.23)	(7.92)	(6.11)	(3.09)	(6.18)	(4.97)
<i>Capd</i>	0.338***	0.288***	0.132***	0.209***	0.398***	0.277***
	(4.07)	(8.15)	(7.86)	(8.51)	(9.41)	(6.31)
<i>Dind</i>	-0.047***	-0.049***	-0.061***	-0.075***	-0.085***	-0.049***
	(-6.05)	(-7.53)	(-6.78)	(-5.58)	(-8.92)	(-8.41)
<i>Eo</i>	-0.033***	-0.039**	-0.055***	-0.026***	-0.041**	
	(-6.17)	(-2.27)	(-6.86)	(-6.45)	(-2.43)	
<i>Dmark</i>	0.008	0.086	0.081	0.085**		
	(1.05)	(1.39)	(1.48)	(2.53)		
<i>Fle</i>	0.07***	0.064***	0.073***			
	(5.821)	(6.91)	(5.98)			
<i>Urb</i>	0.467***	0.558***				
	(9.31)	(8.33)				
<i>Humc</i>	0.057***					
	(4.13)					
<i>Cons</i>	-0.343***	-0.811**	-0.528***	-0.767***	-0.982**	-0.676***
	(-6.97)	(-2.38)	(-8.12)	(-5.13)	(-2.38)	(-6.29)
region, time	control	control	control	control	control	control
N	556	556	556	556	556	556

Note: \*\*\*, \*\*, \* respectively represent significance levels of 1%, 5%, and 10%, and the values in () are t-values. Same below.

This part of the benchmark inspection mainly adopts the system GMM method. Table 3 shows the empirical analysis results of formula (1), which mainly reports the impact of financial decentralization by higher-level governments on local economic efficiency. The empirical analysis results with different control variables added are presented in columns (i) to (vi). Through the econometric test results, it can be seen that the coefficients of the variable of financial power delegated by the superior government are positive, and all have passed the significance level test of 1%. Taking column (i) as an example, it can be seen that for every 1% increase in the degree of financial decentralization by the higher-level government, local economic efficiency will increase by 0.327%. This also indirectly confirms the importance of delegating financial power to higher-level governments. The possible explanation for this is that as the degree of financial power delegated by the higher-level government increases, the dependence of local governments on higher-level finance will decrease. That is, the income of local finance will mainly come from local taxation, so local governments will focus more on developing the



local economy, expanding the tax base, expanding financial resources, and improving the quality of local economic development; In addition, due to the decentralization of financial power, local governments have correspondingly reduced wasteful behaviors such as "running some money in" to strive for transfer payments, which will also improve local economic efficiency. In terms of controlling variables, except for the two variables of industrialization degree and openness to the outside world, the coefficient symbols of the five variables of capital deepening, marketization process, financial deepening, urbanization rate, and higher education level are positive, indicating that these five variables have a positive impact on local economic efficiency.

#### 4.2.2 Interaction impact

From the above analysis, it can be seen that the level of local economic development also affects the enthusiasm of higher-level governments to delegate financial power. Table 4 mainly reports the impact of the interaction between the level of local economic development and the delegation of financial power by higher-level governments on local economic efficiency. The econometric test results in Table 4 are mainly obtained based on formula (2), and it can be seen that the interaction term between the degree of economic development and the decentralization of financial power has passed the significance test, and the coefficient sign is positive. This indicates that the level of economic development has strengthened the enthusiasm of higher-level governments to delegate financial power, which may be explained as the improvement of local economic development level has nurtured local tax sources, reduced the dependence of the local government on higher-level finance, and thus increased the enthusiasm of higher-level governments to further delegate financial power. Overall, the higher the level of local economic development, the lower the degree of dependence on higher-level finance, and the higher the efficiency of fiscal funds expenditure. The higher-level government has more enthusiasm for delegating financial power, forming a positive interaction between local economic development and higher-level government delegating financial power.

Table 4: Results of the impact of financial decentralization by higher-level governments on local economic efficiency after the introduction of interactive items

explanatory variable	explained variable					
	economic efficiency(TFP)					
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
<i>L.Decfin</i>	0.347**	0.253***	0.622***	0.343***	0.318	0.277**
	(2.48)	(6.16)	(5.08)	(6.11)	(5.21)	(2.30)
<i>Decfin*Degeco</i>	0.024***	0.025***	0.133***	0.253***	0.350*	0.121***
	(4.21)	(4.24)	(5.12)	(3.24)	(2.11)	(6.19)
<i>cons</i>	-0.042***	-0.122*	-0.312***	-0.242***	0.048	-0.034
	(-3.81)	(-2.01)	(-5.18)	(-3.44)	(0.61)	(-1.02)
region, time	control	control	control	control	control	control
N	523	523	526	526	523	523

In Table 4, TFP represents the local economic efficiency under the interaction; *L.Decfin* represents the degree to which superior governments delegate financial power under the interaction; *Decfin\*Degeco* represents the interaction between the level of local economic development and the decentralization of financial power by the central government; *\_Cons* represents the intercept term.

#### 4.2.3 Robustness testing

This article mainly examines the impact of financial decentralization by higher-level governments on economic efficiency, with sample years ranging from 2000 to 2020. Mainly using macro variables for panel analysis, simple panel analysis can lead to potential errors in empirical results. We refer to the approach of Chu Yuchun and Liu Jianping (2009),<sup>[19]</sup> differentiate the core explanatory variables and control variables in formula (1), exclude the two variables of the marketization process and urbanization rate and include economic efficiency variables. Subsequently, we apply the GMM method for econometric testing. Table 5 shows the robustness estimation results of the impact of financial power delegated by the superior government on economic efficiency. It can be seen that after the superior government delegated financial power, the coefficient symbols of the seven control variables mentioned above basically passed the robustness test, thus verifying the robustness of the empirical analysis results in this article.

Table 5: Robustness test results

explanatory variable	explained variable					
	economic efficiency( <i>D.TFP</i> )					
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
<i>D.decfm</i>	0.232*** (5.26)	0.323*** (7.23)	0.263*** (5.12)	0.267*** (8.03)	0.252** (6.78)	0.337*** (8.39)
<i>D.capd</i>	0.255*** (5.31)	0.242*** (6.31)	0.657*** (6.11)	0.420*** (7.16)	0.337*** (8.29)	0.213* (2.10)
<i>D.dind</i>	-0.029*** (-6.22)	-0.089*** (-5.48)	-0.047*** (-6.28)	-0.037*** (-4.09)	-0.032*** (-3.74)	
<i>D.eo</i>	-0.067*** (-6.49)	-0.041** (-2.48)	-0.040** (-2.34)	-0.034*** (-5.12)		
<i>dmark</i>	0.037** (2.58)	0.055 (1.13)	0.033** (2.41)	0.027** (2.39)		
<i>D.file</i>	0.027*** (9.22)	0.138*** (7.30)	0.104*** (6.26)			
<i>urb</i>	0.067*** (6.29)	0.048*** (8.71)				
<i>D.humc</i>	0.211*** (9.79)					
<i>cons</i>	-0.167*** (-6.26)	-0.641** (-2.09)	-0.344*** (-6.17)	-0.282** (-2.16)	-0.548*** (-7.62)	-0.369*** (-8.13)
region, time	control	control	control	control	control	control
N	526	526	526	526	526	526

## 5. Conclusion

This article uses panel data from 30 provinces in China (excluding Tibet) from 2000 to 2020 as the research sample, and uses Generalized Moment Method (GMM) estimation to explore the impact of moderate financial power under the superior government on local economic efficiency and the governance effect of fiscal decentralization. The research conclusions mainly include: Firstly, empirical research has found that for every 1% increase in the degree of financial decentralization by higher-level governments, local economic efficiency can be improved by 0.327%, indicating that the decentralization of financial power by higher-level governments has to some extent promoted local economic growth. At the same time, the analysis also found that in addition to the two control variables of industrialization and openness to the outside world, capital deepening, financial deepening, urbanization level. The coefficient symbols of the five control variables of marketization process and higher education level are positive, indicating that these five control variables also have a positive impact on local economic efficiency. Secondly, to examine the impact of local economic development on the delegation of financial power by higher-level governments, this study also found that the interaction term between economic development and delegation of financial power also passed a significance test, and the coefficient sign was positive, indicating that the level of local economic development will also stimulate the enthusiasm of higher-level governments to delegate financial power to a certain extent. Finally, overall, moderate decentralization of financial power by higher-level governments can help promote local economic growth, and the higher the level of local economic development, the less dependence on higher-level finance, and the higher the efficiency of fiscal expenditure. This can stimulate the enthusiasm of higher-level governments to delegate financial power, forming a positive interaction between local economic development and higher-level governments' delegation of financial power.

## Acknowledgments

Fund projects: The General Project of the National Social Science Foundation of China "Research on Improving the Financial System and Mechanism to Enhance the Ability of Ensuring Basic Public Services in Rural Areas under the Dual Circulation New Pattern" (Project No. 21BJY067); The 2021 National College Student Innovation and Entrepreneurship Project "Research on Enhancing the Ability

of Rural Public Service Guarantee under the Background of Double Circulation" (Project No.:202110927015); Key Project of Philosophy and Social Sciences Research of Hubei Provincial Department of Education "Research on Fiscal Decentralization Reform, Local Taxation System and Local Governance Improvement in the New Era" (Project No.20D090).

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