



The Impact of Deviation from Budgetary Expenditure on the Efficiency of Local Government Expenditure: An Empirical Analysis Based on Provincial Data from China 2007 to 2019

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Abstract: The budget is an important vehicle for the government to regulate the economy and allocate financial resources, and deviations in the execution of the budget and accounts will, to a certain extent, affect the government's ability to govern and the public's trust in the government. Keeping the deviation from the budget within a reasonable range plays a crucial role in establishing a modern budget system that is comprehensive, standardized, transparent, scientific and strong in restraint, and giving full play to the function of finance as the foundation and important pillar in national governance. Starting from government expenditure efficiency, the author studied the impact of budget deviation and government expenditure efficiency through the empirical analysis of Feasible Generalized Least Square (FGLS) model estimation based on theoretical analysis and using provincial panel data from 2007-2019, and obtained the following conclusions: (1) There is a significant negative relationship between local budget expenditure deviation and government expenditure efficiency. (2) There is a spatially significant negative relationship between local government budget deviation in education, social security and urban and rural communities on government expenditure efficiency in these areas. Therefore, this paper proposes: strengthening the management of local budget revenue and expenditure adjustments, improving financial performance management and administrative accountability mechanisms, and enhancing the implementation of the concept of scientific budgeting in practice.

Keywords: Budget Deviation, Efficiency of Government Spending, Feasible Generalized Least Square (FGLS) Model

1. Introduction

Since the reform and opening up, China's economy has developed rapidly and the quality of life of the people has continued to rise. GDP is no longer the core indicator for evaluating the performance of government officials at present. According to *the Circular on Improving Performance Assessment for Promoting High-Quality Development* issued by the Central Organization Department in 2020, the people's sense of access, happiness and security is taken as an important criterion for judging the performance of local leaders and cadres. This indicates that the focus of local governments in China has shifted to improving the level of

local basic public services and addressing basic livelihood welfare protection. The findings of *the 2021 China Modern Public Service Development Index* have showed that the overall score for China's public services in 2021 was 64 points, which seems to be poor. Liu (2021) points out that the uneven supply and distribution of health care, housing security and education among different regions and populations are the areas that people want to be improved urgently [1]. Therefore, local governments should focus on improving the efficiency of the supply of local public goods and government welfare spending in the "supply-side" reform, which are of current concern to the public.

After the tax sharing reform, the proportion of local fiscal

expenditure continued to rise, with statistics showing that in 1994, China's local fiscal expenditure was RMB 403.81 billion, accounting for 69.71% of the national fiscal expenditure. As the scale of local expenditure continues to expand, local fiscal expenditure has reached RMB 20,374.32 billion in 2019, which is an increase of nearly 41 times; and accounting for 85.30% of national fiscal spending, up for 15.59%. At the same time, along with the abolition of agricultural taxes, the "camp reform", tax cuts and fee reductions and other major reforms of the fiscal system, the restructuring of state-owned enterprises and the development of local urbanization, the increased responsibilities for local governments have put increasingly significant pressure on local finances. From the perspective of governance, land finance can bring quick and profitable non-tax revenues to localities, thus easing the pressure on local fiscal expenditure. However, in the long run, this may lead to a deformed local industrial structure and a fragile fiscal revenue structure. Meanwhile, land concessions will result in serious consequences, such as loss of interests of landless farmers, difficulties in housing security for residents due to rising property prices and slow economic development due to weak local consumption, which are not conducive to livelihood protection and social development. Debt financing is also an important means of easing financial pressures [2], however, China's fiscal deficit ratio increases to over 3.6% in 2020, exceeding the international warning line by about 0.6%, and the local government special debt limit increased by RMB 1.6 trillion over last year, and reached to RMB 3.75 trillion. At this moment, increasing government debt to relieve local fiscal pressure is a way of 'quenching thirst'. In order to make our finances sustainable, we can not only focus on external revenue, but also on government content expenditure, by improving the structure of government expenditure, thus easing the pressure on local government finances.

Each year, the amount of local government financial expenditure is determined by the local government at the beginning of the year when preparing the financial budget, and is implemented in accordance with the approved amount after approval by the local people's congress. According to the requirements of budgeting, the year-end final accounts should be basically the same as the budget approved by the local people's congress. Gao (2008) first introduced the concept of "budget deviation" and pointed out that excessive deviation from the budget will lead to the failure of the rule of law, inefficient administration and reduced credibility of the government budget [3]. Currently, budget deviations of 5% or less are considered reasonable internationally. At the provincial level, 31 provinces in China accounted for 37.10% and 62.58% of general public budget revenue deviations and expenditure deviations outside the reasonable range from 2010 to 2019. This shows that provincial governments in China generally have the phenomenon of "over-recover" and "over-spend", while the over-spending of fiscal expenditure is more serious. The binding nature of local budgets is not only a reflection of the local government's ability to govern, but also of the efficiency of government spending.

The main source of pressure on local finances is the

government's inability to balance its 'revenues' and 'expenditures'. The 'excess expenditure' will inevitably lead to 'excess revenue' and lead to increased government debt, higher taxes for the people and a lower sense of well-being. Fiscal 'excess expenditure' implies inefficient spending of government budget funds. On the one hand, it exposes the local governments' unreasonable budgeting and poor macro-control ability at the local level, leading to a decline in credibility; furthermore, it will exacerbate the difficulty of collecting tax revenue, leading to restrictions on the normal activities of enterprises and bringing obstacles to the operation of the local economy. On the other hand, it reflects the government's low administrative efficiency, with inefficient spending often accompanied by more corruption and waste, leading to a vicious circle of local financial revenue and expenditure, and bankrupting people's trust in the government. At the same time, when a government is inefficient in its spending, it can only achieve its performance targets by 'excess expenditure' in order to meet the targets set by higher levels of government. Thus, there is a causal link between excessive fiscal 'excess expenditure' and inefficient government spending.

Based on the above research background, this paper empirically examines the relationship between budget deviations and government expenditure efficiency with the help of provincial panel data from 2007 to 2019 in China. This paper elaborates the correlation between budget deviation and local fiscal expenditure efficiency from two aspects: theoretical hypothesis and empirical test. On the one hand, it further improves the theoretical explanation of the correlation between budget deviation and fiscal expenditure efficiency; on the other hand, it empirically tests the correlation between budget deviation and local government expenditure efficiency in four categories: education, social security and urban and rural communities under the condition of robustness, in an attempt to On the other hand, we empirically test the relationship between budget deviation and the efficiency of local government expenditure in the three categories of education, social security and urban and rural communities to ensure robustness and to provide policy reference for the reform of the budgeting-oriented fiscal system.

2. Literature Review

2.1. Impact Study of Budget Deviations

The deviation from the budget and final accounts refers to "the difference between the government budget income and expenditure approved by the National People's Congress at all levels and the actual implementation of the government final accounts". After it was first proposed by Gao [3], domestic scholars have mainly studied the influencing factors of the deviation from the budget and the control of the deviation from the budget.

China's research on the control of budget deviations is mainly based on theoretical analysis. Wang (2015) points out that the main problems of budgeting in China are the softening of budget execution constraints and inefficient budget auditing and evaluation [4]. Chen and Lu (2019)

suggest that China's fiscal budget system is not perfect and the budget is not transparent enough [5]. To address the problems related to budget deviation in China, Feng and Shen (2015) point out that reducing the pressure of rigid assessment of taxation tasks can effectively reduce the degree of budget deviation [6]. At the same time, local governments should build a comprehensive and standard local budget system by strengthening the initial review of the budget and accounts by the National People's Congress, changing the incentive and restraint mechanisms for government officials, and strengthening the co-ordination of financial resources.

Current empirical studies on the factors influencing budget deviations point out that active fiscal policy, fiscal transparency and government budget expenditure deviations show a significant positive correlation [7]. Fiscal expenditure decentralization and state audit oversight show a significant negative correlation with budget expenditure deviations [8]. Vertical fiscal imbalances are positively associated with deviations in government budget revenues; vertical fiscal imbalances, economic development in fiscal transparency and deviations in budget revenues are negatively associated [9]. Meanwhile, Wang and Liu (2015) used the standard deviation method to calculate local government efficiency and obtained a long-term stable negative shock relationship between government efficiency and budget deviation through empirical analysis of panel data, followed by spatial panel data to conclude that fiscal budget deviation in China exhibits spatial clustering and radiation effects [10].

As the concept of "budget deviation" has not been developed abroad, most foreign scholars have studied budget forecasts and influencing factors related to the budget. Fatima *et al.* (2012) empirically analyse Pakistan's fiscal data for the period 1978-2009 and pointed out that a balanced budget is necessary to ensure sustainable local economic development [11]. Galinski (2013) calculates the budget forecast errors of local governments in Poland for 2001-2011 and suggests that the accuracy of local government budget forecasts improves the governance of public services [12]. Blume and Voigt (2013) suggest that higher levels of budget transparency lead to more efficient fiscal spending and less government corruption [13]. Arjomand *et al.* (2016) analyse the US budget over the period 2000-2013 and conclude that government budget overspending reduces local labour productivity and economic development [14]. Boukari and Veiga (2018) conduct a comparative analysis of government budgets in France and Portugal and conclude that, given different political, institutional and economic factors, French local government budgets are less biased and more efficient in terms of government forecasts [15]. Picchio and Santolini (2020) study the impact of Italian government policies on the accuracy of budget forecasts through a quasi-natural experiment, noting that easing policies can greatly increase budget errors [16].

2.2. Measurement and Study of Fiscal Expenditure Efficiency

The production frontier analysis method, which measures the relative efficiency of the "input-expenditure" mix, is

commonly used both at home and abroad to measure the efficiency of government spending, and is divided into parametric and non-parametric methods. From the existing literature, the use of the Data Envelopment Analysis (DEA) model of data envelopment analysis in a non-parametric approach to calculate the efficiency of government spending has been the most widely used [17]. Meanwhile, a number of scholars have used the stochastic frontier analysis Stochastic Frontier Approach (SFA) model in parametric methods to construct frontier functions using econometric regression equations for related studies [18]. In addition to this, Gupta and Verhoeven (2001) used a free disposition envelope analysis FDH model to calculate 12 years of government spending on health and education in 37 African countries and found that government spending in Africa has been increasing in efficiency, but is well below Asian and European levels [19]. Qi *et al.* (2016) used a local frontier order efficiency approach to measure the efficiency of provincial education expenditure in China and empirically analyse the impact of institutional factors [20].

Current research on the efficiency of local spending is divided into a consideration of the efficiency of local government spending in general and the efficiency of spending on specific public services. Kocisova *et al.* (2017) used a DEA model to calculate education expenditures for each European country in 2015 [21]. Sekiguchi (2019) used the SFA model to study the efficiency of government spending in Vietnam's provinces and found that government fiscal efficiency was positively related to economic growth [22]. Xu *et al.* (2020) use the SFA model to measure the efficiency of government spending in 145 prefecture-level cities in China, showing that local fiscal spending is negatively related to fiscal pressure in China [23].

2.3. Literature and Innovations in This Paper

Throughout the existing literature, there is still room for further exploration of the research on budget deviation and government expenditure efficiency. The innovations of this paper are mainly reflected in the following: i. Among the studies on budget deviations, some scholars have pointed out that budget deviations and government efficiency are correlated, but no one has yet conducted relevant studies on government administrative efficiency explicitly to government expenditure efficiency. Secondly, there are relatively abundant studies on government expenditure efficiency at home and abroad, which point out that government expenditure efficiency is influenced by factors such as fiscal decentralization, government audit and government pressure, but there is less literature on the influence of budgeting and budget deviation and other related elements on government expenditure efficiency.

3. Research Design

3.1. Model Construction

Based on the above theoretical analysis, this paper

establishes model (1) to test the hypothesis of whether there is a linear correlation between the deviation of local government expenditure budgets and the efficiency of local fiscal expenditure. Based on this, this paper sets the model as follows:

$$eff_{it} = \alpha_0 + \alpha_1 IDEV + \sum_{j=2}^9 \alpha_j X + \mu_{it} \quad (1)$$

Among them, *eff* is the core explained variable, indicating the efficiency of education expenditure (*edu_eff*), social security expenditure (*soc_eff*), and urban and rural community expenditure (*cit_eff*). IDEV is the core explanatory variable, indicating the deviation of education expenditure (*edu_IDEV*), social security expenditure (*soc_IDEV*), and urban and rural community expenditure (*cit_IDEV*). *X* denotes the control variable; *j* denotes the number of explanatory and control variables, in equation (1), *j* = 2, 3, ..., 9, μ denotes the random error term; subscript *i* denotes the 31 provinces; *t* denotes the time range, from 2007 to 2019.

3.2. Selection and Measurement of Indicators

3.2.1. Expenditure Budget Deviation Indicator

The budget deviation is the difference between the

government's budget revenue and expenditure as approved by the legislature and the government's final budget revenue and expenditure as the result of its actual implementation. The budget deviation is the difference between the government's budget revenue and expenditure approved by the legislature and the government's final budget revenue and expenditure as the result of its actual implementation. The models are the followings: Deviation from budgeted expenditure = (General public final expenditure - General public budget expenditure) / general public budget expenditure × 100%.

3.2.2. Government Expenditure Efficiency Indicator

This paper uses stochastic frontier analysis (SFA) to measure the fiscal efficiency of local governments. Fiscal expenditure efficiency is actually measured as the difference between the minimum input cost and the actual input cost for a given level of public service provision. Therefore, a cost-based stochastic frontier model is appropriate. The public services included mainly include the three dimensions of education, social security and Urban and rural community, consisting of six primary indicators and 18 secondary indicators. The specific items are shown in Table 1.

Table 1. Selection of indicators for measuring the efficiency of local government spending.

Input indicators	Output indicators (first indicators)	Output indicators (secondary indicators)
Education expenditure	Teacher-student ratio at all levels of schooling	pupil-teacher ratio in primary schools (pupils = 1) Lower secondary student-teacher ratio (students = 1) Teacher-student ratio in senior secondary schools (students = 1) Teacher-student ratio in higher education (students = 1)
	schools at all levels	general primary schools (nos.) general junior high schools (nos.) general secondary schools (nos.) general colleges and universities (nos.)
Social security and employment expenditure	participants in each type of insurance	people participating in basic pension insurance at the end of the year (10,000) people covered by unemployment insurance at the end of the year (10,000) participants in basic health insurance at the end of the year (10,000) people covered by work injury insurance at the end of the year (10,000) people covered by maternity insurance at the end of the year (10,000)
		urban greenery urban water supply
Urban and rural community expenditure	city Appearance	cleaning area per capita (sqm) public toilets per 10,000 people (seats) vehicle equipment dedicated to amenities and sanitation per 10,000 people (units)

Data source: China Statistical Yearbook, China Regional Economic Statistical Yearbook, EPS DATA database.

3.2.3. Description of Other Variables

In order to control the influence of other variables on the efficiency of local fiscal expenditure, this paper refers to the domestic and foreign scholars' studies on the factors affecting the efficiency of fiscal expenditure. In order to control the influence of other variables on the efficiency of local fiscal expenditure, this paper refers to the relevant studies of domestic and foreign scholars on the factors affecting the efficiency of fiscal expenditure, and according to the purpose of the study, eight control variables are introduced from the factors of regional economic development level, regional social structure and local government financial strength, etc. In order to control the influence of other variables on the

efficiency of local fiscal expenditure, this paper refers to the relevant studies of domestic and foreign scholars on the factors influencing the efficiency of fiscal expenditure: Urban population density (rkmd); Fixed asset investment (gdzc); Degree of openness to the world (jck); Percentage of tax revenue (sszb); Government size (zfej); Living standards of residents (agdp); Share of tertiary sector (set3); Unemployment rate (une).

3.3. Data Sources and Descriptive Statistics

This paper selects panel data for 31 provinces across China from 2007-2019, with data for each indicator coming from the China Statistical Yearbook and the statistical yearbooks of the provinces in previous years, and the descriptive

statistics of the variables, as shown in Table 2.

Table 2. Descriptive statistics.

VARIABLES	describe	average	SD	min	max	N
edu_IDEV	Education expenditure deviation	-0.0495	0.0382	-0.2473	-0.0021	403
soc_IDEV	Social security expenditure deviation	-0.0477	0.0435	-0.3879	-0.0026	403
cit_IDEV	Urban and rural community expenditure deviations	-0.0550	0.0505	-0.4893	0.0000	403
Pubic_IDEV	Public service expenditure deviation	-0.0878	0.0565	-0.4034	-0.0098	403
edu_eff	Efficiency of education expenditure	0.9483	0.0305	0.8166	0.9911	403
soc_eff	Efficiency of social security expenditure	0.9193	0.0373	0.8163	0.9858	403
cit_eff	Efficiency of Urban and rural community expenditure	0.6344	0.2150	0.1805	0.9893	403
rkmd	Urban population density	7.8539	0.4318	6.2442	8.6940	403
gdzc	Fixed asset investment / GDP	0.7133	0.2600	0.2098	1.5070	403
jck	Imports and exports/GDP	0.1260	0.2009	0.0000	1.1754	403
sszb	Tax revenue/general budget revenue	0.7482	0.0800	0.5695	0.9664	403
zFzj	General budget revenue / GDP	0.1053	0.0313	0.0560	0.2273	403
agdp	Gross domestic product per capita	10.5759	0.5702	8.8414	12.0090	403
set3	Share of tertiary sector	44.6240	9.6961	28.6000	83.5000	403
une	Unemployment rate	3.3772	0.6554	1.2000	4.5700	403

4. Empirical Analysis

In order to reduce the impact of heteroskedasticity on the regression results, all variables on both sides of model (1) are treated as logarithmic. According to the results of Hausmann's test, random effects models should be chosen for education expenditure efficiency, social security expenditure efficiency and urban and rural community expenditure efficiency, and generalized least squares (FGLS) should be applied to carry out the empirical analysis.

Based on the results of model (1), it can be concluded that, with or without the control variable, the pre-final deviation in education shows a significant negative correlation effect on the efficiency of education expenditure, significant within the 99% confidence interval, i.e. after the control variable, each unit increase in the pre-final deviation in education decreases

the efficiency of education expenditure by 0.874 units; in social security, it can be seen by column (3) that before the After controlling for the variables, column (4) shows that the deviation from the budget has a significant negative impact on the efficiency of social security expenditure, with a confidence interval of 99% or less, i.e. for every unit increase in the deviation from the budget of social security, the efficiency of social security expenditure decreases by 0.524 units. In the urban and rural areas, before controlling for variables, i.e. column (5), the deviation from the budget has a significant negative effect on the efficiency of urban and rural expenditure, with a confidence interval within 99%, and after controlling for variables, it is shown from Table 3 that it is not significant, i.e. it can be inferred that there is a significant linear relationship between the deviation from the budget and the efficiency of urban and rural expenditure.

Table 3. Baseline regression analysis results.

VARIABLES	(1) edu IDEV	(2) edu IDEV	(3) soc IDEV	(4) soc IDEV	(5) cit IDEV	(6) cit IDEV
edu_eff	-0.722*** (-13.28)	-0.874*** (-5.28)				
soc_eff			-0.536*** (-10.21)	-0.524** (-2.46)		
cit_eff					-0.111*** (-11.82)	-0.004 (-0.09)
rkmd		0.014* (1.75)		0.028*** (2.84)		0.059*** (5.46)
gdzc		0.036*** (3.32)		0.045*** (3.11)		0.032** (2.09)
jck		0.023 (1.10)		-0.019 (-0.71)		0.060** (2.05)
sszb		0.062* (1.76)		-0.015 (-0.32)		0.045 (0.89)
zFzj		0.222** (2.03)		-0.254* (-1.77)		0.271* (1.74)
agdp		-0.002 (-0.29)		0.006 (0.47)		0.048*** (3.08)
set3		-0.002*** (-4.07)		-0.001 (-0.94)		-0.001 (-0.69)
une		-0.010** (-2.00)		0.017** (2.50)		0.002 (0.29)
Constant	0.635*** (12.32)	0.725*** (2.81)	0.445*** (9.22)	0.124 (0.36)	0.015** (2.48)	-1.103*** (-4.68)
Observations	403	403	403	403	403	403
r ² _a	0.266	0.400	0.154	0.195	0.213	0.354
F	176.5	34.12	104.3	15.15	139.8	28.80
rho	0.561	0.654	0.390	0.541	0.370	0.508

To increase the credibility of the study, this paper regressed public service budget deviation as a proxy variable, and the results are shown in Table 4. It can be

concluded that, after controlling for variables, public service deviation is significantly negative for education, social security and urban and rural expenditure efficiency,

i.e. an increase in public service deviation leads to a decrease in expenditure efficiency in education, social security and urban and rural areas. Therefore, the conclusions of this study are robust.

Table 4. Robustness testing - variable substitution.

VARIABLES	(7) Pubic IDEV	(8) Pubic IDEV	(9) Pubic IDEV	(10) Pubic IDEV
edu_eff	-0.783*** (-3.38)			-0.753*** (-3.11)
soc_eff		-0.517*** (-3.42)		-0.582*** (-2.62)
cit_eff			-0.072** (-2.50)	0.094* (1.81)
Controls	Yes	Yes	Yes	Yes
Constant	0.114 (0.33)	-0.210 (-0.79)	-0.642*** (-3.27)	0.498 (1.41)
N	403	403	403	403

Table 5. Heterogeneity test.

Variables	East			Middle			West		
	(11) edu IDEV	(12) soc IDEV	(13) cit IDEV	(14) edu IDEV	(15) soc IDEV	(16) cit IDEV	(17) edu IDEV	(18) soc IDEV	(19) cit IDEV
edu_eff	-0.821*** (-11.01)			-0.686*** (-15.05)			-0.667*** (-10.55)		
soc_eff		-0.580*** (-7.97)			-0.452*** (-10.39)			-0.574*** (-7.83)	
cit_eff			-0.111*** (-9.56)			-0.067*** (-10.64)			-0.130*** (-12.93)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.266*** (3.02)	0.003 (0.03)	-0.265** (-2.48)	0.212*** (4.74)	0.152*** (2.84)	-0.012 (-0.25)	0.106 (1.34)	0.095 (0.93)	-0.276*** (-3.13)
N	143	143	143	104	104	104	156	156	156

To further explore, the impact of budget deviation on the efficiency of government expenditure, this paper divides China's provinces into regions and divides China into three parts: East, Central and West to study them separately. Firstly, from columns (11), (14) and (17), we can see that there is a significant negative relationship between the deviation from the budget and the efficiency of education expenditure in the eastern region, and the confidence interval is within 99%. Secondly, in terms of social security, from columns (12), (15) and (18), it can be seen that the deviation from the budget has a significant negative correlation with a confidence interval within 99% for the three regions of East, Central and West, with the deviation from the budget having a greater impact on the efficiency of social security expenditure in the East and West, followed by the Central region; finally, in terms of urban and rural areas, from columns (13) and (16) and (19), it can be seen that there is a significant negative correlation between budget deviation for the three regions of East, Central and West with confidence intervals within 99%, but compared to the other two variables, budget deviation has a smaller impact on the efficiency of urban and rural expenditure, and for the western region, every unit increase in urban and rural budget deviation decreases the efficiency of urban and rural expenditure by 0.130 units.

5. Conclusions and Policy Implications

Based on China's provincial-level data from 2007-2019, this paper investigates the impact of budget deviation on the efficiency of three types of government spending: education, social security, and urban and rural. and through empirical analysis, we conclude that budget deviation has a significant negative relationship with government spending efficiency in

education and social security, i.e., for every 1% increase in budget deviation, education spending efficiency decreases by 0.847% and social security spending efficiency decreases by 0.524%. Meanwhile, the overall results were not significant for urban and rural community expenditure efficiency. According to the results of the heterogeneity analysis, the deviations from the budget in education and social security still show a significant negative correlation on government expenditure efficiency in the eastern, central and western regions, while the deviations from urban and rural community expenditure also have a significant negative correlation on government expenditure efficiency at this time, and it can be concluded that there is a spatial effect of the deviations from the budget on government expenditure efficiency. Xing (2020) analyzed the regional differences among the east, middle and west of China based on the data from 2007 to 2016, and also concluded that it would inhibit the efficiency of government expenditure [24]. At the same time, Xu (2020) also provided a strong basis for this paper [23]. Based on the content of this paper, the following policy recommendations will be given.

First, strengthen the management of budgetary adjustments and further regulate government revenue and expenditure. Compared to tax revenues, local governments have more discretionary power over non-tax revenues and therefore have a greater degree of deviation from the budget and accounts. Therefore, it is recommended that local governments should, in accordance with the legal principle of collecting as much as possible and not collecting excessive taxes, introduce corresponding regulations or laws on the basis of tax collection in accordance with the law, further clarify and refine the scope and extent of government budget adjustments, and improve the government's system of land

concessions and various administrative fees and charges, so as to further regulate the collection of non-tax revenues and reduce the degree of revenue deviation. In addition, external supervision such as the National People's Congress (NPC) should be strengthened to review and supervise non-tax revenues, so as to control and regulate the extent of deviations in budget preparation and implementation. With regard to the management of budget adjustment procedures, the government should, on the basis of budget management in accordance with the provisions of the 2014 Budget Law, on the one hand, further clarify and enhance the power of the NPC in budget preparation and approval, and strengthen the NPC's substantive review of budget adjustments, so as not to approve any unreasonable adjustments, thereby strongly restraining budget adjustments. On the other hand, we can learn from the experience of developed countries and set up a budget review committee in the NPC, with the assistance of people with professional knowledge in budget review and supervision, so as to improve the scientific and standardized nature of budget management and keep the deviation of the government budget and final accounts within a reasonable range.

Second, sound financial performance management and administrative accountability mechanisms to strengthen the regulation of financial information disclosure. On the one hand, promote the further disclosure of performance evaluation information. Governments at all levels should develop a unified public template, which includes disclosing the performance evaluation results of key projects of units and major livelihood expenditure projects, so as to facilitate public supervision and prompt budget units to further standardize project management and improve the efficiency of financial expenditure. On the other hand, financial performance management needs to be complemented by an administrative accountability mechanism. Local governments should consider including financial information disclosure in the scope of work performance assessment or integrity assessment, and linking it to the annual appraisal of public officials, so as to mobilize a sense of responsibility and motivation for work, which is conducive to government departments strictly restraining their own behaviour and further improving government administrative effectiveness based on the assessment results, and promoting the construction of a service-oriented and efficient government. This is conducive to the strict discipline of government departments' own behaviour and the further enhancement of their administrative effectiveness based on the assessment results, and the promotion of a service-oriented and efficient government.

Third, enhance the scientific nature of budgeting and strengthening the budget management system Construction. On the one hand, we should establish and improve medium- and long-term budget planning and inter-year budget The budgeting mechanism should be balanced across years. The medium- and long-term budget should be formulated based on the socio-economic development plan for three to five years, and then adjusted and updated according to the

economic and social changes in a year-by-year model. The medium and long-term budgets should be formulated based on the social and economic development plans for three to five years, and then adjusted and updated according to the economic and social changes in a year-by-year model, so as to enhance the foresight of budget preparation and provide effective reference for annual budget implementation. This will provide an effective reference for the annual budget execution and reduce the deviation of the budget and final accounts. On the other hand, budget forecasting techniques should be improved. China should gradually promote and use computer technology, such as grey forecasting technology, combined with economic indicators In order to improve the accuracy of financial revenue and expenditure forecasting and to reasonably control the deviation of the budget and accounts, we should gradually promote and use computer technology such as grey forecasting technology combined with economic indicators.

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