

# “Effect of multidimensional performance appraisal on the structure of local government expenditure”

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# EFFECT OF MULTIDIMENSIONAL PERFORMANCE APPRAISAL ON THE STRUCTURE OF LOCAL GOVERNMENT EXPENDITURE

## Abstract

In many countries, including China, traditional one-dimensional performance appraisal has led local governments to spend more on economic construction and less on human capital and public services. In 2013, China decided to abandon the traditional bias of performance appraisal. This study aims to analyze the effect of multidimensional performance appraisal on the local government expenditure structure in China. The study collected panel data from 31 provincial administrative regions in China during 2007–2018 for empirical analysis. By assigning different weights to economic-based performance appraisal pressure, livelihood-based performance appraisal pressure, and ecological-based performance appraisal pressure, the study observed the effects of performance appraisal criteria on local government expenditure structure. The results show that: local governments place more emphasis on tasks with higher relative incentive intensity and allocate more expenditures to them; the correlation between tasks affects the proportion of expenditures on related tasks; the basic principle of local government officials in balancing the expenditure structure is to maximize their own utility. They give priority to spending on tasks with high marginal revenue. In addition, this paper also discusses the causes and mechanisms of distortion in local government spending structure. Finally, the paper puts forward corresponding policy recommendations, which provide new ideas for multidimensional performance assessment of local governments.

## Keywords

achievement assessment, multidimensional appraisal, expenditure structure of local government, empirical analysis

## JEL Classification

R51, H11, H79

## INTRODUCTION

The concept, methods, and techniques of performance evaluation have become prevalent in developed countries and extended to some developing countries. In addition to the United Kingdom and the United States, Japan, Australia, Canada, and Germany have all implemented government performance evaluations. Starting in the mid-1980s, the New Zealand government gradually advocated the need to deregulate the economy and end direct government control and intervention in most of the economy and suggested streamlining, breaking up, and radically reforming the public sector bureaucracy. Australia published civil service regulations in 1997 to reduce the privileges of senior civil servants, introduced a financial management and accounting bill, and implemented an accrual accounting program with the strategic goal of transforming a cash-based government accounting system to an accrual accounting system by the year 2000. Japan started administrative evaluation reform in 1997, involving policy evaluation and evaluation of administrative activities. Since then, Korea, Singapore, Malaysia, Indonesia, and other countries have evaluated their government performance one after another.

In the mid-1990s, the research interest focused on the assessment of government performance in China. In the 21st century, the governance model has undergone new changes. In response to the central government's request to create a unique assessment system, efforts were made toward an evaluation system reflecting the "green GDP" and "well-off society" evaluation indicators. "Green GDP," "well-off society" evaluation indexes, and other academic research are gradually reflected in practice.

Sang's group (2009) has studied a more systematic system of "local government performance evaluation indexes" consisting of three primary indicators and thirty-three secondary indicators. Distinctive Chinese local government performance assessment models, such as the Qingdao model, the Hangzhou model, the Fujian model, and the Gansu model, emerged. However, due to the weak existing foundation and the very short implementation time, these models are still in the stage of experimentation and refinement.

In 2013, China clearly stated that the traditional bias of performance appraisal based solely on economic growth rate should be left behind. When the performance appraisal criteria or appraisal index system of the central government for local governments and officials changes, the competitive behavior of local governments is inevitably reshaped. It thus can influence the structural trade-off and arrangement of fiscal expenditure. The non-economic performance appraisal faced by local officials also impacts local fiscal expenditure. The greater the performance appraisal pressure, the more significant the increase in the share of fiscal expenditure. Therefore, reforming officials' appraisal system and the local budget management system has far-reaching implications for reversing the long-term economic expenditure bias of local finance and the administrative-driven budget system.

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## 1. LITERATURE REVIEW

Performance assessment has been widely researched in different contexts and with different approaches. Thus, the existing literature on this topic can be divided into studies dedicated to

- 1) performance assessment pressure under government competition mechanism;
- 2) performance evaluation criteria and performance task execution strategy; and
- 3) government spending tools and performance target achievement.

### 1.1. Performance assessment pressure under government competition mechanism

In a comprehensive view, the performance appraisal pressure of local government officials comes from both vertical and horizontal aspects. Firstly, the vertical performance appraisal pressure comes from the central government's appraisal and evaluation. Secondly, the horizontal performance appraisal pressure comes from lo-

cal governments at the same level. An essential mechanism in the national governance framework is government competition, where the central government motivates local governments to carry out jurisdictional governance by constructing promotion tournaments among local governments (Pi, 2012). The relative performance appraisal in promotion tournaments creates a competitive situation in which local governments compete to catch up with each other regarding performance. In China, grassroots government behavior is often guided by performance goals; if the goals set deviate from reality, they often lead to great pressure on governance, thus alienating the pressure-based system. Game conditions are coupled with one another to push up the grassroots performance pressure. Zhang (2021) also established four types of game failures according to the different degrees of coupling: top-down squeezing, overall control, signaling malfunction, and risk-averse.

Decentralization can enhance the causal relationships between development services and increase regional and state revenue. The quality of public welfare depends on fiscal management and public services (Syam et al., 2019). The cen-

tral government usually adopts a comparative performance appraisal for local government officials to avoid the limitations of the principal-agent relationship in information asymmetry and other aspects and exclude the possible interference of external factors in assessing and evaluating agents (Zhou, 2007). Rewards and punishments are also applied according to the determined appraisal levels and rankings, which can encourage competition among peer governments and reduce supervision. Doing so can encourage competition among governments at the same level, reduce supervision costs, ensure fair and just assessment, and eliminate the influence caused by some unfavorable factors (Zhou, 2009). The relative performance appraisal in promotion tournaments creates a competitive situation in which local governments compete with one another about performance to catch up. They should also manage their activities efficiently to motivate stakeholders to support policies while setting boundaries for feasible neighborhood activities. However, strategic management of sustainability performance remains a rare, aspirational goal (Deslatte & Swann, 2020).

### 1.2. Performance evaluation criteria and performance task execution strategy

Considering the principal-agent relationship, the central government matches strong incentives with performance appraisal results. The final results are a critical basis for evaluating the local government's ability to perform, rewarding the best and punishing the worst, and forming a top-down pressure-based system (Fu, 2008). In this system, the performance appraisal criteria should be a value guidance for creating performance and stipulating the performance tasks that local governments must accomplish, the task completion effect, and the indicator weight for each task (Liu & Jin, 2015). This reflects the national governance philosophy of the central government and the key tasks of the stage.

Local government officials must focus on the core reference basis of performance assessment standards. They use the performance appraisal criteria system as the basis for weighing the importance of

each performance task; factors that can influence local government decisions on performance task implementation include differences in task incentive intensity, task relevance, and result perceptibility (Zhang & Jiao, 2010). Basilio et al. (2020) analyzed the efficiency of local governments and its determinants. These determinants were found relevant when new efforts to decentralize were introduced. Halaskova et al. (2022) researched the efficiency of local governments in the EU employing data envelopment analysis. They found affective organizational commitment as a mediating variable. According to Luna-Arocas and Lara (2020), affective organizational commitment is vital for understanding the correlation between talent management and performance. Finally, the context and culture of the surroundings affect the success of new public management reforms (Ugyel, 2021).

### 1.3. Government spending tools and performance target achievement

Driven by the pressure and incentives of performance evaluation, local governments will do their best to create a performance to obtain more excellent promotion opportunities. Ahuja and Pandit (2020) found that investment, trade accessibility, and inflation of public spending have a positive effect on economic growth. Therefore, using government spending as a policy tool becomes the primary way to achieve high performance.

According to the established performance task execution strategy, local government officials adjust the expenditure structure within their authority to match the performance task execution strategy and maximize the performance output. In this link, local government spending serves as an instrument to accomplish performance tasks, and the performance appraisal system indirectly influences the arrangement of local government spending structure. Although the performance appraisal system of the central government focuses on the completion of relevant performance tasks by local governments, the performance appraisal system can significantly influence the formation of local government spending structure through the mediating

variable of local government governance behavior. The performance of this expenditure structure varies with the performance task execution strategy of local governments.

Moura et al. (2019) classified the factors influencing government performance into purpose, stakeholders, and management factors. Bayramov (2020) considered risk management vital in public sector management, creating a sound budgetary structure and ensuring financial stability and proper budgetary spending. Thus, the efficiency of public expenditure affects local government fiscal performance; however, there is a need for more investigation on its determinants and reasons.

Onyango-Delewa (2020) noted that political divide, fiscal imbalances, fiscal sabotage, and tax payment bias predict changes in expenditure efficiency. Xie and Wang (2018) showed that the influence of social stability assessment on the structure of local public expenditure is related to the local public's ability to express their demands. The stronger the public's ability to express their demands, the more likely they are to increase maintenance expenditure, correct the bias of production expenditure, and solve the problem of insufficient investment in people's livelihood. Local governments need to make the performance assessment of multidimensional indicators such as improving people's livelihood and saving resources the main indicator for assessing the administrative performance of local governments. Only by assessing the effectiveness of local governments in performing public service functions can the functions of local governments shift from excessive pursuit of quantitative economic growth to the provision of good public services, and local governments can more consciously improve their leadership in implementing central policies.

Therefore, following the literature review, this study aims to analyze the effect of multidimensional performance appraisal on the structure of local government expenditure in China. This paper proposes that one-sidedness of local government officials' view of political performance is manifested in focusing on key indicators and neglecting general indicators; focusing on apparent performance and neglecting potential performance; and focusing on short-term benefits and

neglecting long-term benefits. First, in terms of spending direction, local government officials invest public funds in the scope of the assessment content, and the incentive effect of public funds is weak in areas where the performance assessment content is unspecified. Second, regarding expenditure quantity, local government officials give a high proportion of expenditure to areas critical to the central government and easily produce a political performance to obtain a high-performance output.

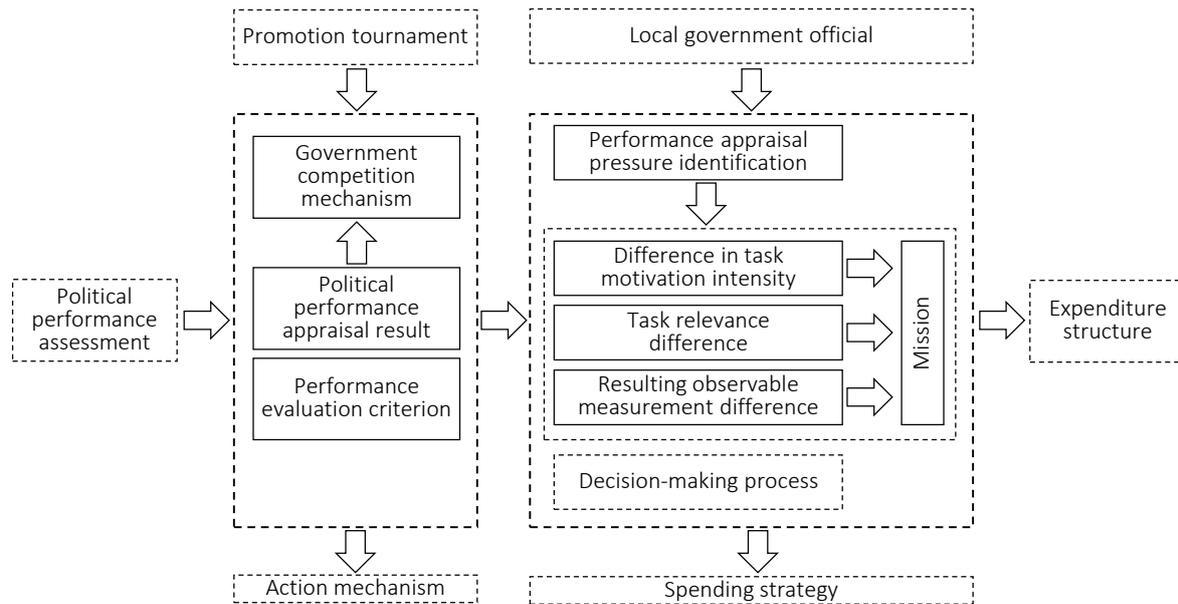
## 2. METHODOLOGY

This study divides the existing research topics into performance assessment, performance evaluation criteria, and government spending tools and performance target achievement. Next, it derives the profit matrix of the respective actors in this relationship. The study then creates an empirical model to analyze asymptotic and local stability and conducts sensitivity analysis of the parameters affecting the structure of expenditure's strategy choice. Figure 1 shows the theoretical model of this study.

The empirical model is analyzed using a fixed effects panel model to investigate the effects of different types of performance appraisal pressures on the local government expenditure structure, with the model taking the following specific form:

$$Str_{it} = \alpha + \beta Ps_{it} + \sum \gamma_j X_{j\lambda t} + z_t + w_t + \varepsilon_{it}, \quad (1)$$

where  $Str_{it}$  is the explanatory variable, indicating the expenditure structure of  $i$  province  $i$  in year  $t$ . The empirical study is replaced by the proportion of expenditure on economic construction ( $Eco_{it}$ ), proportion of expenditure on people's livelihood ( $Liv_{it}$ ), proportion of expenditure on environmental protection ( $Env_{it}$ ), and proportion of expenditure on government operation ( $Adm_{it}$ ) for regression analysis.  $Ps_{it}$  is the performance appraisal pressure index of province  $i$  in year  $t$ .  $X_{j\lambda t}$  is the control variable.  $z_t$  is the individual effect.  $w_t$  is the time effect.  $\varepsilon_{it}$  is the error term and obeys a normal distribution with mean 0.  $\alpha$  is the constant term.  $\beta$  is the coefficient of the explanatory variable expenditure structure.  $\gamma_j$  is the coefficient of the control variable.



**Figure 1.** Theoretical framework

## 2.1. Variables

Local government spending structure ( $S_{it}$ ) is the explanatory variable. The shares of government economic construction expenditure, livelihood expenditure, environmental protection expenditure, government operation expenditure, and science and technology expenditure in the general public budget expenditure are used as quantitative indicators.

Core explanatory variables refer to performance appraisal pressure. Considering that the “promotion tournament” exists in the form of relative performance appraisal, the study uses the findings of Qian et al. (2011) to calculate the weight of each province’s regional gross domestic product (GDP) in each year of the sample data as the weight of the total number of 31 provinces. If the weighted average value is smaller than the weighted average value of that year, then the performance appraisal pressure for that year is assigned to 1, which means that the province is under great performance pressure; if it is larger than the weighted average value of that year, then the performance pressure appraisal for that year is assigned to 0, that is, the province is under less performance appraisal pressure. Finally, the value of each indicator is summed.

Growth and fiscal surplus growth rates are selected to measure economic performance appraisal pressure. Unemployment rate and hospital beds

per 10,000 people are selected to measure livelihood performance appraisal pressure. Wastewater emissions as a proportion of GDP and SO2 emissions as a proportion of GDP are used to calculate ecological performance appraisal pressure.

Given that multiple complex factors may influence the formation of the expenditure structure of a particular region, the interferences of other factors are excluded by setting relevant control variables. The control variables are fiscal decentralization degree, openness to the outside world, industrial structure, urbanization rate, economic development level, and human capital.

This study selects the panel data of 31 provincial-level administrative regions in China from 2007 to 2018 for analysis. Such data are obtained from China Finance Yearbook (2007–2019), China Statistical Yearbook (2008–2019), and China Health Statistical Yearbook (2007–2018).

## 3. RESULTS

### 3.1. Impact of economic-livelihood performance appraisal pressure on expenditure structure

The economic-livelihood performance appraisal pressure value is obtained by weighting the econom-

ic-livelihood performance appraisal pressure values by 50%. Table 1 presents the regression results. Column (1) shows that the livelihood-type performance appraisal pressure has a positive but insignificant effect on the proportion of economic construction-type expenditure. Column (2) reveals a significant positive promotion effect on the proportion of livelihood-type expenditure. Column (3) shows that the effect on the proportion of environmental protection-type expenditure is insignificant, but the coefficient of performance appraisal pressure is positive. Column (4) presents that the proportion of government operation-type expenditure significantly inhibits the share of government operation expenditure. It indicates that under the economic-livelihood performance appraisal pressure, local governments tend to reduce the proportion of government operation category expenditure and use the fund for economic construction and livelihood protection.

### 3.2. Impact of economic-ecological performance appraisal pressure on expenditure structure

The economic-ecological performance appraisal pressure value is obtained by weighting the

economic and ecological performance appraisal pressure values by 50% (Table 2). Column (1) shows that the coefficient of economic-ecological performance appraisal pressure is positive at a 5% significance level, indicating that an increase in economic-ecological performance appraisal pressure significantly promotes local governments' investment in economic construction-type expenditure. Column (3) presents that the coefficient of economic-ecological performance appraisal pressure is positive at a 5% significance level, suggesting that the increase in economic-ecological performance appraisal pressure can significantly increase the proportion of local government's expenditure in the environmental protection category. The results in Column (2) show that the effect of economic-ecological performance appraisal pressure on the share of expenditure in the livelihood category is insignificant. The effect of economic-ecological performance appraisal pressure on the share of government operating expenditure in Column (4) is negative at a 1% significance level; that is, local governments prefer to compress government operating expenditure.

**Table 1.** Regression results of economic-livelihood performance appraisal pressure

Variable	(1)	(2)	(3)	(4)
	Share of economic category expenditure	Proportion of expenditure on people's livelihood	Share of expenditure on environmental protection	Share of government operating expense
<i>Ps</i>	0.657 (0.457)	0.240** (0.095)	0.295 (0.346)	-1.020*** (0.233)
<i>Fde</i>	152.200*** (9.788)	-3.807* (2.043)	-2.113 (7.411)	-77.220*** (4.998)
<i>Fdi</i>	0.508 (0.510)	0.025 (0.106)	-0.202 (0.386)	-0.173 (0.260)
<i>Inds</i>	-0.179*** (0.051)	0.011 (0.011)	-0.070* (0.039)	0.093*** (0.026)
<i>Urb</i>	-0.583*** (0.083)	-0.064*** (0.017)	0.261*** (0.063)	-0.096** (0.042)
<i>Pgdp</i>	1.287*** (0.191)	0.347*** (0.040)	-0.287** (0.145)	-0.494*** (0.098)
<i>Edu</i>	2.897*** (0.715)	-0.309** (0.149)	3.172*** (0.542)	0.973*** (0.365)
Constant term	-89.560*** (6.441)	10.070*** (1.345)	4.778 (4.877)	77.860*** (3.289)
<i>R</i> <sup>2</sup>	0.797	0.242	0.508	0.828
<i>N</i>	372	372	372	372

Note: Standard errors are in parentheses; \*, \*\*, and \*\*\* mean significance at 10%, 5%, and 1%, respectively.

**Table 2.** Regression results of economic-ecological performance assessment pressure

Variable	(1)	(2)	(3)	(4)
	Share of economic category expenditure	Proportion of expenditure on people's livelihood	Share of expenditure on environmental protection	Share of government operating expense
<i>Ps</i>	1.121** (0.509)	0.081 (0.108)	0.822** (0.385)	-1.112*** (0.261)
<i>Fde</i>	151.100*** (9.764)	-3.792* (2.064)	-2.958 (7.381)	-76.360*** (5.015)
<i>Fdi</i>	0.480 (0.508)	0.018 (0.107)	-0.217 (0.384)	-0.136 (0.261)
<i>Inds</i>	-0.167*** (0.051)	0.007 (0.011)	-0.057 (0.039)	0.091*** (0.026)
<i>Urb</i>	-0.609*** (0.078)	-0.077*** (0.017)	0.254*** (0.059)	-0.049 (0.040)
<i>Pgdp</i>	1.386*** (0.195)	0.356*** (0.041)	-0.217 (0.147)	-0.597*** (0.100)
<i>Edu</i>	2.772*** (0.716)	-0.285* (0.151)	3.050*** (0.541)	1.035*** (0.368)
Constant term	-87.440*** (6.224)	10.890*** (1.316)	5.691 (4.705)	74.500*** (3.196)
<i>R</i> <sup>2</sup>	0.798	0.229	0.514	0.828
<i>N</i>	372	372	372	372

Note: Standard errors are in parentheses; \*, \*\*, and \*\*\* mean significance at 10%, 5%, and 1%, respectively.

### 3.3. Impact of livelihood-ecological performance appraisal pressure on expenditure structure

Table 3 reports the specific impact of local governments' expenditure structure arrangement under livelihood-ecological performance appraisal pressure. This type of performance appraisal pressure is obtained by weighting the livelihood and ecology types of performance appraisal pressure values by 50%. The signs of the coefficients of performance appraisal pressure in Columns (2) and (3) are positive and pass the 10% and 1% significance

level tests, respectively. Therefore, the increase in the livelihood-ecological performance appraisal pressure can significantly promote the increase in the proportion of local governments' expenditure in the livelihood and environmental protection categories. The coefficient signs of performance appraisal pressure in Columns (1) and (4) are negative. Column (4) passes a 5% significance level test, suggesting that the increase in the livelihood-ecological performance appraisal pressure is not conducive to the increase in the proportion of expenditure on economic construction and that of expenditure on government operation.

**Table 3.** Regression results of people's livelihood-ecological performance assessment pressure

Variable	(1)	(2)	(3)	(4)
	Share of economic category expenditure	Proportion of expenditure on people's livelihood	Share of expenditure on environmental protection	Share of government operating expense
<i>Ps</i>	-0.634 (0.437)	0.594* (0.330)	0.256*** (0.091)	-0.523** (0.228)
<i>Fde</i>	153.400*** (9.807)	-2.871 (7.398)	-4.081** (2.043)	-76.900*** (5.110)
<i>Fdi</i>	0.517 (0.510)	-0.234 (0.385)	0.008 (0.106)	-0.125 (0.266)
<i>Inds</i>	-0.214*** (0.051)	-0.061 (0.038)	0.012 (0.011)	0.105*** (0.026)
<i>Urb</i>	-0.650*** (0.081)	0.269*** (0.061)	-0.067*** (0.017)	-0.058 (0.042)

**Table 3 (cont.).** Regression results of people's livelihood-ecological performance assessment pressure

Variable	(1)	(2)	(3)	(4)
	Share of economic category expenditure	Proportion of expenditure on people's livelihood	Share of expenditure on environmental protection	Share of government operating expense
<i>Pgdp</i>	1.267*** (0.192)	-0.256* (0.145)	0.362*** (0.040)	-0.532*** (0.100)
<i>Edu</i>	3.148*** (0.718)	3.089*** (0.541)	-0.326** (0.150)	0.920** (0.374)
Constant term	-86.310*** (6.286)	4.853 (4.742)	10.490*** (1.309)	75.190*** (3.276)
<i>R</i> <sup>2</sup>	0.797	0.512	0.246	0.821
<i>N</i>	372	372	372	372

Note: Standard errors are in parentheses; \*, \*\*, and \*\*\* mean significance at 10%, 5%, and 1%, respectively.

### 3.4. Impact of economic-livelihood-ecological performance appraisal pressure on expenditure structure

Table 4 reports the results of the specific effects of local governments on the expenditure structure arrangement under the economic-livelihood-ecological performance appraisal pressure. The performance appraisal pressure values constructed therein are weighted by the performance appraisal pressure values of economic, livelihood, and ecological types, all with a weight of 33%. The results reveal that the

coefficients of performance appraisal pressure in Columns (1), (2), and (3) are positive, indicating that an increase in the economic-livelihood-ecological type of performance appraisal pressure can correspondingly promote spending on economic, livelihood, and ecological aspects. In contrast, the coefficient of performance appraisal pressure in Column (4) remains negative at a 1% significance level. This suggests that when there is no appraisal of a government operation aspect, local governments usually compress the expenditure in this area and use the saved fund for expenditure in other areas. This result shows a certain regularity in this expenditure strategy arrangement of local governments.

**Table 4.** Regression results of economic-livelihood-ecological performance assessment pressure

Variable	(1)	(2)	(3)	(4)
	Share of economic category expenditure	Proportion of expenditure on people's livelihood	Share of expenditure on environmental protection	Share of government operating expenses
<i>Ps</i>	0.416 (0.554)	0.772* (0.417)	0.282** (0.115)	-1.197*** (0.283)
<i>Fde</i>	152.000*** (9.824)	-2.782 (7.392)	-3.990* (2.047)	-76.440*** (5.015)
<i>Fdi</i>	0.487 (0.511)	-0.216 (0.384)	0.017 (0.106)	-0.137 (0.261)
<i>Inds</i>	-0.185*** (0.052)	-0.057 (0.039)	0.013 (0.011)	0.088*** (0.026)
<i>Urb</i>	-0.607*** (0.081)	0.273*** (0.061)	-0.068*** (0.017)	-0.081* (0.042)
<i>Pgdp</i>	1.311*** (0.193)	-0.254* (0.145)	0.360*** (0.040)	-0.552*** (0.098)
<i>Edu</i>	2.924*** (0.721)	3.069*** (0.543)	-0.324** (0.150)	1.039*** (0.368)
Constant term	-88.010*** (6.332)	4.485 (4.764)	10.420*** (1.320)	76.390*** (3.232)
<i>R</i> <sup>2</sup>	0.796	0.512	0.241	0.828
<i>N</i>	372	372	372	372

Note: Standard errors are in parentheses; \*, \*\*, and \*\*\* mean significance at 10%, 5%, and 1%, respectively.

### 3.5. Economic-livelihood performance appraisal pressure

The result in Column (1) of Table 5 shows that the coefficient of economic-livelihood performance appraisal pressure gradually decreases with the weight of economic performance appraisal pressure. The coefficient of economic-livelihood performance appraisal pressure also undergoes a regression analysis from large to small, positive to negative sign, and high to low significance. Significance changes from high to low to high vividly show the trade-offs and adjustments of local governments' spending strategies under different incentive strengths. Column (2) presents the influence of the economic-livelihood type of performance appraisal pressure on the proportion of livelihood category expenditure under different weights. The same pattern exists and is significant; that is, as the weight of livelihood-type performance appraisal pressure gradually increases, the sign of the regression coefficient of economic-livelihood-type performance appraisal pressure is always positive; the value gradually increases, and the significance level keeps increasing, indicating that the performance appraisal system gives a relatively high incentive intensity of livelihood protection tasks in the performance appraisal system.

### 3.6. Economic-ecological performance appraisal pressure

Table 6 reports the results of the effects of economic-ecological performance appraisal pressure on the local government expenditure structure under different composition weights. Column (1) shows that as the weight of economic performance appraisal pressure decreases and that of ecological performance appraisal pressure increases, the economic-ecological performance appraisal pressure experiences a change from a significant positive promotion effect to a negative suppression effect on the proportion of economic construction expenditure; the higher the weight of economic performance appraisal pressure, the more significant the positive promotion effect, whereas the lower the weight of economic performance appraisal pressure, the more significant the negative suppression effect; the higher the weight of economic performance appraisal pressure, the more significant the positive promotion effect; the lower the weight of economic performance appraisal pressure, the more obvious the negative suppression effect. In Column (3), the economic-ecological performance appraisal pressure with different weights has the opposite effect on the share of environmental protection expenditure.

**Table 5.** Regression results of economic-livelihood performance appraisal pressure

Weight	(1)	(2)	(3)	(4)
	Share of economic category expenditure	Proportion of expenditure on people's livelihood	Share of expenditure on environmental protection	Share of government operating expense
90%:10%	1.280*** (0.367)	0.046 (0.078)	0.201 (0.282)	-0.848*** (0.190)
80%:20%	1.267*** (0.401)	0.088 (0.085)	0.236 (0.307)	-0.954*** (0.206)
70%:30%	1.166** (0.431)	0.140 (0.091)	0.270 (0.329)	-1.037*** (0.221)
60%:40%	0.958** (0.451)	0.194** (0.095)	0.292 (0.343)	-1.066*** (0.230)
40%:60%	0.323 (0.446)	0.268*** (0.093)	0.278 (0.337)	-0.907*** (0.228)
30%:70%	0.020 (0.421)	0.276*** (0.087)	0.246 (0.318)	-0.756*** (0.217)
20%:80%	-0.212 (0.389)	0.267*** (0.081)	0.210 (0.294)	-0.600*** (0.201)
10%:90%	-0.369 (0.355)	0.249*** (0.074)	0.174 (0.269)	-0.463** (0.185)

Note: Standard errors are in parentheses; \*, \*\*, and \*\*\* mean significance at 10%, 5%, and 1%, respectively.

**Table 6.** Regression results of economic-ecological performance assessment pressure

Weight	(1)	(2)	(3)	(4)
	Share of economic category expenditure	Proportion of expenditure on people's livelihood	Share of expenditure on environmental protection	Share of government operating expense
90%:10%	1.339*** (0.370)	0.023 (0.079)	0.254 (0.285)	-0.847*** (0.192)
80%:20%	1.415*** (0.410)	0.034 (0.088)	0.369 (0.315)	-0.962*** (0.212)
70%:30%	1.432*** (0.441)	0.049 (0.096)	0.514 (0.345)	-1.066*** (0.232)
60%:40%	1.344*** (0.487)	0.065 (0.103)	0.676* (0.370)	-1.129*** (0.250)
40%:60%	0.783 (0.511)	0.090 (0.108)	0.911** (0.384)	-1.000*** (0.263)
30%:70%	0.411 (0.492)	0.092 (0.103)	0.922** (0.369)	-0.818*** (0.254)
20%:80%	0.0857 (0.459)	0.087 (0.096)	0.869** (0.343)	-0.618*** (0.238)
10%:90%	-0.153 (0.418)	0.079 (0.088)	0.782** (0.313)	-0.439** (0.218)

Note: Standard errors are in parentheses; \*, \*\*, and \*\*\* mean significance at 10%, 5%, and 1%, respectively.

### 3.7. People's livelihood-ecological performance appraisal pressure

The results shown in Table 7 are the effects of livelihood-ecological performance appraisal pressure on the public local government expenditure structure with different composition weights. Under different weights, the impact of livelihood-ecological performance appraisal pressure on the share

of livelihood expenditure in Column (2) is always positive. However, as the weight of livelihood performance appraisal pressure gradually decreases, the strength of this positive impact tends to decrease gradually, including the significance level. Column (3) shows that when the weight of ecological performance assessment pressure is relatively high and continues to increase, the positive effect of livelihood-ecological performance assessment

**Table 7.** Regression results of livelihood-ecological performance assessment pressure

Weight	(1)	(2)	(3)	(4)
	Share of economic category expenditure	Proportion of expenditure on people's livelihood	Share of expenditure on environmental protection	Share of government operating expense
90%:10%	-0.513 (0.349)	0.244*** (0.072)	0.209 (0.264)	-0.395** (0.182)
80%:20%	-0.562 (0.375)	0.259*** (0.078)	0.291 (0.284)	-0.439** (0.196)
70%:30%	-0.604 (0.401)	0.269*** (0.083)	0.387 (0.303)	-0.480** (0.209)
60%:40%	-0.631 (0.422)	0.268*** (0.088)	0.492 (0.319)	-0.511** (0.220)
40%:60%	-0.605 (0.443)	0.229** (0.093)	0.677** (0.334)	-0.511** (0.231)
30%:70%	-0.548 (0.439)	0.192** (0.092)	0.729** (0.330)	-0.475** (0.229)
20%:80%	-0.472 (0.424)	0.149* (0.089)	0.743** (0.319)	-0.422* (0.221)
10%:90%	-0.389 (0.403)	0.107 (0.085)	0.726** (0.302)	-0.359* (0.210)

Note: Standard errors are in parentheses; \*, \*\*, and \*\*\* mean significance at 10%, 5%, and 1%, respectively.

pressure on the share of environmental protection expenditure increases significantly; the coefficient value of the variable also becomes large.

### 3.8. Economic-livelihood-ecological performance appraisal pressure

The regression coefficients of economic-livelihood-ecological performance appraisal pressure in Column (1) of Table 8 change from large to small and from positive to negative in sign as the weight of economic performance appraisal pressure decreases. The significance of the regression coefficients also changes from highly significant to insignificant to significant. Columns (2) and (3) show that as the weight of livelihood and ecological performance appraisal pressure increases, the positive effect of economic-livelihood-ecological performance appraisal pressure on the proportion of expenditure on livelihood and environmental protection increases significantly. The values of variable coefficients not only increase significantly but also increase significantly in significance. With the increase in the incentive intensity of the performance appraisal system for livelihood protection and ecological protection tasks, local governments have become proactive in their expenditure for livelihood and environmental protection. The effect of the economic-livelihood-ecological performance appraisal pressure in Column (4) on the share of government operating category expenditure always shows a significant inhibitory effect. This reverse effect is independent of

the weight sizes of other types of performance appraisal pressure.

## 4. DISCUSSION

Changes in the regression results are observed by assigning different weights to economic-based, livelihood-based, and ecological-based performance appraisal pressures; that is, different incentive strengths are assigned to different development tasks in the performance appraisal system. Unlike the previous research, this study considers the supervision role of local government by constructing the evolutionary model. Thus, the results are pretty comprehensive and indicate the following conclusions:

- The result is a high proportion of local government expenditure in the field of livelihood protection. This promotion effect becomes further significant.
- As the weight of economic performance appraisal pressure decreases and that of ecological performance appraisal pressure increases, the economic-ecological performance appraisal pressure always positively contributes to the share of environmental protection expenditure; the strength and significance of this contribution increase.
- In terms of setting the weight of economic-livelihood-ecological performance appraisal

**Table 8.** Regression results of economic-livelihood-ecological performance assessment pressure

Weight	(1)	(2)	(3)	(4)
	Share of economic category expenditure	Proportion of expenditure on people's livelihood	Share of expenditure on environmental protection	Share of government operating expense
100%:0%:0%	1.238*** (0.334)	0.168 (0.257)	0.014 (0.072)	-0.739*** (0.174)
80%:10%:10%	1.368*** (0.410)	0.307 (0.314)	0.063 (0.087)	-0.978*** (0.211)
60%:20%:20%	1.275** (0.495)	0.526 (0.377)	0.152 (0.105)	-1.229*** (0.253)
40%:30%:30%	0.695 (0.548)	0.734* (0.413)	0.256** (0.115)	-1.263*** (0.279)
20%:40%:40%	-0.134 (0.519)	0.743* (0.390)	0.293*** (0.108)	-0.930*** (0.267)
0%:50%:50%	-0.634 (0.437)	0.594* (0.330)	0.256*** (0.091)	-0.523** (0.228)

Note: Standard errors are in parentheses; \*, \*\*, and \*\*\* mean significance at 10%, 5%, and 1%, respectively.

al pressure, the influence on the local government expenditure structure in the process of changing from one-dimensional performance appraisal criteria to multidimensional performance appraisal criteria in the performance appraisal system, the gradual fading of the development concept of “GDP is the hero,” and the increasing importance of livelihood and ecological protection affect the expenditure structure of local governments.

discuss the effect of multidimensional performance appraisal on government spending policy. The effect of multidimensional performance appraisal on economic category expenditure, proportion of expenditure on people’s livelihood, and expenditure on environmental protection may be included. Moreover, the boosting effects of multidimensional performance appraisal strategies on government spending are worth evaluating.

However, this study also has several limitations. First, given that China has only recently adopted the multidimensional performance appraisal policy, there are not enough data on government spending disclosure. Thus, future studies may collect a larger sample and retrieve more data as the Chinese government continues to publish such information. Second, future research can

Considering that factual information on the extent to which current government spending policy has been implemented is difficult to obtain, future studies on government spending policy should be further detailed. At the same time, the efficiency of the multidimensional performance appraisal approach can be assessed, which better solves government spending issues.

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## CONCLUSION

This paper aims to analyze the effect of multidimensional performance appraisal on the structure of local government expenditure in China. As for the trade-off principle of local government expenditure structure, three general points are highlighted throughout the analysis. First, tasks with higher relative incentive intensity are more important to local governments and given a larger expenditure share. Second, increasing the incentive intensity of tasks reduces the expenditure on conflicting tasks and increases the share of expenditure on complementary tasks. Third, under the constraint of expenditure scale, local government officials prioritize tasks with higher marginal returns and tend to spend less or not on tasks excluded from the assessment system.

Based on this empirical analysis of multidimensional performance appraisal pressure, setting multiple critical tasks simultaneously in the performance appraisal system and increasing the importance of different tasks are conducive to guiding local governments to arrange more expenditure on related tasks. In this way, optimizing the expenditure structure can be achieved by improving the performance appraisal system. A performance appraisal system that does not conform to the objective development law is unhelpful to social development and may aggravate the contradiction of local government expenditure structure due to the heavy expenditure responsibility.

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