

# Study on the Impact of Local Fiscal Pressure on Basic Public Services in the Livelihood Sector

Xueting Wang, Shuguang Wang\*

Harbin University of Commerce, Harbin, 150023, Heilongjiang, China

\*Corresponding author

**Keywords:** fiscal pressure; transfer payments; fundamental public services in the livelihoods sector

**Abstract:** The current fiscal framework in China demonstrates significant vertical imbalance, wherein sub-national administrations experience constrained revenue-generating capacities relative to their expanding public service obligations. This structural discrepancy has precipitated acute fiscal stress across local governance units. In this context, Examining the correlation between fiscal constraints and the delivery capacity of essential public services represents a critical research imperative, particularly within the context of social welfare provision and livelihood security. Based on a balanced panel data set of 30 provincial-level regions in China from 2010 to 2023, empirical analysis reveals that fiscal pressure has severely constrains the improvement of basic public services in the people's livelihood domain. This conclusion is robust to various tests and is further shown to vary regionally, with a more pronounced negative impact in the central and western regions. Additionally, fiscal transfer payments can significantly mitigate the negative consequence of fiscal pressure on these services.

## 1. Introduction

As socialism with Chinese characteristics enters a new stage, living standards have risen and demand for livelihood services has increased. In this context, governments should prioritize people's livelihoods and meet basic needs in education, healthcare, and social security. China's "14th Five-Year Plan" emphasizes addressing shortcomings and improving equalization of basic public services. Local governments, as key providers, must ensure public service investment, clarify financial responsibilities, optimize resource allocation, and enhance public happiness and achievement. Nevertheless, local governments' current fiscal revenue and expenditure pattern faces challenges owing to the misalignment of financial and administrative authorities between central and local governments. On one hand, the rapid rise in fiscal spending must support not only economic growth but also social and livelihood needs, while also managing the pressure of repaying local debt principal and interest, increasing financial operation risks. On the other hand, the economic new normal and tax-fee reduction policies have slowed fiscal revenue growth, further widening the fiscal revenue-expenditure gap.

In recent years, China has used fiscal transfers to ease local financial pressure. This is a key institutional arrangement under fiscal decentralization and is crucial for regulating central-local government interactions. Considering this, the paper investigates how fiscal pressure affects basic public services in the area of public livelihood, and the system for modifying transfer payments. This research has important practical value for optimizing the financial allocation arrangement between the central authority and local administrations, enhancing the standard of basic public services in the realm of people's livelihood, and fulfilling the public's aspirations for a better life.

## 2. Literature review

Fiscal pressure, a common issue for local governments worldwide, has drawn significant attention from both domestic and international scholars. Bradbury (1983) suggests that fiscal pressure results from the persistent mismatch between government financial resources, spending

obligations, and actual needs. <sup>[1]</sup>Chrenick and Reschovsky (2017) argue that fiscal pressure is influenced by both institutional factors and the economic environment. This dual impact makes it challenging for local governments to align their fiscal revenue with their authority and spending responsibilities, thus worsening fiscal imbalances. <sup>[2]</sup>In the study of fiscal pressure in China, Some researchers argue that local fiscal pressure originates from the persistent disequilibrium between fiscal revenue and expenditure. Li Ming (2020) discovered that while fiscal pressure is linked to the current fiscal system, its origin can be traced back to the 1994 tax-sharing reform. <sup>[3]</sup> Zhang Weiliang (2023) believes that fiscal pressure mainly stems from the structural imbalance between the government's long-term fiscal disbursements and revenue.<sup>[4]</sup> Within the fiscal system reform process, institutional shortcomings cause fiscal pressure and the lag in design creates financial difficulties for local governments. Fan Ziyang (2015) argues that fiscal pressure continues because the central government centralizes financial power while decentralizing expenditure responsibilities to local governments, resulting in a misalignment between financial and administrative authorities.<sup>[5]</sup>

In examining how fiscal pressure influences local government fiscal expenditure, Xu Chao (2020) believes that public demand for goods and services has a "ratchet effect"—once a certain level is reached, expectations are hard to reduce. Meanwhile, driven by local government promotion incentives, it's often difficult to directly cut fiscal expenditure when facing fiscal pressure; instead, fiscal pressure is alleviated by adjusting the expenditure structure. <sup>[6]</sup>Yan Kun and Huang Xiao (2022) found that the vertical imbalance of fiscal revenue will have an impact on the expenditure bias of local governments, and then reduce the provision level of basic public services.<sup>[7]</sup>Zheng Rong (2024) focuses on the impact of changes in "education authority" on fiscal pressure, and finds that there is a crowding out effect of fiscal expenditure between different public service projects in the area of people's livelihood, for example, the increase in fiscal expenditure in the field of education will crowd out the financial investment in the field of medical and health care. <sup>[8]</sup>

Fiscal transfer payments, as a budget adjustment tool, can notably reduce local governments' financial burden, spur them to boost public service spending, and elevate the level of people's livelihood services. Chu Deyin (2018) believes that general transfer payments can effectively reduce the vertical imbalance of central and local governments by the discrepancy between local fiscal income and spending, thereby alleviating fiscal pressure.<sup>[9]</sup>Hu Hongshu (2019) further argues that transfer payments can guide local governments' spending preferences to favor people's livelihood and strengthen the general supply of public services. <sup>[10]</sup>Hu Yujie (2023) finds that the perpendicular imbalance of fiscal will significantly inhibit the improvement of the provision quality of public services related to people's livelihood, while transfer payments positively impact the provision of local public services for people's livelihood.<sup>[11]</sup>

### **3. Research hypotheses**

#### **3.1. Mechanisms of fiscal pressure on basic public services in the area of livelihoods**

In China's fiscal decentralization framework, the fiscal independence of local governments is constrained by the centralized nature of the political system, while assuming most responsibility for the provision of livelihood services. As a result, local grassroots fiscal expenditures far exceed fiscal revenues, forming a gap between revenue and expenditure, which in turn puts local governments under heavy financial pressure. In some areas with greater fiscal pressure, Local governments have been compelled to cut expenditures in people's livelihood sectors to ease the pressure. Local officials face dual pressures during their tenure: a performance appraisal system favoring economic growth and personal promotion incentives. These pressures force them to allocate limited financial resources, often prioritizing quick-win areas like infrastructure over long-term investments in essential public services like education, healthcare, and social security. This preference crowds out resources for people's well-being, exacerbates public goods imbalances, and results in a fiscal expenditure structure that neglects livelihood services, hindering improvements in basic public service supply.

Hypothesis H1: Fiscal pressure will have a significant inhibition effect on the level of basic public service provision is enhanced in the field of people's livelihood.

### 3.2. Transfer payments can moderate how fiscal pressure affects the provision level of fundamental public services in the people's livelihood area

Fiscal transfers are an important compensatory mechanism to address the imbalance between central and local financial income and spending, and can guide local governments to allocate more resources towards livelihoods, avoiding excessive bias in favour of economic construction due to pressures for economic growth and political advancement, and thus reducing crowding out of livelihoods.

Hypothesis H2: Transfer payments can weaken the inhibitory effect of fiscal pressure on the level of basic public services in the field of people's livelihood.

## 4. Research design

### 4.1. Benchmark modeling

This research will empirically examine the influence of fiscal pressure on public services in the field of people's livelihood. The benchmark regression model was constructed as shown in (1), and a two-way fixed-effect model was employed for the estimation.

$$Ps_{it} = \alpha_0 + \alpha_1 fp_{it} + \sum_j X_j Controls_{jit} + \mu_{it} + \varepsilon_{it} \quad (1)$$

The level of public services in the realm of people's livelihood serves as the explanatory variable, the fiscal pressure serves as the central explanatory variable,  $Controls_{jit}$  is the control variable,  $\mu_{it}$  and  $\varepsilon_{it}$  are the individual fixed effects and time fixed effects, and  $\varepsilon_{it}$  is the random interference term.

A moderation model is developed to verify whether transfer payments affect the extent of basic public services in the realm of public's livelihood domain due to fiscal pressure, as shown in (2):

$$Ps_{it} = \alpha_0 + \alpha_1 fp_{it} + \alpha_2 Trans_{it} + \alpha_3 (fp \cdot Tran) + \sum_j X_j Controls_{jit} + \mu_{it} + \varepsilon_{it} \quad (2)$$

Among them, fiscal transfer payment is the adjustment variable.  $fp \times Tran$  represents the interaction between fiscal pressure and transfer payment, in order to confirm the moderating influence of transfer payments on the link between fiscal pressure and the extent of basic public services in the people's livelihood domain.

### 4.2. Selection of variables

(1) Explained variable: standard of essential basic public services in the area of people's livelihoods

At present, most scholars mainly focus on the comprehensive estimation of the efficiency of fiscal spending (Ma Haitao and Liu Zichang, 2025),<sup>[12]</sup> and the provision of public services in a single domain, like education, healthcare, or the equalization of fundamental public services (Zhang Tiantian and Lv Shuli, 2025).<sup>[13]</sup> In terms of evaluation methods, commonly used methods include DEA-Malmquist index analysis, principal component analysis and entropy weight method. Few studies have systematically analyzed a multi-dimensional index system for public service levels in the people's livelihood field. Drawing on the definitions from the 20th National Congress of the Communist Party of China, a comprehensive evaluation index system was constructed, including four first-level indicators (education, healthcare, social security, and public cultural services) and 12 second-level indicators. Using the entropy method in Stata 18.0, the public service level scores for each province from 2010 to 2023 were calculated.

(2) Core explanatory variable: fiscal pressure.

Drawing on the calculation method of Chu Deyin (2024), the fiscal pressure is measured from the angle of the fiscal revenue-expenditure gap, and the proportion of the revenue-to-expenditure gap ratio of the local government's general public budget to local GDP is used as the measurement

index of fiscal pressure, that is,  $\text{fiscal pressure} = (\text{general public budget expenditure} - \text{general public budget revenue})/\text{GDP}$ .<sup>[14]</sup>

(3) Moderating variable: transfer payments.

By efficiently distributing financial resources, transfer payments steer local governments to increase funding in key livelihood areas such as education, healthcare, social security, and culture, thereby boosting the enhancement of basic public services in the people's livelihood area. The per capita general transfer payment amount is used for measurement and logarithmic processing.

(4) Control variables

The level of economic development is assessed by the proportion of regional GDP to total population, population density is measured by the ratio of the number of permanent residents in the region to the land coverage of the region, urbanisation rate is measured by the ratio of the permanent urban population to the total permanent population of the region, the heightened industrial structure is measured by the ratio of the three industrial structures to the GDP, and the strength of financial support is measured by the ratio of the overall financial expenditure of the public budget to the geographical GDP.

### 4.3. Data sources

This study employs panel data from 30 Provincial-level administrative divisions in China, spanning 2010 to 2023 to empirically examine how fiscal pressure affects basic public services in the people's livelihood domain. Due to the availability of data the Hong Kong, China and Macao, China Special Administrative Regions, Taiwan China Province are not included in this article. The data originates from the China Fiscal Yearbook, the China Statistical Yearbook and the provincial (municipal) statistical yearbooks. Descriptive statistics of the variables are shown in Table 1.

Table 1 Descriptive statistics of variables

variable name	sample size	average value	standard deviation	minimum value	maximum values
Level of basic public services in the area of people's livelihoods	420	0.308	0.113	0.103	0.606
financial pressure	420	0.138	0.101	0.014	0.544
Level of transfer payments	420	8.345	0.574	6.983	9.950
Level of economic development	420	10.857	0.497	9.464	12.208
population density	420	5.464	1.286	2.054	8.282
urbanization rate	420	0.600	0.123	0.338	0.896
Heightened industrial structure	420	2.395	0.126	2.133	2.844
Financial support	420	0.256	0.110	0.105	0.758

## 5. Analysis of empirical results

### 5.1. Benchmark regression

To evaluate how fiscal pressure affects basic public services in the people's livelihood area, a two-way fixed effects model is used, with the results displayed in Table 2. Column (1) displays the regression findings for the core explanatory variables alone, while column (2) adds control variables for a more comprehensive analysis.

As can be seen in column (1), the regression coefficient of the core explanatory variable fiscal pressure is -0.016 but fails the test of significance. Column (2) after adding control variables, the regression coefficient of fiscal pressure is -0.213 and significant at 1% level. This indicates that fiscal pressure significantly reduces the level of basic public services in the field of people's livelihood, which is aligns with hypothesis H1.

In terms of control variables, economic development level and population density negatively

affect basic public services in the people's livelihood area, while urbanization level and industrial structure upgrading positively impact these services.

Table 2 Benchmark regression results

variant	(1)	(2)
	Livelihood public service level	Livelihood public service level
Fiscal pressure	-0.016	-0.213***
	(-0.325)	(-3.100)
Level of economic development		-0.053***
		(-5.224)
Population density		-0.127***
		(-3.586)
Urbanization rate		0.408***
		(6.576)
High industrial structure		0.063*
		(1.738)
Level of financial support		-0.009
		(-0.179)
constant term (math.)	0.310***	1.213***
	(46.282)	(6.506)
Area/year fixed effects	containment	containment
R <sup>2</sup>	0.132	0.189
observed value	420	420

## 5.2. Robustness test

### 5.2.1. Replacement of explanatory variables

To ensure the model's reliability and robustness, this paper measures Deap2.1 software to determine the efficiency of basic public service expenditure in the people's livelihood field for the explanatory variables. Tobit panel data model is chosen to analyse the relationship between fiscal pressure and the efficiency of basic public services in the field of people's livelihood. The regression outcomes are presented in column (1) of Table 3, and the effect of fiscal pressure on the efficiency of basic public service expenditures in the field of people's livelihood is still significantly negative, which reinforces the credibility of the research conclusions.

### 5.2.2. Endogenous problems

To address potential endogeneity issues stemming from reverse causality between fiscal pressure and basic public service levels in the people's livelihood domain, this study will address the standard of fundamental public services in the people's livelihood domain, which can alleviate the interference of reverse causality on the model estimation results to a certain extent. As indicated in column (2) of Table 3, the core regression coefficient for fiscal pressure is significant at the 1% level. This suggests that fiscal pressure has a substantial negative influence on the level of basic public services in the field of people's livelihood in the subsequent period, further corroborating the detrimental influence of fiscal pressure on these services.

### 5.2.3. Sub sample regression

Taking into account that municipalities directly under the Central Government have unique administrative characteristics and scale levels, their economic, financial, and public service provision are significantly different from those of other provinces. In this paper, the municipalities were excluded from the regression analysis. The findings indicate that the regression coefficient linked to fiscal pressure, excluding centrally-administered municipalities, is notably negative at the 1% level. (see Table 3 column (3)), which further confirms the negative consequence of fiscal pressure on the standard of basic public services in the area of people's livelihood domain.

Table 3 Robustness test

variable name	(1) Replacement of explanatory variable measures	(2) One period of lagging fiscal pressure	(3) Excluding municipality samples
Fiscal pressure	-0.093*** (-2.693)	-0.112*** (- 1.982)	-0.263** (-3.594)
constant term	2.981*** (4.798)	1.256*** (6.041)	1.098*** (5.093)
constant term	containment	containment	containment
area/year fixed effects	containment	containment	containment
N	300	390	364
R <sup>2</sup>	0.232	0.135	0.019

Note: \*, \*\*, and \*\*\* denote significant at the 10%, 5%, and 1% levels, respectively. T-values are in parentheses.

### 5.3. Moderating effects test

To test the mechanism between fiscal pressure, transfer payment and the standard of basic public services in the domain of livelihood support, this paper performs a regression analysis of the moderating effect model (2). As shown in Table 4, the interaction term between fiscal pressure and fiscal transfer payment is significantly positive at the level of 5%, indicating that fiscal transfer payment can significantly alleviate the inhibition effect of fiscal pressure on basic public services in the field of people's livelihood, which verifies Hypothesis 2. This finding further underscores the significance of improving the transfer payment system to better play its positive impact in advancing the equalization of basic public services and strengthening of the level of livelihood protection.

Table 4 Moderating effects test

variant	Livelihood public service level
Fiscal pressure	-0.114** (-2.10)
Transfers × financial pressures	0.016** (2.19)
Transfer payments	-0.014** (-0.89)
Level of economic development	-0.255*** (-5.66)
Population density	-0.143 (-1.25)
Urbanization rate	-0.297* (-1.85)
Industrial structure	0.041 (0.37)
Level of financial support	-0.835*** (-4.67)
constant term (math.)	4.387*** (4.13)
sample value	420
R <sup>2</sup>	0.985

Note: \*, \*\*, and \*\*\* denote significant at 10%, 5%, and 1% levels respectively. T-values are in parentheses.

### 5.4. Heterogeneity analysis

There are notable disparities in the degree of economic development, social history and culture,

and wealth creation potential in diverse areas of China. It is challenging to effectively capture the results of inter-regional heterogeneity by conducting regression analysis on the sample data of the whole country only. Therefore, this paper divides the 30 provinces in the country into four regions, the east, the center, the west and the northeast, based on their levels of economic development, to examine whether there are regional differences in the impact of fiscal pressure on the standard of basic public services in the people's livelihood area.

Table 5 Analysis of regional heterogeneity

variant	eastern region	northeastern region	western region	central region
Fiscal pressure	-0.015 (-0.082)	0.110 (0.753)	-0.266*** (-2.916)	-0.041** (-2.104)
Level of economic development	-0.068*** (-3.135)	-0.055 (-1.043)	-0.009 (-0.413)	-0.131*** (-4.111)
Population density	0.011 (0.123)	-0.459*** (-3.712)	-0.426*** (-6.355)	0.780*** (3.184)
Urbanization rate	0.466*** (4.585)	-0.551 (-1.113)	0.250* (1.798)	0.934*** (3.889)
Industrial structure	0.017 (0.159)	0.113 (1.418)	0.150*** (2.834)	-0.024 (-0.229)
Level of financial support	-0.214 (-1.582)	-0.243** (-2.419)	0.083 (1.301)	-0.378* (-1.825)
constant term (math.)	0.727 (1.468)	3.313*** (4.082)	1.755*** (4.929)	-3.134** (-2.296)
area/year fixed effects	containment	containment	containment	containment
N	154	42	154	70
R <sup>2</sup>	0.168	0.464	0.471	0.320

Note: \*, \*\*, and \*\*\* denote significant at the 10%, 5%, and 1% levels, respectively. T-values are in parentheses.

As shown in Table 5, the regression analysis indicates that fiscal pressure is not significant correlated with basic public services in China's eastern and northeastern regions, but is significantly negatively correlated in the western and central regions (at 1% and 5% levels, respectively). This may be because the eastern coastal provinces, with high economic development and strong fiscal capacity, can use more funds for public services, making fiscal pressure's impact insignificant or even positive. The northeastern region, being vast and sparsely populated, also shows no significant impact. In contrast, the central and western regions, with weaker economies, prioritize fiscal funds for economic growth-related areas like infrastructure, neglecting livelihood services. Despite national strategies for coordinated development, resource allocation challenges persist, and the high demand for livelihood services in these regions makes them more vulnerable to fiscal pressure's negative effects.

## 6. Conclusions

Using the panel data of 30 provinces in China from 2010-2023 as a sample, this paper finds that fiscal pressure has a significant negative impact on the level of public service coverage in the area of people's livelihood, and the results still hold after the robustness test. Further analyses show that fiscal transfers have a significant moderating effect and can weaken the negative impact of fiscal pressure on the level of public service provision. Heterogeneity analyses show that fiscal pressure has a significant negative impact on the central and western regions. The research insights include: first, to construct a central-land relationship with 'clear powers and responsibilities, coordinated financial resources, and regional balance', to clarify the responsibilities of all levels of government in the supply of public services in the field of people's livelihood, and to establish a dynamic adjustment mechanism; second, to improve the performance appraisal mechanism of the local government, to establish a people's livelihood-oriented appraisal system, to incorporate education,

medical care, social security, and other service provision into it, build a performance-oriented budget allocation mechanism, and reduce the negative impact of fiscal pressure on the quality of public services; third, optimise the structure of transfer payments, tilting them towards education, healthcare, social security, and other basic livelihood areas; and fourth, improve the incentive mechanism for the promotion of officials, and guide local officials to establish a scientific view of performance, enhance their sense of responsibility for people's livelihoods, and rectify the tendency of focusing on the economy rather than on people's livelihoods.

## References

- [1] Bradbury K L, Structural Fiscal Distress in Cities: Causes and Consequences[J]. *New England Economic Review*, 1983, 41(2-3):32-44.
- [2] Chernick H, Reschovsky A, The fiscal condition of U.S. cities: revenues, expenditures, and the "Great Recession"[J]. *Journal of Urban Affairs*, 2017, 39(4):488-505.
- [3] Li Ming, Long Xiaoyan. Realistic Dilemma and Cracking Path of Local Financial Pressure under the Background of Tax and Fee Reduction[J]. *Contemporary Economic Management*, 2020, 42(09):60-69.
- [4] Zhang, Wei-Liang, Song, Li-Ying. Can Digital Economy Ease Fiscal Pressure? --Empirical evidence from Chinese cities[J]. *Journal of Hubei University (Philosophy and Social Science Edition)*, 2023,50(01):162-171.
- [5] FAN Zi-Ying. Root causes of land finance: financial pressure or investment impulse[J]. *China Industrial Economy*,2015(06):18-31.
- [6] Xu Chao, Pang Yumeng, Liu Di. Local Fiscal Pressure and Government Expenditure Efficiency: A Quasi-Natural Experiment Analysis Based on Income Tax Sharing Reform[J]. *Economic Research*,2020,55(06):138-154.
- [7] Yan Kun, Huang Xiao. Research on Chinese-style decentralization, fiscal vertical imbalance and basic public service provision[J]. *Economics Dynamics*, 2022, (12):37-50.
- [8] Zheng Rong, SU Shidong. Local Government Fiscal Pressure and Healthcare Expenditures-Evidence from the Reform of Education Rights[J]. *Dongyue Lecture Series*, 2024,45(11): 118-128+192.
- [9] Chu Deyin, CHI Shuxian. Do transfer payments reduce Chinese-style fiscal vertical imbalances[J]. *Finance and trade economy*,2018(9):23-38.
- [10] Hu Hongshu, Wu Strongqi. Research on the impact of transfer payments and fiscal efforts on the supply of basic public services--a threshold effect analysis based on provincial panel data[J]. *Journal of Central China Normal University (Humanities and Social Sciences Edition)*,2019,58(06):95-105.
- [11] Hu Yujie, Gao Yanlei, Wang Xiudong. Fiscal Vertical Imbalance, Transfer Payments and Livelihood Public Service Provision[J]. *Contemporary Finance*, 2023(11):41-53.
- [12] Ma Haitao, Liu Zichang. Empirical Study on Comprehensive Performance Evaluation of Fiscal Operation and Fiscal Expenditure Efficiency of Local Governments--Panel Data from Prefecture-level Cities in China[J]. *Journal of Central University of Finance and Economics*, 2025,(01):16-29.
- [13] Zang Tiantian, Lv Shuli. Research on the Efficiency of Social Security Fund Expenditure in China from the Perspective of Common Wealth[J]. *Journal of Henan University of Technology (Social Science Edition)*,2025,26(02):35-44.
- [14] Chu Deyin, Cheng Yangfan, Ying Xue. Fiscal pressure, transfer payments and high-quality economic development[J]. *Research on Finance and Trade*,2024,35(08):57-68.