Original Research Article

The impact of fiscal revenue on local government competition

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Abstract: Based on panel data from 286 prefecture-level cities from 2013 to 2022, this study empirically analyzes the effect of fiscal revenue on the enhancement of local government competitiveness using a two-way fixed-effects model.The findings indicate that fiscal revenue can significantly enhance government competitiveness. The mechanism analysis shows that fiscal revenue effectively boosts government competitiveness by stimulating regional innovation capabilities and optimizing the business environment.Accordingly, the study proposes two suggestions: to adopt multiple measures to increase fiscal revenue and to implement targeted policies to enhance government competitiveness, in order to promote the improvement of government competitiveness through increased fiscal revenue.

Keywords: Fiscal revenue; Government competitiveness; Regional innovation; Business environment

1. Introduction

Local fiscal revenue, as an important financial guarantee for local governments to perform their functions, provide public services, and promote economic and social development, directly affects the competitiveness of local governments in terms of its scale, structure, and efficiency.Against the backdrop of the continuous deepening of globalization and regional economic integration, competition among local governments has become increasingly fierce[1].This competition is not only reflected in the scramble for economic resources but also in multiple dimensions, such as regional innovation and the business environment.Therefore, exploring in depth the impact mechanism of local fiscal revenue on the competitiveness of local governments is of great theoretical and practical significance for improving the governance efficiency of local governments and promoting coordinated regional development.

In recent years, research on the impact of local government fiscal revenue has focused on various aspects such as regional economy and public services.By increasing fiscal revenue, local governments can invest more in public facilities such as transportation and energy, thereby improving the regional development environment. At the same time, the increase in fiscal revenue helps to increase investment in education, scientific and technological innovation, and talent introduction[2], which in turn promotes the upgrading of the regional economic structure.In addition, fiscal revenue can also be used to strengthen environmental monitoring and governance, and to promote the development of resource-saving and environmentally friendly industries.Regions with larger fiscal revenue scales have stronger expenditure capabilities in areas such as education, healthcare, and social security, and thus provide higher levels of public services[3].

Research on local government competition factors is multi-dimensional, focusing on political incentives, institutional environment, and regional cooperation:

Political incentives: GDP-centered performance evaluation once led to fierce economic growth competition [3], sometimes at the cost of the environment and public services. With increased emphasis on environmental protection and people's livelihood indicators, competition strategies have shifted toward high-quality development and "positive competition".

Institutional environment: Institutional arrangements like fiscal decentralization constrain competitive behavior and curb malicious competition [4].

Regional cooperation: As regional economic integration advances, competition has evolved from "zero-sum games" to "win-win cooperation" amid growing demand for collaboration.

Thus, the marginal contributions of this study are as follows:

1. Expanding research perspectives: By focusing on two key transmission mechanisms—regional innovation and business environment—it reveals the in-depth impact pathways of fiscal revenue on government competitiveness, enriching theoretical research on the relationship between fiscal revenue and local government competitiveness.

2. Providing practical insights: It offers new ideas for the transformation of local governments' competition strategies under the background of high-quality economic development, emphasizing the importance of innovation and business environment optimization in enhancing government competitiveness, with significant practical guiding value.

2. Research hypotheses

2.1. The comprehensive impact of fiscal revenue on local government competitiveness

Fiscal revenue has a crucial impact on the competitiveness of local governments.First, adequate fiscal revenue enables local governments to strengthen infrastructure construction to attract talent and industry and improve the level of public service provision.Second, fiscal revenue provides financial security for local governments to implement industrial support policies and investment attraction activities, thereby increasing the intensity of regional industrial support and investment attraction policies.Finally, it enhances the ability to cope with risks and crises.During economic downturns, local governments can increase fiscal expenditure and implement active fiscal policies to boost economic vitality and stabilize employment.Improvements in these areas help to improve the regional investment environment, attract talent and resources, and promote industrial upgrading, thereby gaining a competitive edge in regional competition.Conversely, insufficient fiscal revenue will restrict the development of local governments in these key areas and weaken the region's competitiveness.

2.2. The mechanism by which fiscal revenue enhances local government competitiveness

Fiscal revenue boosts local government competitiveness by strengthening regional innovation. It finances scientific research, builds innovation platforms, optimizes education, and implements talent policies, which fosters new technology development and a vibrant innovation ecosystem. Enhanced regional innovation attracts high-tech firms and talent, driving industrial upgrading, economic growth, and job creation, and enhancing regional economic vitality. Moreover, innovation improves public service quality through new technology applications, increasing resident satisfaction and government credibility. It also enables local governments to make more forward-thinking policies, enhancing their regional leadership. In sum, fiscal revenue significantly enhances local governments' competitiveness in economic, public service, and policy dimensions, giving them an edge in regional competition [5].

Fiscal revenue enhances local government competitiveness by optimizing the business environment. It provides financial/policy support for infrastructure improvement, administrative approval streamlining, and enterprise policy implementation to reduce corporate costs, enhance efficiency, and foster a favorable business ecosystem. A better business environment attracts investment/entrepreneurship, promotes industrial agglomeration and diversified economic development, creates jobs, and strengthens regional economic vitality and attractiveness[6].Meanwhile, a sound business environment boosts enterprise innovation and competitiveness [7], accelerates industrial upgrading, and enhances the sustainability of the local economy. Additionally, it improves residents' quality of life and satisfaction, enhances government credibility, and elevates the local government's image and appeal in the region.

Hypotheses:

Hypothesis1: Increased fiscal revenue has a positive effect on local government competitiveness.

Hypothesis2: Fiscal revenue enhances local government competitiveness by promoting regional innovation capabilities and optimizing the business environment.

3. Data description and model specification

3.1. Data description

This study selects 286 prefecture-level cities in 30 provinces of China, excluding Tibet and the Hong Kong, Macao, and Taiwan regions, as the research sample.After excluding missing data and outliers, a total of 2, 733 valid annual observations were obtained.The data used in this study are sourced from the EPS Global Statistical Database, China Economic Network Database, Zhejiang University Taizhou - Qiyan China Inclusive Finance Database (TFID), China City Statistical Yearbook, and China City Competitiveness Report.

3.2. Variable selection and description

3.2.1. Dependent variable: local government competitiveness(Comp)

The local government competitiveness index in the Report on China's Urban Competitiveness evaluates cities' capabilities in resource attraction, market competition, and sustainable development, employing a comprehensive indicator system across economic, social, and environmental aspects with scientific data methods. It guides urban strategy and policy formulation, aids investors in assessing regional investment potential, and supports decisions to foster coordinated regional growth and narrow development disparities.

3.2.2. Core explanatory variable: local government fiscal revenue(Revenue)

Fiscal revenue refers to the monetary funds collected by the state, in accordance with legal standards, to fulfill its functions, leveraging its political power or social management capabilities.It serves as the primary source of funding for the government to implement macroeconomic regulation, provide public services, safeguard social stability, and promote economic development.

3.2.3. Mechanism variables

(1)Regional Innovation Level (Innova).Drawing on the research methodology of Tan et al.[8], this paper measures this indicator by taking the natural logarithm of (the number of patent applications + 1).The number of patent applications is a classic output indicator of technological innovation, characterized by easy data accessibility and international comparability.

(2)Business Environment Level (Business).This study regards the scale of small, medium, and micro enterprises (SMMEs) in the market as an important indicator for measuring market entry barriers and market vitality, thereby indirectly reflecting the regional business environment level.

3.2.4. Control variables

To control for other factors that may affect local government competitiveness, the following control variables are selected:

Urban: Represented by the proportion of urban population in the total population; Overview: Represented by per capita road area; Infra: Represented by the proportion of value added of the secondary industry in GDP; Finance: Calculated as the natural logarithm of the year-end deposit and loan balance of financial institutions.

3.3. Model specification

To investigate the impact of fiscal revenue on government competitiveness, the following two-way fixed effects model is constructed in this paper:

$$Comp_{it}=\beta_0+\beta_1 Revenue_{it}+\beta_2 X_{it}+\mu_i+\lambda_t+\varepsilon_{it} \quad (1)$$

Here, the explained variable $Comp_{it}$ denotes the government competitiveness of region i in year t, the explanatory variable $Revenue_{it}$ represents the fiscal revenue of region i in year t, is a vector of control variables, and λ_t respectively represent the individual and time fixed effects, and ε_{it} is the random disturbance term.

4. Econometric results and analysis

4.1. Benchmark regression analysis

Table 1 presents two models: Model (1) with only the independent variable and Model (2) that adds control variables. The results of Model (2) reveal a significant positive link between fiscal revenue and government competitiveness, with a regression coefficient of 0.027 (significant at the 5% level). This shows that rising fiscal revenue can boost government competitiveness. More fiscal revenue allows the government to invest in infrastructure, optimize the business environment, and attract enterprises and talent. It also enables more resources for innovation and industrial support, driving economic transformation and new growth. These actions enhance the government's resource - allocation and economic - development abilities, strengthening its overall competitiveness in regional competition. Thus, Hypothesis 1 is supported[9].

4.2. Further analysis

4.2.1. Mechanism analysis

To test Hypothesis 2 proposed in this paper, this study follows the two-step mediation effect testing approach to analyze the two pathways mentioned above.Based on the benchmark regression model (1), this study sets up equation (2) for the mediation effect test:

$$Mediator_{it}=\alpha_0+\alpha_1 Revenue_{it}+\alpha_2 X_{it}+\mu_i+\lambda_t+\varepsilon_{it} \quad (2)$$

Here, the definitions and measurement methods of $Revenue_{it}$、X_{it}、μ_i、λ_t and ε_{it} are consistent with those in equation (1).represents the mediating variables, which are the regional innovation level (Innova) and the level of the business environment (Business) mentioned earlier.The final regression analysis results are presented in **Table 1**.

Table 1. Mechanism tests.

	(1) Comp	(2) Comp	(3) Innova	(4) Business
Revenue	0.035***	0.027**	0.209***	0.684***
	(0.011)	(0.011)	(0.076)	(0.232)
Urban		-0.149***	0.216	0.288
		(0.056)	(0.403)	(0.934)
Overview		-0.001**	0.004	0.004
		(0.001)	(0.003)	(0.008)
Infra		0.001**	0.000	-0.001
		(0.000)	(0.003)	(0.007)
Finance		0.020	0.050	-0.009
		(0.013)	(0.034)	(0.092)
_cons	-0.010	-0.081	6.061***	4.542***
	(0.052)	(0.118)	(0.503)	(1.476)
N	2733	2733	2733	2733
R^2	0.894	0.897	0.952	0.725

Note: The values in parentheses are clustered robust standard errors at the city level.***.**, and *indicate that the regression coeflicients are significant at the 0.01, 0.05, and 0.10 levels, respectively.

As described earlier, the level of regional innovation has a positive effect on enhancing government competitiveness, and their relationship is influenced by multiple factors, among which financial support is a crucial one.This enables local governments to establish diverse innovation incentive mechanisms to encourage enterprises and research institutions to increase their R&D investment[10].Financial support can also promote cooperation and exchange between regions.Local governments can invest funds to establish innovation cooperation mechanisms with other regions, share innovation resources, and carry out joint R&D and innovation projects. This helps to enhance the technological innovation capability within the region and strengthens the influence and competitiveness of local governments in regional cooperation.Therefore, only the impact of fiscal revenue on the level of regional innovation is reported here.In Model (3) of Table 1, the coefficient of Revenue is significantly positive at the 1% level, indicating that fiscal revenue promotes innovation and entrepreneurship in the region, thereby enhancing government competitiveness.

A favorable business environment attracts foreign-funded enterprises and high-end talents, bringing advanced management concepts and technologies.It prompts government administrative reform, bridges the government-market gap, and drives digital technology adoption for efficient, intelligent services, fostering local government development.Digital technology also enhances market regulation, boosting entities' credit awareness and social responsibility to maintain social stability[11].A stable environment ensures market order and healthy growth, enhancing government competitiveness.Here, we focus on fiscal revenue's impact on the business environment.In Table 1's Model (4), the Revenue coefficient is significantly positive at 1%, indicating fiscal revenue improves the regional business environment, boosts business establishments, and thus enhances government competitiveness.These findings underscore fiscal revenue's crucial role in this process.

5. Research conclusions and policy recommendations

5.1. Research conclusions

Firstly, fiscal revenue significantly enhances local government competitiveness; the more fiscal revenue a government has, the higher its competitiveness.Secondly, fiscal revenue indirectly boosts government competitiveness through transmission mechanisms such as enhancing regional innovation capabilities and improving the business environment.

5.2. Policy recommendations

5.2.1. Increase fiscal revenue through multiple measures

Optimize tax policies and adjust the tax structure equitably to incentivize emerging industries.Foster economic growth through industrial upgrading and innovation, boosting corporate profits and tax revenues.Enhance fiscal management efficiency, minimize waste, and ensure prudent use of funds via scientific budgeting and performance assessments.

5.1.2. Implement targeted policies to enhance government competitiveness

Boost innovation investment by establishing dedicated funds for R&D projects and innovation platforms to elevate regional innovation.Streamline administrative approvals to cut corporate costs, offer one-stop services, and fortify IP protection to refine the business environment.Increase education funding to nurture innovative talent, implement talent recruitment policies to attract top-tier professionals, and cultivate a conducive innovation ecosystem.

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