

The Reproduction of “Disparity” under the Appearance of “Equity”: The Impact of Financial Investment in After-school Services under the “Double Reduction” Policy on Regional Educational Equity in Zhejiang Province

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Abstract

With the implementation of the “Double Reduction” policy, after-school services have gradually been integrated into the compulsory education system. The panel data of the 11 prefectural cities in Zhejiang Province from 2020 to 2023 are used in this paper; per-student public expenditure is taken as the main index, variance coefficients are employed to address regional differences, and goodness-of-fit indicators (R^2) are used to determine how well local financial capacity and fiscal effort explain the fluctuations in per-student funding. Based on the above analysis, it can be seen that after the implementation of the policy, Zhejiang's spending on compulsory education after-school services has increased steadily, and the relative difference between regions has been reduced. As the power of local financial capacity has increased, so too has the per-student funding due to capital accumulation. Fiscal efforts have had weak explanatory power; therefore, it can be concluded that the funding difference is due to objective financial constraints and not to any subjective reasons. Therefore, it is proposed that a provincial-level precise transfer payment system be built to strengthen the accountability mechanism and advance the goal of educational fairness across the country.

Keywords

“Double Reduction” policy, after-school services, fiscal investment, educational equity, local financial capacity

1. Introduction

In July 2021, China officially introduced the “Double Reduction” policy and promoted the improvement of after-school services to promote high-quality and fair development of compulsory education. Through the inclusive supply of public educational resources, the policy aims to reduce the imbalance in after-school education opportunities caused by differences in family background and tackle the long-standing problem of educational inequality due to excessive dependence on family resources [1]. Sustained financial support is needed for after-school programmes, but there is no unified policy on the sources and liabilities of funding at all levels of government. Most of the fiscal liabilities fall under the responsibility of municipalities and counties,

so they have different financial strengths in different areas and are consequently unbalanced in administrative power and funds [2, 3].

Although some studies have begun to investigate the equity issues of after-school services in light of the “Double Reduction” policy, most of them are conducted on a large scale or span many provinces; there is a lack of in-depth research on regional differences within a single province and long-term observation of the results of policy implementation [6, 7]. Therefore, in this paper, Zhejiang Province will be the study area, and municipal panel data will be used to investigate the regional differences in fiscal investment for after-school education and the reasons for them. Using the coefficient of variation and R^2 indicators, it will study how the difference in fiscal investment for after-school services among different areas has changed and explore the reasons for this; it will provide some empirical support for strengthening the provincial fiscal coordination mechanism and advancing substantive policy equity [4]

2. Research Design

2.1 Core Concept Definition and Case Selection

Financial investment in after-school services under the “double reduction” policy refers to the funds allocated by the government for after-school programmes in compulsory education, and this amount is shown as the operating expenditure of the general public budget per student. Local fiscal capacity is the financial autonomy of local governments, which can be reflected in per capita general public budget revenue [5]. Local fiscal commitment is the willingness of local governments to invest in education, and it is measured by the proportion of general public budget expenditures for education [4]. Zhejiang Province has been a pioneer pilot area for the “double reduction” plan, and there are substantial differences in the economic and fiscal strength of its cities; thus, it is a good research sample [6].

2.2 Research Methods and Data

To examine the effect of fiscal investment in after-school services under the “Double Reduction” policy on educational equity in rural and underdeveloped areas of Zhejiang Province, the data from the Statistical Announcement on the Implementation of Educational Expenditure in Zhejiang Province (2021-2024) and the Zhejiang Statistical Yearbook (2021-2024) were used.

For the measurement of variables, the study will be carried out as follows: The dependent variable is fiscal investment in after-school services (per-student general public budget expenditure on operational funds), and the independent variables are local fiscal capacity (per capita general public budget revenue) and local fiscal commitment (education expenditure ratio to total general public budget expenditure). Control variables are the per capita regional GDP and year-end resident population. The two main indicators of the explanatory power are the coefficient of variation (CV, also known as relative disparity) and goodness-of-fit (R^2) [7].

First, this paper collects the per-student public expenditure data for the provinces from 2020 to 2023, computes provincial averages, coefficients of variation, and interquartile ranges, etc., to analyze the trend of regional disparity over time. Second, a scatter plot is drawn of the local fiscal capacity on the x-axis and per-student public expenditure on the y-axis, and then linear regression analysis is carried out to determine how R^2 and the regression coefficient change over time. Thirdly, the same method is used to study the correlation between fiscal efforts and per-student expenditure and compare their degrees of explanation [8].

3. Study Findings

3.1 Descriptive Statistics and Changes in Regional Disparities

3.1.1 Individual Differences in Per-student Operating Expenses Across Cities

According to the data, per-student funding in all cities has been increasing, but there are substantial differences in the speed of this increase among them; that is, the development speeds of various areas at different stages of economic development are also different [9].

Hangzhou recorded the highest per-student expenditure in 2020 at 9,576.80 yuan among the three cities, and Taizhou had the lowest at 3,042.48 yuan, which was about 3.15 times lower. By 2023, Hangzhou was still the leader with 9,885.70 yuan, and Taizhou was at the bottom at 3,912.62 yuan. It dropped from 6,534.32 yuan to 5,973.08 yuan and was reduced to 2.53 times [10].

In terms of the speed of growth, the increase in per-student funding for Quzhou City was the most significant; it rose from 3,340.52 yuan in 2020 to 5,210.72 yuan in 2023, an increase of 56.0%, whereas Hangzhou was only up 3.2% and Zhoushan even decreased (from 8,530.19 yuan to 8,265.14 yuan), dropping by 3.1%. There are different policy responses in the economically developed and underdeveloped areas; the latter will be guided towards catching up with the former and reducing the disparity.

3.1.2 Provincial-wide Overall Investment Level and Regional Gap Trends

Table 1 shows the changes in the provincial average and coefficient of variation of per-student public expenditure for compulsory education in Zhejiang Province from 2020 to 2023; it can be seen that there are two dynamic features in the overall investment level and regional disparity after the policy was implemented.

Table 1: Provincial average and coefficient of variation of per-student public expenditure for compulsory education in Zhejiang Province (2020-2023)

a particular year	Provincial per capita value (unit: yuan)	coefficient of variation	labeled
2020	4860.65	0.46	Before policy
2021	4965.97	0.36	After the policy
2022	5488.22	0.34	Post-policy
2023	5750.58	0.33	Post-policy

The coefficient of variation shows how much different parts of the country's educational investment vary by region. Before the policy took effect in 2020, it was 0.46; By 2023, it had dropped to 0.33, a reduction of 28.3% over the past four years. The coefficient kept dropping every year after the policy was introduced and did not increase. The gradual increase in per capita spending across Zhejiang Province shows that, although the total amount of fiscal support for after-school education has increased, it has also reached a level that is balanced with the region's economic development and promoted some improvement in educational equity [11]. Thus, the “Double Reduction” policy has promoted the equal development of all areas in education.

3.2 Changes in the Explanatory Power of Local Financial Power Over Time

As shown in the table above, after the implementation of the Double Reduction Policy, the relative differences in per capita public expenditure among cities in Zhejiang Province have gradually shrunk. What is causing the trend towards equilibrium? How is Local Fiscal Capacity related to the Above problems? Local fiscal capacity (per capita general public budget revenue) is the independent variable. Through the methods of scatter plots and linear regression models, it will study the relationship between this indicator and the level of per capita spending; then, based on it, calculate the annual good fit index (R^2) and regression coefficient to determine the extent to which local financial resources can reduce the disparity in per capita spending.

In short, the general trend of the local fiscal capacity is that it will have a “small fluctuation at the beginning followed by a long period of significant growth” in the explanation of per-student funding differences. Over the past four years, R^2 has increased from 0.5475 to 0.7242, and the rise in cumulative amount was 17.67 percentage points (32.3%). The R^2 value in 2023 was 0.7242, indicating that about 70 per cent of the differences in per-student funding among cities can be explained by regional fiscal capacity, and thus local financial resources are still the main factor determining the level of after-school service funding in municipalities.

All the regression coefficients and their corresponding statistical significance are positive in all years, and they are all at the $p < 0.01$ level. It can be seen that the local fiscal capacity and per-student public expenditure are positively and linearly related. More local fiscal resources will be available to increase the financial support for after-school services. After a small drop in 2021, the regression coefficients stabilized, and it was found that for every yuan increase in per capita fiscal revenue, there was an increase of about 0.33-0.38 yuan in per-student public expenditure. Although the marginal effect of local fiscal capacity on per capita funding has not been steadily increasing, its proportion in the pattern of per capita expenditure disparity is still rising [12].

As a result, although the regional difference has been reduced somewhat at first glance, at its root, it is now mainly due to the local economic situation in that area. The problem of this structural contradiction has arisen and must be dealt with in the present policy work.

3.3 Comparison of the Explanatory Power of Fiscal Measures

To explore the reasons for the difference in investment further, this paper will introduce the link between local fiscal efforts and per-student funding, and determine how much of the difference can be attributed to the financial strength of the local government. Based on the above results, it is concluded that the two factors are different, and fiscal support has had a relatively small impact on per-student funding differences.

Based on the above data, the scatter plot of local fiscal effort (shown as the education expenditure ratio in general public budgets) and per-student operating funds from 2020 to 2023 is not a straight line. The distribution of the data is scattered and has no trend; thus, it cannot be concluded that the intention of local governments for educational investment is correlated with per-student funding.

In terms of goodness of fit and statistical significance, the fiscal efforts in each year had an R^2 value of less than 0.1 for the variation in per-student funding, did not show a clear time trend, and were significantly lower than the R^2 values for local fiscal capacity. In addition, neither the regression coefficient of fiscal efforts nor that of per-student funding reached the significance level $p < 0.1$, so it can be concluded that there is no statistically significant linear relationship between the two.

Based on the above results, the effect of local governments' subjective fiscal efforts on the uneven distribution of after-school service funds is much smaller than that of objective fiscal capacity. The different areas in Zhejiang Province have had relatively low funds for after-school activities primarily because they do not have enough financial resources; this is not a lack of desire to invest. The main reason local fiscal capacity is far more influential than fiscal effort is that it is also a “financial capacity-driven” funding mode.

4. Discussion

Zhejiang Province has shown a trend of “reducing the gap and strengthening financial power”, and although the provincial fiscal measures have promoted a more balanced development of investment, they have not broken the original pattern of being more prosperous due to stronger finances.

4.1 Cause Analysis

The paradox in the after-school service funding of Zhejiang Province, that is, although the fiscal difference has decreased, the financial dominance has increased, is not due to random policy implementation factors. It is caused by the combined effect of the economic foundation, fiscal system, and local policy choices. The two main reasons for this phenomenon are the external economic environment and different degrees of attention from the government.

First of all, the basic problems of the economy are the cause of this “financial dominance” pattern. There are significant differences in the economy of the cities in Zhejiang Province. Wealthier areas can cover the basic life needs of residents and make additional investments to improve the quality of services and expand services; financially weaker areas are forced to rely on provincial transfer payments to cover only the essential operating costs [9]. The structure of financial capacity differences due to economic disparity is stable over the long run, so it will be difficult to change the “financial dominance” investment pattern in the short term. Although the fiscal policy of the province will reduce the relative gap, it will not be able to address the underlying reason for different investment behaviour.

Second, the degree of priority given by local governments to different issues is influenced by various reasons; therefore, they have varied fiscal health. An increase in the R^2 value indicates that, with the same financial resources, different choices of local governments have had different effects due to subjective reasons. Regions with similar financial strength that focus on developing balanced compulsory education and consider after-school services to be basic living expenses will be more inclined to allocate fewer funds to these programmes and channel the money into after-school services. On the other hand, areas that do not place great importance on after-school services are unable to make full use of their funds effectively. The people have

made voluntary choices, so there is an investment gap in the regions. The rich area has more freedom in making investment decisions; therefore, it will be more likely to increase its investments based on its own priorities and thus widen the investment gap with the poor and strengthen the phenomenon of “financial dominance” [10].

In other words, it addresses the problem that the administrative authority is disconnected from financial power in the field of education finance. Qian and Cai's [5] results in Guangdong Province also support this; although there are provincial-level coordinated measures to reduce the absolute difference in educational investment, the decisive role of local financial strength in the decision to invest cannot be ignored when expenditure responsibility is shifted to the grassroots and financial resources are distributed unevenly [5, 8]. The fix for the fiscal imbalance will not be realised by raising the overall living standards; if the structural problems in the areas with weak finances are not addressed, the provincial coordination will be an illusion of fairness that cannot solve the root causes of the different financial situations of these places and will result in “disparity under the guise of fairness” [12].

4.2 Policy Recommendations

First, strengthen the financial support system for after-school activities and build a coordinated transfer payment mechanism at the provincial level to allocate funds according to various areas and types; target subsidies can be given to areas with weak finances, and the budget for after-school services should be added to the standard fiscal framework. Second, a three-tier fund-sharing system of the provincial, municipal and county governments should be established. Expand the scope of provincial cooperation to reduce the fiscal pressure on local areas and improve the fairness of regional distribution in education and resources. Thirdly, it needs to build a comprehensive teacher compensation and incentive system. Reasonable and uniform remuneration standards will be established for the service staff of after-school programmes to motivate them to participate actively, improve service quality, and create a high-quality teaching team. Finally, all sorts of monitoring and evaluation should be conducted to observe changes in the scale of investment, allocation of funds, and use efficiency of resource use. Organised collection and analysis of data can help the government know the problems in applying the funds more quickly and better utilise the funds for operations.

5. Conclusion

Based on the panel data of the 11 prefectures in Zhejiang Province from 2020 to the present, this paper investigates how much fiscal investment has been made for after-school education and how it has affected the improvement of educational equity in the region under the “Double Reduction” policy. According to the actual situation, with the increase in provincial after-school service funds due to policy, the regional expenditure gap has shrunk, and now local governments are also responsible for distributing some of the compulsory education funds. It will change how the educational resources are distributed as well. Although the structure of the funds varies by area, the total amount invested has been relatively stable, and there is still an internal imbalance. Due to the problem of structural disequilibrium in economic development and different geographical circumstances, the regional funding gap will continue to expand; thus, short-term measures cannot solve the root cause that has been accumulating for a long time. Currently, the main problems are that the division of responsibilities between the central and provincial governments is unclear, and there is an uneven distribution of funds for economically developed and underdeveloped areas. Recommendations are to improve the coordination and transfer payment system of the provinces, expand the range of data analysis, use causal inference methods, add quality indicators, conduct cross-provincial comparisons, etc.

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Conflicts of Interest

The authors declare no conflict of interest.

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