The Analysis on Educational Expenditure of China

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ABSTRACT

Educational expenditure is an important indicator to measure the level of education development, and financial education expenditure plays a really important role in the development of education in a country. Based on the data from 2006 to 2014, this paper analyzes the educational expenditure and fiscal educational expenditure in the aspects of total amount and growth rate. Besides, it explores the distributional structure of educational expenditure from three aspects: provincial and municipal level, tertiary education and urban and rural areas. The analysis reflects the status of China's educational expenditure in different angles. At the same time, with the comparison with foreign countries, the corresponding measures and suggestions are given in the end.

KEYWORDS

Educational Expenditure, GDP, Structure of Distribution, Regional Disparities.

INTRODUCTION

With the rapid development of modernization and increasingly important role of education, government attaches more importance to education. Therefore, the scale of educational inputs is becoming larger and larger and fiscal expenditure on education is also on the rise. Many scholars have realized this trend and make considerable analysis of educational expenditure, setting more about equality and efficiency. With summarizing available data and information and comparing them with other countries, this paper attempts to analyze more about structure of distribution of fiscal educational expenditure in China and find the differences from well-developed countries, and then combine valuable experience with Chinese policies trying to relieve educational disparities and further promote Chinese overall education level. Before analyzing the structure of educational expenditure, some important notions should be emphasized.

Educational expenditure refers to total input in education and reflects the proportion of different types of educational expenditure in both educational controlling system and subsystem, including educational business expenditure (wages of relative workers and public expense, etc.) and educational fundamental construction investment (expense of constructing buildings and purchasing teaching facilities). On an international scale, public source, mainly from tax, and private source, mainly from tuition are two main approaches to obtain educational expenditure and some other sponsorship or revenue can be supplementary source. It is the same with Chinese structure of educational expenditure source and the source and ways of raising money can be multi-channel and multi-level, consisting of funds allocation from central, provincial, cantonal and prefectural governments, expenditure from

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enterprises and institutions, aid by social force and family burden of education. That is to say, educational expenditure includes fiscal educational expenditure and non-fiscal educational expenditures like school-running expenditure from social organizations and individuals, social donation as well as tuition and fees. Obviously, both central government and local governments take the main burden of expenditure and how much the appropriation is depending on different regulation systems. In terms of fiscal educational expenditure, similarly it refers to the budget used for education from both central authority and local government department of finance.

Apart from the source of educational expenditure, it is necessary to talk about the structure of distribution of educational expenditure. Expenditure can be distributed according to regions within a country, levels of education (elementary, middle and higher education) and rural-urban areas. By allocating expenditure to different parts, total benefits and rate of return are different, and during this analysis, whether the expenditure is sufficient in each part can reflect equality and emphasis, which is helpful to find the problem and make a reform enhancing efficiency.

The final point is the relationship between educational expenditure and GDP (Gross Domestic Product). Broadly speaking, how much money a country puts into education depends on economic development level of this country. GDP is a kind measurement of total value of all economic activities during a period in country level, and as an index it can reflect integrated national economic development condition. More specifically, it can be computed by three ways (production method, revenue method and expenditure method) and expenditure method will be much helpful, which could show us constitution and structure of utilization. Using expenditure approach, GDP represents total value of consumed and expended final product and service, including consumption (C), investment (I), government purchases (G) and net export (NX). As education is regarded as a part of consumption or investment, when GDP is computed, education is included and it is an effective way to estimate educational investment proportion and reflect the degree of importance government attached to human capital that is one of the important factors in terms of economic development and can boost the economy by improving quality of labor as well as productivity. Also, it is common to measure education scale by calculating the percentage of educational expenditure in GDP.

THE ANALYSIS ON EDUCATIONAL EXPENDITURE

The Growth of Educational Expenditure

Overall, as the total expenditure on education increasing year by year, the proportion of fiscal educational expenditure also grows gradually. According to the statistics, total expenditure on education increased continuously from 981530.87 million yuan in 2006 to 3280646.09 million yuan in 2014, and during this nine-year period fiscal educational expenditure in 2014 was about 4 times more than that in 20062642058.20 million yuan and 634836.48 million yuan respectively. Besides, the percentage of fiscal expenditure changed from about 64.678% to 80.535%, which was a desirable change and showed that government played an increasingly important role. Combing the figure with graph 1, we can see the rising trend gradually became stable and continuous. From graph 1, it is also apparent to see that fiscal educational expenditure grew faster than total educational expenditure, which could mean that government invested more on education compared with private sector and focused more on it as
well as made effort to increase investment on education to improve the whole level of education in China, which could further give rise to economic growth.

In order to know the scale of education intuitively, it is effective to introduce the percentage of educational expenditure in GDP. Likewise, to analyze how much effort governments make in education, the percentage of fiscal educational expenditure in GDP that is main source of educational expenditure can be used. This indicator reflects the degree of recognition and status of education in overall governmental arrangement. From graph 2 below, the change of GDP presented a rising trend during 2006 to 2014 and it was the same with educational expenditure and fiscal educational expenditure. More emphasis is put on governmental behavior and the percentage of fiscal educational expenditure climbed from about 2.87% in 2006 to 4.28% in 2012, reaching the highest level of the whole period. After that, there was a slight decrease in the percentage and the figure was still above 4%. The slowdown of this percentage was likely to be explained that the scale of education had achieved the goal made by government, 4% of GDP, and it was satisfactory to hold this desirable scale. To some extent, there is a positive correlation between GDP and educational investment.

Finally, growth rate can be regarded as a developmental index to reflect a dynamic process, therefore it is necessary to take a closer look at the growth rates in each year in graph 3. In brief, the growth rate of educational expenditure and fiscal educational expenditure fluctuated from 2006 to 2014 and their fluctuation was very similar. Although the growth rates dropped more than 10% from 2007 to 2009, the period spanning from 2012 to 2013 witnessed another significant decline. To be more specific, the growth rate of educational expenditure decreased from about 20% to 5% and even the growth rate of fiscal educational expenditure decreased from 25% to 5%. In addition, it can be seen in graph 1 that the percentage of fiscal educational expenditure slowed down from 2012, and also in graph 3 the growth rate of both educational expenditure and fiscal educational expenditure dropped dramatically by nearly 20%. As was mentioned before, the percentage of fiscal educational expenditure in GDP reached the target of 4% in 2012 for the first time, so that instead of improving this condition further, government just kept this satisfactory level and tried to realize sustainable development.

![Figure 1. Educational Expenditure and Fiscal Educational Expenditure during 2006-2014.](image)

Figure 1. Educational Expenditure and Fiscal Educational Expenditure during 2006-2014.
The Structure of Educational Expenditure

Firstly, the analysis starts from regional differences. It is obvious that the educational development varies from different regions and it is much related to local economic development. It is necessary to take a closer look at figures of different provinces from Statistic Department.

According to graph 4 and 5, the fiscal educational spending was higher in the northwest as well as north and lower in the middle and southwest. To be more specific, fiscal educational expenditure in northwest China was the largest and increased fastest as government put more efforts to develop educational enterprise in those lagging regions, like Xinjiang, Qinghai and Ningxia. The expenditure in east and south China ranked in the middle as most well-developed provinces that are mainly located in the east of China, including Jiangsu, Zhejiang and Shandong province, have better and mature educational system, which could mean that they can keep this desirable level and pay attention to some other urgent and pressing areas. Also, most of those provinces with high input in education are coastal provinces like Guangdong, Zhejiang and Jiangsu province. Education in these provinces developed early as the local governments were much more conscious of the importance of education in early years and made much contribution to developing education to further boost local
economy and technology. Likewise, central government also supports financially to encourage their development and promote further development.

In northeast China like Liaoning and Jilin provinces, the fiscal educational expenditure grew rather slowly. Even from 2013 to 2014, they held negative growth. In Jilin province, the figure decreased from 46236.84 million yuan to 44602.92 million yuan and Liaoning province experienced a sharper drop from 77664.99 million yuan to 70533.96 million yuan. It is much related to the depressed economic situation in these areas. The economy in northeast China is continuously at low ebb due to its imperfect and unreasonable industrial structure, therefore the development of education is affected and the decline in 2013 appeared.

There is one more point needed to be stressed that the proportion of fiscal educational expenditure in total educational expenditure in municipalities is rather higher although the amount is not very large. That is to say, more funds are appropriated and allocated by government rather than social organizations, enterprises or citizens, and development of local education relies more on fiscal educational expenditure, like constructing schools, purchasing facilities and employing teachers.

Although fiscal educational expenditure in most regions increased, regional disparities still have been enlarged gradually. As fiscal budget is limited and natural endowment is different like climate, geographic condition and population, educational input in less developed regions is insufficient, resulting in low education level and basis as well as imperfect system. With less fiscal educational, scale of education is limited and education quality is poor. Residents cannot realize the importance of education and do not have awareness of receiving higher education spontaneously. Comparatively, in well-developed regions, with more financial support, education can be more widely popularized and more advanced facilities and resources can be provided, which could promote quality of labor. Eventually, high quality human capital promotes economic growth and then more emphasis is put on education. In other words, virtuous cycle enables self-sustained development of education and different basis contributes to different subsequent development, so central government should play a role to solve this problem and give more financial budget to less developed areas.

Overall, in regional aspect, with more funds as well as establishment and improvement of compulsory education system, financial strain in the middle and west of China has been relieved. However, with abundant resources in the east of China, the problem of wasting resources exists seriously and the law of diminishing utility of funds should be taken into consideration. Hence reasonable regional fiscal policies of education should be established and continue to increase fiscal educational expenditure in less developed regions.
The second aspect will aim at three levels of education. From graph 6, we can see the percentage of expenditure on elementary education increased, while that of middle and higher education decreased. It is easy to conclude that people pay more attention to elementary education, which could indicate more opportunities of being educated were provided and more children can attend school. According to Graph 7, fiscal expenditure of elementary education constitutes the largest part (about 33%), which is followed by middle schools (about 30.5%), institutions of higher education (about 22%). However, the change in percentage of fiscal expenditure on these three levels presented an opposite trend compared to the change of educational expenditure. Percentage of fiscal expenditure on elementary education accounting for total fiscal educational expenditure was decreasing. Nevertheless, fiscal educational expenditure was more used to develop higher and middle education, especially in higher education from 2009 about 19.9% to 2011 about 22%. This is likely to be explained that with the popularity of compulsory education, governments turn to cultivate more people with high quality in order to pursue more innovation or boost economy development. That is to say, increasing investment on human resources is beneficial to higher level of innovation and more breakthroughs in technology. Also, with more workers with high...
quality, there is a higher wage rate and higher income level, which could improve economic condition. Besides, well-developed regions have rather adequate expenditure and have formed rather stable education system, so it can relieve the tension of government expenditure and turn to develop middle and higher education. Due to popularity of nine-year compulsory education, elementary education in poor regions has developed significantly. In this stage, scale of higher education is becoming large and also development of higher education relies more on government. According to graph 7, among middle schools, junior high schools are subsidized more than senior high schools and they even catch up with primary schools. In each stage of education, a large part of budget is used to develop and construct ordinary schools. All evidence demonstrates that, with limited budget, government would lay more emphasis on basic education and try to achieve the popularity of fundamental education as well as nine-year compulsory education.

In terms of three levels of education, governments pay more attention to higher education in order to achieve higher labor quality and more technological breakthrough as well as promote overall development of their country. Nevertheless, middle education is neglected with less input, which limits educational development and cultivation of diversity. Overall, primary education is still the basis of the education system. The government investment in primary education should also be dominated, while increasing investment in secondary education. When it comes to higher education, it should depend more on social and individual power, promoting multi-channel investment and construction, optimizing utilization.

Compulsory education obviously possesses qualities of public goods, especially elementary education. As a kind of pure public goods, compulsory education must be provided by governments. Non-compulsory education can be invested by both public and private sector. With limited budget, grants should be allocated according to rate of return to the public, and elementary education should be given priority. When it comes to higher education, it is necessary to encourage the public to invest more on it and make reasonable sharing proportion between government and private sector like cost sharing policy. That is to say, private sector should devote more on developing higher education as they gain more benefits and externalities. Another point is to raise awareness of the importance of receiving higher education and at the mean time create more opportunities for poor and difficult families to finish higher education as well as give some relief and welfare. To summarize, efficient allocation of resources is important and administrations should evaluate performance of different level of education to enhance quality, efficiency and return rate. Also, it is necessary to broaden access to invest education, like releasing educational bonds and lottery to raise more educational funds.
Finally, rural-urban distribution structure of educational expenditure is worth to mention. Actually, this section can be regarded as a part of regional aspect, but educational disparities between rural and urban areas is typical and analyzing this
problem is beneficial to know better about Chinese educational institutions and find an effective solution. The tendency of fiscal educational expenditure in rural areas is the same as that in urban areas and local governments continue to increase the input on education by year. More importantly, according to graph 9, fiscal expenditure on rural schools was always larger than that on urban schools from 2007 to 2011. Compared with junior school, government invested more money and capital on primary schools. One more fact should be emphasized that rural primary and secondary school students account for 80% among nationwide primary and secondary students, which means rural education development, especially elementary education development, matters crucially. Although the level of fiscal educational expenditure on rural schools was rather higher, the gap still existed. For one thing, rising attending school cost and low-income level of rural households result in rural-urban educational opportunity inequality. Some students cannot afford pricy tuition and then drop out of school. Another thing is that rate of educational return is lower in rural areas than that in cities so that urban schools have access to more resources (teachers and facilities) and investment. In other words, according to figure 10, rural schools have less non-fiscal educational expenditure since they attract less investment like money, equipment and human resource. Although educational expenditure on rural areas is more than that of urban areas, in order to eliminate this kind of discrimination, government still needs to stress on rural areas and distributing more available resources. Some preferential policies and incentives (subsidies) also are much helpful.

Figure 9. Fiscal Educational Expenditure in Rural and Urban Ordinary School during 2007-2011.
Comparison with Developed Countries

In general, how much the fiscal educational expenditure accounts for GDP differs from policies and economic as well as educational condition in different countries. On average, the percentages of fiscal educational expenditure in developed countries are around 5%, higher than that in developing countries. To some extent, the more developed a country is, the higher percentage is. In 2005, the figure for America was 4.8% and similarly that for Canada was 4.7% while China only had 3%. Nevertheless, the figure for America and Canada was not the highest as they began to develop educational enterprise much earlier and have already formed reasonable educational system and pattern, which could indicate that they can maintain this condition and turn to other less developed areas. By contrast, developing countries have weaker educational foundation and develop rather slowly so that it is essential to attach more importance to education and give more aids to it.

According to statistics, the average percentage that fiscal educational expenditure accounted total fiscal expenditure of OECD countries in recent years is about 13% in 2005 and countries whose percentage ranked in the front were Mexico, New Zealand and Denmark. The next were Italy, Germany and Japan. This ranking is related to the welfare of a country. With better welfare system, governments focus more on education that have considerable externalities and can improve citizens’ level of welfare directly. However, there is another situation that countries have better welfare system but they do not invest a large amount of money to education. For example, governments in European countries and Japan make more contributions to social welfare and take over more projects related to welfare, which means the total funds appropriated by governments are large, thus there are less funds used for education and the percentage of educational expenditure is comparatively lower than that in other countries.

Compared with developed countries, there is a long way to go as for China. Central and local governments should clear responsibilities and not only put more emphasis on education, but improve the efficiency of utilization of resources and further perfect educational system both in allocation and transfer. Education and economic development go together and have mutual help and promotion. With more
developed economy, educational expenditure is more sufficient and with more educational expenditure education makes more contributions to economy as human capital accumulation promotes economic development. In other words, there are greater potential and power to develop economy through tapping educational potential and improving status of education.

**LITERATURE REFERENCES**

With the progress and development of society, the importance of education is increasing, people pay more attention to the development of education, and governments also vigorously develop the cause of education to promote the further development of the country. At the same time, educational investment has become one of the heated issues discussed by scholars both nationally and internationally. Wang Lijun (2006) [1] and Li Ying (2011) [2] studied the impact of educational investment on economic growth, pointing out that the two are closely related and should increase investment in education, and then form a virtuous circle promoting each other. In addition, Ma Dandan (2016) [3] conducted a horizontal and vertical analysis of the scale of financial education in Shandong province, respectively, to explore the gap between Shandong province and other coastal developed provinces of financial educational expenditure. Zhang Baogui (2009) [4] and Xu Jingjian (2010) [5] further studied the proportion of educational expenditure in GDP, and provided the mathematical model as the basis of econometric.

Further research found that there are some problems of structural level allocation in the level of educational development. Hu Yuling and Shen Guangfu (2013) [6] studied the allocation of educational expenditure at all levels of education and analyzed whether it was reasonable and effective. In view of higher education, Zheng Yu (2015) [7] compared the source structure of educational expenditure both nationally and internationally, and examines the problems of the source structure of educational expenditure in Chinese universities. Ye Qingsong and Chen Feng (2013) [8] pointed out that the internal allocation of educational funds in colleges and universities had conflicts and contradictions, and need to be further optimized. For the primary education, Tang Xinglin and Li Wenjun (2013) [9] compared OECD countries, pointing out that China's financial educational funding is biased towards higher education and should be tilted to primary education. Liu Jiang and Zhang Xiaofeng (2005) [10] also pointed out that China should raise the focus of public investment in compulsory education, focusing on the development of compulsory education.

In addition, the regional differences in the level of educational development are also evident. Lu Xiaoxu, Lu Yuqi, Zhou yongbo and Yuan Zongjin (2011) [11] pointed out that regional differences in education funding still exist and that the real education fairness still needs to be done. Meanwhile, the implementation of some controlling policies is necessary. Li Zhiyong and Chu Xin (2008) [12] carried out the performance evaluation of the primary education in the eastern coastal provinces and found that there was regional inequality, advocating to strengthening the performance management of educational expenditure, and improving the educational public finance system. Zhang Zhengang, Liu Yuan and Yu Chuanpeng (2011) [13] found that regional educational expenditure had a certain lagging effect on the contribution of higher education, and the promotion of the scale of higher education in different
regions is also different. In terms of urban and rural education inequality, especially compulsory education, Wu Chunxia (2007) [14] analyzed the evolution of urban and rural compulsory education funding gap and explored its influencing factors and gave countermeasures and suggestions.

In general, China's educational expenditure situation is still a problem, Cui Yue (2015) [15] and Liu Haitian (2011) [16] analyzed the status of China's education expenditure, and further gave countermeasures analysis.

CONCLUSION

The analysis above reflects two main features of fiscal educational expenditure in China-inadequate expenditure and imbalanced expenditure structure. Briefly, China's educational expenditure is increasing year by year. Educational expenditure has increased, and similarly, government spending on education has increased as well. More specifically, the proportion of fiscal educational expenditure in total educational expenditure increased by year, indicating that the country's support for education is stronger and stronger than that of private sector and government makes more contributions in terms of education. Although China's investment in education is increasing, China's total expenditure on education is still fall behind that of developed countries. This can be reflected in the proportion of educational expenditure to GDP, and most of the developed countries account for the proportion of education expenditure far more than China. Also, although fiscal educational expenditure increases by year, the amount is still much lower and its growth rate cannot catch up with the growth rate of GDP, which requires that the percentage of fiscal educational expenditure in GDP should be improved and kept at the level of 4-5%. In addition to the insufficient total fiscal educational expenditure, China's fiscal education expenditure also exists problems in distribution structure, including three aspects: regional disparities, imbalance among elementary, middle and higher education as well as urban-rural disparities.

In view of the above problems, we should mainly proceed from two aspects, one is to increase the source of funds and the second is to adjust the structure of investment in education with limited funds. In terms of the limited funds, the state cannot blindly increase the investment in education so that at this time it is necessary to encourage the role of private capital. With the improvement of individual living standard, most people can afford their own education, which could save public educational resources. At the same time, China can develop private schools to encourage stratified consumption on elementary education. In addition, the state may consider issuing educational lottery tickets or encourage school listing to obtain more funds from the capital market. For the latter, in order to better develop education in backward areas, government should give full play to the interaction between economy and education, that is, economic development promotes the development of education, in which more resources and talent could be attracted, while educational development serves economic development. These two terms should adapt to each other, for example, the development of vocational education in poor areas will be more reasonable. Besides, authorities can introduce a number of policies to encourage high-end talent to build their hometown, or take the use of model that developed areas promotes the surrounding areas (the establishment of schools, etc.). For three levels of education, first and so on higher. In the stage of higher education, the level of treatment to higher
education should be improved, such as increase in research subsidies, higher education personnel subsidies and college student subsidies.

REFERENCES