



Research Article

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## The cost accounting, cost sharing and pricing analysis of preschool education-taking Beijing as an example

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### ABSTRACT

*The pricing of preschool education has become social hot problem. This paper advocates setting prices through cost accounting and costing sharing. After analyzing the scale, structure and level of pre-school education costs in Beijing each year, we found revenues and costs of Beijing pre-school education are among the best in China. Throughout each beneficiary's cost-sharing, we found the proportion of the government to gradually reduce the share, and the proportion of parents' sharing gradually increases accordingly.*

**Keywords:** Preschool education; Cost Accounting; Cost Sharing; Pricing

### INTRODUCTION

Currently, pre-school education, out of compulsory education and lack of public financial support, has become the most expensive education in China. It is reported that, in some areas of China, the tuition of a kindergarten child has been comparable to the university's tuition, forming a strange phenomenon that children are affordable for primary schools, middle school, but can't afford to go to kindergarten. Some existing pre-school charging standards in effect are seriously lagging behind. Take Beijing nursery fees as an example, most of the existing public kindergarten charging standards are formulated in 1997, charged differently based on class level, in which a class of primary age under three charges 200 Yuan per child per month, class of ages up to three charges 150 Yuan per child per month.[1] The rest of the class levels are in descending order. For decades, the total household income per capita in Beijing has risen from 8741.7 yuan in 1997 to 36,469 Yuan in 2012, an increase of more than four times, but the charging standards for public kindergarten has remain unchanged, resulting in the rising " sponsorship fee" or other forms of child care services which are provided to children, separately charged to compensate for the lack of childcare charges, in order to maintain current operations.

Cost-plus pricing refers to a pricing method based on the cost of the organization, applied to non-competitive product pricing. Specifically, It includes full cost-plus pricing method, variable cost-plus pricing method and the standard cost-plus method. The basic procedure is to first seek cost base, and then adding a predetermined percentage on the base, then target price can derived. Cost-plus is the premise of cost accounting.[2] Cost accounting can determine the total cost of pre-school education, plus the nurseries' need to maintain long-term development or the appropriate income of private kindergarten, the total investment of pre-school education will be able to be determined. Again according to the proportion of the cost-sharing, we can determine the amount of education fees per semester. Of course, pre-school education pricing based on cost accounting, cost-plus and cost sharing, still exists some problems that could lead the maximization of pre-school education cost, resulting in the blind expansion, luxurious decoration of the kindergarten, increasing costs to improve charges. Therefore, the cost of the project should be strictly controlled, and only reasonable costs could be credited.

Cost-sharing theory is based on the theoretical basis: education is an activity that requires investment and generates profits, which can meet the needs of more than one subject, the beneficiaries include the nation, educated individuals,

taxpayers ( employers ) , entrepreneurs and schools. Cost must be shared by these subjects based on the principle of benefit obtaining and the principle of capability of payment. The principle of benefit obtaining means no matter who benefit from education ( either directly or indirectly), he should pay for education expenses, the more advantages and benefits he obtained , the more expense he should bear, whereas the less. The principle of capability of payment says all the beneficiaries should pay according to their ability to assume the corresponding proportion of the education cost.[3] The two principles in relation to each other are indispensable. The former is the foundation, it embodies basic principles of market economy --equivalent exchange; the latter is the key, it embodies the basic principles of society --the principle of fairness. According to the cost -sharing theory, a number of subjects, including the nation, the children and their families, society and kindergartens can benefit from pre-school education. According to the principle of benefit obtaining and the principle of capability of payment, education costs must be borne by these beneficiaries. There are three pre-school education cost-sharing models, assumed by the Government cost-sharing model, assumed by family, government and society cost-sharing model and assumed by family cost -sharing model.

## 2. Empirical analysis on relationship between education cost and charges in Beijing

### 2.1 Analysis of the scale, structure and level of pre-school education costs in Beijing

Preschool is currently using cash basis accounting, cost is reflected in the various expenditures, according to the Beijing preschool expenditure data, provided by "China Statistical Yearbook of education funding", we can have a broad outline of the overall cost of Beijing preschool education.

(1) The scale of pre-school education. Preschool education expenditure is usually determined by revenue, it endeavours to break even and strives for a little balance. With revenue growth of pre-school education, early childhood training costs continuously improve. Government and society gradually focus on pre-school education. Total expenditure of pre-school education in Beijing increased slowly from 546,552 Yuan in 2006 to 1,048,641 Yuan in 2010, has grown rapidly from 2011 to 2012, reached respectively 3,021,444 Yuan and 3,823,370 Yuan, compared with 2006 increased nearly sevenfold.

(2) The structure of pre-school education. Pre-school education expenditure consists of operating expenditures and capital construction expenditures. Capital construction expenditures are usually few, basically remains flat every year. Pre-school education expenditure is mainly made up of operating expenditures. Operating expenditures consist of personal spending and public spending. From 2006 to 2012, personal spending and public spending grew quickly and synchronously year after year. The proportion remained constant during this period, personal spending accounts for 2/3, public spending accounts for 1/3. Personal spending accounts for the bulk of pre-school expenditure. It indicates that pre-school education funding is on the "eat meal" level, pre-school spending is mainly wages and benefits expenses of teachers, public spending is very little, spending devoted to teaching is not enough; capital construction expenditures is rare, which makes kindergarten fixed assets difficult to update in time. In the long run, these will not be conducive to the development of pre-school education. The accounts of personal expenditures each year is slightly different. From 2006 to 2007, personal expenditures is divided into the basic wage, wage subsidies, other wages, welfare and social security costs, a slight increase can be seen in each of the items. Wage subsidy accounts for the largest proportion, followed by the basic salary, social security charges and other wages, welfare is very few. 2008-2012 personal expenditures reclassified as wages and benefits expenses, expenses for both. Wages and benefits expense increased rapidly, individuals and family allowances increases very slowly. The accounts of public spending are also slightly different for each year. From 2006 to 2007, public spending is divided into official expenses, business expenses, equipment purchase costs, repair costs and other expenses, the project gradually increased slightly. From 2008 to 2012, public expenditures reclassified as expenditures for goods and services, other capital expenditures, both grew parallelly and rapidly year after year. For public expenditures, expenditures for goods and services accounted for 2/3, other capital expenditures accounted for 1/3, but the trend pace of growth in expenditures for goods and services is faster.

(3) The level of pre-school education expenditure analysis. Beijing preschool educational expenditure of each student from 2008 to 2012 are 12,758 Yuan, 17,072 Yuan and 15,607 Yuan, 15,771 Yuan and 18,479 Yuan respectively. In 2009, the growth rate is relatively large, somewhat lower in 2010, and grew rapidly again in 2012. In 2010, for example, of education expenditure per student, operating expenditure accounted for 15,171 Yuan, 9,747 Yuan of which comes from individual part, the public parts accounted for 5424 Yuan, while capital construction expenditure accounted for only 436 Yuan. This shows that Beijing preschool educational expenditure of each student is mainly used for expenditures on operating expenses, which mostly consist of accounted for teachers' salaries and welfare expenses, about 2/3. Official fees and repairing fees are about 1/3. That year, Beijing urban residents per capita disposable income is 29,073 Yuan, namely the total household income for a family of three is 87,219 Yuan, the monthly average is 7,268 Yuan. Beijing per student educational expenditure is 1,300 Yuan that year, accounting for about 18% of household monthly income, basically reasonable, but by 2012, the per student educational

expenditure share of household income increases substantially, becoming heavier burden on parents .

## 2.2 Comparative analysis on pre-school education costs and charges in Beijing

Compare the total expenditure and total revenue of pre-school education in Beijing from 2006 to 2012, we can see total revenue over the years, are slightly higher than the total expenditure. The total expenditure account for 96.3%, 96.4 %, 97.5%, 97.8%, 93%, 97.13%, 96.06% respectively of total revenue , indicating that the total investment is based on the total cost of the pre-school education.

## 2.3 The student's average cost in Beijing compared with other provinces

Per student educational expenditure of every province over the years is relatively stable. From the provincial perspective, preschool educational expenditure are spending more in economically developed provinces, such as Beijing, Shanghai, Tianjin, Zhejiang, Guangdong and so on; also in provinces that gets more government grants, such as Tibet, Qinghai and Inner Mongolia and so on. Educational expenditure of Beijing has been ranking first in the country. In 2012, for example, a mean of 31 provinces is 5,760 Yuan, while Beijing was 18,479 Yuan, 3.2 times of the average. Per student educational expenditure is substantially lower in underdeveloped and low government funding provinces, such as Hunan, Sichuan and so on.

## 3. Beijing pre-school education cost sharing and pricing analysis

According to the data provided by "China Statistical Yearbook of education funding", we conducted empirical analysis of Beijing pre-school charges.

### 3.1 Convert Pre-school income data into cost-sharing data

Since all kindergarten's income is actually every subject's inputs or cost sharing, therefore income data can be transformed into cost-sharing data. The statistical indicators of seven years vary. From 2006 to 2007, operating expenditures and educational surcharge appropriated funds on budget are the main share of government cost-sharing. Operating income (mainly tuition) is the cost sharing of pre-school education of parents. School industry, work-study, social services revenue and donation income are mainly pre-school education cost sharing of society. Other income is mainly cost sharing of kindergarten. From 2008 to 2012, the budget educational funding and taxes used in education levied by all levels of government belongs to the government inputs; operating income are invested by parents; enterprise funds belonging to enterprise-owned school, school industry and social services revenue invested in education, inputs belonging to private schools owner's and donated funds from community organizers, these four parts are social investment; other income belongs to the kindergarten inputs. Transformation results in Table 2.

### 3.2 Beijing pre-school education cost sharing analysis

From Table 2, from 2006 to 2010, the government is the major pre-school education cost-sharing subject, and the proportion was increasing year by year, from 59% in 2006 to 71%, it is absolutely the main cost sharing, this is a few years ago government to increase in 2010, is the absolutely main body of cost sharing . This is inseparable from the increasing investment of government. Parents are the second largest cost-sharing subject, but the proportion of share is gradually decreasing , from 25% in 2006 to 14 % in 2010, indicating a decline in the burden on families in these few years. As the pre-school education is non- compulsory education, according to the principle of benefit obtaining, this ratio is relatively reasonable. But in 2011 and 2012 the situation has changed dramatically , in 2011 the government share dropped to less than 40% , in 2012 continued to decline ; while the proportion of parents share increased substantially in 2011 and 2012 , a 46.78 percent share in 2011 , 2012 declined slightly . This result coincides with the phenomenon that the burden of parents becomes heavier these two years. As children cultivating cost continuously improve, while government investment is relatively reduced, resulting in the increasing in the absolute amount of the family's share, accordingly the relative proportion also increased significantly. The proportion of social sharing and kindergartens sharing proportion increased slightly.

Table 1: Income structure of pre-school education revenue in Beijing

Year	Total income	1 institution funding in budgeting	2 addition funding for education	3 Operating income	4 Run industry, work-study programs, social services revenue for education	5 donation revenue	6 other revenue			
2006	567676	290320	31835	170484	463	39993	15889			
2007	638063	369234	30930	177297	112	39397	11163			
	Total income	1 country education financial funding	1.1 education funding in budgeting	1.2 education tax	1.3 enterprise funding in enterprise school	1.4 revenue of run industry and social service using in education	2 organizers invest in private school	3 social donation funding	4 career revenue	5 other revenue
2008	726325	474972	444436	30486	0	50	0	48404	197616	5333
2009	1002391	741056	702318	38728	0	10	0	49447	205631	6257
2010	1127250	787961	716567	71394	0	0	0	94219	239832	5238
2011	3110523	1255689	1107794	132270	8918	6707	33028	233093	1455227	133486
2012	3979983	1819063	1517735	285287	7369	8672	27289	225217	1743293	165121

Table 2: Cost-sharing of pre-school education revenue in Beijing

Year	Government Share	Parents Share	Kindergartens Share	Society Share	Year	Government Share	Parents Share	Kindergartens Share	Society Share
2006	60.5%	25.0%	7.5%	7.0%	2010	70.0%	14.6%	7.0%	8.4%
2007	64.3%	28.1%	5.6%	2.0%	2011	39.86%	46.78%	4.31%	9.05%
2008	65.0%	27.0%	5.1%	2.9%	2012	38.13%	43.80%	11.33%	6.74%
2009	73.9%	15.1%	6.1%	4.9%	2009	73.9%	15.1%	6.1%	4.9%

Beijing, as an economically developed city, social sharing is an effective way to relieve parents of the burden. Propagandizing the importance of preschool education improves people's awareness of preschool education. We should encourage social groups and individuals to donate to education and encourage private capital to invest kindergartens and adopt other ways to increase social sharing share. The proportion of social sharing ought to be actively expanded, at the same time; cost-sharing of kindergartens should be encouraged. The future development of kindergartens is mainly government-oriented, public kindergartens will become the dominant force, while encouraging social multi-channel kindergartens. The pre-school education funding should be included into local government budgets, progressively realizing the "separate budget". Also it's necessary to increase the proportion of pre-school education funding in "education surcharges" of the financial budget, 6% to 8% is an expected. The proportion of the public kindergarten should be up to 70% or more. Meanwhile, a reasonable division of municipal and district-level financial investment's key point on pre-school education should be given attention to. Municipal finance should allocate special funds to support the public kindergarten construction; county government and township government should arrange for special funds from the annual fiscal appropriations to promote the construction of the territorial public kindergarten and the purchase of private kindergartens' pre-school education service.

### 3.3 Beijing pre-school education cost-sharing compared with other provinces

Pre-school education cost-sharing in the provinces and cities, in 2010, the average of 31 provinces preschool education cost-sharing shows, the government share 68%, the society shares less than 1%, parents share 26%, kindergartens share of 5%. In Tibet, Xinjiang and Qinghai, the government investment reached 90% or more, the sharing proportion of parents, social and kindergartens are very low; Government investment in Shanxi, Heilongjiang, Inner Mongolia, Gansu and some other places is also very high, above 80%. For example, in 2010 the cost of pre-school education in Tibet, the government share 92.5%, the proportion is quite high; parents share 5.9%, less stressful; kindergartens share 1.6%; social sharing is zero. So for these economically underdeveloped regions, the state increases investment in pre-school education through fiscal transfer payments and other means, so that more pre-school age children can enjoy the pre-school education, but also greatly reduce their parents' burden. But by 2012, the average of 31 provinces preschool education cost-sharing shows, the government shares 43.82%, the society shares 4.84%, parents share 49.78%, kindergartens share 1.56%. Although in a small number of provinces, such as Tibet, Xinjiang and Qinghai, the governments still share a high proportion, but in most provinces, the government share less than 50%, while they are more stressful pressure, cause they share more than half of the pre-school education cost.

Government of Shandong, Guangdong, Jiangsu and Zhejiang and other economically developed areas invest less, parents share more. For example, the cost of pre-school education in Shandong Province, in 2010 the government shares only 40.6%, in 2012 the government shares only 33.94%; parents share 47.4% in 2010, 60% in 2012, indicating the increasingly heavy burden of parents, especially pre-school education cost in economically developed areas is higher accordingly.

## CONCLUSION

Firstly, make policy, implement non-compulsory education charges cost-sharing principle, promulgate charge regulations by the Ministry of Finance and the Ministry of Education and other departments jointly. Benefits of doing so are there are rules to follow to prevent arbitrary cuts on preschool education expenditure and misappropriation of funds, as well as all sorts of excuses arbitrary charges phenomenon.

The second is the implementation of the reasonable cost charges policy; do not cut government investment on public kindergarten. Based on the fundamental and public-welfare feature of early childhood education, the government should increase investment, government policy should reflect the social value of early childhood education, such as educational feature, commonweal, fairness, and so on. Kindergarten fees should be combined with the evaluation of kindergarten, strictly implement pricing by quality and high quality with favorable price principles. The education sector should consider the quality of education as the main index rating when setting evaluation criteria. To limit the scope of charges, we should limit the minimum and maximum charges, and the span should be sufficient, able to widen differences in charging level, encouraging the development of kindergarten.

The third is to hold a hearing for pre-school education pricing to determine preschool tuition standards. The quasi-public nature of pre-school education determines the pre-school tuition can adopt cost-sharing system. However, there are certain contradictions among related parties, the government is more concerned about the educational development, educational equity, social stability and financial payment ability; kindergartens are more concerned about the compensation of the education cost; family's more personal attention is subject to the expected rate of return to its pre-school education and the level of tuition fees and the current affordability. To reduce

contradictions, the preschool pricing hearing can be held with the relevant government departments, kindergartens and family representatives and experts and scholars attended to determine kindergarten tuition standards at all levels.

Fourthly, establish a scientific and reasonable tuition system, determine the appropriate tuition adjustment period. For social stability and cost-saving, tuition standards are generally not adjusted annually. Due to the increasing cost of education, the adjustment period should not be too long. Combined with economic and social development planning cycle and the length of schooling, the adjusting cycle can be set to 3-4 years.

Fifthly, establish a multidimensional supervision and restraint mechanisms of preschool education fees. Supervision and inspection system is an important part of the preschool education fees management, improve supervision and inspection system is to ensure that charging system of preschool education standardized and orderly operation.

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