Land Acquisition Selecting Mode for Preschool Projects Based on Data of UN Comtrade 2018

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Abstract. Based on the basic data of UNComtrade2018, this paper studies and calculates the problem of site purchase and lease for preschool education. The research shows that because of the different fiscal policies and tax standards of government departments, it is more reasonable and economical for preschool education to operate leased sites in some cases. This is completely different from the university's calculation results and deserves attention.

Keywords: Preschool Project, Land Acquisition, Selecting Model

Introduction

1. Introduction

In recent years, due to the continuous development of the economy, China’s demand for infrastructure is huge. And the infrastructure and public services themselves require a lot of money to support. Traditional large-scale infrastructure projects, usually by the public sector alone to provide services, but this approach will lead to the government’s burden is very large, and there are a series of risks such as government failure. Another popular method abroad is to have full private and private sector provision of public services [1].

But this method is very easy to lead to the development of macro-economic constraints, and for China’s system itself is not practical, in China’s actual application, easy to bring the risk of market failure. To mitigate the risks of the first two approaches, balancing the two approaches yields a new approach, known as PPP.

With the opening of the second child and the follow-up policy, the cause of infant education in China is facing great challenges. The definition of infant education in our country mainly refers to the Education for Infants and young children of 0 ~ 6 years of age, and it is for normal intelligence children, according to the law of Intelligence Development of infants and young children, carry out organized and purposeful rich environmental activities to promote the intellectual development of infants and young children. Early Childhood Education lays the foundation for higher education in the future, so a good preschool is very important for everyone [2-4].

At the present stage, China’s temporary way is to encourage private enterprises to vigorously build kindergartens, but with the occurrence of a series of social problems such as “red, yellow and Blue”, it fully reflects the public’s distrust of private kindergartens, the management of private kindergartens is in disorder and the condition of government supervision is difficult. Therefore, according to the
State Council on the current development of pre-school education and the spirit of the three-year plan for provincial and municipal pre-school education, the construction of PPP places for infant education is imperative.

2. The Construction of Financial Analysis Model

2.1. Financial Analysis Model

Based on the project investment cash flow statement, the present value of net cash flow is calculated, the financial analysis of the project life cycle is carried out, and the feasibility of the project is judged by the dynamic investment payback period index [5-7].

The present value of annual net cash flow is calculated as follows:

\[
P_{t} = -K_t (1 + I)^{-t} \]

(1)

\[
P_{t} = \begin{cases} S_t + GSt - Ct - [(S_t + GSt) \times (1 - \gamma) - Ct - Dt] \times T \end{cases} (1 + I)^{-t} \]

(2)

where:
- \(K_t\) — Investment in year of \(t\);
- \(S_t\) — Gross income for year of \(t\);
- \(GSt\) — Government subsidies for year of \(t\);
- \(Ct\) — Operating costs for year of \(t\);
- \(\gamma\) — Ratio of income reduced to taxable income, 50% for small and micro enterprises, 0 for other enterprises;
- \(Dt\) — Depreciation for year of \(t\);
- \(T\) — Income tax rate;
- \(I\) — Discount rate.

The payback period is calculated as follows:

\[
\sum_{t=1}^{T} (CI - CO)_t = 0
\]

(3)

Among them:
- \(CI\) (Cash Inflow) — Cash Inflow in year \(t\);
- \(CO\) (Cash Outflow) — Cash Outflow for year \(t\);
- \((CI-CO)_t\) — net cash flow in year \(t\);
- \(T\) — Project Duration.

2.2. Evaluation Criteria

2.2.1 Dynamic benchmark payback period. According to cloud room data, China’s current long-term Treasury bond yield is 3.3%, real estate listed companies Yield valve 9.2%. At the same time, according to online data, the average annual rate of return of real estate trust is 8.05% in the first half of 2018. This paper uses the average annual rate of return of real estate trust to set the payback period of dynamic benchmark investment for 12 years. When the calculated dynamic payback period is more than 12 years, the scheme is not feasible, and vice versa.

2.2.2 Financial internal benchmark rate of return. According to “economic evaluation methods and parameters of construction projects (third edition)”, the financial internal benchmark rate of return is set at 12%. When the calculated financial internal rate of return is less than the financial internal benchmark rate of return, the project is not feasible.

3. Project Profile and Simulation Results
3.1 Basics of the Project
The case project is located in Lüshunkou District, Dalian. The land area is 1,840 square meters, the land price is 4,500 yuan per square meter, the plot ratio is 1.5, and the land tenure is 70 years, a kindergarten is built and operated by social capital in cooperation with the government through the PPP model. The social capital is responsible for the construction, investment and operation of the whole project. The government pays the fees of the infant education service to the kindergarten through the subsidy of the infant education service, at the same time in the kindergarten construction project land acquisition, taxation and other aspects of policy support. In return, kindergartens charge no more for their services than public kindergartens with the same level of service.

Table 1. Construction costs

| Project                                | Investment amount (thousand Chinese yuan) | Calculation basis                      |
|----------------------------------------|------------------------------------------|----------------------------------------|
| The cost of land                       | 35398                                   | 5300m2 × 6678 元/m2                    |
| Civil engineering cost                 | 8374                                    | 9300m2 × 900 元/m2                     |
| Advance engineering fee                | 593                                     | 7% of construction and installation cost |
| Cost of infrastructure and supporting facilities | 842                                     | 10% of construction and installation cost |
| Unforeseeable charge                   | 422                                     | 5% of construction and installation cost |

3.2 Construction of a PPP Kindergarten by Acquisition
According to the law of our country, the requirement of kindergarten Gross leasable area is no less than 10 M2 per child. According to the market analysis, the average number of people in a medium sized kindergarten is about 200, so the Gross leasable area needs 2000 square meters. At the same time, taking into account inflation, the price of civil construction and hard decoration is 900 yuan/m2, the working capital is 900,000 yuan, the basic furniture and equipment is 140,000 yuan in proportion to the number of beds. Other expenses shall be set aside in a certain proportion.

For reference, the average salary of infant and child care teachers and their employees in Dalian is 4,000 yuan per month, for a total of 50 persons, with an annual wage and welfare payment of $2.98 million. At the same time, taking into account inflation, the annual cost of meals is 1.07 million yuan, the annual cost of utilities is 140,000 yuan, the annual cost of office is 300,000 yuan, and the annual cost of repairs and materials is 220,000 yuan. Publicity costs are charged at 2 per cent of income. A total of $4.8 million per annum.

According to Formula (1) (2) (3): DYNAMIC PAYBACK PERIOD: PT = 28 years. The dynamic payback period of the project is too long, and the after-tax financial internal rate of return is less than the benchmark rate of return, which is unacceptable.

3.3 Construction of a PPP Kindergarten by Leasing
In order to reduce the financial pressure caused by land costs, according to the national guidance, assuming that land can be leased with the support of the government, and assuming that the lease term is 50 years, the first year should pay 750,000 yuan in rent, land rent is increased by 3 per cent annually and is paid once a year. On the basis of this financial analysis, according to the cash flow statement and formula (1) (2) (3) calculation: DYNAMIC INVESTMENT PAYBACK PERIOD: PT = 11.8 years. Under this assumption, the dynamic payback period of the project is reduced to 11.8 years, and the payback period is greatly shortened, which is basically the same as that of the dynamic benchmark.
It is difficult to find the critical value of uncertain factors because the payback period of the investment is much longer than the benchmark value when the land is purchased.

4. Conclusion
The simulation analysis shows that under current policies, social capital has a long payback period and a low internal rate of return for setting up a middle-income kindergarten in Dalian without government support, the project is not financially viable.

In order to encourage the social capital to participate in the kindergarten construction, the government should give the policy support in the following aspects: First, the government should allow the project operator to obtain the land by the way of lease, so as to reduce the pressure of the Social Capital Fund Cost; Second, the government in cooperation with social capital should limit the upper limit of the annual rent of the project land and reduce the enterprise income tax, so as to realize the feasibility of the project.

Applying PFI model to kindergarten projects can reduce the burden of financial endowment and effectively solve the problems of unbalanced service supply of public kindergartens and the difficulty in ensuring the public welfare of private kindergartens.

Kindergarten projects are characterized by long construction cycle and slow investment recovery, so project risks should be reasonably distributed between public and private parties according to the principle of risk sharing. In order to make the monetary value to fully embody the PFI project and the implementation of the social benefit is bigger, the operation stages according to the service quantity and quality of service for project performance evaluation, to determine the amount of subsidy, is helpful to improve the operation efficiency and service level of the private sector, give play to the role of the supervision of the public sector, realize win-win situation of project economic benefit and social benefit.

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