

Analysis of PPP Project Risk

Jing Zhang^{1, a}, Jiefang Tian^{1, b}

¹School of North China University of Science and Technology, Tangshan 063210, China.

^aHappydeZhangjing@163.com, ^b550341056@qq.com

Abstract

With the advent of civil society, public services and infrastructure have become an important part of people's lives. Due to the current situation of economic globalization in China, many governments have failed to build public facilities. As a new social capital investment method, PPP has facilitated the relief of the government's financial burden and the transformation of government functions. However, as far as the operation of China's PPP projects is concerned, there are still many problems and shortcomings that restrict the long-term development of PPP projects. Therefore, this paper mainly discusses the risk sources and risk prevention of PPP projects, and maximizes the effectiveness of PPP projects.

Keywords

PPP project; source of risk; risk prevention.

1. Introduction

The PPP model is a cooperative mode in which social public institutions and the private sector of the society build partnerships to achieve production or construction of infrastructure and service goals. After the partnership is established, each participant needs to participate in the construction of the project. During the "Thirteenth Five-Year Plan" period, the state has an encouraging attitude towards the PPP model. At this stage, this cooperation model has been applied in many fields such as large-scale infrastructure construction and municipal engineering[1]. By analyzing the social effects of PPP mode applied to engineering projects, it can be found that this model can help government departments to solve the shortage of public project construction funds, and can also provide a certain direction for private investment funds. It can be said that the PPP model has the function of promoting the optimal allocation of social resources.

2. Meaning and Risk of PPP Mode

2.1. Meaning of PPP Mode

In the process of China's economy moving from high-speed development to high-quality development, the government and social capital cooperation (PPP) model can be operated in an orderly manner, and the government's macro-control, development planning, market supervision and public services functions and social capital can be implemented. The combination of technological innovation and motivation to achieve complementary advantages and effectively improve the quality of public services[2]. This project of equal participation, openness, transparency, benefit sharing, and risk sharing is a concentrated expression of the modern state governance concept emphasized by the Party Central Committee with General Secretary Xi Jinping as the core. According to the information released by the Ministry of Finance and the Center for Social Capital Cooperation, the PPP model refers to the formation of a partnership between the government and private organizations in order to provide certain public goods and services based on the concession agreement. The partnership and the signing

of the contract clarify the rights and obligations of both parties to ensure the smooth completion of the cooperation, and ultimately enable the partners to achieve more favorable results than expected individual actions.

2.2. PPP Project Risk Definition

Risk refers to the possible loss and damage under certain conditions and circumstances, which is called risk[3]. Under normal circumstances, risks are ubiquitous and can be divided into controllable and uncontrollable risks. The PPP project has different positions in terms of enterprises and governments, and the expected benefits are also different. In the government's view, it is hoped that through the PPP project, long-term stable public services and infrastructure will be fulfilled, and the obligation to serve the public and perform government functions will be fulfilled. For investors, it is hoped that through PPP projects, continuous and long-term business opportunities will be obtained. Get a return on your investment. Generally involved in investment companies are: material suppliers, construction parties and capital investors.

However, there are risks in investing, as is the PPP project, so whether it is social capital or the government, there is a situation in which investment cannot be repaid. For example, the lengthy approval process, land acquisition and legal changes may bring risks, which may lead to delays in the project, failure to proceed smoothly, or serious debt disputes. In addition, the cost chain is broken due to weak cost control and poor internal management. As a result, the social capital has no return; or the unilateral breach of any party is also the main factor that can not be achieved. Only by analyzing the source of risk and developing risk prevention measures can we fundamentally reduce the losses caused by risks.

3. Principle and Basis of Project Risk Identification in PPP Mode

3.1. Principles of Risk Identification

Risk identification, that is, identifying where the risk occurs, the predisposing factors, the scope of the risk, and the risk characteristics. For PPP projects, there are many factors that induce risks. How to identify and simplify complex problems is the essence of risk identification problems. Finding the source from many influencing factors is the root cause. The risk identification of PPP projects is divided into two categories, one is objective existence, that is, the risk that can be predicted; the second is uncertainty risk, which may exist and requires the sharp professional judgment of managers to identify[4].

3.2. The Basis of Risk Identification

Risk identification is based on a variety of information and materials, including relevant historical data on risk management and information related to the project. Historical data is past risk management experience and documentation, which can provide reference for new project risk management. The relevant information of this project refers to various types of data of the project, and is the guiding information for analyzing the possible risks in this project.

4. PPP Project Implementation Key

4.1. Choosing the Right Project and Partner

The government should do a good job in the overall planning, comprehensive balance and reserve management of PPP projects in accordance with the needs of economic and social development, in accordance with the rational layout of projects and the effective allocation of government investment. From the public service and infrastructure projects to be constructed, timely screen the applicable projects of the PPP model, and cultivate and develop according to the PPP model; screen the mature construction projects from the potential projects submitted

by the project reserve or social capital, and prepare the implementation plan. Submitted to the joint review mechanism for review, and conduct value-for-money evaluation and financial affordability demonstration to ensure the practicability of PPP projects and avoid late implementation difficulties due to congenital shortage of projects. After the review of the implementation plan is reviewed by the jury system and approved by the government, the project implementation agency shall, in accordance with the laws and regulations such as the bidding and bidding laws and the government procurement law, adopt a variety of methods such as open tendering, invitation to tender, and competitive negotiation. Management experience, professional competence, financing strength and social capital with good credit status as partners.

4.2. Reasonable Benefits and Risk Allocation

The implementation of the PPP project can provide the government with the supply of demand for capital and advanced technology and management experience, and the social capital's strong financial strength (or financing capability) and advanced technology and management experience. Transforming partnerships and forming a community of interests to achieve mutual benefit and win-win results. Reasonable distribution of benefits and risk allocation are the basis for the formation of partnerships between the two parties. The government hopes to achieve the supply of the best products or services with the least amount of resources; social capital hopes to exchange high-value future profits by sacrificing the opportunity cost of funds and providing good products and services. Therefore, the PPP project agreement should balance the balance of business and public welfare in the distribution of benefits, not only to ensure the legitimate rights and interests of social capital, but also to maintain the public interest and control the profit of social capital at a reasonable level. In terms of risk allocation, factors such as risk allocation optimization, risk-return equivalence and risk controllability should be considered, taking into account factors such as government risk management capability, project return mechanism and market risk management capability. In principle, commercial risks such as project design, construction, finance and operation and maintenance are borne by social capital. The risks of laws, policies and minimum requirements are borne by the government. The risks such as force majeure are shared by the government and social capital.

4.3. Perfect Contract

The PPP project contract system mainly includes project contracts, shareholder contracts, financing contracts, engineering contracting contracts, operating service contracts, raw material supply contracts, product procurement contracts and insurance contracts. The project contract is the core legal document among them. The project boundary condition is the core content of the project contract, which mainly includes the boundaries of rights and obligations, trading conditions, performance guarantee and adjustment. The boundary of rights and obligations mainly clarifies the ownership of project assets, the public responsibility of social capital, the government payment methods and the results of risk allocation. The boundary of the trading conditions mainly clarifies the project contract period, project return mechanism, charging pricing adjustment mechanism and output description. The performance guarantee boundary mainly defines the compulsory insurance plan and the performance bond system consisting of investment competition guarantee, construction performance guarantee, operation and maintenance guarantee and transfer maintenance guarantee.

5. PPP Project Risk Analysis

The construction of the PPP project is the construction of the whole life cycle, interlocking, step by step, omission of any link, sudden unexpected factors in the construction process, and

expected deviation of the operation process will bring risks to the project. Summarizing the root causes of the current failed PPP cases can be divided into the following reasons:

5.1. The Project Has A Long Construction Period and Complex Operation Mode

The adoption of PPP projects is more common in the construction of infrastructure such as municipal public utilities, people's livelihood, water conservancy, transportation, etc., and the life cycle of such projects is relatively long, and the operation mode after the construction period is relatively complicated, making the project vulnerable to more uncertain factors. . These uncertain factors can be divided into two layers: macro and micro. The macro layer includes political, economic, and legal factors related to the national macro environment. Microscopic uncertainty refers to investment related to project benefits. , market conditions, costs, revenue and other factors. During the life of the project, these uncertain factors are widespread, which may cause the actual situation of the project operation to deviate from the expected effect, which leads to various potential risks such as market risk, government risk and insufficient income.

5.2. Risk Sharing and Adjustment Mechanisms Are Not Flexible

Risk sharing refers to the allocation of various risk elements in a PPP project among project participants in some form. There are many participants in the PPP project, mainly government and social resources. The project lasts for a long time, and neither the government nor the social capital are willing to take risks independently. In particular, the small profit of the PPP project makes the social capital cautious and cautious about the risk, and if the government bears a large risk, it loses the meaning of the PPP project. Therefore, the PPP project needs to set a flexible risk sharing and adjustment mechanism based on the risk avoidance and commitment of all parties in the contract formulation.

5.3. PPP Related Laws Are Not Perfect

The PPP project is still in the stage of continuous research and exploration. Relevant laws and regulations are still not perfect. The legal system lacking the national level is protected. Only the ministry regulations, local regulations or other normative documents support it. Due to the lack of a constraint mechanism for government defaults, policy changes have been more frequent, which has spurred the enthusiasm of the private sector, and has also increased the additional policy risks of the participants, which is not conducive to the development of the PPP model.

5.4. Force Majeure

There is a risk of force majeure in operating the project using the PPP model. Force majeure includes major natural disasters, including social factors such as wars that cannot be foreseen by parties to PPP projects [5]. Force majeure cannot be pre-empted in advance. If it is not avoided and shared in a scientific and reasonable way, the consequences will be unimaginable. The current state strongly advocates the "One Belt, One Road" development strategy, which brings unlimited opportunities for Chinese enterprises to "go global". "Going out" will be involved in the investment and construction of "PPP" (this PPP can be understood in a broad sense) project, and "One Belt and One Road" "The countries along the route are mostly located in the geopolitical sensitive areas and risk concentration zones of Asia, Africa and Europe. There are many social instability factors. These unpredictable "force majeure risks" pose great risks to the operation of PPP projects.

6. PPP Project Risk Prevention and Control Measures

6.1. Do A Good Market Survey

Before the investment and construction of the PPP project, the government departments and social capital must conduct sufficient market investigations, and jointly employ independent third-party organizations to prepare project feasibility analysis reports. Social capital should not direct the commitment of the current government as the actual development of the market. Government departments should also conduct independent market research, do not blindly make decisions, and should make scientific and reasonable analysis to make decisions that are in line with market conditions.

6.2. Improve the Strength of the Company Itself

In the current PPP mode, the construction market is undergoing earth-shaking changes. Compared with traditional construction projects, PPP projects put forward higher requirements for participating companies. The PPP model requires construction companies to further improve the integration of resources across the entire industry chain. With a variety of capabilities: investment and financing, planning and design, cost control, quality control, information management, operation and control. As the main body of PPP project participation, social capital should actively adapt to current and future policy adjustments and market development trends, continuously optimize the industrial structure and improve its own strength, so as to actively respond to various risks and protect project contracts in the future PPP project implementation process. Smooth execution.

6.3. Planning for Risk Sharing

Strictly speaking, risk sharing cannot reduce the probability of occurrence of specific events such as wars and natural disasters, but it can reduce the losses and risk management costs after the risks occur. Reasonable risk sharing is conducive to promoting the construction of PPP projects and making the project participants More active, cautious and rational performance of contractual obligations throughout the life of the project. In terms of risk sharing, the control of government departments is stronger than that of social capital, and the government departments should provide guarantees. In addition, after negotiation, social capital can bear the losses within a reasonable range of this risk, and if necessary, the government will recover after the policy is improved in the future; for financing risks, market risks, etc., social capital has more control ability and is closely related to its investment profit. Should be borne by social capital. The force majeure risk cannot be foreseen by the participants, and there is no control ability, such as natural disasters, wars, etc. o PPP project contract parties can stipulate the traffic control, policy protection clauses, and material price changes in the specific environment. In general, this risk can only be transferred to the insurance company.

6.4. Science Matching Risks and Benefits

The PPP project risk and return matching should follow the principle of reciprocity: that is, according to the principle of relative risk and return, the risk-bearing party should have greater economic benefits for the indirect manufacturing risk or the controlling risk. The PPP project government and social capital have different roles in cooperation. The rights and obligations assumed at different stages are different, and the value created in a specific period is different. Projects need to be reasonably allocated according to the principle that risk and return are consistent.

6.5. Improve Government Contract Supporting Policies

The position of the government in the entire market makes PPP projects not constrained by market and contract under certain circumstances. Based on this, in the process of PPP project construction, we must first establish a dynamic monitoring process for the whole process of

operation norms, and set the “rights and obligations” of the participating parties in the sunshine to truly safeguard the interests of the participants of the PPP project. At present, all parties to the PPP project should rely on the national PPP integrated service platform to comply with the spirit of the contract, and in case of problems, they can act in accordance with the law. At the same time, it is necessary to strengthen the supervision and approval of all aspects of the PPP project. If it is not included in the budget and there is no repurchase fund, it should be “one vote veto”. PPP project participants may introduce third-party PPP project special repurchase funds supervision and even custody to ensure that PPP project repurchase funds are paid according to the contract.

7. Conclusion

The PPP model is an innovative cooperation mode for the government to carry out urban infrastructure construction. The large number of participants, the complex life cycle of the project, and the diversity of operational risks make the PPP model a big problem in practical applications. Therefore, it is necessary to improve and improve relevant laws, regulations and rules and regulations, clarify the relationship between PPP project processes and rights and responsibilities, build a unified management platform, improve the risk sharing system, improve risk identification technology, strengthen risk resistance, and actively promote the development of PPP mode. China’s urbanization process has added lasting momentum.

Acknowledgements

The authors would like to thank Professor Wang Haixia of North China University of Science and Technology for the assistance in the invaluable information on PPP.

References

- [1] Chen Fang: Risk Sources and Risk Prevention of PPP Projects, *Taxation*, 12(2018)No.27, p.186.
- [2] Zhou Yi'an: Risk Assessment and Management Countermeasures of Engineering Projects in PPP Mode, *Industry and Technology Forum*, 17(2018)No.19, p. 240-241.
- [3] Huang Dian: Research on Financial Risk Measurement and Control of PPP Projects, *Journal of Finance and Accounting*, 10(2018)No.21, p.85-90.
- [4] Tang Qiwen, Li Yang, Tang Qianlong, Li Zhengliang: Research on Risk Identification and Sharing of PPP Projects, *Economist*, 9(2018)No.12, p.69-70+73.
- [5] Sun Jun : Discussion on contract risk and prevention and control measures of investment construction projects under PPP mode, *Science and Technology Innovation Review*, 13(2016)No. 19, p.131-132.