

Application of PPP Mode in American Transportation Infrastructure

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Abstract: The United States has certain practical experience in the field of infrastructure construction using the PPP model. This paper firstly analyzes the development history and policies of the US PPP project, and then analyzes the application of the PPP model in the US highway project. Third, it analyzes the advantages and disadvantages of the PPP model in the application of the US highway project. Finally, It is suggested that the United States approach provides some useful experience and enlightenment for China to develop PPP mode in the field of transportation infrastructure.

1. The origin of the development of PPP projects in the United States

From the perspective of the whole world, the development of PPP has been around for a long time. In the 18th century Britain, there were big businessmen who jointly set up trust-like companies to borrow money from private individuals to repair roads and set up fees on the roads they repaired as a source of repayment. In the modern sense, PPP appeared in the United Kingdom and the United States in the 20th century. The United States has been using various forms of PPP, and the private sector has played a greater role in providing public infrastructure than any other country. Most of the transportation, water, electricity, education, and other public services were originally built by the private sector with federal, state, or local governments. Especially in the 1980s and 1990s, the US government still needed to provide public infrastructure products and services to a growing population without raising taxes.

In order to save government expenditure costs, improve government leadership, increase project flexibility, and improve the quality of public services, the government began to use private sector resources to accelerate the supply of public goods and services, and PPP was able to grow rapidly in the United States. Up to now, the application of PPP has been extended to almost all public sectors in the United States, from schools, hospitals, prisons, to oil pipelines, transportation, garbage disposal, and even in the military, aerospace and other fields have the shadow of the private sector, and private role of the department is also becoming more and more prominent. According to relevant statistics, the PPP contract signed by the US federal government accounts for about one-seventh of the budget expenditure, and one-third of it is used by the Ministry of National Defense.

As a federal state, each state and local government has a relatively large autonomy. Therefore, various states and local governments will implement different modes and different levels of PPP according to their own requirements. In addition, the United States does not have a government agency that promotes PPP, but some NGOs and other agencies are actively working to promote PPP, such as the National Council for Public Private Partnerships (NCPMP) and the Mayors Business Council, etc. Among them, NCPMP is a non-governmental organization with a mission to promote public-private partnerships.

2. Development of PPP policy in the United States

2.1. Federal level.

The private sector plays an important role in the US transportation infrastructure. In the first half of the 19th century to the 20th century, the involvement of the private sector in the construction of toll roads and bridges in the United States was a common form. However, in 1956, the United States enacted the Federally-funded Highway Act and the Federal Highway Tax Act, which defined the source of funding for interstate highway development as a federal highway trust fund consisting of fuel tax, tire tax, and vehicle purchase tax. In addition to some bridges and tunnels, federally-funded highway projects prohibit charges, which excludes the private sector from the transportation infrastructure.

Since then, in order to continuously promote the private sector's participation in transportation infrastructure, the United States has introduced a series of laws and regulations. In 1995, the National Highway Designation Act (NHDA) was enacted, allowing the establishment of state infrastructure banks and increased private sector financing channels. In 1998, the Transportation Infrastructure Finance and Innovation Act (TIFIA) was enacted, which established the US Department of Transportation to provide loans or loan guarantees directly to the private sector or national contributors of eligible projects. This attracts more private capital into transportation projects. In particular, the bill supports major projects that use private sector funds (such as projects with an investment of more than \$100 million) and can receive up to 33% of the project cost of a federal loan or loan guarantee. In August 2005, the “Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, SAFETEA-LU” was issued. Authorized \$244 billion in funds to finance roads, road safety and public transportation projects; allow interstate highway tolls for road maintenance or new roads; and allow the issuance of private property bonds (PABs) with a cap of \$15 billion PPP project financing to fund road projects.

In September 2014, the US Federal Highway Administration issued the Model Public-Private Partnerships Core Toll Concessions Contract Guide, which is used to guide the standardization of the US toll road PPP model. In January 2015, the United States launched Qualified Public Infrastructure Bonds (QPIBs). Compared with the original public event bond issuance mechanism, QPIBs relaxed the issuance cap, expiration date, interest rate and maximum replacement limit. Restrictions have expanded the scope of financing for public transport, airports, ports, waste disposal, sewage treatment, tap water and more ground transportation projects, further contributing to the larger private sector's large-scale participation in PPP projects.

2.2. State level.

US state and local governments are also constantly exploring PPP legislation. In 2003, the Texas House of Representatives enacted the 3588 Act. The bill proposes new measures to promote the development of transport PPP projects. Specifically, it includes: (1) Establishing Regional Mobility Authorities (RMA). RMAs are special sectors that meet the transportation needs of one or several counties/counties by means of a cross-regional approach. Bonds may be issued or existing toll roads within the state road system may be converted into toll roads, or part of the land may be purchased or leased for non-transportation purposes to increase project revenue. (2) Expand the authority of state government highway tolls. Toll road projects that support toll income and government funds for public-private partnerships also allow the signing of toll agreements (shadow charges) so that local governments or the private sector can use their own funds and expected returns to improve the road. (3) Allowing Comprehensive Development Agreements (CDA), comprehensive development agreements to include road design, construction, financing, land acquisition, road operations and maintenance, and increasing the willingness of the private sector to participate in the project through franchise rights. (4) A flexible financial support policy for cross-border Texas transportation corridor projects. The cross-border Texas Transportation Corridor project is mandated to be built through bonds and PPP, so that government departments do not have to sacrifice other road projects in the construction of corridor projects.

3. Developments in the PPP model of the US Highway Project

Although the private sector already plays an important role in the US public infrastructure, compared with other countries, the United States is still slow to develop the PPP model in the transportation sector. The main reason is that the US highway construction funds in the past five or six decades have mainly come from the federal trust funds and other financial funds.

With the new demand for highways and the lack of financial resources due to social and economic development, since the 1990s, some toll highway projects have begun to be designed, built, financed, operated and maintained by the private sector (Design-Build-Finance-Operate-Maintain, DBFOM) model construction provided, in part because of the financing flexibility granted by the US government's ISTEA, TIFIA, SAFETEA-LU and other bills. According to statistics, as of October 2012, 11 highway projects with a total investment of more than 2.7 billion US dollars have been developed using the PPP franchise model or strict private investment. Currently, they are in the operational stage. This means that the use of the PPP model in the highway sector has accelerated in the past few years and will be used in larger and more complex projects in the future.

In addition, since 2004, the US transportation market has privatized the toll highways, selling the toll highway franchise rights under the fixed franchise period to the private sector, and the franchise period is longer, and the US government and scholars will sell the goods. Franchise rights are seen as privatization by the private sector. For example, a toll highway in Indiana and the Skyway on Chicago are sold to the private sector for 75 years and 99 years respectively. The franchise transfer income is the general public budget fund. In practice, the transfer of established toll highway franchise rights has also been criticized by some other public authorities, but this kind of trading activity has won the favor of the private sector.

4. Benefits of adopting PPP mode

From the practical experience of the United States, we can summarize some of the benefits of adopting the PPP model.

4.1. Compared with the traditional government supply model, adopting the PPP model can make the project implementation and supply as soon as possible.

One of the main reasons is that the PPP model is conducive to easing financial constraints and improving the public sector balance sheet debt situation. The use of public infrastructure tends to be a huge investment, and the ability of the public sector to secure and allocate budgetary funds is weaker than the private sector's ability to raise funds, especially on large projects. But this is not to say that the evaluation method of the PPP model is fair, but merely that the public sector can make full use of the PPP model to complete project financing and implement project implementation as soon as possible. The government can share the construction cost over a longer period of time without a one-off taking out huge sums of money.

4.2. The adoption of the PPP model is conducive to the transformation of government functions.

More and more private departments are involved in the construction, operation and maintenance of projects through the PPP model, which transforms the functions of government departments from the past infrastructure providers to regulators. This helps the government to withdraw from functions that it is not good at, to return the functions that should be undertaken by the market to the market, and to focus more on administrative coordination, policy support, quality and safety supervision. Government and market boundaries, improve public service levels, improve key performance indicator systems, and improve the quality of public services.

4.3. Adopting the PPP mode is conducive to improving the quality of service.

The private capital introduced under the PPP model is usually a company with relevant project design, construction or operation experience. Therefore, the private sector in the PPP mode can

participate more in the various stages of design, construction, financing, operation and maintenance, making the private sector relevant. Experience and technology are more fully utilized. In addition, the PPP model also introduces market constraints. In the PPP project, due to the existence of private capital and commercial lending, there will be bondholders and shareholders, both of which will pay attention to the project income. Among them, the creditor will calculate the project income beforehand, and request information disclosure in time to protect the timely recovery of the principal; shareholders will pay attention to the project management quality and progress, so as to protect their own profits. As a result, the project will pay more attention to the needs of the market and users in the establishment, which will help improve the quality of service.

4.4. Adopting the PPP mode is conducive to reducing production and construction costs while ensuring quality.

First, the private sector enters the project. Some or all of the risks of the construction, operation and maintenance of the project are transferred to the private sector. To ensure the operation, the private sector will receive the government fees or user fees as early as possible, which will greatly reduce the traditional mode. The extension of the construction period, cost overruns and other issues. Because in the PPP mode, only the completion can be received, which gives the private sector the incentive to complete the project on time and even in advance; secondly, many PPP projects are set, and the cost of exceeding the budget is also borne by the private sector. Therefore, in order to ensure the profitability of the project, the private sector will actively adopt various measures to manage risks through due diligence, etc., and minimize costs on the basis of quality assurance. Third, many of the private capital parties introduced in the PPP model are business entities that are good at risk management of the corresponding projects. Therefore, the introduction of such private entities through PPP can reduce construction risks and reduce construction costs while ensuring quality.

4.5. Adopting the PPP model is conducive to promoting economic growth.

Infrastructure construction projects are usually large projects with high cost and long payback period, but they are also related to the national economy and people's livelihood. If they rely solely on the government's own financial strength, the construction speed will be slower. Under the PPP model, a large amount of social capital has the opportunity to participate in the infrastructure construction, which can greatly increase the investment level in a short period of time and quickly complete the project construction, thereby improving infrastructure conditions and stimulating economic growth in the long run.

5. Possible problems with PPP mode

In the practice of PPP in the United States, there are also some problems worthy of summarization and reflection, which can be summarized as follows:

5.1. The cost of financing.

Private sector financing costs are significantly higher than government borrowing costs. According to US law, the US federal and state governments have the right to issue bonds, while issuing bonds is tax-free, and private sector financing is subject to tax, which makes the cost of private sector investment higher than government financing costs, using PPP mode. It does not reduce the cost of public service provision.

5.2. The project has a slow schedule and high handling fees.

On the one hand, compared with the traditional model, the pre-bidding bidding in the PPP mode takes a relatively long time. Therefore, the government department and the private sector need to understand each other and study in the early stage of cooperation. Further government departments may need to work with one or more private departments. A saw-and-saw negotiation process is carried out, which may result in higher transaction costs. On the other hand, for many institutional

departments, the PPP model is a new financing model. Therefore, it is necessary to learn and understand the experience of other regions first, so the initial learning time will be relatively long and the training cost will be relatively high.

5.3. The public understands the degree of recognition.

Regarding the PPP model, the public's understanding is not consistent, and some people will treat PPP and privatization. In essence, there is a clear distinction between privatization, which refers to the transfer of ownership of an asset to the private sector, which is regulated by institutions such as the Public Utilities Commission. PPP is an institutional arrangement for cooperation between the public and private sectors, and the rights and obligations of both parties are agreed upon in accordance with the contract law. Due to the transparency of many PPP projects, the availability of policy and project information, and the failure of the public to meet the needs of the public, some of the public's understanding is limited, so they are opposed to the PPP model.

5.4. The opportunistic tendencies of the government and the private sector may lead to project failure risks.

If there is no very clear and detailed regulations, the government is limited by the amount of funds. In order to meet the public's demand for infrastructure, it may be necessary to attract private capital to participate in project construction, reduce project standards in preparation for bidding, and raise standards and revisions after completion of bidding. In order to win the bid, private companies may first meet the government's requirements and propose more favorable conditions. After winning the bid, they will propose new requirements and renegotiate with the government. In this way, either the project may fail in the end, or the project cost will be increased, and the image of the government and the public sector will be affected, thus damaging the healthy development of PPP in the long run.

6. The Reference and Enlightenment of American Development Experience to China

Under the background of deepening the reform of financial investment and financing system in China, promoting the development of PPP mode in the country is of great significance to China's further improvement of transportation infrastructure construction and improvement of public service level. However, as in the previous analysis, it should be acknowledged that the PPP model may also bring some problems to society in its development. In practical applications, PPP is not applicable to all fields. Not all problems can be solved by it. The project structure must be rationally designed according to the actual situation of the project. Therefore, China needs to absorb the development experience of the United States in promoting the PPP model.

6.1. The Ministry of Finance, the People's Bank and other departments have introduced flexible financing support policies.

From the perspective of the development of the PPP model in the US transportation infrastructure, it is inseparable from the support given by financing. The transportation infrastructure, especially the toll highway project, has a large investment scale and a long investment recovery period. In addition, future new projects are mostly projects with poor economic benefits and outstanding social benefits. In order to attract social capital participation, it is necessary to provide flexible financing support for social capital. Specific recommendations by the Ministry of Transport, the Ministry of Finance, the People's Bank of China and other departments to design and introduce relevant policies to give social capital financing flexibility, credit concessions and other support according to the characteristics of transportation infrastructure projects, so as to increase the attractiveness of social capital, in the choice of investors to achieve full and effective competition, and to a certain extent, the feasibility gap subsidy project can reduce the level of government investment subsidies and reduce the pressure on fiscal expenditure.

6.2. Encourage localities to explore innovations in a local context.

PPP itself is a great innovation in the supply of institutions. Then, for each PPP project specific operational design, there are countless innovation spaces. As a federal state, the states have greater autonomy, and Texas is constantly innovating and developing legislation to promote the application of PPP in transportation projects, allowing the establishment of special departments, expanding highway toll jurisdiction, and allowing the use of comprehensive development. Agreements, flexible financial support, etc. to attract private sector participation. It is suggested that China can learn from the US practice, propose principled rules at the central level, give local governments greater discretion, encourage localities to adapt to local conditions, combine the characteristics of transportation PPP projects, boldly explore, innovate PPP models, enrich PPP connotation, improve system design, and strengthen the means of supervision creatively implemented the central PPP policy and regarded the public interest as the main driving force for innovation, so that the people can get benefits from the PPP project.

Use the power of non-official organizations to strengthen the knowledge and promotion of PPP. There is no special government agency in the United States to promote the use of PPP throughout the country. Instead, some non-official organizations are actively promoting it. Drawing on the practice of the United States, China should also organize the transportation PPP on a regular and irregular basis with the help of quality research and consulting institutions. Knowledge promotion and training, improve the awareness level of PPP at all levels of transportation departments and social capital; actively build a platform to promote communication between government departments and social capital, promote communication between the two parties, exchange ideas and ideas, and then jointly promote understanding and support for PPP.

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