International Experiences for Public Engineering Project PPP Finance Mode: Inspiration to Public Engineering Project Finance in China

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Abstract. Under the cooperation of public sector and private sector, public engineering project PPP finance mode can use abundant technology and management experience for private sector. It can support long term stable investment channel for private sector. At the same time, it can decrease finance pressure for government sector and can realize the winning for both public sector and private sector. PPP mode can flexibly adopt many different types according to detailed conditions for public engineering project, among which franchise BOT is typical running style. Many countries have accumulated abundant public engineering project finance, construction, operation and management experiences for PPP mode. China should study PPP mode operation experiences for public engineering project accumulated long term by other countries, and should improve PPP mode operation process according to China’s specific conditions. When public engineering project uses PPP mode, rational investment compensation, transfer and exit mechanism should be designed to attract private sector, and law, policy, operation management institutions, contract management and risk duty mechanism should be enhanced.

Introduction

In PPP (Public-private partnership) finance mode, public sector and private sector should cooperate to fulfill one public engineering project, and they support the necessary capital together for it. Because public engineering project usually has big scale construction and high investment, the government sector will face much finance pressure if it affords the total investment individually for many public engineering projects. This is not good to long term healthy development for public engineering project.

PPP finance mode can well solve this question, in which public sector and private sector cooperate to fulfill public engineering project. It can fully use the abundant technology and management experience for private sector, and it can give long term stable investment channel to private sector. It can decrease government finance pressure, so public sector and private sector can both get economic revenue from PPP finance mode. Because PPP finance mode has obvious advantage, many countries have adopted it for public engineering project. Now the public engineering projects in China also widely adopt PPP finance mode, and the number will increase gradually in the future.

Many countries have accumulated abundant public engineering project finance, construction, operation and management experiences for PPP mode. Among these countries there are common public engineering project operation types, and there are also different public engineering project operation types. China should study PPP mode operation experiences for public engineering project accumulated long term by other countries.
International Experiences for Public Engineering Project PPP Finance Mode

Experience for Public Engineering Project PPP Finance Mode in France

In 2004, France treasury ministry issued “Empirical guideline for public and private partnership (PPP) contract”. It gave detailed regulations for law and operation criterion abided by public sector and private sector in PPP mode. The public engineering project PPP mode in France adopts many styles, including debt finance, Dailly transfer mechanism, project corporation finance, equity finance and lease. In Dailly transfer mechanism, financial institution signs special document to transfer creditor’s right for some debtors to credit institution by purchase or mortgage (Jiang, 2016).

PPP finance mode has been fulfilled in many public engineering projects in France, and the government sector pays much attention to public engineering project. Private enterprise usually takes part in public engineering project and pays the investment with big proportion. In PPP finance mode for public engineering project, rational design and management for project contract are very important.

The PPP mode contract in France can usually be divided into “Partnership contract and similar contract” (CPE) and “Entrusted public service contract” (DSP). CPE includes all PPP mode contracts paid by government sector (listed in Table 1). DSP includes PPP mode contract paid by users, and the common styles are franchise, lease and private management (Pei, Wang, 2016).

<table>
<thead>
<tr>
<th>Kind</th>
<th>CP</th>
<th>BEA/BEH</th>
<th>AOT/LOA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range of contract</td>
<td>Asset design, construction, operation, finance and maintenance</td>
<td>The most are related to construction. The service not for construction is limited. Judicature, public security, health, house, fire fighting and rescue service</td>
<td>Include private construction duty and choice of purchasing asset for public institution Public security, judicature, national defense</td>
</tr>
<tr>
<td>Fields</td>
<td>All</td>
<td>All</td>
<td>Country and district institution</td>
</tr>
<tr>
<td>Public institution</td>
<td>All public institutions</td>
<td>Local institution and health fund</td>
<td>Country and district institution</td>
</tr>
<tr>
<td>Ownership of project asset</td>
<td>Owned by public institution</td>
<td>Transfer to private in contract term</td>
<td>Transfer to private in contract term</td>
</tr>
<tr>
<td>Return for private partner</td>
<td>Public payment(part paid by some users)</td>
<td>Public payment</td>
<td>Public payment</td>
</tr>
<tr>
<td>Project design</td>
<td>Public institution designs or private partner designs</td>
<td>Private partner designs</td>
<td>Private partner designs</td>
</tr>
<tr>
<td>Contract period</td>
<td>Related to asset life span(max number is 99 years)</td>
<td>18-99 years</td>
<td>Max number is 70 years</td>
</tr>
</tbody>
</table>

Table 1. Main character of partnership contract and similar contract(CPE) in France.


Experience for Public Engineering Project PPP Finance Mode in UK

The public engineering project PPP mode in UK adopted PFI style in 1997. In this style private sector took part in public engineering project construction, and the project was given to private sector to operate after construction. Government would pay bonus for free charge public engineering project. Improved PF2 style was adopted in UK in 2012. In this style government sector took part in public engineering project equity investment as small stockholders. The project finance report must be open, and open invite tender management should be enhanced (Yin, Chen, 2015).

UK issued “Evaluation guideline of value for money” in 2004, which used value for money (VFM) method to evaluate public engineering project. VFM method compared bid price with public sector comparator (PSC). If bid price was lower than PSC which was the total expense adjusted with risk by public sector, PPP mode should be adopted (Gao et al., 2011).

The PFI style in UK gives clear definition for government sector and private sector to take part in PPP project. It encourages private sector to take part in public engineering project, and public sector
and private sector supply the project together. It can use the technology, management and capital advantages for private sector, and can realize the winning of public sector and private sector. This style has been widely used in many countries. VFM evaluation method explains the feasible condition for public engineering project PPP mode, which is good to make rational judgment to public engineering project for government sector. But it is difficult to define PSC rationally, and the key question is how to divide and measure all kinds of revenue and expense for public engineering project.

Experience for Public Engineering Project PPP Finance Mode in Japan

Japan issued “Law of promoting public project construction with private sector” (PFI law) in 1999. The government gave the design, construction, maintenance and operation for public engineering project to special corporation. The corporation can adopt BTO, BOT, BOO, RO styles to fulfill project with service purchasing type, individually computing type or mixed type (Tang, 2016).

The innovation of PPP finance mode in Japan is that PPP mode is used for middle and small enterprise finance service. After empirical research and law construction for many years, PPP finance mode is mature now and government sector can use little amount capital to support middle and small enterprise (Huang, 2007). This innovation lets government sector realize the aim of using PPP mode to fulfill public engineering project, and lets middle and small enterprise solve the question of difficult debt and equity finance because of small scale.

Experience for Public Engineering Project PPP Finance Mode in Korea

Korea issued “Law of promoting social capital to take part in infrastructure investment”(PPP law) in 1994, which promoted PPP finance mode to be used in public engineering project widely. Korea first revised this law in 1999, which allowed to give finance support for social capital credit warrant. It also allowed social capital to start PPP finance project, and allowed private infrastructure investment center to support professional technology service. Korea second revised this law in 2005, which allowed to use BTL style for public engineering project. It also allowed to increase the range for social capital to take part in, and allowed to cancel lowest revenue protection for social capital (Finance department of Treasury Ministry in China, 2015).

When public engineering project adopts PPP mode, the clear definition of right, law status, finance operation and supervision for public sector and private sector is very important to successful construction and operation for public engineering project. Public engineering project PPP finance mode should build complete law and policy system, and PPP management institution should have full function and good supervision. This is basic condition for the country to fulfill healthy public engineering project. Korea has accumulated abundant experience for this side.

Korea has built complete PPP law and policy frame, and it can be divided into “PPP law”, “PPP law fulfilling rule”, “PPP project plan” and PPP project guideline from up to down. PPP management institutions in Korea mainly include congress, treasury ministry, industry administration department, local government, PPP check commission and Korea PPP center (Finance department of Treasury Ministry in China, 2015).

During long term exploration process to fulfill PPP public engineering project in many countries, abundant experiences for PPP project finance, construction, operation and management have been accumulated (listed in Table 2). The common point is that government proposes private sector to take part in public engineering project, and the technology, management and capital advantages for private sector should be used to build complete PPP project operation mechanism. Furthermore, special PPP project operation experiences focused on some sides are produced in many countries, and the research for these special experiences will be good to fulfill PPP project systematically.

Develop Status for Public Engineering Project PPP Finance Mode in China

The construction and operation for public engineering project in China have been fulfilled long time. The public engineering project was fulfilled by government sector in the past, and there were some
questions in reality for government sector to construct public engineering project individually. Because government sector isn’t professional institution to construct public engineering project and hasn’t professional knowledge for design, engineering and supervision, government sector usually entrusts engineering corporation to construct public project. This will produce asymmetric information between government sector and engineering construction corporation. Engineering construction corporation has complete information for engineering construction, while government sector only has incomplete information for engineering construction.

Some public engineering projects began to use construction investment supplied by government sector and private sector together in 1980s in China. In the early stage of 21 century, PPP mode was gradually increased in public engineering projects in China. Now China government has paid much attention to use PPP mode in public engineering project, and PPP mode will have wider and wider prospect for public engineering project construction in the future.

When public engineering project uses PPP mode, the portfolio of equity, debt and other styles should be designed according to project condition and finance requirement, which will let public sector and private sector flexibly take part in project and will increase project operation efficiency (Fodor et al., 2013; Kini et al., 2009; Dumas et al., 2009; Hand, Green, 2011; Escobar et al., 2015).

Table 2. Public engineering project PPP finance mode in typical countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>Main character</th>
<th>Operation style</th>
</tr>
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<tbody>
<tr>
<td>France</td>
<td>Project contract design and management</td>
<td>Project contract is divided into CPE and DSP. CPE includes all PPP mode contracts paid by government sector, and its range involves with public security, judicature, national defense and other public projects. DSP includes PPP mode contract paid by users, and the common style is franchise, lease and private management.</td>
</tr>
<tr>
<td></td>
<td>Daily transfer mechanism</td>
<td>Government and private sector take part in public engineering project together.</td>
</tr>
<tr>
<td>UK</td>
<td>VFM evaluation method</td>
<td>VFM compares bid price and PSC.</td>
</tr>
<tr>
<td>Japan</td>
<td>PPP mechanism for middle and small enterprise finance service</td>
<td>Government sector realizes the aim of using PPP mode to fulfill public engineering project, and middle and small enterprises solve the question of difficult debt and equity finance because of small scale.</td>
</tr>
<tr>
<td></td>
<td>Build SPV</td>
<td>PPP law and policy frame can be divided into “PPP law”, “PPP law fulfilling rule”, “PPP project plan” and PPP project guideline.</td>
</tr>
<tr>
<td>Korea</td>
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</tr>
<tr>
<td></td>
<td>PPP management institution</td>
<td></td>
</tr>
</tbody>
</table>

PPP mode can flexibly adopt many operation management styles according to detailed condition for public engineering project. Among these styles franchise BOT (build-operate-transfer) is typical operation style. When public engineering project uses BOT style, government sector gives public engineering project to private sector for design and construction, and government sector permits private sector have certain franchise period after project construction. Private sector operates public engineering project and gets revenue during franchise period, and private sector gives the project back to government without returns after franchise period. Based on BOT style, public engineering project PPP mode has many derivative styles, such as BOO (build-own-operate) and BLT (build-lend-transfer).

Inspiration to Public Engineering Project Finance in China

When public engineering project uses PPP mode in China, international operation experiences for public engineering project PPP mode should be studied and listed as reference. China detailed conditions should be considered to improve operation process for public engineering project.

Because public engineering project has high construction cost and long recycle period, private sector usually hasn’t enough effort to take part in the project for PPP mode. During the construction
and operation for public engineering project, many measures should be adopted to attract private sector, and rational investment compensation, transfer and exit mechanism should be designed. Public sector should enhance explanation and knowledge training to let private sector understand construction and operation process and investment usage and recycle process for public engineering project. For successful public engineering project, technology, management and operation experiences should be timely concluded to use in new public engineering project construction and operation.

When public engineering project uses PPP mode, law and policy should be improved and operation management institutions should be enhanced. Complete PPP law, rule and policy are good to make clear definition to right, duty and operation process for government sector and private sector. Government sectors with different rank should all have PPP management institution to let the plan, construction, operation for public engineering project be fulfilled with guidelines. Contract management should be enhanced and rational risk duty mechanism should be designed for public engineering project. A series of contracts should be signed, such as design, engineering, main contractor, subcontractor, operation, finance contracts. Clear, rational and convenient terms should be designed for these contracts. It can give definite right and duty for all sides and can let project have good construction and operation.

Because public engineering project has long period, government sector and private sector will face many risks, and rational risk duty mechanism should be designed to decrease total project risk. Government sector mainly affords law, rule and policy risks to let project be constructed and operated under stable and good macro environment. Private sector mainly affords design, engineering and operation risks, and has the duty to use efficient technology and management experience.

Conclusions

PPP finance mode can fully use the abundant technology and management experience for private sector and can give long term stable investment channel to private sector. It can also decrease government finance pressure, so public sector and private sector can both get winning for public engineering project PPP finance mode. China should study PPP mode construction, operation and management experiences for public engineering project accumulated long term by many countries in the world, and should improve PPP mode operation process according to China’s specific conditions.

PPP mode can flexibly adopt many operation management styles according to detailed condition for public engineering project, among which franchise BOT is typical operation style. When public engineering project uses PPP mode, rational investment compensation, transfer and exit mechanism should be designed to attract private sector, and law, policy, operation management institutions, contract management and risk duty mechanism should be enhanced.

References


