

PUBLIC-PRIVATE PARTNERSHIPS IN CHINA'S INFRASTRUCTURE DEVELOPMENT: LESSONS LEARNT

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Abstract

Recently, the Chinese government has shown its active attitude to encourage and support private investors to participate in the infrastructure construction and public service supply, and there is a huge investment opportunity for PPP in China. However, many risks exist especially due to the immature legal system and creditworthiness of the government, and only those who have in depth understanding on the Chinese legal system and manage risks well will succeed. This paper, therefore, explains the most frequent risks encountered in China's past PPP projects like legal/regulation risks, political risks, economic risks, and force majeure risk. Lessons learnt from previous PPP implementations in China are also summarized, such as being familiar with the local government and its off-take capability, business environments; avoiding unfair contract; launching a boundary for higher and lower rates of return.

Keywords: Lessons learnt, Public-Private Partnership, Infrastructure, China

INTRODUCTION

Public-Private Partnerships (PPPs) are arrangements where the public and private sectors both bring their complementary skills to a project, with varying levels of involvement and responsibility, for the purpose of providing public services or projects (Efficiency Unit, 2008). In recent years, there have been increasing campaigns for PPP in the development and operation of infrastructure projects. PPPs present a number of recognized advantages, which include the ability to raise additional finance, bring the private sector operational efficiencies, reduce cost and increase quality to the community (European Commission, 2003).

In China, the tremendous economic growth has resulted in an immense demand for basic infrastructure like roads, ports and power generation facilities. To meet the development needs, the Chinese government has progressively promulgated a number of regulations for

private investment in public utilities, and is moving towards adopting international contractual practices and working out an equitable risk-sharing scheme. More importantly, the Chinese government announced on November 9, 2008 that China will relax credit conditions, reduce taxes and embark on a massive infrastructure spending program in a wide-ranging effort to offset adverse global economic conditions by boosting domestic demand (Chinese Government's Official Web Portal, 2008). With the 4 trillion RMB stimulus plan as announced by the Chinese government, only 1.18 trillion comes from the central government, the rest would have to be topped up by the local government, and/or the private sector (NDRC, 2009). Since most of the local governments are still subject to severe budgetary pressure, there is a heavy reliance on the private sector investment. This might provide a great opportunity for private investors to get more involved in infrastructure development via PPP mode. Therefore, it is worth examining the application of PPP in the past and deriving lessons learnt for future references.

RESEARCH OBJECTIVES AND METHODOLOGY

In general, the primary objective of a PPP arrangement is to bring a win-win result between the government and private investors. Under the existing social, legal, economic, political, and technological environments of China, it is understandable that the PPP framework, even if successfully tested in other countries, must be structurally adjusted. However, the PPP application in China, a country that is rapidly changing, has evolved in an ad hoc and experimental manner and a mature Chinese PPP framework has not been established (Chen and Messner, 2005). Therefore, the objectives of this study are as follows:

- To examine the standard practices of the Chinese government's administration on PPP projects; and
- To draw lessons of PPP implementations in China's infrastructure development.

The research methodology for this study consisted of four steps: (1) reviewed extensive literature on PPP and its practices in China; (2) collected data and identify the diversity and evolution characteristics of PPP development procedure and governmental administration; (3) collected actual data from 16 PPP projects in China from a desktop literature review and telephone interviews; (4) analyzed the project data to identify the key reasons to their failures, and then drew lessons for both the private investors and government to better set up their strategies in project delivery.

INFRASTRUCTURE DEVELOPMENT IN CHINA

China has been facing with the realities of a growing large population, an increasing urbanization growth and a present quandary of limited resource, which urgently calls for creative and optimal use of infrastructures. To alleviate the negative impact, Chinese government has always shown its active attitude to support the investment and development of infrastructures. In general, the infrastructure development in China since the Opening-up reform could be divided into three phases as presented, i.e. initial development (1978 - 1989), rapid development (1990 - 2002) and stable development (2003 - present) (NBSC, 2008).

At the early stage of China's Opening-up, basic infrastructure like roads, ports and power generation facilities were in urgent need and accounted for a large proportion of government funding. During the period of 1982 - 1989, Chinese government put a total investment of 292.7 billion RMB in about 261 infrastructure projects including energy and public

transportations (NBSC, 2008). Since 1990, private capital had been encouraged to participate in the infrastructure development, most of which were implemented in the form of Build-Operate- Transfer (BOT). With the coming of private participation, there was a rapid growth of China's infrastructures. It is worth taking notice that the Chinese government issued a total number of 660 billion RMB treasury bonds and invested these to the infrastructure construction (NBSC, 2008), when the Asian Financial Crisis happened in 1997. In phase 3, in line with its sustaining economic growth and its success in bidding for 2008 Olympic Games, huge capital in infrastructure area has been invested in order to decrease the bottleneck effect of infrastructure shortage. In addition, a stimulus package estimated at 4 trillion RMB will be spent over the next two years after 2008 to finance programs in 10 major areas, such as low-income housing, rural infrastructure, water, electricity, transportation, the environment, technological innovation and rebuilding from several disasters (Chinese Government's Official Web Portal, 2008). It is therefore understandable that China will continue a rapid development tendency in its infrastructure development after 2008.

PPP IN CHINA

Application Status

Private participation in infrastructure development in China was first seen in the power industry in 1980s. The Shajiao B power plant in Shenzhen, which came to operation in 1988, is regarded as the first BOT project in China. However, government and commercial banks in Shajiao B project took over too many risks due to the lack of BOT experience. Thereafter, several state-approved pilot BOT projects have been awarded in order to introduce BOT on a larger scale since late 1996, such as Laibin B power project and Dachang water project etc. Since then, the involvement of private investors in infrastructural development of public utilities has improved greatly. However, at the end of last decade, the central government invested huge amounts of treasury bonds in infrastructure, and was determined to clean up the unregulated or illegal projects, which lead to a termination of the first round of private investment (Shen et al, 2005). Stepping into the 21 century, the bottleneck effect of infrastructure shortage for the economy emerged and imposed great budgetary pressure on the government. For examples, the forecast of the total investment on rail construction in the 11th Five-Year (2006 - 2010) is 1,250 billion RMB (MOR, 2006); In Beijing alone, there will be about 2,400 infrastructure projects to be developed during this period with a total investment of over 470 billion RMB (BMCDR, 2006). The huge investment in infrastructure area could not be completed by the government alone, thus provides a good business opportunity for private investors.

In light of the above, there are two rounds of private investment in China's infrastructures as presented in Figure 1, which illustrates the PPP project numbers each year in China according to the World Bank PFI database. It is easy to find that China's infrastructure market has been opened to the private investors except for some special sectors such as pivotal railway, ports and airports. The highest openness has been seen in toll road and municipal utilities including water, environment, city gas, etc. However, it could be found that the investors in both rounds of infrastructure investment in last two decades have limitations (Wu, 2007). Foreign investors acting as the major player in the first round usually charge higher and prefer operating projects in more developed regions in China, while state-owned enterprises as the principle player in the second round have relative low operation and management efficiency, which largely restrains the advantages of concession model. Nevertheless, international companies are still the most competitive player (Zhang, 2009).

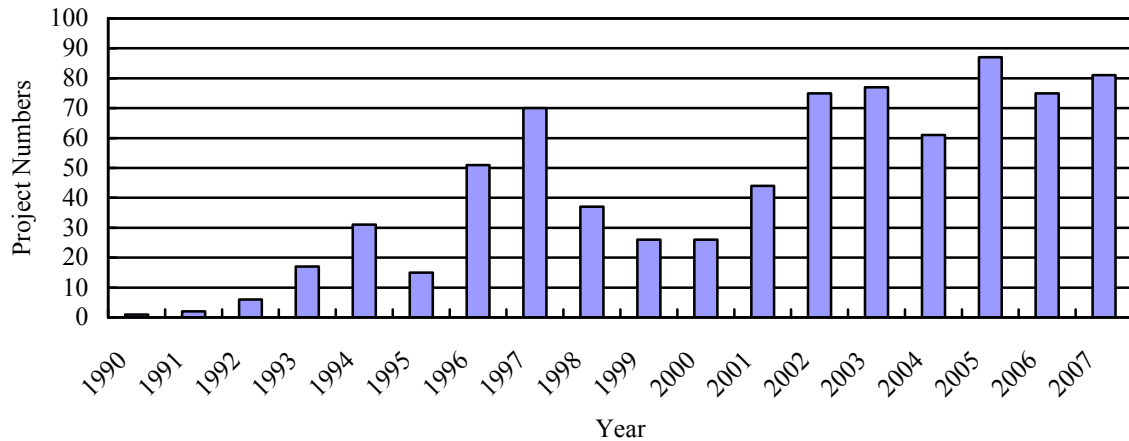


Figure 1: *Private Investment in the Chinese Infrastructure Development (World Bank, 2009)*

Evolution of Governmental Administration

Chinese government's active attitude has been seen to encourage and support private investors to participate in the infrastructure construction and public service supply. Table 1 lists out all the direct governmental documents to promote and guide the private investment via PPP vehicle.

Table 1: *Direct governmental documents related to PPP in China*

Year	Document Title
1994	Local administrative measures on the concession of municipal public utilities in Huerhaote and Hainan
1995	Circular Concerning the Issues of Absorbing Foreign Investment through BOT
1995	Circular Concerning the Issues of the Approval and Administration of Experimental Foreign-invested Concession Projects
2000	Temporary Provisions of the Ministry of Construction on Utilizing Foreign Capital in Municipality Public Utilities
2001	Several Opinions of the State Development Planning Commission concerning the Promotion and Guidance of Private Investment
2001	Local administrative measures on the concession of municipal public utilities in Jilin and Dalian
2002	Notice of the General Office of the State Council on the Relevant Issues concerning the Appropriate Handling of the Existing Projects Guaranteeing the Fixed Return from Investments by Foreign Parties
2002	Opinions of the Ministry of Construction on Accelerating the Marketization of Urban Utilities
2003	Local administrative measures on the concession of municipal public utilities in Beijing, Jiangsu, Sichuan, Hebei, Chengdu, etc
2004	Administrative Measures on the Concession of Municipal Public Utilities
2004	Decision of the State Council on Reforming the Investment System
2004	Sample Document for the Franchised Operation of Urban Water Supply, Gas Supply and Waste Disposal
2004	Local administrative measures on the concession of municipal public utilities in Ji'nan, Guizhou, Shanxi, Xuzhou, etc
2005	Several Opinions of the State Council on Encouraging, Supporting and Guiding

	the Development of Individual and Private Economy and Other Non-Public Sectors of the Economy
2005	Local administrative measures on the concession of municipal public utilities in Tianjin, Dongguan, Gansu, Qingdao, Xinjiang, etc.
2006	Sample Document for the Franchised Operation of Urban Heat Supply and Wastewater Disposal
2006	Local administrative measures on the concession of municipal public utilities in Hu'nan, Shanxi, Hefei, Wuhan, Shenzhen, Beijing, etc.
2007	Local administrative measures on the concession of municipal public utilities in Shanghai (draft)
2008	Research Reports of PPP Legislation in Infrastructure Development

The governmental documents listed in Table 1 reflect several improvements of the Chinese government with regard to PPP implementation in the following:

- The target of the guidance documents is expanded to all private investors from foreign investors only;
- The implementation method is also expanded to a wider concept of concession from BOT model;
- More detailed operation procedures are provided; and
- An active attitude of the Chinese government to encourage private participation in public utilities and improve the investment circumstance is seen.

However, laws and regulations in China are still not mature and are changing so far, especially for those related to PPP. Several defects are listed as follows:

- These governmental documents are in lack of strong legal force in the forms of opinion, notice and decision, which may become a potential risk when they conflict with other regulations or laws;
- Current documents are issued by the State Council and its ministries, which majorly take into account their own responsibilities and therefore lack of completeness; and
- A myriad of regulatory procedures and charges at municipal, provincial and national levels affects the promotion of PPP, especially during swings in macro-economic control measures.

Approval Procedure

The National Development and Reform Commission (NDRC, used to be called “State Planning Commission, SPC”) and local planning commissions are in charge of evaluation and approval of project application reports of PPP projects. In the past, the interior provincial governments, and ministries and commissions concerned under the State Council (SC), have the power to evaluate and approve projects with a total amount of investment below US\$10 million. The local governments of special economic zones and the coastal cities have the power to evaluate and approve projects with a total amount of investment below US\$30 million, while the SPC is responsible for those projects that are above US\$30 million (Wang et al, 1998). However, in order to transform the administrative functions of the Government and simplify the approval procedure, Decision on Reforming the Investment System and the Catalogue of Investment Projects Approved by the Government was issued in 2004 by the SC, which lists out the major and restricted fixed assets investment projects invested and constructed by enterprises without using government capital. Thereafter, a private consortium may only submit project application reports to the government for its investment and construction of any project in the Catalogue, which is subject to ratification, and such

procedures as the approval of project proposals, feasibility study report and report for starting construction shall not be stuck to any longer (State Council, 2004). The Catalogue has also made prescription on the power of governmental approval, of which the total amount of investment is not the only division standards of the approval power. Instead, different standards are adopted according to the different nature of PPP projects.

Tending Procedure

The Ministry of Construction is responsible for the overall administration of the tendering activities throughout the country, while the construction authorities are responsible for those within their own areas. The main tasks of the government administration organizations include prequalifying contractors, reviewing and approving the client's application for calling for tenders and tender documents, evaluating tenders, arranging and supervising tender opening, tender evaluation and award of contract, making arbitration regarding the disputes that occur during the tender process, penalizing the organizations or individuals who violate tender procedures, and supervising the signing and performing of the contract.

At present, there are two types of administrative arrangement commonly used for PPP projects. The first form is to set up a separate tendering office formed of professionals. The rules and regulations related to the tender process are formulated jointly by the Construction Commission, Planning Commission, Fiscal and Auditing Bureau, Industrial and Commercial Administration Bureau, and other relative departments, with the Construction Commission representative as the leader of this office; the other form is to employ or create an agency entrusted with the whole process, which was adopted in Guangxi Laibin B Power Project (Wang et al, 1998). It is worth noticing that several contradictions exist between the bidding procedure for PPP projects and the Bidding Law, which may be considered as a potential obstacle. For instances, according to the Bidding Law, it would not be allowed for the investors to negotiate with the government on the key issues such as tendering price; it is also required to have at least three potential bidders, which are not appropriate for PPP projects.

Case studies

Sixteen past PPP projects in China, which failed in obtaining a rational financial return (Cases 8, 10, 12 and 16), were forced to renegotiate with the government (Cases 1, 4, 6, 7, 11 and 15), or were even suspended/purchased by the government during the concession period (Cases 2, 3, 5, 9, 13 and 14), were selected for the case studies in this paper. The principal risk factors causing their failure were presented in Table 2.

Table 2: Principal risks encountered in past PPP projects of China

Risk \ Case No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Change in law	√		√											√		
Approval and permit				√												
Poor political decision-making				√			√				√					
Public/Political opposition				√												
Government's reliability	√	√			√	√	√		√	√	√				√	

Force majeure	√			√														
Financing risk				√														
Insufficient income				√	√				√									√
Competition (Exclusive right)					√	√			√									√
Supporting utilities													√					
Market demand change					√	√	√		√									√
Tariff change								√										
Corruption																		√
Case 1: Jiangsu **** Sewage Treatment Plant; Case 2: Changchun Huijin Sewage Treatment Plant; Case 3: Shanghai Dachang Water Plant; Case 4: Beijing No. 10 Water Plant; Case 5: Hunan **** Power Plant; Case 6: Tianjin Shuanggang Waste-to-Energy Plant; Case 7: Qingdao Veolia Sewage Treatment Plant; Case 8: Hangzhou Bay Bridge; Case 9: Fujian Xinyuan Minjiang No. 4 Bridge; Case 10: Shandong Zhonghua Power Plant; Case 11: Guangdong Lianjiang Sino-French Water Plant; Case 12: Fujian Quanzhou Citong Bridge; Case 13: Wuhan Tangshunhu Sewage Treatment Plant; Case 14: Shanghai Yan'an Road.(E) Tunnel; Case 15: Shenyang No. 9 Water Plant; Case 16: Beijing Jingtong Expressway																		

Legal/Regulation Risks

As shown in Table 2, legal/regulation risk especially change in law risk is one of the most frequent risks encountered in China's PPP projects. This risk includes the adoption, promulgation, modification, or reinterpretation after the signature date of the concession agreement by any governmental authority of any laws of the host country; and the imposition by a governmental authority of any material condition in connection with the issuance, renewal, or modification of any approval after the date of signature of the Concession Agreement that in either case establishes requirements for the construction, operation, or maintenance of the BOT project that render the performance by the project developer according to its terms illegal (Wang et al, 2000; Wang and Ke, 2008). For example, the State Council issued a notice on abolishing the existing projects guaranteeing the fixed rate of return from foreign investments in 2002. Thereafter, those existing projects with a promised fixed rate of return from local government were forced to be handled in the way of "modification", "purchase", "transfer" or "cancellation" on the basis of the particulars of the concerned project (Wang, 2006).

Political Risks

Besides the laws/regulations risk, political risks are regarded as other most frequent risks, which describe the risks of the actions from the central, provincial, or local levels of government. The specific risk factors critical to the success of PPP projects in China may include poor political decision-making process, public/political opposition, government reliability and corruption. Other risk factors, which also fell within the political risks group but did not identified in Table 2, include change of local government and its key official, government's fiscal situation and capability to purchase guaranteed output (especially of power/water/gas), government's poor knowledge and high expectation, etc (Wang et al, 1999; 2000). It is important to be noticed that the authors suggest the private investors not to take

advantage of government's poor knowledge/ experience and sign unfair contracts, especially when local governments promise some incentives to improve the attractiveness of the target project to private investors due to the urgent pressure of infrastructure development.

Economic risks

The major expectation for the private investors to participate in the infrastructure construction and management is to gain rational financial return. It is thus understandable that economic risks would be frequently met in the past PPP projects. These risks include financing risk, insufficient income, competition due to the exclusive right, market demand change and tariff change as indicated in Table 2. For this risk category, some investors made their investment decisions based only on government's promises to obtain a subjective evaluation instead of reliable feasibility studies. Government and private investors reached agreements easily with the government's promises, especially when the government needed funding while the investors needed projects. It is not surprising that these projects, without much feasibility study will fail eventually (Ho, 2006).

Force majeure and other project level risks

Force Majeure is the circumstances beyond project developer's or government's control such as natural disasters or accidents. For example, the contract negotiation in the case 1 in Table 2 was forced to be suspended because of the SARS in 2003. There are also other frequent risks in China's PPP projects like delay of supporting utilities, project approval and permit.

LESSONS LEARNT

Proper risk management

Risk management is regarded as a critical success factor of PPP implementation, and can bring in significant improvement to construction project management performance (Li et al, 2005). It is essential for the public client and the private bidders to evaluate all of the potential risks throughout the whole project life. Public and private sector bodies must place particular attention on the procurement process while negotiating contracts for PPP to ensure a fair risk allocation between them. Systematic risk management allows early detection of risks and encourages the PPP stakeholders to identify, analyze, quantify, and respond to the risks, as well as take measures to introduce risk mitigation policies. Within a proper risk management process in China's PPP projects, a careful and active approach to clearly align the sponsors' interests with the government and society is especially critical to avoid conflicts and reduce risks; clear/strong contractual arrangements are also essential.

Maturity of the legal system

The risk factors associated with PPP projects in China in terms of legal and institutional frameworks distinguish themselves from those in developed countries. It is therefore important to understand the existing laws/policies in China. The project structure and contract should take into account the country and project's characteristics. In developing countries like China, there is still legal risk from poor enforcement of law especially by the local government and state-owned entities. It is therefore not sufficient to rely only on contracts to mitigate risks. Other further measures may include maintaining a good relationship and aligning interests with the government and society. As the public-private interface is throughout the period of long term Concession Agreement, any little collision against the long term objectives of the government would rise critical problems in future.

Government's efficient assistant and friendly attitudes

Government's efficient assistant and friendly attitudes are also one of the critical success factors. Successful stories of implementing PPP projects with government's great supports and incentives have been seen in recent years. For examples, the project company of Tianjin Shuanggang Waste-Fired Power Plant enjoyed the incentives such as 5 years tax holiday, free use of existing power grid, 0.12 billion kWh electricity off-take guarantee per year, free supply of waste by Tianjin Urban Planning Bureau; in Laibin B project, the government also provided considerable supports like power purchase guarantee, fuel supply guarantee, tax incentives, foreign exchange guarantee etc (Wang, 2006). However, the private sector should not take the offer of fixed return guarantee if local governments provide, as it has been forbidden by the central government since 2002.

Familiarity with the local government, its off-take capability, & business environments

It is a common practice to sign an off-take contract with the government, which can ensure the income flow during the operation period. But the private sector must be familiar with the local government, its off-take capability, and business environments. To achieve this, the private investors may need to maintain a good relationship and gain accurate information (e.g., financial, etc.) about the Chinese entities. Proper documentation of government promises of supports is critical as well. Taking Tianjin Shuanggang Waste-fired Power project for instance again, in addition to the supports in the previous section, the local government promised to provide subsidy while its total amount had not been clearly defined, that should be considered as a risk (Wang, 2006).

Avoiding unfair contract

PPP modalities, with the ability of attracting foreign and private capital in infrastructure development, have been identified as innovative tools for financing major infrastructure projects. The main goal of private investment is to chase a reasonable financial return. But that does not mean the investors should sign an unfair contract by taking advantage of government's poor knowledge/ experience if have chances. Because conflicts will be inevitable once the government realizes the unfairness and resistance from local residents will also rise. For instance, in Qingdao VEOLIA Wastewater project, due to government's unfamiliarity with BOT and the lack of knowledge of the market and cost for wastewater treatment, the negotiation took a long time as government changed frequently their attitudes. The government agreed at first a quite high off-take price but latter on wanted to re-negotiate with Veolia (Wang, 2006).

Launching a boundary for higher and lower rates of return

Baring higher and lower rates of return is regarded as a reasonable measure, which can reduce the market and revenue risks in a certain extent, and also guarantee the project's exclusive rights. As a negative example, after the Hangzhou Bay Bridge project was awarded, the government also decided to build two more bridges near the Bridge. One of the reasons is the government's unhappiness with the project company's too high rate of return (Wang, 2006).

CONCLUSIONS

With the continual economic growth in China, the increasing need of infrastructures has been placing budgetary pressure on the government. Likewise, private investors cannot afford to ignore the scale of the market in China for infrastructure projects, and their keenness to invest

in this market, combined with the Chinese government's need to attract private investment and improve efficiency, will ensure solutions being found to make PPP work. However, this paper indicates that there are unique and critical risks associated with China's PPP projects that stem from China's unique social system. It is thus important to draw lessons in risk management from previous PPP implementations. As a brief summary, the main lessons learnt on risk management for infrastructure projects in China are as follows:

- Legal/regulation risks, political risks, economic risks and force majeure risk are most frequent risks associated with China's PPP projects;
- When disputes appeared, sometimes re-negotiation among partners especially with government is more efficient and effective than mediation/arbitration/lawsuit;
- Proper risk management is critical, especially that it should align the private sector's interests with the public sector, have clear/strong contractual arrangements and enforcement;
- Private investors should standardize and detail the contract terms and conditions as much as possible, rely on published policies/regulations/laws and written contracts rather than oral promises;
- Government's efficient assistant and friendly attitudes is important especially for projects with a weak revenue generating capability;
- Private investors should be familiar with local government and its off-take capability as well as the business environments, while should not take advantage of government's poor knowledge/ experience or sign an unfair contract; and
- Launching a boundary for higher and lower rates of return is a good practice.

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