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**Reviewing the key governance issues in Chinese BOT
(Build-Operate-Transfer) infrastructure and their attendant
risks from the perspective of the Chinese government**

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Being a dissertation submitted to the faculty of The Built Environment as part of the requirements for the award of the MSc Infrastructure Planning Appraisal and Development at University College London: I declare that this dissertation is entirely my own work and that ideas, data and images, as well as direct quotations, drawn from elsewhere are identified and referenced.

Wenxun Pan

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ABSTRACT

PPP (Public-Private Partnership) as an efficient risk transfer tool that has been commonly used within various developed countries such as the UK, France and Australia. Starting in the 1980s, China also began to apply PPP models in infrastructure. Until 2013, based on the foundation of “The Belt and Road Initiative”, the Chinese government prioritized infrastructure development. PPP then became popular in China, specifically when utilizing methods such as BOT (Build-Operate-Transfer). However, BOT does still encounter some governance related challenges due to a lack of experience, with attendant risks.

Therefore, the aim of this research is to review the current issues in Chinese BOT governance based on the perspective of the Chinese government and to provide recommendations to enhance the BOT governance and reduce attendant risks such as efficiency loss, project delays and reduced public credit. The predominate observations display the main issues including legal challenges, involvement of state-owned capital and the overwhelming power of the local government in regards to project negotiations. The discussion of these issues is a vital process as transparency is an issue that is being improved in China since 2013. Finally, suggestions on how to overcome the issues are provided mainly from the perspective of government initiatives and policy making.

Chapter 1: Introduction

1.1 Research background

1.1.1 Definition of infrastructure

Infrastructure, as defined by the Cambridge dictionary (2019), is “*the basic systems and services, such as transport and power supplies, that a country or organization uses in order to work effectively.*” Jochimsen (1966) declares infrastructure as the sum of material, personal facilities and data that are accessible to economic agents. Railways, bridges, roads, airports, electricity, telecommunication networks and hospital are all examples of infrastructure in this context (Newell et al., 2009).

All of the different definitions provided illustrate the importance of public infrastructure when ensuring the proficient operation of social and economic activities. Research on this topic is valuable because these elements comprise the structure of a country.

1.1.2 The Chinese context

This paper will focus on the Chinese context. In recent years, China has witnessed an economic boost and urbanisation, which has led to an increasing need for developing public infrastructure. The economic growth in China is predominately concentrated in the Yangtze River Delta, Bohai Bay Region and Pearl River Delta (Newell et al., 2009). Since China’s “The Belt and Road Initiative” (BRI) was established in 2013, China has conducted the “going out” strategy in the international market, the core of this strategy is to promote infrastructure construction and interconnection with other Asian and European countries to achieve a common prosperity (Guardian, 2018).

1.1.3 The involvement of private enterprises in Chinese infrastructure

Prior to the 1980s, the Chinese government was the only party who was responsible for infrastructure construction. However, based on the requirements that infrastructure necessitates large capital funds and long periods of development, traditional infrastructure financing model has changed. The public private partnership (PPP) mode was introduced within China in the 1980s and become even more popular after 2013 (Chen et al., 2015). Build-Operate-Transfer (BOT) is the most common mode of PPP applied in the majority of hard infrastructure projects such as highway, bridge and

energy plant construction. However, since China is still developing, the framework of PPP/BOT governance is not comprehensive yet based on the short history available.

1.2 Research focus

This research will focus on the key governance issues observed in BOT infrastructure in China. In comparison to European countries (such as the UK) that have already developed strong BOT governance, China is still exploring the development of this governance. There are many examples of failure in Chinese BOT projects, such as the Hangzhou Bay Bridge, where the toll income in operation did not achieve the projected target due to the poor decision-making by the local government (Fu, 2017).

Some research has already been completed on the suitability of PPP and BOT in China (Wang, 2012; Wu, 2011; Wang, 2014). However, there is still a research gap on the key issues of BOT governance within the Chinese government as most research focuses on general PPP rather than BOT. Also, most of the Chinese BOT research focuses on the perspectives of private entities and funding issues (Peng, 2016; Liu, 2014). There is a lack of evaluation regarding government actions in China. Since the political issues like institutional challenges and government decision making are sensitive topics in China, researchers are always not willing to deep research and publicize their findings that are based on observing the government. Thus, research on key issues in Chinese BOT governance and their attendant risks from the perspective of the Chinese government is worthwhile.

1.3 Research aims, objectives and structure

The primary aim for this dissertation is to identify the key issues relating to BOT governance in China. By reviewing these issues, it is hoped that a deeper understanding of potentially involved risks and how to avoid these issues could be obtained and that suggestions could be provided to the Chinese public sector in order to improve their abilities to manage BOT arrangements.

There are three main objectives presented in order to support the research questions. The first objective is to develop a deep understanding of international practice on PPP/BOT governance issues. The second objective is to identify and review the key

issues of BOT governance in China through qualitative research methods. The third objective is to generate suggestions for the Chinese government based on the key findings of the research.

This dissertation has been organised into six chapters. Chapter 1 provides an introduction of the research background and to identify the main research focus. Chapter 2 presents the literature review and provides more understanding of international key governance issues and the potential solutions. Chapter 3 displays the methodology chapter and works to explain how the research design and data collection methods support the research objectives. Chapter 4 outlines the analysis of case studies and describes observed governance issues within the Chinese BOT infrastructure to provide the foundation for the initial hypothesis. Chapter 5 illustrates the findings and further discusses the outlined issues through interviews and provides recommendations to the Chinese government. Finally, Chapter 6 provides a conclusion with reflective answers to the research questions and describes the potential limitations of this study and further areas of future research.

Chapter 2: Literature review

This literature review will primarily observe key arguments presented around the international governance of PPP/BOT infrastructures and the potential related risks. Firstly, the definition and components of PPP will be introduced. Secondly, the PPP model will be compared to between China and the UK to understand the differences between them. Furthermore, I will review some important issues in PPP governance across different nations in regards to attendant risks. Finally, international practices of risk treatment methods will be analysed.

2.1 The definition of PPP and BOT

As for the concept of the PPP, a unified definition does not yet exist. Linder (1999) describes PPP as the cooperative ventures between public sector and private business. Grimsey and Lewis (2002) define PPP in the field of infrastructure as a financial tool. When faced with the burden of public debt, governments may seek out cooperation with the private sector by inviting private entities to join into long-term agreements including infrastructure construction and management. However, PPP is not just about financing but concerns the use of private sector skills and management experience (Olusola Babatunde et al., 2012). It can also be viewed as a useful method for risk transfer when governments attempt to deliver value-for-money infrastructures (Li et al., 2005).

There are many concepts involved in PPP, however the main types of PPP (with specific emphasis on BOT) are listed below in table 1:

Components	Characteristics
Design-Build-Operate (DBO)	It can be cost and time efficient, as the private sector involved from the design stage (early stage) (Kelly et al.,1998). Regular payments may be attractive to private business.
Build-operate-transfer (BOT)	A project company will be established (PPIAF, 2009). The private sector might receive a concession to build and operate the infrastructure, where the

	government doesn't have to invest money. Private sectors are permitted to recover construction costs through methods such as revenue sharing (Lianyu and Tiong, 2005). After the commission period, the infrastructure will then transfer back to the public sector.
Transfer-Operate-Transfer (TOT)	Private enterprises are not involved in the infrastructure construction (Shrestha et al., 2017). This is the primary difference in comparison to other types of PPP.
Build-Own-Operate (BOO)	The facility will not be transferred to government, as it is privately owned (Florea-Gabrian, 2018).

Table 1: Components of PPPs

There are many other types of PPP such as DBTO, BT, DB, and PUO. These are mostly variations on the concepts listed above in table 1. While PPP encompasses a variety of forms, this study will focus on BOT.

2.2 Comparison between China and the UK

Zhang et al., (2015) declared that the performance of PPP is directly influenced by the institutional environment in China and institutional arrangements should follow the development of PPP. In contrast, the UK is more experienced in PPP and has developed a comprehensive framework for policy creation and further monitoring. As illustrated in figure 1, Infrastructure UK (IUK) is the group that is responsible for managing PPP policy issues. Under IUK, PPP policy team and assurance team are responsible for drafting key policies and providing guidance and assurance regarding PPP (EPEC, 2012). This displays good practice in institutional arrangements.

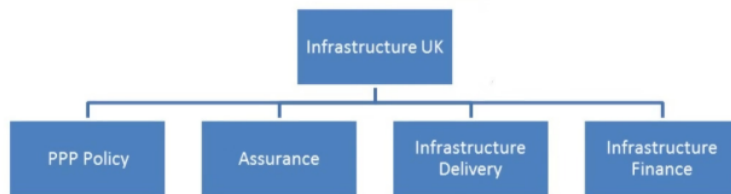


Figure 1: Main PPP units in England (EPEC, 2012)

However, in China, there is not an independent department operating in the central government with the sole purpose of managing PPP. The Ministry of Construction, the Ministry of Finance and other departments all have some management authority and responsibility towards PPP projects (Huang et al., 2009), which indicates the prevalence of a fragmented system.

The second largest difference between China and the UK is observed in the role of the government when managing the PPPs. Specifically in the UK, the relationship between government and private investors is relatively equal based on the formation of commercial relationships with private enterprises (O'Neill, 2013). Thus, powerful private investors may have more influence on decision making of the project. However, China is a centralized state so the government tends to make decisions based on their own judgement and civil society rarely gets an opinion in the process (Liu and Yamamoto, 2009). A report by Chen and Hubbard (2012) also implied an imbalance of power between Chinese government and private enterprises in PPP/BOT arrangements especially in the negotiation process, which could present risks to infrastructure delivery.

Furthermore, state-owned companies in China are always considered as the private sector to participate in BOT/PPP arrangement (Tong, 2006), while in the UK the private sectors are always pure private companies. This undoubtedly provides the basis for a major distinction between European and Chinese BOT mode. According to the data obtained from the Ministry of Finance, the total income of state-owned enterprises was 58750.07 billion yuan in 2018 and accounted for 65.5 % of China's gross national income (Sina Finance, 2019), therefore implying a dominate position for state-owned

capital throughout the nation's economy (Gang and Hope, 2013). Shao (2018) stated that allowing state-owned enterprises to partake in PPP/BOT would provide a method to fully utilize their capital advantages and reduce financial risks. Moreover, as the values of government and state-owned companies are consistent, it hence can maximize the social public welfare for public.

However, more risks may be involved in this process as well. Sun (2017) observed the participation of state-owned enterprises as a government issue for PPPs, based on the fact that state-owned enterprises may display lower efficiency than purely private enterprises (Fu, 2017). There is still much research lacking on this concept so it is difficult to emphasize a generalized concept.

2.3 Key international governance issues and attendant risks in PPP/BOT

The international governance issues will be analysed, summarized and reviewed in following paragraphs.

2.3.1 Institutional and political challenges

First of all, the OECD report (2012) indicated that a lack of comprehensive and transparent institutional mechanisms and policies could be one of the key issues of PPP governance. Jefferies et al., (2002) also discussed a transparent procurement process as a critical factor for the success of BOT. Increased risks related to a loss of trust, conflicts of interest, and increasing unethical behaviours are a result of not having clear and transparent PPP regulations and policies (Lousberg and Noorderhaven, 2014). Medda (2007) also identified that political risk emerges due to government actions. In China, Ke et al., (2010) describes that many PPP projects lack transparency especially in the tendering process as the bidding methods are varied across provinces. Meanwhile, the lack of capable and well-resourced government authorities could create another drawback in the form of project changes or delays (Hawkesworth, 2011).

Another key issue outlined by Stern and Holder (1999) is based on the politics of the nation. China has a highly centralized political environment, which may lead to increased political risks when implementing PPP/BOT infrastructures (Xu et al., 2010).

In China, it may be difficult to engage different stakeholders in the decision-making process, that may restrict the strategic decision making.

Meanwhile, Sachs et al. (2007) also considered the reliability and credit of governments as a large issue surrounding the governance of PPPs in some Asian developing countries, including the constant changing of contracts, imposition of taxes and termination of concession (Estache et al., 2008).

2.3.2 Stakeholder negotiations

Providing adequate governance for stakeholders is a critical factor associated with the success of PPP (Mitchell et al., 1997). However, there are many issues. Firstly, because private stakeholders are complex and dynamic entities it makes it harder for the government to monitor the project (South et al., 2015). This could result in many more complex negotiations as well (Transport Quebec, 2006). Also, the multiplicity of stakeholders is always accompanied by the risk of stakeholder conflicts or opposition (El-Gohary et al., 2006). Poor dispute resolutions may take place if no resolution mechanisms are agreed upon by both private and public parties involved.

However, the report from ECA (2018) has presented a different viewpoint towards stakeholders, by arguing that mega-infrastructure may face reduced levels of competition, as few private enterprises could undertake projects of this scale. This could be considered a governance issue in Western countries as the government is put in a position of dependence (OECD, 2014).

2.3.3 Difficulty in delivering value-for-money infrastructure

OECD (2008) identifies that the main motivation towards utilizing the PPP arrangement is to pursue a value-for-money infrastructure situation. However, large numbers of PPP projects, including BOT infrastructure, are not completed on time or within the targeted budget (ECA, 2018). This is generally due to insufficient planning for the project, which becomes a key governance issue in BOT/PPP. Critics such as Shaoul (2005) has argued that, in comparison to traditional government procurement, the public sector must always pay a higher price for PPPs. The bidding, transaction and other costs of PPP/BOT are greater than traditional infrastructure costs (Garvin and Bosso, 2008). Thus, if those additional costs are not clearly justified, the project does

not have the ability to prove the value-for-money it delivers. Meanwhile, Ashuri et al., (2010) observed that over-optimistic forecasts for future demands in BOT highway projects are a common issue observed in PPP governance, which can also cause less value-for-money and fewer profits received than expected.

2.3.4 Inappropriate risk allocation

OECD (2012) acknowledged inappropriate risk transfer as a challenge of PPP/BOT governance, which may also restrict the efficiency of management. In European countries, excessive risks are always undertaken by private partners according to the audit data that is collected by the ECA (2018). In fact, Sanni and Adebisi (2017) argued that risks are generally allocated to the party that is least able to refuse them, rather than who can best manage them, based on the bargaining power of each of the parties. They also declared that the ineffective risk sharing in BOT arrangements might be caused by a subjective view towards the consequences and likelihood of certain risks. In this case, risks associated with increased costs and less value-for-money may be observed.

2.3.5 Social welfare concern

Sharma et al., (2010) argued that governance issues also exist in balancing the differences in desires from both public and private parties involved in PPP. There is a central difference observed in the willingness of public and private sectors, as governments consider more social benefits while private companies have a predominate focus on reducing the associated construction costs. As declared by Siemiatycki (2006), some private sectors have a tendency of selecting public infrastructure projects that will have more opportunity to earn profits. During PPPs, private enterprises might also create a “new” infrastructure, which could lead to increased social risks as the infrastructure cannot fully meet social welfare needs (UNECE, 2004).

2.4 International practice on PPP/BOT governance---Risk treatment

In order to overcome the recognized issues above, lessons can be learned based on how other countries mitigate risk.

2.4.1 Favorable institutional conditions for BOT/PPP

Afzal (2013) suggested that in order to capture effective governance, the government must create an encouraging institutional and political environment for BOT. As endorsed by the OECD (2007), efficient public governance should have a transparent political environment and a comprehensive legal framework that incorporates the protection of contractual rights. Two methods are commonly used in PPP legislation across other countries. First of all, some developed Asian countries conduct uniform and independent laws for PPP created by those at the top of the legislative decision-making hierarchy. For instant, the PFI Act in Japan (Werneck and Saadi, 2015), the Public-Private Partnerships in Infrastructure Act of 1994 in Korea (Kim et al., 2018), and the Republic Act No. 6957 (BOT Law) in Philippine (Llant, 2008) all provide a robust legal basis for PPP/BOT projects. In contrast, countries like the UK and Malaysia have created national institutions and units specifically for PPP and have generated policies to enhance the available governance (HM Treasury, 2013; PPPLRC, 2018). These institutions have authority over policy interpretation, and implementation of supportive PPP models. However, from these observations, it is still not clear which method is more suitable for China.

2.4.2 Establishing reasonable risk share

In order to form respectable governance, the basic principle requires the establishment of a risk allocation that is embedded within a win-win strategy for all parties involved in the arrangement (Hovy, 2015) Hwang et al., (2013) proposes two criteria: (1) any agents that undertake the typical risks should be able to control the outcome; (2) the risk should be allocated to agents that are able to manage the risk at the lowest costs.

Quiggin (2004) argued that the PPP/BOT contract should be separated to different project stages to determine and reduce the risk levels associated with different contractors. However, Owen and Clayton (2007) held an opposite opinion to Quiggin. They believed that private companies have an increased commercial incentive towards minimizing the risks of the project by diminishing the costs and ensuring the project quality if they were responsible for the entire life cycle of the project.

2.4.3 Facilitating Consensus building

Innes and Booher (1999) suggested the importance of having access to the consensus among stakeholders at early stage of the process. Moderators may be required to solve conflict between different departments by incorporating distinct interests together and seeking solutions that could offer mutual benefits (Fisher & Ury, 1981). Santosh Kumar Delhi et al., (2012) also emphasised the need for fairness in negotiations between public and private parties, as a fair process is actually a supporting element within public governance.

2.4.4 Systematic value for money assessments

Countries, such as Britain and Australia, have developed systematic value-for-money assessments for PPP projects (Siemiatycki, 2009). The public sector comparator is a common method used to evaluate the costs of utilizing PPPs in comparison with the costs of using “conventional government procurement” methods (Quiggin, 2004). However, Coulson (2008) criticised that the public sector comparison tools may be too optimistic and ignore some of the risks such as “competition risks”. Therefore, the need for improvement of value-for-money assessments is still apparent.

De Clerck and Demeulemeester (2016) also argued that an increasingly competitive environment should be created in order to incentivise private bidders. The creation of competitions then will lead to innovation within the private sector, which will inevitably also increase the value for money observed.

2.5 Chapter Summary

To conclude, the primary issues surrounding international PPP/BOT governance are reviewed in the above sections that include institutional and political challenges, inappropriate risk allocation, difficulty in delivering value for money and conflicts in private sector negotiations. Social welfare may also create concerns in Western countries. Accordingly, what other countries do to relieve these issues are further analysed in the risk treatment segment of this paper. The foremost methods can include providing a favourable legal environment for PPPs, conducting systematic value-for-money evaluations and establishing reasonable risk allocation mechanisms to use in the planning stages and the facilitation of fair consensus practices.

However, as mentioned previously, a research gap on the perspective of the government decision-making abilities and behaviours in China is still prevalent. Thus, research will be conducted on key issues in Chinese BOT governance and their attending risks from the governmental perspective.

Chapter 3: Methodology

This chapter aims to provide a clear explanation on the methodology used within this study. Firstly, the methodology and detailed design process are introduced. Justification of the reasons for using such research methods and how they relate to my research objectives will follow. Explanations on how different kind of methods fit together will be provided and data collection methods will be discussed. Finally, the ethical issues of this method will be deliberated and solutions to minimize the associated risks will be postulated.

3.1 Research objectives and research questions

All of the research designs aim to meet the following **objectives**:

- 1) Understanding international practice on PPP/BOT governance issues
- 2) Identifying and reviewing the key issues on BOT governance in China
- 3) Providing suggestions for the Chinese government based on the key findings from the research

Accordingly, the **research questions** are:

- 1) What are the critical issues of BOT governance in the current Chinese context?
Sub-question: Why have these issues emerged? What are the attendant risks?
- 2) How will these issues on BOT governance be overcome from the Chinese government perspective in order to reduce the project risks?

3.2 Methodology and research design

Qualitative research has been utilized for this study in order to respond to the research questions and meet the research objectives.

3.2.1 Literature review

The literature review creates a fundamental rationale for this research and provides readers with a general idea of what the international key issues and risks are in regards to the governance of PPP/BOT infrastructures and what the international solutions are. Thus, the literature review is an empirical method utilized to understand the international governance issues and risk treatments, which facilitates the achievement of my first objective.

3.2.2 Case study analysis

In order to meet the second research objective, the case study analysis method will be used in order to determine the key governance issues specifically within the Chinese context. The primary function of a case study analysis is to expand an initial hypothesis towards the gathering of supportive evidence for the first research question. Three key issues will be identified through case study analysis and are observed as critical issues in the current Chinese context. Those issues will be explored later in the interview process to determine their importance. In this case, a case study-based approach is useful once ‘how’ or ‘why’ questions are asked (Yin, 2003).

However, the utilization of a single case study typically creates limitations in the generalizability of the entire portfolio in order to produce transferable findings (Crowe et al., 2011). Hence, two case studies have been chosen in order to illustrate the question more comprehensively. The case studies examined in this case are the Changzhou-Wujin Highway BOT project and the Wujin Waste-to-electricity Plant BOT Project. Due to the fact that these two cases originated from different sectors, this will help to form more interesting insights into the generic similarities, and sector specific contrasts observed.

3.2.3 Semi-structured Interview

Semi-structured interview technique has been implemented in order to investigate the opinions of the study participants in greater depth (Kvale, 2003), while also comparing different views towards specific issues (Kelle, 2006). This has also facilitated more interaction between the interviewer and participants by allowing improvisation in some follow-up questions based on certain interview responses (Rubin and Rubin, 2011). Thus, to investigate the issues that took place within two case studies with the hopes of generating a nonspecific observation towards the entire Chinese context, interviews were conducted in order to deeply investigate whether the key issues of BOT governance are still critical factors in China now. A set of questions was asked to predominately focus on 3 important issues that were discovered in the case study analysis. The questions may be changed slightly according to the responses received from interviewees. In this case, observations will be made on why these issues have emerged in China and what the attendant risks caused by governance issues are.

Different responses from the interviewees were discussed to verify the initial hypothesis. Furthermore, other barriers in BOT governance were also discussed. Finally, interviewees were asked to provide suggestions towards overcoming the present issues.

In this case, the interview method helps to answer both the first and second research questions, while meeting the second and third objectives. After the conclusion of the interview, recommendations to form more effective governance frameworks for the Chinese government were provided.

3.2.4 Policy analysis

Policy analysis is necessary to this study, as it is based on the perspective of the Chinese government. Therefore the policies related to PPP and BOT in current years were reviewed to illustrate to what extent the Chinese government is successful with their policy creation. Meanwhile, during the interviews, participants derived from both governmental departments and private sectors provided some supportive data for further policy analysis. This was helpful to more thoroughly understand both central and government initiatives.

3.3 Data Collection and Analysis

For the analysis of the case studies, the source of evidence was a mixture of primary and secondary data. As for the secondary data, it was primarily derived from the government documents related to cases, such as feasibility reports and news clippings. This assisted in the provision of a comprehensive background for case studies and also identified the key stakeholders involved in both cases. Furthermore, the interviewees also provided more primary data that would not be observed in documents. Much the same as the case study analysis, the policy analysis also combined with primary and secondary data, from online sources and interview responses.

For the interview, fifteen people were interviewed for primary data collection and all were invited for an online tele-interview. The participants invited to participate were key stakeholders of the two case studies and experienced workers in the field of BOT infrastructure in China. Among these interviewees, 10 people were directly involved with the two case studies and 5 others were derived from the generic BOT field. To

broaden the spectrum of suggestions towards risk treatment, interviewees were collected from both public and private sectors, including the local public authorities, lending institutes, project enterprises and construction side. All of the participants had a minimum of 3 years working experience in BOT in order to generate higher quality content from the interviews. A full list of participants details concerning their roles and jobs in BOT management can be found in Appendix B.

3.4 Research ethics

Allmark et al., (2009) suggested that there are few ethical concerns regarding the utilization of in-depth interviews including privacy, confidentiality, informed consent and over-involvement. To overcome these issues, the goals and objectives of the interview have been clearly explained to all participants, which has clarified that the result of the interview will only be used for academic purposes. Secondly, the privacy of all participants has been well protected. The name, age, occupation and any other sensitive information or identifying factors of interviewees have not been published in this dissertation. Also, no sound recordings or photographs were taken without approval from the participants.

Chapter 4: Case study analysis

This chapter will provide a clear background and analysis of the two case studies previously described. The Changzhou-Wujin Highway and Wujin Waste-to-electricity Plant were chosen for this study because they both represent an initial attempt to conduct BOT infrastructure in China. Additionally, the Changzhou-Wujin Highway was a failed project, which further exposed some issues with the BOT governance. The governance issues in both cases have been identified through the case study analysis, which formed my initial hypothesis.

4.1 Case A: Changzhou-Wujin Highway



Picture 1: Map of Changzhou-Wujin Highway (Source: photographed by Yuan Qian Pan, 2019)

As shown in picture 1, the Changzhou-Wujin Highway is found between two red points. It is a BOT mode highway that connects Changzhou and Wujin, with the total length spanning 26.121 kilometres. The foremost objective of this highway is to connect Wujin and Changzhou and therefore boost the economic development and urban construction in both regions. Planning for this project began in 1995 and the road was

put into operation in 1997. The government cancelled the toll fee charging at 2013 and terminated the contract with private sector (Jiangsu Government, 2013).

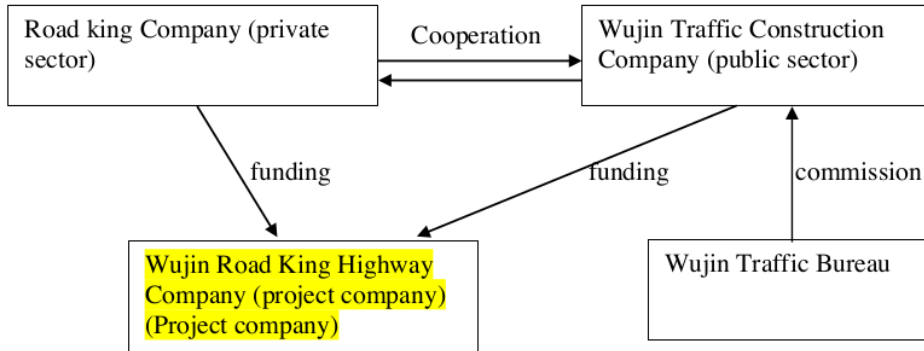


Figure 2: Stakeholders of case A (Wujin Road King Highway Co., Ltd., 1996)

As shown in figure 2, the Wujin Road King Highway Company was founded as the project company by Road King Company and Wujin Traffic Construction Company (representing the local government). The total amount invested in this project was 249 million Yuan. The local government and Road King invested 99 million yuan and 150 million Yuan, accounting for 39.76% and 60.24% of total investment respectively.

4.2 Case B: Wujin Waste-to-electricity Plant



Picture 2 : Wujin Waste-to-electricity Plant (Source: photographed by Yuan Qian Pan, 2019)

The Wujin Waste-to-electricity Plant was designed in 2005 to control environmental pollution, improve the environmental quality and reduce the harmfulness of domestic garbage, therefore leading to the achievement of sustainable economic development in the Wujin District (Sheng and Wei, 2008). In 2008, this plant was completed and put into operation. The objective of this plant was to dispose of 200000 tons of domestic waste per year (Zeng, 2008).

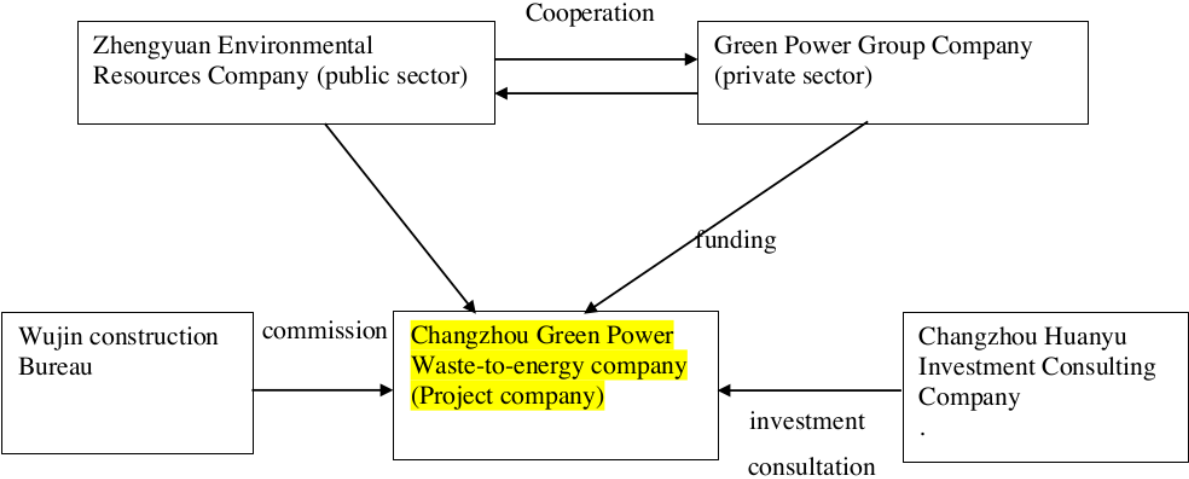


Figure 3: Stakeholders of case B (Wujin construction Bureau, 2004)

As shown in figure 3, the project company was founded in 2004 by the Green Power Group and the Zhengyuan Environmental Resources Company (representing the local government). The total investment of this project was 279 million, which was entirely provided by the Green Power Group while the local government was only required to provide convenient procedures. It is also notable that Green Power Group is a state-owned company in Beijing (Xinhua News, 2017).

4.3 Main governance issues in the Chinese BOT

First of all, as outlined within the literature review, the participation of stated-owned companies may create a governance issue in BOT specific instances in China. In regards to the Wujin Waste-to-electricity Plant, the largest shareholder of the green power group (private sector) was the state, as they account for 80% of the stock while

the other 20% has remained as private capital. This displays a dominant position of the state. In this regard, the decision making of this BOT project is likely to be controlled by Beijing and Wujin government, which may create governance issues.

Secondly, there appears to be an issue of an imbalance of power when negotiating with the private sector. In regards to the Changzhou-Wujin Highway, the first five years of tolls collected by the Wujin local government were provided back to the Road King Company based on the stipulations of the original contract. However, due to the low toll income received after five years, the targeted rate of return became unrealistic. At that time, during the multiple renegotiation with the Road King Company, Wujin local government tore the contract unilaterally by refusing to give the annual dividend to Road King Company and terminated the agreement. Thus, the public sector tends to have an overwhelming power to compare against the private sector during the negotiation, which can be identified as a critical issue in the Chinese context.

Finally, the two case studies completely exposed the issues of low transparency. When observing the bidding process, the contracts display, both Case A and Case B did not follow the competitive tender process. Instead, the private enterprises involved in both projects took part in negotiations with the local government prior to the commencement of the bidding process (Wujin construction Bureau, 2004; Wujin Traffic Bureau, 1996). Thus, these two cases did not obtain project funding through the competitive mechanism, thus further displaying non-transparent decision-making processes.

In summary, three governance issues have been outlined by initial analysis of two cases, including the participation of state-owned companies, imbalance of power when negotiating with the private sector and low transparency. This is my initial hypothesis towards the presented research question, as it is assumed that these three aspects are all critical to BOT governance in the current Chinese context. The hypothesis would be reviewed through interview.

Chapter 5: Finding and discussion

The aim of this chapter is to review the primary governance issues in BOT infrastructure and the related attendant risks within the current Chinese context from the perspective of the government in order to propose some suggestions for the Chinese government. Since the initial hypothesis was illustrated in the case study analysis, interviews were conducted in order to capture the opinions of the respondents on these issues. The findings illustrate if the observed issues are still presently critical in China. Finally, suggestions are provided on how to overcome the governance issues.

5.1 Interview analysis

Interviewees were asked a set of probing questions surrounding each issue. To begin with, eight interviewees that were familiar with European conditions believed that the government intervenes much more in Eastern countries in comparison to Western nations in regards to BOT modes. This observation corresponds with Chen and Hubbard's study (2012) as an imbalance of power still exists between public and private sectors. The imbalance of power could be reflected in many ways such as unfairness in bidding and the sacrifice of private sector's interest.

5.1.1 Participation of state-owned company

As outlined in the Wujin Waste-to-electricity Plant case study, the participation of the state-owned company may be a governance issue. When discussing this issue, most respondents thought this phenomenon was common in Chinese BOT. One government officer noticed that, "*We always prefer to work with large-scaled state-owned companies [...] they always have more capability to ensure the smooth cash flow...*" According to a statistic from the China PPP Center, the state-owned capital accounted for 51.5% in all PPPs in 2019 (January to June), indicating a dominant role of state-owned capital in PPP investment. Most respondents believed it was due to larger influence and greater experience of the state-owned company.

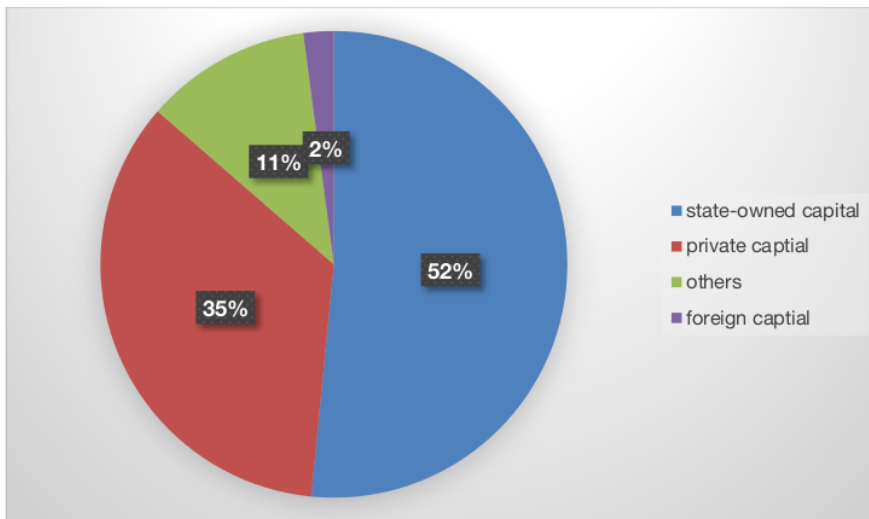


Figure 4: The proportion of different investments in the Chinese PPP (CPPPC, 2019)

Twelve of the respondents described a dissenting opinion regarding this phenomenon. As declared by one respondent, *“the efficiency of the BOT project may be reduced if the state-owned company is involved.”* This displays that they believe in the efficiency loss issue, which is consistent with the publications from Fu (2017). This would also cause risks like project delays and going over budget.

Moreover, other viewpoints from respondents created a supplement towards this research area. One participant declared that, *“In China, state-owned enterprises need to follow both market rules and the administrative management approach like government, which is inflexible [...] it is difficult to create innovation.”* This displays the differences between private enterprises and state-owned companies that can create less flexibility and innovation towards BOT projects. It could be argued that without the capability of innovation, the infrastructure will then face the risk of diminishing their market competitiveness.

Meanwhile, five respondents argued that the involvement of state-owned companies obeys the purpose of BOT. One respondent stated that *“It is hard to separate government and state-owned companies as they are both state-owned capitals, the interests of the government determined the behaviour of state-owned enterprises [...] so the funding still comes from government.”* Hence, it could be reasoned that the nature

of BOT has changed in China, as it is based on the cooperation between government capitals. In this case, most of the risk was undertaken by the state. This does not meet the purpose of BOT, as the problem of public debt is still not fundamentally relieved. Therefore, the BOT in China obeys the risk share tool theory proposed by Li et al. (2005). This issue may also be observed as another kind of government intervention, which implies high political affiliation. This finding corresponds to the opinions of Stern and Holder (1999).

In summary, the government still presently prefers to involve state-owned companies, which leads to several risks towards the Chinese BOT projects. Thus, it is still a huge governance issue in China, which is consistent with the presented hypothesis. This idea also supplements other current studies, as the lack of flexibility and innovation state-owned involvement is a critical risk in the Chinese BOT.

5.1.2 Negotiations with private sector

When interviewees were asked about to what extent China has established fair and effective negotiations between public and private sectors, eleven of the participants expressed a negative answer. One public officer stated that *“As I know, The Road king company has other BOT infrastructure in other province, if the return rate is lower than expectation, the local government always deny paying the dividends to Road king [...] Even now, this issue is common in some regions of China, the results are always the sacrifice of private interests.”* This could lead to speculation that other local governments may also obey the initially developed consensus when facing interest conflicts, so this issue is broader than just the Changzhou-Wujin Highway case study.

As for the private funders, three respondents from private sectors also emphasized the imbalance of power in negotiation and cooperation. They explained that the reason for this issue as *“for our private companies, our willingness is not only the economic profits, we also want to increase our corporate reputation through building mega infrastructure projects.”* This implies that, based on the background of a socialist planned economy, most of the private enterprises still lack strength. Thus, to collaborate with the government would help them to enhance their corporate reputation and seek more convenience in procedures with the government. In this case, private enterprises

generally put them in a weaker position. Then, they might only have choices that are predetermined by the government in negotiations. This finding is consistent with my initial hypothesis, but is not consistent with El-Gohary et al.'s argument (2006), as the private sector's opposition seems less likely to affect the project process in China.

Meanwhile, when discussing the attendant risks, most respondents mentioned public credit risk. One respondent stated that, "*the public credit of local government will be damaged [...] then private enterprise may lose trust to local government.*" It was observed that public credit risk restricts the possible participation of private enterprises, which was supported by Sachs et al. (2007). The Chinese government often breaks these arrangements; therefore they do not follow the win-win strategy proposed by Hovy (2015).

However, 5 participants stated "*From the perspective of government, we definitely pay more attention on social benefits rather than the financial benefits [...] especially in China, where government consider people's interests first.*" So it is clear that the social risks mentioned by Siemiatycki (2006) are less likely to happen in China, as the private sector generally follows the willingness of the local government.

To summarize, unfair negotiations are still an issue in China, which is consistent with the initial hypothesis and will lead to the political credit risk and damage the potential return rate of the private sector.

5.1.3 Low transparency

When asked what the local government actually did in the bidding process, the interviewees involved in two case studies all recognised that the local government had taken part in simple negotiations with the identified private enterprise. One respondent said, "*as for Changzhou-Wujin Highway, the Road King company is introduced by a leader in Jiangsu Traffic bureau.*" This implied the potential combination of private interests at that time.

However, it was interesting to observe that thirteen of the respondents considered the transparency issue to be less serious in China presently. They suggested that China has a huge improvement in transparency due to more comprehensive regulations

surrounding PPP and stricter supervision from the central government. One of the respondents indicated that, *“the low transparency in both cases appeared was due to the ambiguity of the related policy at that time [...] However, after the policy of “Ba Xiang Gui Ding” released in 2012, the supervision on open tender in BOT became very strict where simple negotiation was not allowed.”*

Starting in 2013, the central government released multiple policies for PPP such as Guidance on encouraging private capital to participate in PPP projects (National Development and Reform Commission, 2017). Those policies imply that the central government has been attentive when regulating the local government for transparency in decision-making processes. Additionally, five experts on BOT infrastructure declared, *“All BOT projects information is now required to be entered into the China PPP Center established in 2014 and the project information have to be updated in a timely manner.”* Similar platforms such as the China PPP platform were also established (China times, 2016). Project bidding information and new policies are available to the financial department, private companies, and citizens through the PPP center and China PPP platforms. Thus, the PPP Center has played a significant role in increasing the transparency of BOT.

Thus, this research further considers low transparency issues in present day China as the government bidding action has been more standardized since 2013. This finding is not consistent with Ke et al.’s (2010) research, as the observed results may have changed due to more standardisations appearing in 2013.

5.1.4 Legal challenges

Throughout the interviews, another significant issue frequently mentioned by respondents was the legal challenges surrounding PPP and BOT due to the fact that China still lacks a comprehensive legal framework. The participants believed that this issue was the most critical problem as it has hugely restricted the development of BOT in China.

Two thirds of the respondents believed that this issue was critical as there is still a major legislative gap present in BOT. As stated by a BOT project manager, *“some of the*

process in Chinese BOT is not covered by the current policy and guidance [...] for example, there is still no regulations to identify whether the BOT arrangement should follow the administrative law or commercial law.”

Meanwhile, the fragmentation of the PPP policy is another significant drawback that causes discordance. One respondent noticed that *“The regulations made by each departments of the State Council can only be applied to some industries, and they all proceed the regulations from their own perspectives [...] There are some inconsistencies.”* The BOT infrastructure in China involves a wide range of industries such as energy, and road construction. For each of these industries, different regulations must be followed. It is postulated that since these regulatory documents are separate and cannot be amalgamated, the legal framework for BOT lacks overall symmetry. There are also inconsistencies among different regulations across different departments. That will create difficulties for local government to govern the BOT projects. Also, the regulations propagated by local governments in different regions are inconsistent. According to a respondent, *“The regulations for BOT project vary from city to city without a standardized model.”* Thus, those differences may pose threats towards central laws and regulations. Since some of BOT infrastructure involves various stakeholders that derive from different regions in China, inconsistency and unfairness may be observed and lead to future conflicts.

Based on the previous analysis, a lack of legal framework and the inconsistency among different regulations can create several risks. One of the most significant risks involved is the successful creation of solutions for conflicts. In this case, when conflicts between government and private enterprise appear, it becomes difficult to arbitrate due to the lack of legal frameworks. Thus, the current legal environment does not fully protect the interests of those in the private sector and does not regulate government behaviour. Six respondents also expressed, *“lack of solid legal framework will cause confusion to the key stakeholders.”* It is observable that, due to the lack of legal foundations, both local government and private enterprises may become confused when disputes are raised. For instant, government and financing institutions may have different viewpoints towards a BOT project. Thus, initial contracts need to be adapted and costs increased, which may lead to cost overrun and project delays.

To summarize, by reviewing these 4 aspects, it is concluded that the dominant role in state-owned capital, imbalance of power in negotiation and the lack of comprehensive legal frameworks are still critical issues in present day China. However, transparency has vastly improved and no longer poses a major risk to Chinese BOT now.

Obviously, there may be other barriers towards BOT governance. However, due to the criteria limitations, this study will focus on the provision of suggestions for the issues that are mentioned previously.

As discussed in the literature review, there are two predominate types of legal framework utilized in other countries; the utilization of the independent law for PPP/BOT or the establishment of an independent PPP institution and the enactment of a policy through this institution. As discussed above, the Chinese central government has released some new PPP policies since 2013. The PPP platform and PPP center were also successfully established by the central government.

However, based on the interview results, twelve of the interviewees believed that current policies and PPP centers are not sufficient to restrict local governmental behaviours and regulate the BOT mode efficiently in China. They view strict and independent law as a major priority now. As suggested by one private stakeholder, *“Current PPP policies and document from central government are basically guiding document and there is no mandatory compliance to restrict the government behaviour.”* Based on these opinions, it was observed that the PPP center (with relevant policies in some European countries like the UK) might not suitable for use in the Chinese context. However, China could imitate the measures introduced by Korea and Japan to enact specific laws.

Another participant also stated, *“Recent years has witnessed a frequent update in PPP regulations, which may make private enterprises more confused about the current policy situation.”* Thus, it has been proposed that governments should avoid frequent updates and amendments to current policies, as this only provides temporary relieve to the governance issues of BOT. Instead, an independent law especially for PPP, or even

BOT, should be created by the central government as soon as possible in order to provide legal support for the promotion of BOT while also restricting the unwanted behaviours of local government. Meanwhile, in consideration that cross-regional BOT projects are common in China, and are likely to create disputes, the controversial policies regulated by local government in different regions should be thoroughly explained in independent law documents in order to avoid disputes.

Additionally, in terms of whether BOT infrastructure should follow administrative law or commercial law in China, this dissertation established the view that conducting commercial law is a more suitable solution. Due to that the nature of administrative law is based on the implementation of national policies (Lu and Liu, 1997), the use of administrative law to adjudicate disputes may aggravate the imbalance of power between government and enterprises. Hence the intention of reducing government intervention and regulating government behaviour is lost if administrative law is conducted in BOT arbitration.

5.2.2 Suggestions for participation of state-owned company

As declared by one participant, *“To conduct BOT mode in china, we need to active the private enterprises and transform government functions [...] the government should be a supervisor rather than the largest investor.”* The foremost solutions suggested by interviewees concluded the wishes to restrict state-owned capital and encourage the participation of private capital.

According to the Notice of the Ministry of Finance to the Operational Guidelines for the PPP (The Ministry of finance of the people’s republic of China, 2014) enacted by the central government, local state-owned enterprises controlled by local government should not be permitted to participate in the local PPP projects as private sector stakeholders. Thus, the cooperation between the government and state-owned enterprises within the same city is strictly forbidden. Meanwhile, in order to support private companies, local government is assisting these companies to broaden their financing channels in ways such as the issuance of bonds or assisting the asset security in order to strengthen their participation capabilities in BOT mode (Sina Finance, 2017).

However, there are still challenges involved with the removal of the dominant position of state-owned capital. Since the participation of state-owned enterprises has only been limited geographically, state-owned enterprises from other provinces still have no limitations in regards to BOT investment. In this case, government intervention is not actually reduced. Meanwhile, as a developing country with a socialist market economy system, the power of state-owned enterprise is still large.

In order to more effectively manage the issue surrounding state-owned capital and reduce the attendant risks, the following suggestions are provided. Primarily, it is suggested that central government plays a key role in the control of the investment proportion of state-owned enterprises by regulating the amount of state-owned capital allowed in a BOT infrastructure. For example, the upper limit of the state-owned stock in the project company should be stipulated in the BOT arrangement.

On the other hand, according to ten respondents, in order to reduce the intervention of the government, the fundamental method is to increase the proportion of investment from pure private enterprises. One officer stressed the importance of changing conventional ideology: *“It is undeniable that introduction of BOT mode has challenged the ‘feudal official culture’ that has been rooted in China for thousand years[...] since China's planned economic system lead to the current social situation of ‘government-led society’”* In this case, the first requirement is for the Chinese government to change their conventional attitudes and eliminate prejudice towards private enterprises. Under the same enterprise conditions and capabilities, local government should additionally give priority to private enterprises rather than to state-owned enterprises. This is important to provide more opportunities by establishing a transparent project platform and to create a fair competitive environment.

Secondly, in order to activate the private enterprise, governments should enact the supportive policy for reducing the funding barriers and cost of private companies. Favorable conditions for private sector institutions could be created from a financial aspect by reducing their costs or providing subsidies for private companies. For example, the Chinese government could also follow the example from South Korea, where the government reduced the tax costs of private enterprises involved in BOT or other PPP infrastructure projects (Shen, 2018).

5.2.3 Stakeholder negotiation suggestions

In order to reduce the manipulation from government and enhance the voice of private sector stakeholders in order to contribute a fair celebrative environment for the Chinese BOT, the Chinese central government has introduced relevant guidance documents and policies. For example for the Government and Private Capital Cooperation Regulations on Infrastructure and Public Services (draft for comment) (Ministry of commerce of the people's republic of China, 2017), it clearly demonstrated that the local government should begin implementation of a decentralization policy for PPP/BOT and emphasize the importance of government trustworthiness, in an attempt to eliminate the worries of the private sector when beginning BOT projects. Moreover, some PPP arbitration institutions like the "One Belt and One Road" Wuhan PPP Arbitration Center was established in 2017 (Xinhua News, 2017), with the objective of more effectively integrating the interests of each party, producing fair judgments, providing legal support for disputes and promoting successful experiences for major PPP/BOT projects. These institutions could also promote a process with greater transparency in Chinese BOT projects.

However, as previously stated, barriers still exist as those political documents only provide guidance. The creation of these documents does not resolve the issue of imbalance of power in negotiations at a fundamental level. Also, as one officer stated, *"when disputes occur, whether BOT arbitration should follow the commercial law or administration law is still controversial in industry."* Additionally, since BOT mode in China is still in the juvenile phases, both the government and private enterprises involved are not experienced. In this case, if the government intervention is still too controlling throughout negotiations, it is likely that the wrong decision will be made and this will increase the economic and social risks of the project.

Thus, to protect the interests of private parties in the Chinese BOT infrastructures, it is necessary to establish a government credit mechanism. When the government attempts to use controlling power in order to affect the contracts and other BOT processes, the punishment should be strictly implemented according to the independent regulations created.

Furthermore, expert-ruling systems should be implemented to settle disputes. It was proposed that the central government should establish the PPP expert database as soon as possible. In this case, when the conflicts occurred in the negotiation process, private sector members could ask for expert help derived from the PPP expert database. Based on their own knowledge and project experience, these experts then could prescribe professional decisions by thoroughly analyzing specific issues on case-by-case basis. To ensure fairness, the experts should be independent from the local government of the BOT project and should be assigned randomly to resolve the conflicts observed in BOT projects. Experts may also be sourced from developed countries like the UK and Australia in order to derive access from advanced international experiences.

Another proposition is to intensify the use of consultancy agents in BOT arrangements. As for now, the use of a consultancy is not compulsory in Chinese BOT. In these situations, the UK prefers to utilize Infrastructure and Public Private Partnership Advisory firms like KPMG and Deloitte, in which case the value-for-money is evaluated (KPMG, 2018). Thus economic conflicts can be avoided to some extent within the planning stage.

Fundamentally, a trust-based association between the government and the private sector should be established (Edkins and Smyth, 2006). Both governments and private companies should not expect to pursue benefits by forfeiting the welfares of the other party. Government interventions should be reduced by transforming their attitude towards these disputes from government-led to government guidance. These proposed changes in attitude require legal and policy support.

Chapter 6: Conclusion

6.1 Research aim and objectives

The aim of this research is to review the current critical issues observed within Chinese BOT infrastructure, principally from the perceptions of central and local government actions and their decision-making. Hence, a literature review was conducted that included a brief assessment between both China and the UK context while also reviewing international issues in PPP/BOT governance, which has helped to further understand the international practice. Then, qualitative methods, including case study analysis, interviews and policy analysis have all met the research objectives and achieved significance across the following aspects:

Identifying key issues and challenges on BOT governance in China

Capturing a deep insight as to why these issues have emerged and what the potential risks are that will influence the delivery of BOT infrastructure

Providing some suggestions and recommendations towards the Chinese government in order to contribute more effective BOT governance

6.2 Responding to research questions---Summary for finding and discussion

Firstly, three key issues were outlined with the basis collected from case studies and in-depth interviews. It was observed that there was a huge legal challenge in Chinese BOT governance due to the absence of a comprehensive legal framework used to restrict the government behaviour and protect private sector interests. Additionally, the over-involvement of state-owned enterprises and overwhelming power of the local government in project negotiations were also key issues plaguing the current Chinese context. However, the new findings describe that the issues surrounding transparency have been gradually relieved since 2013. Therefore this research believes that low transparency in tendering has little impact to Chinese BOT mode in the present day.

In depth interviews and policy analyses were conducted in order to respond to sub-questions regarding why these issues have emerged and what their attendant risks are. Firstly, the current legal challenge is critical towards creating success for the Chinese BOT. This is due to the current situations observed in regards to the BOT legal gap, the fragmentation of policies across different infrastructure sectors and the inconsistent regulations observed within different regions. Private enterprises may feel confused

about the feasibility of the BOT infrastructure due to ambiguous regulations, and this creates a potential risk towards the restriction of the development of BOT. Meanwhile, the current policies are mostly guiding principles, that are not strictly implemented by the local government. Thus, legal challenges can create a risk overrun or project delay.

Furthermore, in regards to the participation of state-owned companies, local government still has a preference to cooperate with state-owned companies due to their larger scales and stronger influence. However, this issue may also create instances of low efficiency, lack of flexibility and less innovation during project implementation.

Additionally, local government still has an overwhelming power over local governments in regards to project negotiations due to the fact that most private enterprises are still not strong enough under the background of the socialist planned economy in China. Most of these private enterprises have the tendency to seek shelter from the government in order to enhance their cooperation capacities. This issue is of critical nature due to the fact that it could lead to the public credit risk and damage the interests of private enterprises which would further discourage the private sector.

Thus, the following recommendations to the Chinese government have been provided. First of all, central government should create priority towards the establishment of a compulsory PPP/BOT law that is independent from other policies in order to unify the existing controversy in Chinese BOT. Meanwhile, in order to eliminate the political influence, commercial law is recommended for use in BOT arbitrament.

Secondly, the core reason for removing the dominant role of state-owned capital is to activate purely private enterprises to participate in BOT infrastructure, hence to further lower the proportion of state-owned capital. That requires the Chinese government to change the conventional ideology and eliminate prejudice to private capital, as well as provide financial support towards them.

Finally, as is the case for stakeholder negotiations, it is suggested that the central government should popularize expert ruling systems and consultancy agencies in order to generate equal relationships with the private sector and facilitate more trust.

6.3 Deepening the understanding of the issues

Based on the analysis of these findings, the core of this dissertation can be concluded that the Chinese government should not influence the bidding, contracting and operation of BOT infrastructures by taking advantages of their stronger power in China, which requires solid legal support in order to regulate government decision-making and actions.

The three main issues reported in the findings all reflected heavily on government intervention in Chinese BOT projects and indicated that this was a barrier for the Chinese private sector towards successful entrance into the field of infrastructure. The primary motives for private companies are to pursue profits, while the Chinese government is concerned with social benefits more than return rates. Therefore, an environment that is too controlling may influence the sacrifice of the private sector's interests, which will further discourage the promotion of BOT mode.

To satisfy their needs better, the government should transform their attitudes and roles by altering traditional ideology and enhancing institutional frameworks. Firstly, government attitudes need to transform their ideals from the traditional ideology in the infrastructure field that is closely connected to social welfare and national economic development. Thus, removal of the overabundance of political influence may require a long period of time. Secondly, the too controlling governance fundamentally relates to the institutional environment in the China. Thus, the supreme law for BOT must be published as soon as possible in order to facilitate the top-to-down reform of BOT.

6.4 Limitations and further research

While this dissertation attempted to postulate an answer for the research question, there are still limitations. Firstly, due to the time constrain and word limit, only two cases have been thoroughly researched, and both cases are located within the Jiangsu Province. There is the potential that this may have caused some informational bias when generalizing ideas across all of China. However, due to the practical difficulty in data collection, only the cases that were accessible have been researched.

Moreover, within the interview some of the questions relate to political issues, which is very sensitive topic in China. In this case, some of the interviewees might not have been completely forthcoming about their thoughts. This issue has been mostly resolved by also interviewing stakeholders within the private sector.

Thus, further research is suggested to analyse more cases from different provinces across China within different sectors in order to capture a more comprehensive framework for the critical issues observed in BOT governance. Moreover, since this dissertation focused on only 4 key issues, it is suggested that further research could be conducted regarding other issues discussed within the international literature review such as how to reach an optimal risk allocation mechanism or how to achieve value for money in Chinese BOT infrastructure. Finally, since the policies and regulations regarding PPP/BOT are continually updating and are changed quickly, the constant review of the related policies is necessary in order to ideally shape the government's behaviour.

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Appendix A:

Semi-structured Interview Questionnaire:

Background

1. What project were you involved in?

Changzhou Wujin Highway Project

Changzhou Wujin Waste-to-electricity Plant Project

Other BOT projects (generic)

2. Are you working in the public or private sector?
3. working experience (years)
4. your role in BOT projects

Project shareholder (government side)

Project shareholders (private capital parties)

Government regulatory agency

Supervisory

Consultancy company

Construction company

BOT project company

Other (please specify)

General

1: Since the BOT mode comes from European countries, to what extent do you think BOT mode is necessary and suitable for Chinese infrastructure? What are the most critical differences from European countries in BOT mode and their impacts on the delivery of the Chinese BOT?

Participation of state-owned enterprises

1: There are lots of cases of state-owned companies participating in the Chinese BOT infrastructure like Nanjing Yangtze River Tunnel and Qingdao Bay Bridge. To what extent you agree that the local governments in China are still more willing to cooperate with state-owned companies now and why?

2: As in China, some of the private sectors are state-owned companies, which could also be a major difference between eastern and western countries. To what extent do

you think the involvement of state-owned companies is effective or not? If it brings any benefits or risks to the BOT governance in China and why?

Transparency

1: As far as I know, the project of Changzhou-Wujin Highway/Changzhou Wujin Waste-to-electricity Plant did not follow the open tender process in bidding. So how did you actually do to build cooperation with the private sector at that time?

2: Low transparency issue, especially in decision making such as bidding process on BOT governance, always comes with the potential political, social and economic risks. To what extent you agree with this in the Chinese context and why?

3: In international practice, the low transparency of governance on PPP/BOT could be caused by institutional challenges like policy making. If transparency is still an issue in China, why do you think it has emerged?

Stakeholder management

1: Due to the nature of BOT mode, the implementation process may be embedded with a complex network between the public sector and the private funders. So do you think in China, there has already been a fair and effective negotiation between both parties? And why? If there is still an issue in the current Chinese context what are the potential impacts?

Other barriers

1: Apart from the 3 issues we discussed before, what other barriers in BOT mode you think are restricting the development of BOT in China now? and Why? What are the potential risks to the delivery of the BOT infrastructure?

Suggestion

1: In terms of the issues we discussed before, has the Chinese government taken some actions to relieve them? Are there still any barriers to overcome the issues? How to further reduce the risks in BOT governance?

Appendix B:**Interviewee information:**

Participant code	Role	Department	Gender	Case
A1	Top official	Public sector	Male	Case A
A2	Top official	Public sector	Male	Case A
A3	Officer	Public sector	Male	Case A
A4	Officer	Public sector	Female	Case A
A5	Staff	Private sector	Male	Case A
B6	Top official	Public sector	Male	Case B
B7	Officer	Public sector	Female	Case B
B8	Project manager	Private sector	Male	Case B
B9	Project manager	Private sector	Male	Case B
B10	Project manager	Private sector	Male	Case B
C11	Top official	Public sector	Male	Generic
C12	Officer	Public sector	Male	Generic
C13	Officer	Public sector	Female	Generic
C14	Project manager	Private sector	Male	Generic
C15	Staff	Private sector	Male	Generic

Note* : All the interviewees are invited in online interview. So only some of the important interview evidence will be presented in finding and discussion section.

Appendix C:

Information and consent form

Project Title: Reviewing the key governance issues in Chinese BOT infrastructure and their attendant risks from the perspective of the Chinese government

Researcher: Wenxun Pan

Introduction

You are being invited to take part in a research project being undertaken by a Masters student from the Bartlett School of Planning, University College London (UCL).

Before you decide whether or not to participate it is important for you to understand why the research is being conducted and what participation will involve. Please read the following information carefully, feel free to discuss it with others if you wish, or ask the research team for clarification or further information. Please take time to decide whether or not you wish to take part.

Why is this research being conducted?

The aim of this project is to review the current issues in Chinese BOT governance from the perspective of the Chinese government hence to give some recommendations for them to reduce the attendant risks

Why am I being invited to take part?

You are being invited to take part due to that you have working experience in BOT mode and are familiar with some issues of BOT governance in the Chinese context. Thus, this semi-structured interview aims to help me gain a deep insight into several governance issues in China. Why those issues emerge and what are their attendant risks will be asked.

Do I have to participate?

Participation is entirely voluntary. If you do choose to participate and then change your mind, you may withdraw from the research at any time with no consequences and without having to give a reason.

What will happen if I choose to take part?

If you do choose to participate, you will be invited to online interviews through WeChat to explore the BOT governance issues in China. The interview will last approximately 30 to 60 minutes. Your privacy will be well protected. The name, age, occupation and any other sensitive information will not be published in this research. Also, no sound record and photograph will be made only if I get the approval. Since the interview will be taken through the WeChat App, there will be no travel and subsistence expenses.

What are the advantages of taking part?

There are no immediate benefits for participating in this project and no financial incentive or reward is offered. However, it is hoped that this project could help to promote the BOT infrastructure in China, as some suggestions and recommendations will be provided to the Chinese government to facilitate more efficient and effective governance.

What are the possible disadvantages of taking part?

We anticipate no significant disadvantages associated with taking part in this project. If you experience any unexpected adverse consequences as a result of taking part in the project you are encouraged to contact the researcher as soon as possible using the contact details on page 3 of this information and consent sheet.

If I choose to take part, what will happen to the data?

The interview data will be anonymised at the point of transcription and identified by a general identifier (e.g. 'Planning officer A' or 'Planning consultant B' or a suitable pseudonym). A record of participant identities and any notes will be kept separately and securely from the anonymised data. All data and information affiliated with this project will be securely stored on an encrypted computer drive and physical documents will be stored securely on University property.

The data will be only used for the purposes of this research and relevant outputs and will not be shared with any third party. The anonymised data may be utilised in the written dissertation produced at the end of this project, and this dissertation may then be made publicly available via the University Library's Open Access Portal, however no identifiable or commercial sensitive information will be accessible in this way.

What will happen to the results of the research project?

It is anticipated that the data collected in this project will be included in the dissertation produced at the end of this project, submitted for the award of a Masters degree at University College London (UCL). You will not be personally identified in any of the outputs from this work, and attributions and quotations will be anonymised. If you would like to receive an electronic copy of any outputs stemming from this project please ask the contact below who will be happy to provide this.

Contact Details

If you would like more information or have any questions or concerns about the project or your participation please use the contact details below:

Primary contact	Wenxun Pan
Role	MSc student
Email	ucbqwp0@ucl.ac.uk
Supervisor	John Ward
Role	MSc dissertation supervisor
Email	eric.ward@ucl.ac.uk
Telephone	020 3108 9543

Concerns and / or Complaints

If you have concerns about any aspect of this research project please contact the MSc student contact the student in the first instance, then escalate to the supervisor.

RISK ASSESSMENT FORM FIELD / LOCATION WORK



The Approved Code of Practice - Management of Fieldwork should be referred to when completing this form

<http://www.ucl.ac.uk/estates/safetynet/guidance/fieldwork/acop.pdf>

DEPARTMENT/SECTION MSC IPAD

LOCATION(S) CHANGZHOU-CHINA

PERSONS COVERED BY THE RISK ASSESSMENT Wenxun Pan

BRIEF DESCRIPTION OF FIELDWORK I used the tele-interview to have an in-depth communication with interviewees.

Consider, in turn, each hazard (white on black). If **NO** hazard exists select **NO** and move to next hazard section.

If a hazard does exist select **YES** and assess the risks that could arise from that hazard in the risk assessment box.

Where risks are identified that are not adequately controlled they must be brought to the attention of your Departmental Management who should put temporary control measures in place or stop the work. Detail such risks in the final section.

ENVIRONMENT

e.g. location, climate, terrain, neighbourhood, in outside organizations, pollution, animals.

The environment always represents a safety hazard. Use space below to identify and assess any risks associated with this hazard

Examples of risk: adverse weather, illness, hypothermia, assault, getting lost.

Is the risk high / medium / low ?

No risk

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

- work abroad incorporates Foreign Office advice
- participants have been trained and given all necessary information
- only accredited centres are used for rural field work
- participants will wear appropriate clothing and footwear for the specified environment
- trained leaders accompany the trip
- refuge is available
- work in outside organisations is subject to their having satisfactory H&S procedures in place
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

EMERGENCIES**Where emergencies may arise use space below to identify and assess any risks***e.g. fire, accidents*

Examples of risk: loss of property, loss of life

No risk

CONTROL MEASURES**Indicate which procedures are in place to control the identified risk**

- participants have registered with LOCATE at <http://www.fco.gov.uk/en/travel-and-living-abroad/>
- fire fighting equipment is carried on the trip and participants know how to use it
- contact numbers for emergency services are known to all participants
- participants have means of contacting emergency services
- participants have been trained and given all necessary information
- a plan for rescue has been formulated, all parties understand the procedure
- the plan for rescue /emergency has a reciprocal element
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

FIELDWORK 1

May 2010

EQUIPMENT**Is equipment used?****No****If 'No' move to next hazard
If 'Yes' use space below to identify and assess any risks***e.g. clothing, outboard motors.*

Examples of risk: inappropriate, failure, insufficient training to use or repair, injury. Is the risk high / medium / low ?

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

- the departmental written Arrangement for equipment is followed
- participants have been provided with any necessary equipment appropriate for the work
- all equipment has been inspected, before issue, by a competent person
- all users have been advised of correct use
- special equipment is only issued to persons trained in its use by a competent person
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

LONE WORKING

Is lone working a possibility?

No

If 'No' move to next hazard
If 'Yes' use space below to identify and assess any risks

*e.g. alone or in isolation
lone interviews.*

Examples of risk: difficult to summon help. Is the risk high / medium / low?

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

- the departmental written Arrangement for lone/out of hours working for field work is followed
- lone or isolated working is not allowed
- location, route and expected time of return of lone workers is logged daily before work commences
- all workers have the means of raising an alarm in the event of an emergency, e.g. phone, flare, whistle
- all workers are fully familiar with emergency procedures



OTHER CONTROL MEASURES: please specify any other control measures you have implemented:



- there will be more than one driver to prevent driver/operator fatigue, and there will be adequate rest periods
- sufficient spare parts carried to meet foreseeable emergencies
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

DEALING WITH THE PUBLIC

Will people be dealing with public

If 'No' move to next hazard

If 'Yes' use space below to identify and assess any risks

e.g. interviews, observing

Examples of risk: personal attack, causing offence, being misinterpreted. Is the risk high / medium / low?
low risk

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

- all participants are trained in interviewing techniques
- interviews are contracted out to a third party
- advice and support from local groups has been sought
- participants do not wear clothes that might cause offence or attract unwanted attention
- interviews are conducted at neutral locations or where neither party could be at risk
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

FIELDWORK 3

May 2010

WORKING ON OR NEAR WATER

Will people work on or near water?

No

If 'No' move to next hazard

If 'Yes' use space below to identify and assess any risks

e.g. rivers, marshland, sea.

Examples of risk: drowning, malaria, hepatitis A, parasites. Is the risk high / medium / low?

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

- lone working on or near water will not be allowed
- coastguard information is understood; all work takes place outside those times when tides could prove a threat
- all participants are competent swimmers
- participants always wear adequate protective equipment, e.g. buoyancy aids, wellingtons
- boat is operated by a competent person
- all boats are equipped with an alternative means of propulsion e.g. oars
- participants have received any appropriate inoculations
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

MANUAL HANDLING (MH)

Do MH activities take place?

No

If 'No' move to next hazard

If 'Yes' use space below to identify and assess any risks

e.g. lifting, carrying, moving large or heavy equipment, physical unsuitability for the task.

Examples of risk: strain, cuts, broken bones. Is the risk high / medium / low?

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

- the departmental written Arrangement for MH is followed
- the supervisor has attended a MH risk assessment course
- all tasks are within reasonable limits, persons physically unsuited to the MH task are prohibited from such activities

- all persons performing MH tasks are adequately trained
- equipment components will be assembled on site
- any MH task outside the competence of staff will be done by contractors
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

SUBSTANCES

Will participants work with

No

If 'No' move to next hazard
 If 'Yes' use space below to identify and assess any risks

e.g. plants, chemical, biohazard, waste

Examples of risk: ill health - poisoning, infection, illness, burns, cuts. Is the risk high / medium / low?

CONTROL MEASURES

Indicate which procedures are in place to control the identified risk

- the departmental written Arrangements for dealing with hazardous substances and waste are followed
- all participants are given information, training and protective equipment for hazardous substances they may encounter
- participants who have allergies have advised the leader of this and carry sufficient medication for their needs
- waste is disposed of in a responsible manner
- suitable containers are provided for hazardous waste
- OTHER CONTROL MEASURES: please specify any other control measures you have implemented:

OTHER HAZARDS

Have you identified any other hazards?

No

If 'No' move to next section
 If 'Yes' use space below to identify and assess any risks

i.e. any other hazards must be noted and assessed here.

Hazard:

Risk: is the risk

CONTROL MEASURES

Give details of control measures in place to control the identified risks

Have you identified any risks that are not adequately controlled?

NO

Move to Declaration

YES

Use space below to identify the risk and what

action was taken

Is this project subject to the UCL requirements on the ethics of Non-NHS Human Research?

No

If yes, please state your Project ID Number

For more information, please refer to: <http://ethics.grad.ucl.ac.uk/>

DECLARATION

The work will be reassessed whenever there is a significant change and at least annually. Those participating in the work have read the assessment.

Select the appropriate statement:

- I the undersigned have assessed the activity and associated risks and declare that there is no significant residual risk
- I the undersigned have assessed the activity and associated risks and declare that the risk will be controlled by the method(s) listed above

NAME OF SUPERVISOR John Ward

SIGNATURE OF SUPERVISOR
John Ward

DATE 29 August 2019

FIELDWORK 5

May 2010