

# PUBLIC-PRIVATE PARTNERSHIPS IN CHINA

On 2014 as a landmark year,  
with past and future challenges

Discussion Paper

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# BACKGROUND



## 1.0 Background

Public-private partnerships (PPPs) have been developing in China since the very late 1980s, but the year 2014 might prove to have been a landmark year in this development. In November 2013 the Third Plenum of the 18th Communist Party of China emphasized the decisive role that market forces should play in the Chinese economy (Davis, 2013). The Party's actions in 2014 confirmed this direction, particularly as it relates to PPPs, resulting in many associated circulars, regulations, declarations and debates. The first section of this paper describes the main drivers that make PPPs attractive in China in the contemporary context; for example, the high levels of local government debt and the daunting needs for funding new infrastructure in the coming decades. The second section discusses some important barriers that might prevent the development of sound, successful PPP projects. In the third and last section, we propose some recommendations to harness the full potential of PPPs in China.

### BOX 1. PUBLIC-PRIVATE PARTNERSHIPS

The notion of public-private partnership (PPP) covers a wide range of possible relationships between public and private entities. A PPP is often defined as a long-term contract between a private party and a government agency for providing a public asset or service, in which the private party bears significant risk and management responsibility (World Bank, 2012). While involving private participation, a PPP differs from mere privatization: the government or public entity is ensuring that social obligations are met and successful sector reforms and public investments are achieved (Felsing, 2008). The effectiveness of—and the argument for—PPPs relies on the recognition that public and private actors each have certain advantages relative to the other in performing specific tasks. The responsibilities of the private actor could entail finance, design, construction, operation, management and maintenance. Partnership agreements mostly consist of an allocation of risks, responsibilities and objectives to both the public and private partners.

In China, PPP agreements can also be made between governments and state-owned enterprises, where the latter is considered to be the private partner.

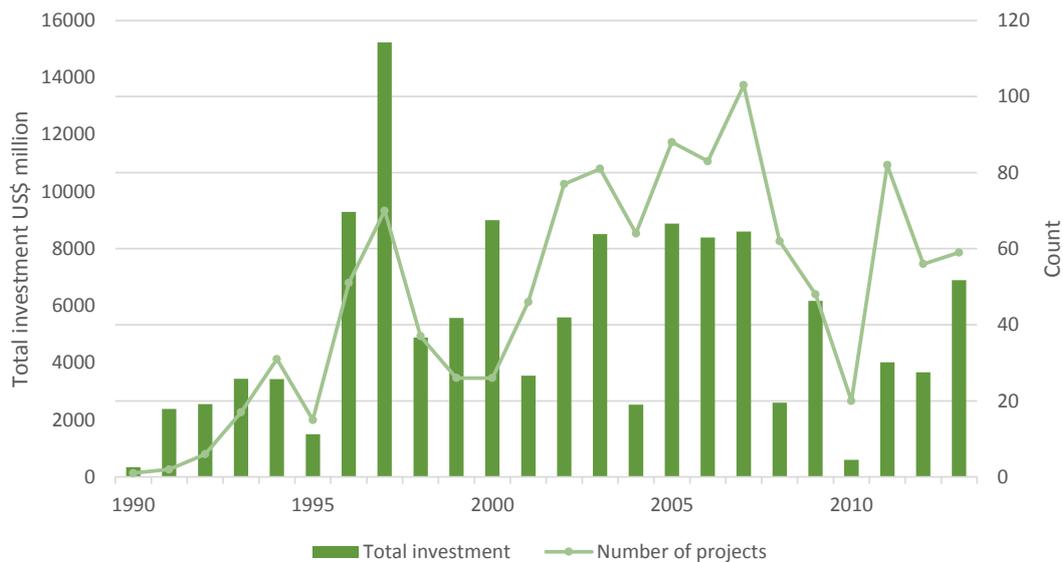
For more details on the different possible arrangements, see, for instance, World Bank (2012).

## 1.1 Trends

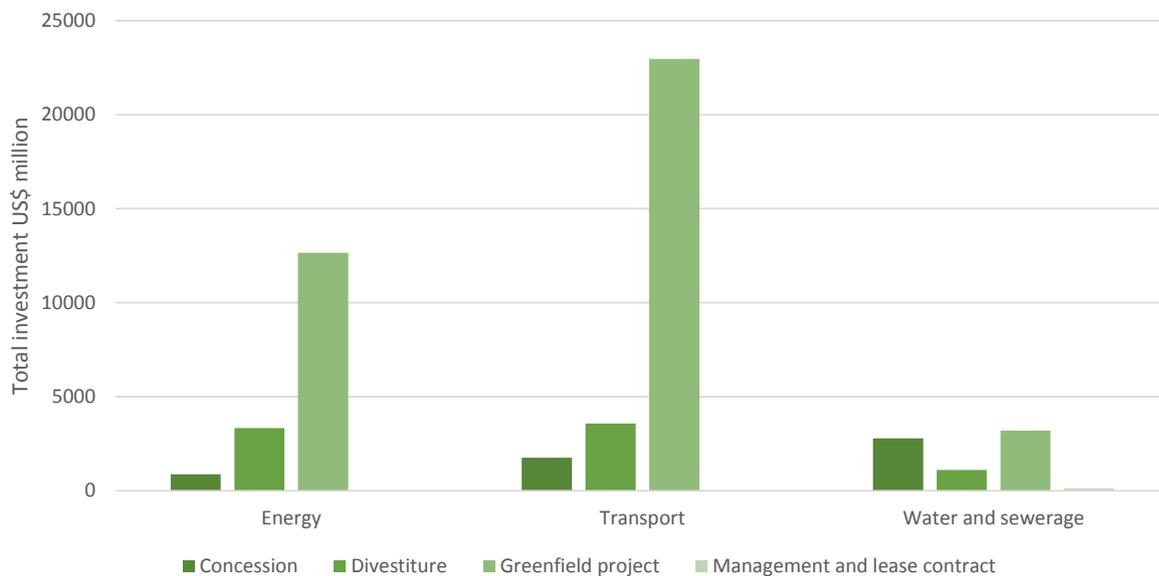
PPPs are not a new model in China. The Shajiao B power plant in Shenzhen, which came to operation in 1988, is a build-operate-transfer project that is usually considered to be the first PPP. Since then, many PPPs have taken place, mostly in the energy, water and transportation sectors.

Unfortunately, there is as yet no centralized or consistent monitoring of PPP projects in China. In the absence of such data, the next best alternative is the World Bank's Private Participation in Infrastructure Database (World Bank, 2014). This database records all the contractual arrangements in which private parties assume operating risks, with and without investments. Figure 1, based on this database, shows the number of projects as well as the corresponding total investment. Figure 2 represents the nature of the agreements between the public and private actors for the three main sectors.<sup>1</sup>

<sup>1</sup> The telecom infrastructure sector is also included in the database, but no private participation has been recorded since 2004.



**FIGURE 1 - EVOLUTION OF PPPs: NUMBER AND TOTAL INVESTMENT IN CHINA (WORLD BANK, 2014).**



**FIGURE 2 - TYPE OF PRIVATE PARTICIPATION IN DIFFERENT SECTORS FOR THE PERIOD 2004-2013 (WORLD BANK, 2014).**

While the World Bank database can provide useful information, one should remain cautious when drawing conclusions from it. It considers only companies that are controlled and majority-owned by private entities, which excludes state-owned enterprises (SOEs). While it sounds logical not to consider agreements contracted with SOEs to be PPPs, in the Chinese context, an important share of infrastructure construction and utility companies are SOEs, and many of them have PPP-like agreements with local governments. Unfortunately, the lack of consolidated data prevents us from being able to precisely estimate the number and scale of such agreements.

Mu, de Jong and Koppenjan (2011) have highlighted an example of how the data has the potential to be misinterpreted. These authors argue that the sharp fall in the number of annual projects observed between 2007 and 2010 does not correspond with a shift toward more conventional procurement approaches. Instead, in this period a large majority of large new transportation projects were transferred or granted to SOEs through PPP-like agreements. Several reasons have been put forward to explain this shift, including harmful and opportunistic behaviour on the part of some private players (e.g. jerry-built projects, insufficient maintenance), the financial crisis, abandoned projects and unmet expectations.

Looking at the distribution of different types of agreements allows us to paint a picture that is less likely to be affected by the exclusion of SOEs in the database. Greenfield projects represent a majority of the private participation in infrastructure, mostly through build-operate-transfer agreements. Water and sewage infrastructure presents an opportunity for more diversified financing, with a relatively higher proportion of concessions and divestitures. More generally, build-operate-transfer remains a favoured model of public-private agreement, although some diversity and innovation are encouraged by central directives. Divestitures and transfer-operate-transfer models are attracting attention, as well: these models help local governments reduce their debt in the short term through price transferring and offer long-term operating revenues without any construction risk to the private partner. Additionally, as the plants are already operational, cash-flow prediction is more accurate, reducing financing risk, as well. Limited numbers of management and lease contracts exist. Indeed, local governments may lack interest in such agreements, since they do not involve any private investment. On top of this, management and lease contracts usually require the redeployment of existing employees into the private organization, which might prove problematic for local governments (Jang, Lee, & Choi, 2014).

## 1.2 Drivers for PPPs in China

Two main factors together explain why the Chinese government is promoting PPPs: the high level of debt among local governments and the substantial investments these governments require for infrastructure.

### Local Government Debt

Since 1994, local governments have been forbidden to borrow money directly. They therefore opted for financing vehicles in order to skirt this restriction to raise funds for infrastructure and public service projects. Local government financing vehicles collected funding mainly through loans contracted with banks (more than 80 per cent of the funding) and also through the issuance of bonds. However, much of these debt and guarantees remained off the local governments' balance sheets. Central government pressure on banks to curtail loans further increased reliance on shadow banking, usually with high interest rates and short maturity. After the financial crisis and the associated infrastructure stimulus program, local debt (on and off the balance sheets) reached levels alarming enough to prompt strong central government reaction. Accordingly, national audits were initiated. In 2011, an audit concluded that local governments owed CNY 10.7 trillion (National Audit Office of the People's Republic of China, 2011); in 2013, this level reached CNY 17.9 trillion, about one-third of China's GDP (National Audit Office of the People's Republic of China, 2013). These amounts included local government responsibility for debt (CNY 10.9 trillion), contingent liabilities (CNY 4.3 trillion) and guaranteed credits (CNY 2.7 trillion).

In this context, the *National Budget Law* was amended in August 2014 (Standing Committee of the National People's Congress, 2014). Among other modifications, the law now authorizes local governments to raise debt and issue bonds only with State Council approval. The underlying motivation for this important amendment is to streamline the indebtedness process, make it easier to track and increase central authorities' control over it. Later on, the State Council issued its Opinions on Strengthening the Administration of Local Government Debt (State Council, 2014c), banning borrowing through local government financing vehicles and capping the amount of debt local governments can take on. Debt can be raised only for non-profit public project investments; for other infrastructure projects with potential cash returns, such as public utilities and transportation, the State Council encourages the use of PPPs or project-specific bonds.

### Infrastructure Funding Requirement

Hand in hand with the high level of government debt is the similarly high level of funding required for infrastructure. In March 2014 the government released its new urbanization plan (State Council,

2014b). Targets in the plan include an urbanization rate of 60 per cent by 2020, up from 53.7 per cent in 2013, representing roughly 100 million new urban residents. To provide these residents with adequate infrastructure and public services (such as housing, transportation, wastewater treatment and utilities), Wang Baoan, vice-minister of finance, estimated a cost of CNY 42 trillion by 2020 (Xinhuanet, 2014). Facing limited investment capacity from local governments, the Ministry of Finance (MOF) has been pushing for PPPs, which are seen as a way to channel substantial private capital into the public sector. With private fixed-asset investments reaching CNY 29 trillion in the first eleven months of 2014 (National Bureau of Statistics of China, 2014), the involvement of private capital might prove extremely helpful. However, a proper investment environment is required to attract private capital in public services and infrastructure. The next section describes the recent efforts that Chinese central authorities have made in this direction.

### 1.3 2014: A Landmark Year?

The year 2014 could prove to be a milestone for development of PPPs in China. During this period, the Chinese government issued numerous important documents encouraging private investment in public services and infrastructure (see Table 1).

**TABLE 1 - RECENT OFFICIAL DOCUMENTS PROMOTING THE DEVELOPMENT OF PPPs.**

DATE	ISSUING BODY AND TITLE	REF.
May 18, 2014	National Development and Reform Commission (NDRC), <i>Notice to encourage private capital to invest in first infrastructure projects</i>	NDRC, 2014c
September 21, 2014	State Council, <i>Opinions of the State Council on strengthening the management of local government debt</i>	State Council, 2014c
September 23, 2014	MOF, <i>Notice on questions relating to expanding the use of PPPs</i>	MOF, 2014c
November 16, 2014	State Council, <i>Guiding opinions on the innovative investment mechanism and encouraging social investment in key sectors</i>	State Council, 2014a
November 29, 2014	MOF, <i>Guide on operation of public-private partnership projects (interim)</i>	MOF, 2014a
December 2, 2014	NDRC, <i>Guidelines on development of public-private partnership projects</i>	NDRC, 2014a
2015?	NDRC, State Council: infrastructure and public project franchise law	

#### Increasing the Role of Private Actors and Market Forces

The Party's third plenum, held in November 2013, asserted an important principle: allowing the market to play a *decisive* role in the allocation of resources (Central People's Government of the People's Republic of China, 2013). This is certainly not a historic revolution, as China has been shifting away from an entirely planned economy for several decades. Nevertheless, it highlights the growing importance the Chinese government is expecting private actors and market forces to play in the economy in the near future. The matter here is not only to raise private capital, but also to increase efficiency and decrease the possibility of stranded assets.

The *Notice to Encourage Private Capital to Invest in First Infrastructure Projects* issued in May 2014 is another step in this direction: the NDRC released a list of 80 major national projects in which private companies were invited to participate, both in the construction and operation phases. The sectors included transportation, information infrastructure, clean energy and fossil fuels.

According to the *Guiding Opinions on the Innovative Investment Mechanism and Encouraging Social Investment in Key Sectors*, China will ease market access in a bid to spur investment through innovating financing and investment regimes (Xinhua, 2014). The easing of market access should consist of further breaking industrial monopolies, reducing market barriers and lowering access thresholds. PPPs will be promoted, and in some situations, investors could be provided with financial incentives such as subsidies and

subsidized loans. Sectors where private contribution is encouraged include environmental protection, agriculture, water, municipal infrastructure, transportation, energy, grids, telecommunications and public services.

### Promoting PPPs

Along with the increasing importance attached to market forces, central authorities have also given much attention to PPPs. The MOF and the NDRC issued their respective guidelines in 2014 concerning PPP agreements. These guidelines are designed to help local governments and private actors share risk in a sound, efficient manner. According to the NDRC’s guidelines (art. 3), PPP mechanisms should be favoured in infrastructure or public services, which both fall under government responsibility and are suitable for market-based operations. The document mentions numerous sorts of favoured projects: supply of natural gas electricity and heat; waste and wastewater treatment facilities; roads, railways, airports and city transportation infrastructures; health, travel, training and elder care services; water conservation; and environmental protection projects. However, priority is given to the newly approved municipal facilities and other urbanization projects.

The different modes of PPPs favoured include franchise, build-operate-transfer, build-own-operate and build-own-operate-transfer agreements. NDRC is explicitly encouraging innovation around these forms of agreements so as to fit with local circumstances. For central authorities to better keep track of the unfolding of PPPs, local development and reform commissions (DRCs) are required to establish a PPP project library and report monthly to the NDRC about progress in their areas. The guideline also emphasizes the need for robust mechanisms entailing cooperation, joint review and price management (art. 4); standardized procedures (art. 5); political guarantees (art. 6); and orderly conduct (art. 7). A template of a partnership contract is provided, as well. The MOF guidelines provide further information about the different steps for establishing a PPP (see Figure 3).

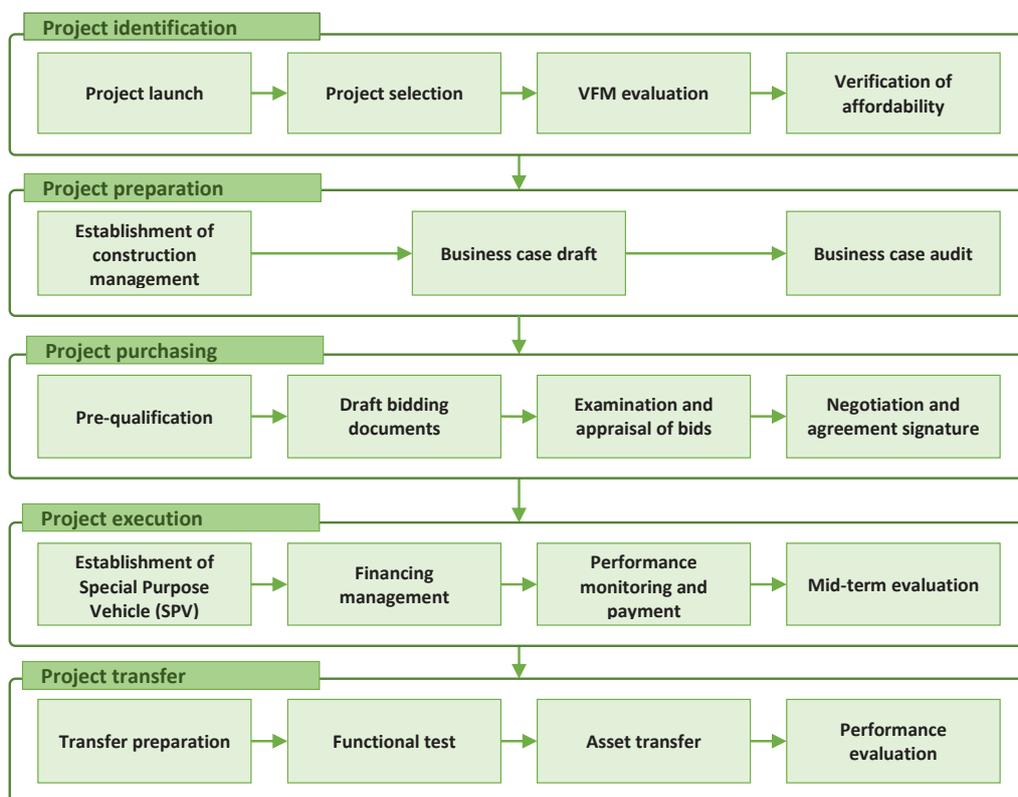


FIGURE 3 - PROCESS FLOW CHART FROM MOF GUIDELINES (MOF, 2014A).

In May 2014 the MOF set up a PPP-leading group, and in December of the same year, the MOF announced the establishment of a PPP center. The main mission of this center entails policy research, training, statistics gathering and international cooperation. In its next steps, the MOF is willing to build a proper environment for PPPs, increase confidence, better manage related standards and norms, and assist in the implementation of more PPP projects.

Also in December 2014, the MOF announced 30 pilot PPP projects, representing a total investment of CNY180 billion (MOF, 2014b). Among these 30 projects, eight are new, and 22 are being transferred from local financing platforms. These projects concern water and heat supply, wastewater treatment, waste management, transport, new energy vehicles, environmental restoration, pipe networks, medical treatment and sport facilities.

There is no doubt that 2014 was an important year for development of PPPs in China. Many elements are now assembled to allow PPPs to flourish: strong central government endorsement, the need for investment, the limited financial resources of local governments, pilot programs, dedicated institutions and increasing experience. However, the recent history of PPPs in China shows that challenges remain to be overcome before a new PPP wave can effectively happen. The next section discusses these impediments.

# CURRENT IMPEDIMENTS



## 2.0 Current Impediments

As in all new PPP markets, uncertainties abound around the development of PPP transactions. A first concern is the high degree of uncertainty faced by private entities when joining PPP projects. The limited capacity of local governments to conduct proper risk analysis and negotiate with private partners also prevents the development of PPPs. Existing financing channels may also prove too limited to support the acceleration the government aims for.

### 2.1 Uncertainties for Private Actors

Whether they involve building infrastructure or providing public services, projects entail many inherent risks. These can include construction delays and quality issues, cost overruns, and changes in market demand (see next section). However, the legal, regulatory and political environment, as opposed to the project itself, may create even more important risks and be a source of uncertainties that dissuade investment.

The predominant role of government is one of these sources of uncertainty. In some cases, local governments do not fully respect the agreements, sometimes in spirit and other times even in the letter. The example of Beijing's subway line 4 has recently been denounced by its second-largest shareholder: Ren Zhiqiang complained that the government made all the decisions, including pricing, investment and line extension. As a consequence, he said his investment turned out to be a "generous donation" (Zhang, 2014). Another example is the Citong bridge in Quanzhou, conceived as a PPP project where tolls would generate revenue. The contract term was 30 years, but at around halfway through this period, the local government built seven toll-free bridges, drastically reducing the revenue from the Citong bridge (SIFL Institute, 2014). Rapid rotation of mayors (typically around every five years) further increases the risk of unsteady political support. It is the role of an agreement to prevent such situations, and this underscores the importance of properly drafting the contract. In the case of the Citong bridge, additional clauses of exclusivity could have prevented major losses for the private partner.

From a survey conducted in China in early 2009 among experts and practitioners, it appears that among all the risks faced by a PPP project, government-related ones were predominant, and government intervention topped the list (Ke, Wang, Chan, & Cheung, 2011). At the same time, legal constraints on government remain weak, and the local courts are still largely influenced by local governments. More judiciary independence and consistent legal recourse are required for China to increase the confidence of private actors' confidence in PPP projects. An important step in this direction could be the Infrastructure and Public Projects Franchise Law, of which a draft is now being circulated in order to solicit opinions (NDRC, 2014b). This regulation, expected to be issued in 2015, is intended to further promote PPPs by providing a comprehensive, sound legal system.

### 2.2 Improper Risk Evaluation and Allocation

Another important barrier that prevents the full potential of PPPs from being tapped is the limited capacity of local governments to properly conduct project feasibility assessments, demand analyses and project financial analyses. These are crucial steps in the preparation of bankable projects. Indeed, the maximum benefits of a PPP can ultimately be achieved only if each risk is properly evaluated and handed to the actor most able to handle it. Even more, properly allocated risks can create incentives for the parties to develop mechanisms for reducing them and thereby lowering the project's overall cost. Precise risk evaluation is also required to determine grounded insurance premium fees. However, the process of risk assessment is complex and requires advanced technical capacity. With many local governments deprived of experience in this domain, risks are often improperly evaluated and not efficiently allocated.

Different typologies of risk exist, with the number of types varying from a dozen to more than forty. Table 2 describes a list of common systematic and project-specific risks associated with PPPs.

**TABLE 2 - SYSTEMATIC AND PROJECT-SPECIFIC RISK FACTORS (ADAPTED FROM CHAN, YEUNG, YU, WANG, & KE, 2011).**

RISK CATEGORY	DESCRIPTION	
Systematic	Political	Government corruption, government intervention, nationalization/expropriation, public credit, poor public decision-making process
	Economic	Interest rate fluctuation, foreign exchange fluctuation, inflation, financing risk
	Legal	Legislation change, imperfect law and supervision system, change in tax regulation
	Social	Political or public opposition
	Natural	Force majeure, unforeseen weather or geotechnical conditions, environmental risk
Project-specific	Construction	Completion risk, non-availability of material or labour, unproven engineering techniques
	Operation	Project or operational changes, operational cost overrun, price change, expense payment risk
	Market	Market competition, change in market demand
	Relationship	Third-party delay or violation, organization and coordination risk, inability of the concessionaire
	Other	Land acquisition, delay in project approvals and permits, conflicting or imperfect contracts, lack of supporting infrastructure, residual risk, inadequate competition for tender

### 2.3 Lack of Grounded Evaluations

Even before figuring out the optimum allocation of risks, local governments should wonder about the opportunity for a specific project to be conducted under a PPP agreement. As long as a PPP is merely considered a means of accessing financing, there is a high risk that inappropriate projects will be selected, increasing the chances of failure. Instead, PPPs should be considered as a convenient but subtle way to benefit from the innovation and knowledge of private actors for public purposes (Asian Development Bank [ADB], 2014). A key consideration to bear in mind while selecting and designing a project is whether it will bring value for money (VFM) (see Box 2). In other words, a PPP project should be selected only if it brings advantages relative to the traditional government construction-and-management model. But here again, evaluating VFM requires efficient assessment methods. Wang Baoan, vice-minister of finance, recently admitted that the lack of these methods has led to a form of “blindness in selecting projects,” a fact that contributes to explaining “why many PPP projects have failed” (CDM Fund, 2014).

Identifying VFM and bringing it to life remain challenging even in countries with long experience with PPPs. The recent debates about VFM achievements for health care services in the United Kingdom and for highways in France are two compelling examples. In both cases, the debate is not so much about the quality of the service provided or the infrastructure delivered, but rather about cost efficiency for the public. An official report from the British parliament is explicit: “The use of PFI<sup>2</sup> has been based on inadequate comparisons with conventional procurement which have not been sufficiently challenged. [...] PFI deals look [for] better value for the private sector than for the taxpayer” (Parliament of the United Kingdom, 2011). While national contexts definitely matter in the choice of different PPP models, it is universal that VFM is never guaranteed and should be properly evaluated for all stages of a project’s life cycle.

<sup>2</sup> A private finance initiative (PFI) is a form of PPP developed in the United Kingdom and Australia and used extensively there. In these agreements, the private actors bear the up-front costs and are reimbursed with long-term public payments.

## BOX 2. VALUE-FOR-MONEY ANALYSIS

Different definitions of value for money (VFM) have been suggested. A definition usually referred to is the British treasury's one: VFM "is defined as the optimum combination of life-cycle costs and quality (or fitness for purpose) of a good or service to meet the user's requirement."

In the context of PPPs, VFM analyses are conducted to determine whether it would be more beneficial for the final user to undertake a project under a PPP model or through a conventional procurement method. Similarly, it could be used to compare the value brought by different PPP arrangements.

In a VFM analysis, the quantitative part entails the comparison of whole life-cycle costs, risk-adjusted and expressed in net present values. A public sector comparator (PSC) is often considered: a PSC is a hypothetical assessment of a conventional public procurement method, with which other procurement options will be compared. Other qualitative elements are considered in VFM analyses, such as the ability to meet environmental obligations, address stakeholder interests, and ensure a fair and transparent procurement process.

For more details, see Federal Highway Administration (2012), Martin (2013) and Perera et al. (2014).

## 2.4 Limited Financing Diversity

So far, the private sector contribution has largely been financed by short-term bank loans, often backed by government guarantees (ADB, 2014).<sup>3</sup> But seeing the large scale of investment required and the limited guaranteeing capacity of local governments under new regulations, the lack of financing sources might prove a bottleneck in further PPP infrastructure developments. Infrastructure bonds are an alternative and have been used for years in China. Beijing recently raised \$1 billion for its subway transportation system with three-year and five-year notes (Wong, 2014). Another important means to enlarge the investing base is to create opportunities for pension funds and insurance companies to invest in infrastructure funds on a long-term basis. Uncertainties and credit evaluation systems of such investors have so far limited these entities' level of participation (ADB, 2014). Establishment of securitization mechanisms at different levels of the project as well as the reinforcement of exit mechanisms and secondary markets is required if China is to channel these funds into infrastructure investment.

<sup>3</sup> The guarantee might be implicit, such as when the so-called private partner is a SOE.

# GETTING THE MOST OUT OF PPPs



## 3.0 Getting the Most Out of PPPs

The government of China has taken active steps to build capacity for PPPs. Guidelines and training sessions are being organized to increase the capacity of local governments to design efficient PPPs, model contracts are being developed, the legal environment might soon be improved with the forthcoming Infrastructure and Public Projects Franchise Law, judicial reform may increase judicial independence and ease the dispute settlement process (Huang, 2014), sectors opened to private and foreign participation are broadening, and the national government is implementing pilot programs seeking to develop a number of PPPs acting as “pathfinders” in a learn-as-you-do strategy (Jiao, 2014).

Infrastructure projects are very complex, and hence PPPs in themselves have to be bespoke. The risks and responsibilities have to be allocated to the public and private parties in a manner that best suits the demand and revenue forecasts of each project. They must also be compatible with the conditions in China. However, some general principles can be considered in order to harness the full potential of PPPs in China.

### 3.1 Seek Efficiency and Innovation Before Funding

In the present situation, characterized by high debt burdens across local municipalities and huge infrastructure needs in several Chinese provinces, it might sound tempting for procurers to consider PPPs as merely a funding source. However, projects initiated under this single motivation are likely to fail sooner or later. If respective interests diverge, if the agreement appears to be unfair during the process, or if responsibilities are not clearly assigned beforehand, then trust will dissolve, partnerships will break, transaction costs will soar, and the project would ultimately either fail or prove not to be as cost-efficient as expected.

Along with the search for private capital, collaboration with private actors should also be sought for efficiency and innovation gains that would not have occurred through conventional procurement processes. This is actually the main objective and justification for PPPs. As the private sector is motivated by profit maximization, it will allegedly seek increased efficiency in its operations, strategic choices and investments. The managerial practices and technical experience of private actors are the main sources for gains. Several conditions should be met in order to tap this potential. First of all, private actors should be given proper risks to bear, as well as the leeway to efficiently handle them. The contract length should be long enough to prevent opportunistic and shortsighted behaviours. Expected services should be quantifiable and assessment methods agreed on. Payment should be based upon performance. Finally, competition should be encouraged in the bidding process.

In simplifying terms, for a PPP to bring value to the public, the efficiency gains attached to the private actor should more than compensate for the profit the company is collecting and the PPP's transaction costs.<sup>4</sup> Unfortunately, efficiency gains and other qualitative benefits of PPPs are often less predictable than assumed, and they may differ widely among sectors, and even projects within a sector. Collection of PPP experience within a single national unit at the MOF is an important step. Through proper knowledge capitalization, procedures and decision-making processes could be substantially improved. More importantly, only through collecting and sharing failed experiences can China avoid repeating them.

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<sup>4</sup> The reality of cost computation is a bit more complex, as adjustment for risks, payment delays, competitive neutrality and taxation should be accounted for (see section 3.2).

## 3.2 Seek Value for Money for the Whole Asset Life Cycle

The VFM approach has taken on significant relevance in the Chinese PPP policy agenda, and its use will be of undoubted importance in the procurement of new infrastructure projects. The MOF has already emphasized the significance of adopting this approach in the selection of PPP projects, yet has highlighted the lack of locally accepted definitions and procedures as the biggest hurdle for its widespread use in China. In its latest documents, the MOF has identified the following guidelines linked to the VFM assessment (MOF, 2014a):

- ✓ Not all projects are suited to be delivered with the use of PPPs.
- ✓ Procurement models should be designed and used according to different sectors.
- ✓ VFM should advocate for sustainable development and environmental concerns.

### BOX 3. ACHIEVING VALUE FOR MONEY IN CHINA: THE BEIJING METRO LINE 6

Some PPP projects have shown that it is possible to achieve VFM in China. Among these, the Beijing Metro line 6 excels as a large-scale urban infrastructure project with a profitable scheme predicated on clear and consistent policies. Unlike the tariff miscalculations that contributed to the failure of the line 4, Beijing Metro line 6 introduced a robust tariff scheme and adequate risk-sharing structures (ADB, 2014).

To illustrate, China MTR Corp. reduced price risk by establishing a hybrid tariff scheme with the Beijing Municipal Government. The agreement guaranteed a minimum ticket price of CNY 2 during the 30-year operating franchise and supplementary tariff payments per passenger if operating costs exceeded the service price.

Line 6 also introduced a business revenue strategy previously implemented in Hong Kong and characterized by bringing the revenues associated with commercial developments to the private contractor. As a consequence, this PPP project offered attractive returns to the private partner and brought cost savings of CNY 4.6 billion to local authorities.

For more details, see Federal Highway Administration (2012), Martin (2013) and Perera et al. (2014).

As discussed in Box 2, a good starting point to achieve VFM is the use of public sector comparators (PSCs) to ensure cost-effective solutions in whichever procurement mechanism is selected. As PSCs have not been widely used in China, smart use of these by procurers would consider the lessons learned from other countries. For example, in the United Kingdom the PSC analysis has been recognized as a subjective tool, highly sensitive to variables such as the rate of discount used, inflation, and tax rates. Moreover, because the PSC analysis is based to a great extent on macro- and microeconomic assumptions, the accuracy and availability of data will potentially jeopardize the results of the analysis (Leigland & Shugart, 2006).

A key aspect of harnessing the full potential of PPPs in China relates to the capacity of local authorities to achieve VFM not only at the commissioning stage of the project, but also by encouraging the attainment of additional benefits throughout the whole asset life cycle. This approach suggests that public authorities should have a wider mindset when designing and commissioning infrastructure projects and should include, for example, social and environmental criteria that could be met during the operational and post-operational asset phases. International experience shows this has rarely been the procurers' standpoint when preparing tender calls, and a lack of, for example, clear standards on material disposal after the asset lifespan has been achieved is common. If followed, a life-cycle approach may prove extremely beneficial for China, especially when poor asset disposal strategies may worsen environmental conditions in the areas surrounding where physical assets are being disposed.

Realizing VFM is closely related to the concept of strategic procurement. Adopting this methodology requires continuous assessment of the procurement activities and improving cost-efficiency through generating the right conditions for competition. On this, it is important for Chinese authorities to introduce better practices on competitive tendering, as available data suggest that 40 per cent of the PPP projects implemented so far have been procured using direct negotiation. Thus, current practices in tendering are not fully exploiting the value of PPPs in lowering infrastructure costs, and private partners are not being forced to bring competitive proposals in the design and pre-tender phases. In fact, most scholars mention that a common problem for PPPs in China has been the government's focus on bringing private capital rather than creating conditions that would enhance competitive pressures (Beh, 2010).

### 3.3 The Need for Performance-Based Specifications

Procurement authorities across different latitudes have acknowledged the importance of performance-based specifications (PBSs) as a cutting-edge development in the pursuance of VFM. A simple definition of a PBS is related to the foremost question procurers face in the pre-tender phase: how do I prioritize across the many infrastructure needs I want to fulfill? To answer this properly, authorities may need to rethink the traditional approach of defining needs based on inputs and specific needs, and start considering the delivery of services in terms of output-based solutions. In other words, to describe their requirements based on desired performance levels but without stating the specific methods to achieve them.

In the context of China, PBSs may prove to be of special value to public authorities, as they are pivotal to developing infrastructure that yields VFM across the asset life cycle. Through the inclusion of environmental standards in tender calls, procurers could track particular variables related to national goals such as reducing greenhouse gas emissions, ensuring minimum coverage levels, and maintaining minimum levels of public satisfaction in the delivery of public services. What's more, for PPPs in particular, PBSs have the potential to increase the financial stability of projects by linking payment schedules to clearly stated performance thresholds and by increasing revenue collection if serviced communities see quantifiable improvements in the quality of the public services provided.

Figure 4 describes some of the activities authorities should conduct in order to include PBSs in the public procurement cycle. Public procurers need to have a clear understanding of their needs, both when developing this approach and when setting selection criteria and technical specifications for bidders. Also, a key aspect for the success of PBSs remains in the ability of the authorities to monitor and evaluate the contract's performance standards and to set payments or sanctions accordingly.

The bottom line on this subject remains the ability of the Chinese authorities to create an environment conducive to the use of PBSs in their procurement practices. There is an opportunity to adopt output-based approaches in the development of PPP project opportunities by national and provincial governments.

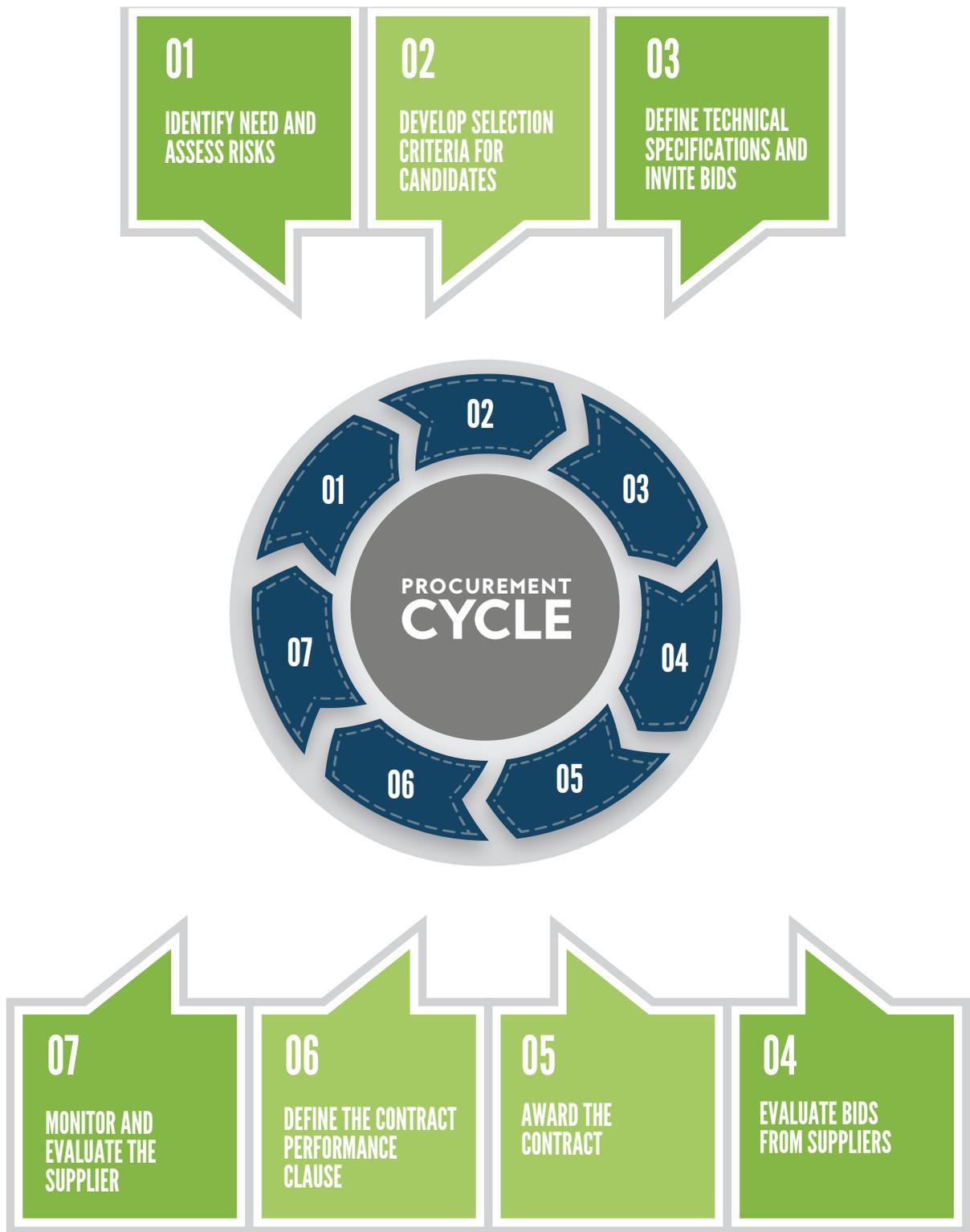


FIGURE 4 - INCLUDING PBSs IN THE PROCUREMENT CYCLE (TURLEY, SILVA, BENSON & DOMINGUEZ, 2014).

### 3.4 Mitigating Political and Regulatory Risks

While negotiating the agreement between the public and private parties, several pitfalls must be avoided. An important one is when an agreement is unbalanced. In many cases, the local government fails to adequately share the risks, continuing to bear too great a share of them (Zhang, Gao, Feng, & Sun, 2014). A probable consequence is that the public actor can't keep its promises during the execution of the project, resulting in defaults and disputes with the private partner and other investors. More generally, it is ultimately not in the best interest of the private actor to sign a biased contract by taking advantage of a local government's lack of experience and expertise, because as soon as the unfairness of the agreement is acknowledged, conflicts will arise (Ke, Wang, & Chan, 2013). Similarly, possibilities for intervention by local government should be contained in order to increase reliability and stability for private investors.

From a financial perspective, it is crucial for PPPs to have an equitable risk-sharing scheme before trying to secure debt or equity financing. Looking at previous Chinese experience, it is easy to find cases that resulted in disaster for the private partner as municipalities modified tariff schemes or halted the agreed-upon payments after assessing the drawbacks of altering the PPP contracts to be insignificant. Therefore, it is important to understand and properly allocate the particular risks faced by the project in order to avoid future failure. Furthermore, in the process of seeking efficient PPPs, a shared vision of the intended results should include an approach that shares both profit and risk. It is important that local municipalities understand that a well-structured PPP should offer fair returns to the private partner, commensurate with the risks taken and the results achieved. In contrast, private sector involvement should deliver better coverage and quality in the services provided to the public. In the process of ensuring a successful PPP, financing should come as a natural added value for public authorities, and not as the exclusive purpose of the commercial cooperation.

When it comes to offering decent returns to the private partner, it is important to design and implement a clear, risk-sensitive fee structure. This is crucial for China, especially when recent reports argue that one of the main barriers for PPPs stems from the moderate returns offered to investors (Chim, 2015). One suitable solution for this issue is to replicate the work that has been done in Hong Kong, where PPPs providing health care and transportation services have been assigned additional embedded services. For example, expanded commercial structures have resulted from offering pharmacy services on top of regular operation and maintenance services in health facilities or by collecting complementary monthly rents from commercial establishments located in metro stations (ADB, 2014).

## 4.0 Conclusion

The government of China is looking to PPPs to deliver on the next phase of urban and rural development. The benefits of PPPs can be vast and include, among others, reducing the debt burden on municipalities and mitigating the government's weaknesses in delivery of public assets. This type of solution is much needed when public authorities recognize that current urbanization trends create enormous challenges in the delivery of adequate public services to the more than 100 million additional residents that will inhabit Chinese cities by 2020.

Public authorities have taken bold steps in creating the appropriate conditions for increasing the predictability of local investments, and this constitutes a clear message to attract private investors. Nonetheless, these attempts do not seem to be enough to overcome the current barriers; therefore, further solutions are still needed. For such solutions to be achieved, municipalities need to prioritize their degree of involvement in infrastructure, develop the appropriate capacities to critically assess infrastructure projects, and strengthen projects' financial conditions through clear tariff schemes and the use of balanced contracts. Finally, the government still needs to undergo a shift in mindset and start looking at PPPs on the basis of mutual benefits, instead of merely as a way of accessing funding.

Given the many reports describing poor environmental conditions and the harmful consequences of these to the general population, it is imperative for public procurers to transcend the usual approach to PPPs. In other words, they must leverage the benefits of PPPs by pursuing VFM not only at the point of commissioning, but also across the whole asset life cycle. This includes the realization of environmental and social benefits across the procurement vacuum, starting with clear, measurable and achievable specifications in the pre-tender phases and going all the way through to asset disposal at the end of a project's operational years.

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