Risk allocation for Public-Private Partnerships

Government support arrangements for risk allocation contracts

- Country case study: Republic of Korea -

1. Introduction

The risk allocation in Public-Private Partnerships ("PPPs") should be agreed under their PPP contracts, which are a form of cooperation between the parties. In common law traditions, there appears to be less legal and regulatory challenges to the government's capacity for contracting with a private party, for implementing the contract, and for providing a private partner with a termination right than in the civil law countries. Whereas, in civil law countries, the legal environment may cause PPP contracts with the private partner to be more vulnerable over their long-time period, because the public authority can rely on its administrative power to protect the public interest, which might result in a unilateral cancellation or an alteration of the PPP contracts[1]. Therefore, some civil law countries have adopted supportive measures for the PPP frameworks by way of establishing a PPP special law and other regulatory frameworks which provide an enabling environment for the PPP contracts to be executed and be kept binding for a long-term period.

In the Korean legal and regulatory frameworks, the Korean policy makers have used their legislative power through a special PPP law and administrative power through the periodical update of a policy statement to provide the enabling environments for the PPP contracts. The PPP law and the PPP policy statement have formulated or confirmed the key risk allocation principles which must be included in the PPP contracts. This enabling environment provides the capacity for the public authority to reach a risk sharing agreement, especially on key risks. On the strength of these frameworks the Korean market has been transformed into a developed one through the accumulation of a track-record of more than 680 projects[2]. Notably, most Korean PPP contracts, with the exception of a few renegotiated or disputed ones, have been protected and remained intact since the formal legal inception of PPP law in 1994.

This paper is intended to outline the development of these government support arrangements focusing on the key risk sharing mechanisms formulated or confirmed through the legislative or administrative measures. The key risks selected in this paper are the land purchase and site risk, the demand risk and the early termination risk. The land purchase and site risk was considered a key risk in 'Build' type PPP projects in the transport sector[3]. The demand risk was considered a

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[1] European PPP Expertise Centre, A note on legal frameworks for PPPs

[2] Ministry of Strategy and Finance & Korea Development Institute, Comprehensive Evaluation of PPP Projects (2013)

[3] The main PPP projects have been implemented Build-Transfer-Operate type or Build-Transfer-Lease type. The majority projects in Build –Transfer-Operate are transport sector (mainly toll roads as well as railways, seaports and airports.)

key risk for user-pays PPP model and the risk sharing measures for this risk were therefore a primary policy consideration. The early termination risk is considered because both the public authority and the private partners (including equity investors, lenders and subcontractors) wish to avoid uncertainty in relation to the early termination of the contracts. This paper could be used as a transport sector example for the development of GI Hub's 'Allocating risks in PPP contracts'[4] .

2. Background

2.1. The Evolution of the legal framework and background

Legal framework in 1994

The initial stage of Korea's PPP scheme from 1994 to 1998 closely reflected a policy decision to meet the great social and economic needs related to the infrastructure gap which had resulted from the rapid economic growth from the 1970s to the early 1990s.

The first phase was the enactment of the '*Act for the promotion of Private Capital Investment in Social Overhead Capital*' (hereinafter PPP Act, including all revisions and amendments) in August 1994. As compared to the prior sector-specific PPP scheme, this Act provided the enabling environment in a more general and comprehensive way for infrastructure development through PPP in order to address the shortage of economic infrastructure.

The compressed and rapid growth achieved, which recorded a high of 14.8% during the 1970s and 6.8% to 12.2% during the 1980s, had led to this shortage.

Timeline of PPP framework

- 1994

Enactment of PPP Act

Legal framework for PPP established

- 1999

Minimum Revenue Guarantee as a demand risk sharing measure adopted in user-pays PPP

Unsolicited Projects admitted

- 2005

Introduction of 'government-pay' model under the BTL to solicited projects

- 2016

Unsolicited projects to BTL

During this period, infrastructure gap had increased since the rail and road transportation had not expanded to meet the increased vehicles, as seen from the table below. The number of registered vehicles increased by more than eight times from 249,000 in 1980 to 2,075,000 in 1990.

[4] Global Infrastructure Hub, Allocating Risks in Public Private Partnership Contracts, http://globalinfrastructurehub.org/allocating-risks-in-ppps/

Trend of vehicle ownership and related indicators[5]

	1970	1975	1980	1985	1990	1995	2000	2005	2010
Registered Vehicles (1,000)	61	84	249	557	2,075	6,006	8,084	11,122	13,632
Road Length (km)	40,244	44,885	46,951	52,264	56,715	74,237	88,775	102,293	105,565
Rail Length (km)	3,193	3,144	3,182	3,121	3,259	3,321	3,516	3,862	4,094
Per capita GDP (in KRW 10,000 in 2005 price)	8.8	30.2	104.6	212.0	441.1	919.5	1,311.8	1,839.3	2,444.8

Sources: Ministry of Land, Infrastructure and Transport, MOLIT-related Statistics (stat.molit.go.kr/portal/cate/partStat.do); Statistics Korea, *Forecasting Future Population*, 2013; Bank of Korea, *National Income, 2013)*

In addition, transparency and fairness in the PPP process was strongly demanded by the public.[6] The civilian government established in 1993 had received strong support from the outset on account of political promise to break the chain of collusive ties between politicians and businessmen. These economic and social needs and the political support to address them led to the successful enactment of the PPP Act. The PPP Act of 1994 provided the strong legal and institutional framework for PPP, most importantly the special and prevailing law associated with it which could take precedence over other laws and creation of a statutory property right granted to the private partner. This framework also included various incentives for PPP projects- tax incentives, financial support, and establishment of a guarantee fund. The 1994 PPP Act also set the transparent and fair competition procedure which would be open to all potential participants applying for PPP projects.

Comprehensive supportive package in 1998 and legal framework in 1999

In 1998, given that the prior legislation had not featured any promotional and supportive function that might have attracted private investment during the influence of the financial crisis, comprehensive initiatives and revisions to the PPP Act were provided. These extensive measures came after the financial crisis starting in 1997.

Although the infrastructure need was still increasing, the severe economic recession resulting from the 1997 financial crisis became a barrier to private investor motivation. Under the IMF economic program, budget spending was strictly limited to restructuring of the financial industry and to addressing unemployment. Infrastructure development through PPP was therefore considered a possible alternative source of financing upon which policy makers could resort. However even after the 1994 PPP legislative scheme, concessions had only been awarded in 10 PPP projects among 45 selected ones, and even in these 10 projects, moreover, the equity contribution of investors was suspended during the period from 1994 to 1998. The financial market had not matured enough for PPP in an environment in which high interest rates and low understanding of project financing were obstacles to PPP participants. '*New Initiatives for Private Participation to*

[5] Ministry of Strategy and Finance & KDI, Hyeon Park, Knowledge sharing program with Algeria (2013)
[6] Ministry of Strategy and Finance & Korea Development Institute, Comprehensive Evaluation of PPP Projects (2013), 2015. 1

Infrastructure[7] (1998) was prepared to address the economic situation, the obstacles to PPP financing and requests from private participants (such as lenders, construction companies, and foreign investors). This initiative thereafter became a cornerstone for revisions of the PPP Act. *New Initiatives* led to additional provisions for extensive promotional and supportive measures, financial support in the form of revenue guarantee, consideration of unsolicited projects, and an infrastructure investment and financing company in the legislation.

Keeping pace with the legislative measures, the PPP Basic Plan, a general policy statement published by the Ministry of Finance in 1999 provided detailed government support mechanisms including a minimum revenue guarantee, the private partner's buyout right, and foreign exchange risk sharing.

Diversification of the PPP payment type through the PPP Act in 2005

In the 2005 PPP Act amendment, 10 years after the implementation of the initial framework, the PPP scheme was diversified to include 'government-pays' model PPP, under the title of Build-Transfer-Lease ("BTL") for solicited projects. In the BTL scheme, the government makes periodic payments to the private partner for making infrastructure assets available to the public. This amendment enabled social infrastructure, including public hospitals, public schools, and military residences to be procured under the BTL.

Following this amendment, more focus has been given to the sustainable management of PPP projects. A more transparent process for PPP procurement through the 'Value For Money' test, the establishment of PPP unit, PIMAC (Public and Private Infrastructure Investment Management Center) at the Korea Development Institute (KDI), the National Assembly's approval of a BTL government payment ceiling and internal governance of the Ministry of Strategy and Finance were provided for in the subsequent adjustment of the PPP Basic Plan.

The Admission of Unsolicited Projects to the BTL under the PPP Act of 2016

Under the PPP Act amendment of 2016, BTL can now be applied to unsolicited projects. Since the introduction of the BTL scheme in 2005, only solicited projects had been allowed for consideration under the BTL type. This restriction had been made in view of the fact that government payment under the BTL type is a fixed debt, and thus initiation by a public authority should ideally be required in the selection of BTL projects. However, under the 2016 legislation, a private party is now able to initiate the 'government-pay' model, BTL PPP projects.

2.2. Overview of risk allocation in the PPP contracts in Korea

Each PPP contract includes a unique risk allocation scheme agreed after the negotiation to deal with the project risks encountered during the PPP term. Even though the risk allocation in the individual contract is agreed on a project-to-project basis, this agreement for typical

[7] Published by the Korea Research Institute for Human Settlement on 1998.7

infrastructure sector follows the general approach in the standard PPP contract published by KDI PIMAC.

Legislative and administrative measures

- Formulating risk sharing measures
  - Land purchase and site risk
  - Demand risk
- Confirming risk sharing measures
  - Early termination risk

Contractual arrangements

- Risk allocation agreement
  - Land purchase and site risk
  - Design risk
  - Construction risk
  - Completion risk
  - Maintenance risk
  - Demand risk
  - Early termination risk

The risk allocation approach under the standard contract for the toll road projects is based on the principle, i.e. 'the risk should be allocated to the party who is best able to assess, manage and the control the risk[8] .

In accordance with this principle, in most transport sector projects, the private partner bears the primary risks for design, construction, completion and maintenance, while the public authority takes the primary responsibility for securing the land purchase and site. Demand risk and early termination risk are shared between a public authority and a private partner.

The contractual arrangement of the key risk allocation benefits from the 'enabling' and 'supportive' legislative and administrative measures. The contractual arrangements of risk sharing are aligned with the risk sharing measures which have been formulated or confirmed under the PPP Act or the PPP Basic Plan.

In this regard, the public authority bears the principal risk in land purchase and site risk on the basis of a legal groundwork for lessening land purchase risk. Also, the public authority can negotiate the demand risk sharing scheme and the early termination payment scheme in accordance with the PPP Basic Plan.

2.3. Legal and administrative measures in Korea

PPP Act and PPP Basic Plan

The principal legal and administrative challenge that the Korean policy makers recognized was that the public sector had (with a few exceptions) monopolized the supply of infrastructure. Private participation under a long-term contract was not a well-accepted concept because the infrastructure procurement had been treated as a public function. As a result, the policy makers created a legal framework through a special law as well as administrative measures of policy statement to provide the enabling legal and regulatory arrangements.

Firstly, the Korean legal framework for PPPs, the PPP Act granted the private partner the statutory status of an equivalent actor in infrastructure development, thus enabling the private party to

[8] UNCITRAL, Legislative Guide on Privately Financed Infrastructure Projects

collect the user-fees from infrastructure developed through its investment. The PPP Act creates a statutory property right granted to the private partner, namely the "right to manage and operate infrastructure facilities" for certain periods agreed to in the contract.[9].

Secondly, a policy statement, the PPP Basic Plan has been published and annually updated under the PPP Act[10] since 1995. The Ministry of Strategy and Finance has announced these updates through the announcement of public policy each year. The PPP Basic Plan includes the policy direction, each year's project plan, detailed procurement guidelines, basic risk allocation principles, and specific terms and conditions to be applied to individual contracts.

Formulation or confirmation of risk allocation principles through legislative or administrative measures

Depending on the legal environments of countries, risk allocation under the PPP contracts as a result of negotiations between the parties may potentially be in conflict with the existing legal and regulatory frameworks. This could limit the capability of the contracting authority to negotiate. In this situation, it may be useful to provide general guidance to the contracting authorities, by formulating or confirming principles of risk allocation.

In the absence of much previous experience with PPP contracts, the Korean policy makers had initially established a solid framework for contracts of risk allocation by way of legislation and the PPP Basic Plan. As a means to reach greater social and political consensus, legislative measures were taken to avoid any contradiction with existing laws on state-owned or privately-owned property, and to strictly manage the government's debt or fiscal obligation which demand risk sharing measures might cause.

The PPP Basic plan can be announced and published with administrative discretion. This enables timely adjustment of the risk allocation scheme to be made on the basis of a policy decision. The principal risk sharing measures included in the annual PPP Basic Plan update provide the explicit grounds for each individual contracting authority to use a guideline to execute the PPP contracts with private partners. Historically, demand risk sharing measures have been announced through this PPP Basic Plan. Also, the PPP Basic Plan has confirmed and declared the risk sharing principles which a public authority can agree in the PPP contract.

3. Government's arrangements for risk allocation agreement

[9] This right is to be treated as a property right (PPP Act Article 26). Unless otherwise indicated in the PPP Act, the provisions of the Civil Act concerning real estate shall apply mutatis mutandis. (Article 27)

[10] PPP Act Article 7 (Formulation and Public Notification, etc. of Master Plans for Public-Private Partnerships in Infrastructure)

3.1. Groundwork for lessening a land purchase and site risk

"Land purchase and site risk" refers to the risk of acquiring title to the land to be used for a project, the selection of the site and the geophysical conditions of the site[11]. Land title issues, site condition issues, and land rights and claim issues make this risk too complex for private partner to handle alone. The variation of land title between state-owned and privately-owned land and the strict rules for state-owned property increase the private partner's land purchase and site risk.

For this reason, the public authority is best positioned to assume this risk and adopt the necessary positive measures with respect to it.

Even though each risk allocation scheme varies depending on its negotiation in the individual PPP contracts, the legal groundwork for facilitating a private partner to acquire or use land has been a major feature for lessening the land purchase and site risk for PPP projects.

Public authority's primary responsibility

In the Korean land purchase and site risk allocation scheme, the public authority bears the principal risk as it is best positioned to select and acquire the required land interests for the project[12].

The main PPP project sector in Korea is the transport sector and has been implemented using (Build-Transfer-Operate) ('BTO'). The ownership of an infrastructure facility is transferred to the government as soon as it is completed. A public authority is entitled to acquire the land for this transport project in accordance with the relevant laws, and takes the primary responsibility of providing the land to the private partner after acquiring or purchasing the land from land owner. Although the public authority acquiring the land for a public purpose is not in conflict with the general expropriation scheme for public works projects, the existing public property law was a legal limitation for state-owned land to be provided to private partner for long-term use.

Allocation of a land purchase and site risk

- Public authority bears primary responsibility
- Enabling legal groundwork
  - Provides special provisions prevailing over the existing laws
- Policy statement
  - Supportive measures for land acquisition financing

Enabling legal groundwork for a private partner to acquire or use land

Considering the strict rules governing state-owned land, the Korean legislation focused on providing an exception to the existing state-owned property law so that public authority has the discretion to sell or let the private party use the land. Also, to facilitate acquisition of privately-

[11] Global Infrastructure Hub 'Allocating risks in Public-Private Partnership Contracts'

[12] KDI PIMAC, Standard Concession Contract for toll roads projects

owned land by the private partner, the PPP Act provided the private partner with an expropriation right.

State-owned property

State-owned land (i.e. national and local government property) amounts to 33% of the Korea's total territory[13]. The use of state-owned property is regulated by a strict rule, according to which, the private partner cannot use the state-owned property for free over a long-term period, and cannot establish any infrastructure for which the ownership could pass to the private partner. The PPP Act provides the relevant special clauses to address issues of state-owned or public property.

By utilizing special clauses provided under the PPP Act, notwithstanding the limitations under state property laws, the sale of, use of and benefit from the state-owned property for PPP projects is enabled as follows[14].

i. The stated-owned property may be sold to the private partner through a private contract without a compulsory bidding process;
ii. The private partner of a BTO or BTL project could use the existing state-owned property free of charge until the expiration of a PPP contract notwithstanding the limitation of period and charge under the state property act;
iii. The public authority may purchase the land located in the designated area and allow the private partner to use and benefit from the land free of charge;
iv. The private partner may use or benefit from national property in order to construct permanent facilities without any conditions upon ownership of the facilities.

Privately-owned property

In addition to providing beneficial measures to state-owned property law, as outlined above, the private partner is granted an expropriation right under the PPP Act[15]. This exceptional measure is founded on the understanding that the private partner's function as an infrastructure developer should be deemed to be same function as that of a public authority with respect to public works. The private partner may expropriate the land or property after the failing of a negotiation with the land owners in accordance with the process made possible under the '*Act on Acquisition of land Compensation for land, etc. for Public Works Projects*'.[16]

Policy statement for accelerating the compensation procedure for financing of land acquisition.

The 2014 PPP Basic Plan provides supportive measures to the private partner as a means of mitigating the private partner's land acquisition risk. If the private partner finances the compensation cost in advance, the public authority supports the relevant financing cost (including interest and guarantee fee). Prior to this scheme, the compensation cost for the toll

[13] Ministry of land, Infrastructure and Transport, Statistics yearbook on land registration(2016)
[14] PPP Act Article 19 (Restriction, etc. on Disposal of National or Public Property)
[15] The PPP Act provides that the concessionaire may expropriate or use the land, things, or rights as prescribed in 'the Act on Acquisition of and Compensation for Land, etc. for Public Works Projects'. (Article 20)
[16] This expropriation right is granted to the concessionaire selected and appointed in accordance with the PPP Act. ,

road PPP projects relied on the government's budget schedule, which often caused delay and claims from the land owners. The supportive measures may accelerate the compensation process and prevent cost increases and related claims. This measure was an example of an adjustment of risk allocation by means of the annual update to the PPP Basic Plan within the discretion of policy makers.

3.2. Evolution of demand risk sharing mechanism

"Demand risk" is related to the variability of traffic (higher or lower than expected when the PPP contract was signed), irrespective of the performance of the private partner. The traffic volume directly generates the project's revenues, thus this risk is related directly to the revenue risk. Forecasting traffic demand influences both project costs (through capital and maintenance expenditures) and project revenues, especially if direct user charges, such as tolls, are the main source of cash flow for the private partner[17]. Despite the significance of traffic demand forecasts, inaccuracy or uncertainty in forecasting future traffic demands is unavoidable because it is technically impossible to make a precise long-term forecast. Furthermore, some strategic decisions by the PPP consortia when they bid, such as in calculating tariff or other conditions, will affect the total cost or revenue[18].

With no prior experience of PPP in toll road project in the early stages, this uncertainty of future traffic volume was an unfavorable factor for the Korean government in attracting and negotiating with private partners. Private partners were reluctant to be exposed to total demand risk and sought strong reassurance from the government.

For the risk sharing measures for user-pays PPP model, the Korean policy makers have used their administrative discretion to devise and amend the detailed risk sharing measures.

Furthermore, as a demand risk sharing measure, the payment type has been diversified from the user-pays model to the introduction of the government-pays model, as BTL, through the PPP Act. The BTL model has only been introduced gradually into legislation as a means of drawing a greater

Evolution of demand risk sharing measures

- **Enabling legal groundwork**
  - 1999 Financial support provision in case of revenue deficiency
  - 2005 Introduction of Government-pays model, BTL
  - 2016 Unsolicited project allowed to the BTL
- **Policy statement**
  - Formulation of demand risk sharing for User-pays model
    - 1999 MRG
    - 2009 New risk sharing (1)
    - 2015 New risk sharing (2)

[17] European PPP Expertise Centre, Traffic revenue risk allocation, http://www.eib.org/epec/g2g/annex/5-traffic/index.htm

[18] European PPP Expertise Centre, Traffic revenue risk allocation, http://www.eib.org/epec/g2g/annex/5-traffic/index.htm

social consensus, since government's risk sharing under this government-pays model is considered to result in increasing government's debt.

3.2.1. Adjustment of demand risk sharing by policy statement

The issues which may relate to the government's fiscal liability need to be dealt with by legislation to ensure greater consensus. The PPP Act and its enforcement provide the grounds for granting subsidy when the actual revenue falls short of the estimated operational profit under the PPP contract[19]. In accordance with the legislation, the PPP Basic Plan at the administrative level enables more flexible adjustment to specific mechanisms of conventional user-pay types. Administrative discretion can tailor specific mechanisms of demand risk sharing for BTO projects. Policy makers have articulated and adjusted a risk sharing scheme from the initial 'Revenue-based' guarantee to the recent 'Cost-based' remuneration scheme through inclusion in the annual PPP Basic Plan.

Initial Risk Allocation scheme –Minimum Revenue Guarantee

The first risk sharing scheme to mitigate the demand risk was a Minimum Revenue Guarantee ("MRG") scheme introduced through the 1999 PPP Basic Plan. Under the MRG scheme, the government guaranteed some portion of the pre-set projected revenue, setting both lower and upper bands to share the traffic risk. In case the revenues would fall below the bottom band, the government would pay the private partner the difference in revenue between the guaranteed and the actually collected one. If the revenue would fall above the upper band, the private partner must share the extra revenue collected with the government.

For projects initiated from 1995 to 2003, the government guaranteed 90% of the projected revenue set in the concession agreement for a period of 20 years, and for projects initiated from 2004 to 2005, 70%–90% of the projected revenue was guaranteed for 15 years. Public concern had been raised because the real traffic volume in a few projects fell below the projected volume and thus serious budget spending was expected in the MRG projects. In 2004, a condition was added to the MRG scheme that if the actual revenue falls below 50% of projected revenue, then the MRG scheme would not be activated. Under the system as revised in 2006, the government guaranteed 65%–75% of the projected revenue for 10 years only for solicited projects, while the MRG scheme in the unsolicited projects was abolished.[20] In 2009 PPP Basic Plan, the MRG scheme was abolished even in solicited projects. Up to 2012, the PPP contracts for 78 projects have included the MRG clauses. In 39 projects (among these, 9 central government toll road projects),

19 Article 53 (Financial Support) If it is necessary for the efficient implementation of construction projects of revertible facilities, the State or a local government may grant a subsidy or extend a long-term loan to the concessionaire, only where prescribed by Presidential Decree. * Enforcement Decree Article 37 (Financial Support) (1) The State or a local government may grant any subsidy or long-term loan to the concessionaire during the construction or operation period of facility within budgetary limits after deliberation by the Deliberation Committee, in any case of the following subparagraphs under the provisions of Article 53 of the Act: 4. Where the actual operational profit (referring to the amount obtained by multiplying the user fees by the demand for the facility concerned) falls considerably short of the estimated operational profit under the concession agreement, to such an extent that the operation of the facility is difficult;

20 Korea Development Institute& Asian Development Bank , Jay-Hyung Kim et al, Public-Private Partnership infrastructure projects: Case studies from the Republic of Korea v.1

government obligation to pay MRG was actually incurred[21]. Criticism and public concern from the public and politicians was continuously raised arguing that the private partner was obtaining a strong benefit without taking a corresponding demand risk.

New demand risk sharing structures

New risk sharing structures were a close reflection of the government's policy decisions when faced with public concerns raised on the MRG scheme.

New demand risk sharing in 2009

A new risk sharing structure was announced through the 2009 PPP Basic Plan.

In contrast to the MRG scheme where the government guaranteed the certain level of revenue estimated using excessive traffic demand in the agreement, under the new structure, the government subsidy was based on the 'Risk Apportionment'. 'Risk Apportionment' is calculated by applying the government bond yield to the project company's net investments, which are evenly divided over every year of the concession period[22].

This 2009 risk sharing scheme was built on lessons from the MRG scheme under which the government might be exposed to a severe fiscal liability in case of over-estimated traffic value with a high rate of return. This new scheme was not actively implemented because it was applied only to solicited projects. In addition it was unsuccessful in that the government's risk apportionment based on government bond yield did not attract the investors.

New demand risk sharing in 2015

The second new risk sharing structure was announced through the 2015 PPP Basic Plan. This structure was devised because both the user-pays model toll road projects and the new risk sharing structure of 2009 had not been actively implemented. Unsolicited projects had been more actively proposed than solicited projects using the BTO. For bankable BTO projects, the private partner tended to request higher returns corresponding to its higher demand risk.

This new structure also aims to provide a publicly defensible rationale for toll setting. Under typical toll road projects, the toll was calculated based on the high returns of private partners, and the toll was supposed to increase annually linked to the Consumer Price Index. Higher tolls than that of traditional procurement road project caused resistance from the users and frequently was the target of political debate.

As a means of mitigating the private party's demand risk while providing bankable projects, the 2015 PPP Basic Plan devised a new risk sharing structure. Unlike the new risk sharing structure

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[21] Ministry of Strategy and Finance & Korea Development Institute,2015.1, Comprehensive Evaluation of PPP Projects (2013)

[22] Ministry of Strategy and Finance & Korea Development Institute, A Study on Bridging Long-term Private Capital over Public-Private Partnership (PPP) When the actual operational revenue exceeds the 'Risk Apportionment, government subsidies are redeemed on the basis of and within the limit of the amount previously paid. Also, on the part of the private participant, subsidies are provided only when the actual operational revenue surpasses 50% of the 'risk apportionment'.

of 2009, this new risk sharing structure is applied to both solicited and unsolicited projects. Also, unlike the 2009 risk sharing structure which had put a limit on rate of return of projects as the government bond yield, this 2015 risk sharing structure has not put the limit on the rate of return so that the negotiating parties can determine it through negotiation considering the project risks on a project-to project basis. These structures are based on the belief that government's risk sharing would encourage the private partner to request a lower IRR in accordance with lower risk premiums as the private partner's revenue is not wholly dependent on the toll revenue.

Two types of risk sharing were adopted depending on how the government sharing portion is calculated. The first type is the *Investment Risk Sharing Scheme* in which the 'government-pays' model is applied to some portion of the private partner's costs of investment. The residual portion of the investment and its corresponding operation cost adopts the user-pay mechanism of typical toll road projects. By mixing the approach of a 'government-pays' model and a typical toll road, this scheme aims to lower the private partner's requirements on the project rate of return in accordance with a decreased demand risk. The second type is *Profit-loss Sharing Scheme* in which the government sets a risk sharing portion of the total investment cost and some portion of the operation cost. If the actual revenue falls below the shared investment cost, the government remunerates the shortfall.

3.2.2. Gradual introduction of 'Government-pays' model type by legislation.

The history of the legislative framework in Korea shows that the BTL model was introduced 10 years after the initial PPP framework. Also, unsolicited projects using the BTL were admitted 10 years after the introduction of BTL. The gradual introduction of this government-pays model is attributed to the recognition that the government and legislators adopted a cautious approach in that the whole demand risk is allocated to the public authority and the BTL model might incur a fixed debt to government.

3.3 Confirmation of early termination risk allocation principles

The early termination risk refers to the risk of a project being terminated before the expiry of the contracted end-date and the monetary consequences of such termination[23]. It is in the interests of both parties to set the early termination compensation in PPP contracts as specifically as possible, and avoid potential conflict.

[23] Global Infrastructure Hub, Allocating risks in Public-Private Partnership contracts.

[15] Article 46(Disposition of Violation, etc. of Acts and Subordinate Statutes) and Article 47(Disposition for public interest) provides that the competent authority may revoke or change an order or disposition made under this Act, suspend or alter infrastructure facilities works, remodel, alter, transfer, remove or restore the original state of any facilities or things thereof, or take any other necessary dispositions.

The general approach for the early termination under the standard contract in the Korea is that either party has a termination right due to the other party's default and the contracting authority should make an early termination payment to the private partner, even in the private partner's default. These contractual arrangements are based on general rule of 'fairness', i.e. to provide both parties with an equal opportunity of terminating and avoiding an unjust windfall from the value of the infrastructure asset transferred to the public authority as a result of early termination.

It may be useful that legal or regulatory frameworks confirm the fairness-based risk allocation contractual arrangements, especially in the legal environment where the public authority has administrative power to cancel or alter the contract which might result in the termination of contract.

It is noted that the PPP Basic Plan has played a key role in providing the solid groundwork for the contractual arrangement in regard to the early termination by confirming early termination payment criteria.

3.3.1. Legislative measures for risk allocation principles

The approach adopted in the PPP Act in regard to 'who is entitled to terminate the contract' follows an administrative law approach. The PPP Act only provides the public authority's revocation right in the case of the private partner's default or for public interest purpose. Also, the PPP Act provides for the administrative power to revoke or cancel its disposition[15].

This administrative law approach is also found in the compensation clauses. The PPP Act provides that the public authority should compensate the private partner for loss which was caused by the contracting authority's disposition power for the public interest purpose. No specific provisions for private partner's termination right or whether the public authority should pay the private partner in the event of the private partner's default have been provided in the PPP Act.

3.3.2. Evolution of the early termination payment criteria through the PPP Basic Plan

The compensation in the event of the early termination of PPP contracts has been articulated and declared mainly through the PPP Basic Plan. Since 2001, the PPP Basic Plan has provided the specific calculation criteria for the early termination payment.

Standard calculation criteria for termination payments could provide a consistent approach in regard to issues related to contingent fiscal liabilities. Also, this standard criteria may provide the investors with great certainty to the extent that might decrease the transactional costs.

The overall approach for a termination payment is described as a 'book value approach' because the private investment cost is the main element for calculating the compensation.

For BTO projects, the termination payment scheme has evolved specifically as to whether senior debt should be guaranteed in the event of private partner's default and on how the value of the future project should be calculated in the event of contracting authority's default.

Notably, in the event of default by the private partner, although senior debt was guaranteed at the initial stage, the senior debt guarantee clause has not been found since 2004 because the Board of Audit and Inspection criticized that senior-debt compensation, suggesting it was, in effect, a state-guarantee to lenders. The fair compensation approach has been adopted by avoiding an unjust windfall to private partner. In this regard, equity and subordinated loans are excluded in early termination compensation in the case of the private partner's default.

The termination payment in event of the contracting authority's default has also evolved since the initial method in which the project value of a remaining contract term was calculated in accordance with 100% of future cash flow (which might be exaggerated), to the more recent approach using a more past performance-based cash flow calculation in estimating future cash flow.

4. Conclusion

Risk allocation between the parties should be expressed in the PPP contracts. The formulation and confirmation of the risk allocation principles under a strong legal framework and continuous administrative support helps to enhance the PPP contracts, particularly in civil law countries.

In the context of a vulnerable legal environment and limited experience of long-term PPP contracts, the Korean policy makers made use of the government's legislative power and administrative discretion to draw consensus for the risk allocation scheme for PPP projects. Legislative power has been used to mitigate land purchase and site risk by providing comprehensive exceptional measures to purchase or use the land. Legislative power also has been used to provide financial support and to introduce a government-pays model of PPP given that this provision could incur government fiscal liability.

On issues which might be within administrative discretion, more flexible adjustments have been made through the announcement of the PPP Basic Plan. The most obvious examples of the administrative discretion, are the evolution of the demand risk allocation scheme from the initial 'Revenue-based' guarantee to the recent 'Cost- based' remuneration scheme, and the evolution of the early termination risk allocation scheme.

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Acknowledgement

This country case study benefited from valuable resources from Korea Development Institute and Ministry of Strategy and Finance. The author would like to thank experts at the KDI PIMAC including Rho, Seungbeom, Kim, Doil and Kim, KiWan who provided invaluable comments. Also, the author would like to show gratitude to Morag Baird (Principal Policy Advisor, Global Infrastructure Hub) for sharing her insight on the theme and review of English writing.

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