Chapter 5

Financial Project Design and Public-Private Partnership

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CHAPTER 5.

FINANCIAL PROJECT DESIGN AND PUBLIC-PRIVATE PARTNERSHIP

The public-private partnership (PPP) is regarded as a key implementation approach for infrastructure development. However, its economic rationale for PPP has not yet been well established, and thus the discussion over PPP is often confused. This chapter discusses the economic logic of PPP in infrastructure development based on public economics theory and presents basic elements and operational structure of PPP in a consistent logical framework. The chapter also provides perspectives for East Asian PPP in our vibrant East Asian economies.

5-1. Investment demand for infrastructure

As the pendulum of development strategies has swung from extreme poverty alleviation to growth orientation with infrastructure development, the required amount of infrastructure investment in growing Asian economies has been the issue. The estimate that used to be often cited was prepared by the joint study of the Asian Development Bank (ADB), Japan Bank for International Cooperation (JBIC), and the World Bank (WB) in 2005; it claimed that investment of US$200 billion for infrastructure would be required annually in the East Asia and Asia-Pacific regions (ADB, JBIC, and WB (2005)).

ADB and ADBI (2009, Chapter 5) present much larger estimates; it argues that US$750 billion per year is required, on average, in Asia and the Pacific regions (including 30 developing countries) amounting to US$8 trillion over 11 years between 2010 and 2020. 68% is new investment while 32% accounts for renewal and maintenance. The sectoral coverage extends to transportation, energy, telecommunication, and water/sanitation.

These estimates are regarded as approximate total amounts. When considering rapid economic growth, particularly in China and India, required investment including depreciation loosely corresponds to 5% or so of annual GDP. Considering that investment ratios are often around 30% or higher, the amount is not particularly surprising. It is a fact that steady infrastructure development is essential to sustained economic growth.

Within the climate of the current global financial crisis, various discussions are

taking place on the necessity of finding a balance between saving and investment (i.e., resource balance) in East Asia, particularly in the context of global imbalance. However, it should be noted that the context differs markedly between China and ASEAN/India. In China, aggressive investment is backed by high savings ratios, which results in sustained, rapid economic growth. However, there is a chronic current account surplus, and it is often argued, whether such claim is warranted or not, that some measures for expanding consumption should be considered if further expansion of investment is difficult. On the other hand, in ASEAN and India, with certain variations across countries, the current account is almost balanced, and thus forced expansion of consumption does not seem to be necessary. Rather, a serious problem exists in the pattern of financial resource flows, which was salient before the Lehman Shock; a large portion of savings in the region goes out of the region for the purchase of relatively riskless assets such as US treasury bonds, and the financial resources come back to the region in the form of investment by US/European investment banks. One issue that East Asia has to take care of is how to develop good projects ourselves and establish financial flows in which our own abundant savings can be used for our own direct investment. This is one of the reasons why large-scale infrastructure development is at issue in East Asia.

5-2. Theoretical foundation of PPP

5-2-1. When is PPP relevant?

The introduction of PPP is often discussed in the context of the shortage of government revenues to finance infrastructure investment. Governments in LDCs may certainly be attracted to the prospect of new infrastructure being financed by the private sector as it will save them money. On the other hand, private players regard PPP as offering new business opportunities with the general expectation that the public sector will, in the end, underwrite the project. Our experience clearly indicates that the implementation of PPP can be problematic unless the roles of public and private participants are clearly stipulated. Stakeholders in PPP are entering into projects with widely differing incentives, thus avoiding moral hazard is extremely important.

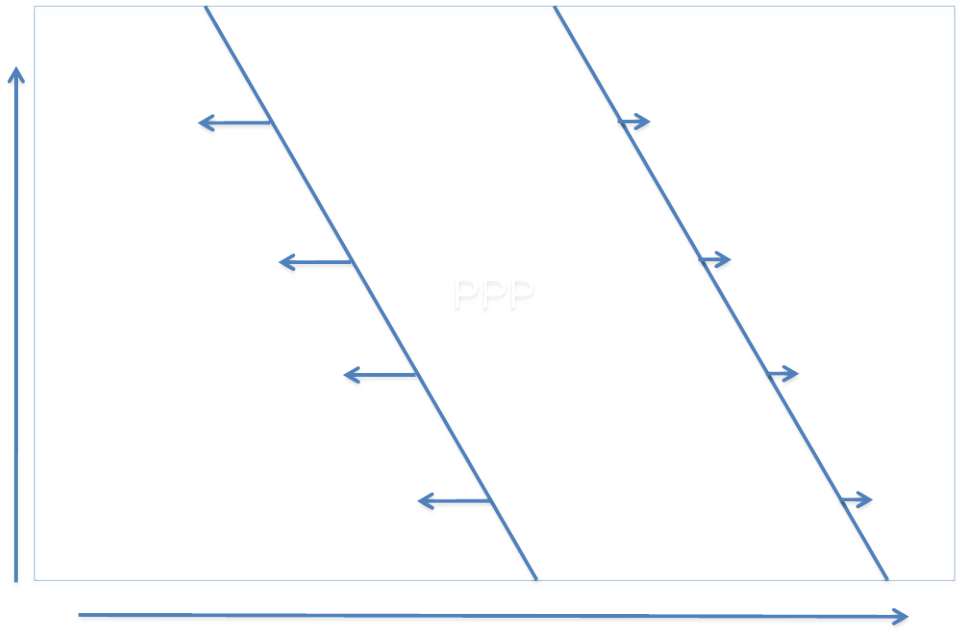
Depending on the context, the definition of PPP is somewhat varied. For our purposes, a rather wide-ranging definition is applied; PPP projects are those in which public sector and private players collaborate in the construction of infrastructure, the procurement of infrastructure and other public services, and/or the financing for these.

Until the early 1980s, it was taken for granted that the construction of

infrastructure and the procurement of infrastructure services would be 100% provided through 100% public. However, in the 1980s, new political thinking on the subject emerged and the privatization of public utility services began. It became clear that the private sector was better-placed to implement certain types of infrastructure projects. Thus, the emergence of a certain type of wholly privately-financed infrastructure was observed; typically, these were economically viable portions of infrastructure procurement which were separated and implemented by the private sector without the public being required to shoulder any of the associated risks.

As the introduction of market mechanism for the procurement of infrastructure and public services proceeds, we gradually realize that a wide range of projects cannot effectively be provided through either 100% public or 100% private. Figure 5-1 depicts three separate types of projects with regard to the involvement of both the public and private sector, and examines the economic viability of the projects and stages of development or the quality of governance. The southwest area of the box includes projects traditionally conducted through 100% public while the northeast area of the box caters for projects with 100% private. Between these two areas, there is an area in which projects cannot be implemented through either 100% public or 100% private. Furthermore, once a PPP scheme is introduced, some parts of 100% public and 100% private may be better handled by PPP; arrows in Figure 5-1 express a possible expansion of the PPP area.

Figure 5-1. Why is public-private partnership needed?



5-2-2. Market failure and the role of government

In order to rigorously specify the role of government in PPP schemes, we should review standard public economics. According to public economics, the role of government may be warranted when market failure exists. The benchmark microeconomic model realizes Pareto efficient equilibria if market distortion does not exist; in such a case, no government intervention is justified. Pareto inferior equilibria imply the existence of market failure. Market failure is typically due to the existence of economies of scale, externalities, public goods, imperfect competition, and incomplete information or uncertainty (Table 5-1). When market failure exists, we may justify a government policy that cancels out market distortion. In such a case, we should apply the first-best policy, whenever possible, that directly counteracts the original distortion without generating new distortion.

Table 5-1. Market failure with which government intervention is possibly justified

Market failure	Examples
Existence of economies of scale	At the firm or plant level At the industry or macro level In industrial agglomeration
Existence of positive or negative externalities	Social net benefits > project net benefits (e.g., infrastructure projects) Social net benefits < project net benefits (e.g., pollution industry)
Existence of public goods	Existence of goods with non-rivalry and non-excludability (e.g., rural access roads)
Existence of imperfect competition	Monopoly, oligopoly State monopoly
Existence of imperfect competition and/or uncertainty	Liquidity constraints (e.g., shortage of SME finance) Super large infrastructure projects

5-2-3. Economic viability of the project

Infrastructure projects are typically accompanied with positive externalities. Even if the procurement of infrastructure generates huge benefits for society as a whole, the project itself may not raise sufficient direct revenue to be economically viable. In such a case, governments may need to provide some form of subsidy to fill the viability gap, taking into consideration the cost and benefit to society as well as the optimal amount of infrastructure procurement. This logic is not necessarily the same as the claim that "whatever the private sector can handle should be implemented by the private sector"; the latter results in the procurement of infrastructure that focuses only on

economic viability and thus is likely to provide a less than optimal amount of infrastructure. It is important to consider costs and benefits for both society as a whole and the project itself in proper project designing.

In addition, even where a project has a high expected financial return, private financing may not be possible because the project is too large for private banks to pool the risk. This is an example of market failure due to liquidity constraints with incomplete information. In such a case, the government may need to provide some kind of insurance.

Markets may fail because of the "public good" characteristics of infrastructure; in such a case, again, government intervention may be justified. It should be noted that "public good" in this context is defined as the opposite of "private good"; non-rivalry and non-excludability characterize public good. A rural access road is a typical example of such a public good. In non-technical writing, the phrase "public good" is often misconstrued as a good provided by the public sector; if we applied such a definition, the argument for justifying PPP would become confusing.

Among various areas of infrastructure, the electricity sector has the most matured business model for PPP. Typically, private players conduct electricity generation while the public sector provides electricity distribution; we have already accumulated a number of successful projects which adhere to this model. Railways, roads, ports, water, and various public services have also started to apply PPP. However, in these sectors, job demarcation between the public and private sectors must still be considered on a case-by-case basis. There remains considerable room for designing a constructive relationship between public and private sectors with creative project packaging.

5-2-4. Additional gains from private incentives

The private sector can bring in additional advantages that the public sector finds hard to achieve. These include, for example, faster realization, innovation, new technology, efficiency in design, construction and operation, reduced lifecycle costs and improved service quality amongst others. There is an expectation that the private sector can run things more efficiently and can obtain better value for money.

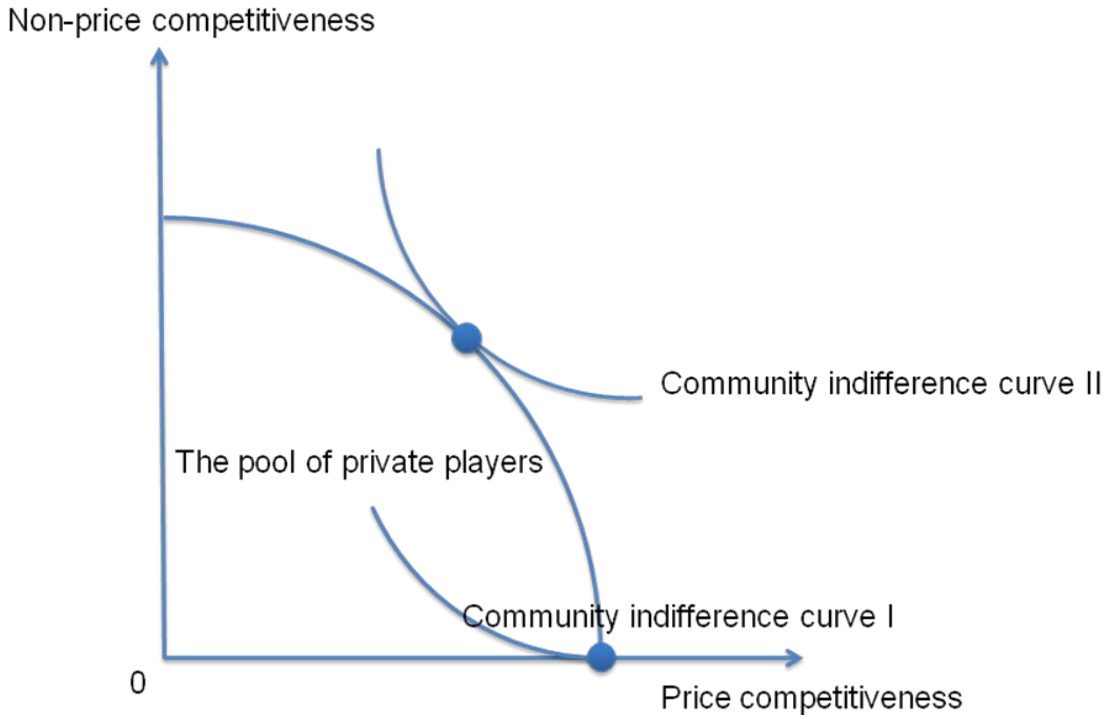
5-2-5. Price and non-price competitiveness of private counterparts

When inviting the private sector to participate, it is essential to introducing healthy competition among private-sector participants. It is thus natural to introduce open bidding and/or other competitive selection processes. It is important not only from an efficiency viewpoint but also to fight against undesirable rent-seeking activities.

At the same time, consideration of the balance between price competitiveness and

non-price competitiveness is crucial. Price competitiveness here refers to the bidding price; a private player offering the lowest price has the highest price competitiveness. On the other hand, non-price competitiveness includes the strengths of private players with respect to safety, reliability, durability of the products, environmental impacts, and others. In open bidding, it is often the case that price competitiveness carries a heavy weight from the viewpoint of saving government expenditure.[1] However, a social optimum exists with appropriate weights between price and non-price competitiveness (Figure 5-2).

Figure 5-2. Price and non-price competitiveness of private players in open bidding



5-3. Toward designing Asian PPP

As PPP is being advocated and implemented all over the world, data and information concerning various cases and experience are accumulated. However, in reality, the approach to PPP needs to be tailored by individual countries because each country has a widely diversified regulatory regime and policy framework at different

[1] A two-envelope method is often applied in open bidding. The first envelope includes a technical proposal to check whether the acceptable level of technical aspects is proposed or not. Then the second envelope with cost estimation is opened to select the cheapest proposal. Such a lexicographic method of selection may be prone to selecting a bidder offering technical aspects at the minimally acceptable level, which is not obviously suboptimal.

stages of development. In addition, globalization delivers an ever-changing and developing environment with new issues and challenges so the PPP concept itself requires constant reviews to update and renew practices and approaches. Hence, the thorough harmonization of regulatory regimes or the establishment of common rules may not be possible or practical. However, some common policy orientation for the best practices can be explored in order to establish a common and shared ground that may help further promote PPP within the region.

The following are the issues that East Asian countries may want to explore further in order to realize successful infrastructure development through PPP.

5-3-1. Prepare key elements for successful PPP

For any economy, a set of key considerations is critical to successful PPP.

(1) Leadership and commitment

PPP requires strong leadership and commitment by the government. PPP can be an effective option for the construction and operation of infrastructure and can also become a strong driver for FDI if it is promoted under proactive leadership.

(2) Policy framework and regulatory environment

Appropriate policy framework should be provided to clarify how the government qualifies PPP projects and supports the private sector. It is also important to establish a sound and stable regulatory environment in order to provide certainty and predictability for investors and financial institutions with respect to rights and obligations of the parties involved, which will establish trust and confidence in the market and promote PPP development in the economy.

(3) A dedicated coordinating section within the central government for promoting PPP

Because of the potential involvement of different layers of public sector entities, effective coordination within the central government may be required for establishing common policy and rules as well as improving practices.

(4) Sharing core philosophy and principles

Core philosophy and principles on the importance of PPP and the course of identifying and evaluating projects and investors must be shared with all stakeholders. To make transactions fair, transparent, and accountable, clear guidelines on the value for money and shared understanding is a must.

5-3-2. Establish robust and transparent regulatory regime

A robust and transparent regulatory regime shall be the basis for creating trust and confidence in the market for PPP to be developed and explored successfully.

(1) Streamlining the existing regulatory regime

While a regulatory regime is already in place in many economies, its inadequacy is often a major impediment for PPP to develop further. Examples include the ambiguity of procedures and the presence of multi-layered government organizations that provide confusing rules and regulations, resulting in additional costs and time delays. Regulatory structure may also need to be constantly up-dated and improved to reflect the market reality and changes in surrounding environment.

(2) Transparency in legal and regulatory regime

Transparency in legal and regulatory regime will ensure certainty and predictability of transactions and reduce risk premium which the private sector may add on and thus minimize overall risks and costs. Establishing and maintaining a transparent and fair process for project identification and tender/contract as well as terms and conditions of support is also crucial to gain trust and confidence from market players. Processes to be taken should be predictable to allow the relevant risks and costs to be assessed by the private sector prior to any action to participate being taken.

5-3-3. Create a framework for funding support and guarantee support

Many economies are systematically launching a system of partial support for funding efforts of the private sector in terms of debt/equity or a specific support by viability gap funding (VGF). Policy options on how to motivate the private sector and how public policy to support the private sector should be optimized though the best practices are yet to be established. Although various policy options do exist, they need to be tested in the market to become practical and effective. Below is a selection of some of the policy options being carried out.

(1) Government finance support (debt/equity)

Long-term debt market is yet to be developed in the region. Therefore, Government's support for private funding efforts may be justified if the scheme is appropriately designed to avoid any moral hazard. The key to effective and successful PPP may be in the designing and structuring of concrete funding and support schemes. Public sector support should be granted with strict justification, in a way so as not to impede efforts by the private entity to carry out its obligations. Consequently, key

principles on public support have to be spelled out as a policy with specific criteria and procedures in order to maintain transparency, fairness, and accountability..

(2) Viability gap funding

VGF, a concept to fill in a viability gap caused by institutional distortion is coming to be acknowledged around the region as an effective tool to enhance project viability and realize PPP delivery. When effectively designed, it should create incentives and yield confidence to market participants in assuming risks and investment. Regulatory structure for such VGF is still under development, but some economies are in the process of instituting such legal framework. Various forms and schemes are available as options to be considered here.

(3) Government guarantee undertaking

This may include various concepts like off-take guarantee of service provided, guaranteeing performance of public sector entities involved including contingent liabilities, guaranteeing specific revenue risks like partial ridership risks, providing a scheme for political guarantee, and others. Such schemes may be essential in the initial years of developing a PPP market.

(4) Cross-border funding support

When the market grows at a high rate with enormous demand for private financing for infrastructure, there exist needs for some cross-border support funding mechanism or funding tools common to the region which any economy may be able to tap into or have access to. Such schemes may be initiated by multi-lateral financing institutions, donors, or both. Private financial market players may also be able to join in such initiatives.

5-3-4. Provide adequate risk mitigation measures for the private sector

Market participants such as investors/financiers are constantly seeking more stable, balanced risk taking ventures in which to invest. Some of the actual issues being witnessed require effective risk-mitigating measures in order to optimize the burden of risk to be borne by the private sector.

(1) Measures to mitigate risks pertaining to land issues

Although regulations to facilitate land purchase or land expropriation are available in most economies, various practical issues relating to land acquisition remain, including whether such regulations should be dealt with by the private sector or whether

it would be better for them to be handled by the public sector. Time delays and cost overruns are typical problems associated with land acquisition. Some mechanisms to mitigate risks such as the creation of a government department that facilitates private sector actions or a contractual land pricing cap may be useful. Creating a fund to support land purchase may be another option. Different issues exist in different economies relating to security, depreciation, and tax treatment that may affect land issues.

(2) One stop shop local permitting/approval system

Complicated permitting/approval system involving multi-layers of central/local governments is a major obstacle that increases costs and causes time delay. Streamlining public sector organization to create a one stop shop permitting/approval system will greatly mitigate risks that the private sector perceives.

5-3-5. Enhance predictability and certainty for financial/contractual practices

Standardization of various documents such as tender documents and model contracts/agreements may help minimize costs and risks to be borne by both public and private sectors and definitively increases predictability and certainty about what can and can not be done, and what could be negotiated.

(1) Standardized documents and model agreements

Effective rules and regulations may not be sufficient to attract the private sector to invest. Investment should be supported by good practices which could be embodied by standardized sector documents and model documents having the effect of creating trust in the market and facilitate various transactions. This may minimize costs and time required for transactions for both the public and private sectors.

(2) Fair and equitable allocation of tasks, obligations, and risks

The allocation of tasks, obligations, and risks should be carried out in a fair and equitable manner, respecting fundamental principles; the party who is most capable of managing and absorbing risks should take such risks. The appetite of market players and the level of risk which the private sector is willing to take shall also have to be taken into consideration.

(3) Sharing knowledge, experience, and know-how on best practices

The best practices in the actual market place (knowledge, experience, and know-how on scheme, structure, and contractual/financial practices) shall better be

shared by market participants, which shall not only increase the quality of practices but also help in reducing the transactional costs. The market environment is constantly evolving as are PPP practices. Sharing knowledge about best practices will contribute considerably to the development of the PPP market. Publication of contracts will also help to create a transparent market place.

5-3-6. Enhanced mechanism for public sector to facilitate PPP process

Projects identified by the public sector often do not move forward due to the shortage of funds available to check the project's feasibility and prepare tender documents. Establishing a project development fund or other kinds of support mechanism may help the public sector realize PPP delivery.

(1) Project Development Funds (PDF) scheme

It is fairly common for the situation to arise in which a project is conceived but there is no progress because line ministries do not have any fund to conduct a detailed feasibility study. To support such studies by dedicated funds (Project Development Funds) may be of great assistance in realizing PPP. Some economies adopt a revolving fund concept in which funds are resourced from the public sector or winning bidders.

(2) Capacity building in the public sector

The public sector must have sufficient capacity and capability to manage the entire process and handle fairly complicated transactions that may differ across sectors and projects. To meet this requirement, the capacity building of the public sector is required to ensure that good governance shall be implemented. Skills development and deployment in the public sector involved in such transactions are also important to realize efficient management of transactions (governance and risk management).

(3) Cooperation with multi-lateral financing agencies and donors

Seeking support and cooperation from multi-lateral financing agencies and/or donor countries may also be quite useful for a given economy to develop a PPP market.

5-3-7. Conduct adequate measures to encourage private participation, secure interest, and gain trust and confidence from market players

PPP becomes a viable option when a sound competitive market and the interest of potential investors willing to undertake the infrastructure projects are created. Efforts to create and maintain such a private sector-friendly environment is a must in order to develop PPP.

(1) Establish sector specific program/policy and publicize project pipelines and timeline

Governments need to address sector issues, elaborate sector policy and sector regulations to clarify the background for developing PPP. It may also be useful to establish project pipelines and timelines so that market participants can understand/assess potentials and opportunities beforehand.

(2) Transparent and fair dispute resolution mechanism

Disputes will necessarily occur between the parties. Regulatory regimes will have to spell out transparent and fair arbitration (including third country arbitration) and litigation process in order to yield trust and confidence to private sector parties.

The difficulty for PPP is in its diversity of concept and its application that needs to be tailored given the specific needs of concrete projects and situations in a given country. PPP is a kind of interaction between a regulatory regime that stipulates and enables partnership among different sectors of the economy and a policy framework that details the intent of the policy makers as well as financial/contractual practices that implement such policies into the rights and obligations of the relevant parties involved.

While complicated, PPP, if implemented successfully, shall become one of the strong drivers for infrastructure development and economic growth as it shall lead to more efficient ways of introducing private funding and financing.