

Financing Sustainable Public-Private Partnerships

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Executive Summary

Public infrastructure deficits afflict both developed and developing countries, and are compelling governments to bring in private sector capital and management efficiency through arrangements known as public-private partnerships (PPPs). While PPPs have the potential to deliver high-quality public goods and services, they are not a panacea for overextended government budgets, as private partners must ultimately be compensated from the public purse in the long term. This briefing looks towards the third pillar of sustainable development, namely economic sustainability, and non-exhaustively outlines the features that make PPPs financially sustainable, both internally and within the wider economy. The final section briefly considers how PPPs can, in turn, be leveraged to support broader environmental and social sustainability goals. A companion IISD briefing, *Public-Private Partnerships Health Check: Managing Partnerships During their Lifetime*, examines the scope for public authorities to check PPP performance against sustainability criteria once a PPP contract is underway.

Introduction

As budgets tighten and the public purse is pulled in many directions, governments and development banks have exhibited a growing appetite for cooperation with the private sector. Bringing in both the capital investment and management efficiencies associated with the private sector through agreements known as public-private partnerships (PPPs) is indeed appealing. PPPs refer quite generally to private sector investment in public projects, whereby investors receive a return on their investment within a specific legal framework.

There are a myriad of structures and arrangements that facilitate this relationship, but all involve some degree of risk transfer away from government to a private firm, or consortium of firms. These risks may be associated with the investment, design, construction or operation of an asset, such as a public building or civil engineering works, or the provision of services, such as waste or water management.



Infrastructure can be built and operated without PPPs, via traditional public sector procurement. The uptake of PPPs has increased, however, due to the large public sector funding gaps for building and maintaining infrastructure and utilities. In some cases, public sector accounting practices have also encouraged their uptake, as PPP liabilities may be off balance sheets.

PPPs for Infrastructure

Shortages of public infrastructure afflict both developed and developing countries. These deficits, where infrastructure is either non-existent or in need of repair, can require significant capital investment. While providing services and infrastructure through purchasing is a core public sector function, PPPs offer options to undertake infrastructure projects in which some (or all) of the up-front capital is provided by the private sector. Access to this private sector finance allows increased investment in public infrastructure, as compared to raising or budgeting additional funds. For this reason, governments worldwide have involved the private sector in provisioning infrastructure for energy generation and distribution, transport, telecommunications and water. From the perspective of the private sector, PPPs are appealing if and when governments underwrite investment opportunities that are long-term, secure, and that stimulate local economies.

Infrastructure PPPs are by no means *guaranteed* to deliver value for money for the public purse in the absence of rigorous contracts, comprehensive feasibility studies and good governance. Indeed, recently the merits of engaging the private sector in public infrastructure development have been drawn into question. The United Kingdom's National Audit Office, for instance, urged the government in April 2011 to critically examine the use of the Private Finance Initiative (the United Kingdom's most prevalent form of PPP), as the costs of debt finance had increased by 20–33 per cent since the credit crisis. It concluded that "there is a need for greater challenge of both the decision to use private finance and the scope of the deal" (National Audit Office, 2011, p. 8). Other concerns about the financial viability of PPPs derive from the higher cost of private sector borrowing compared to government rates, and the high tendering, transaction and negotiation costs involved in such partnerships. These concerns, among others, have led to a reform of the Private Finance Initiative in the United Kingdom, details of which were announced by the Treasury in December 2012. The scope of this reform and potential implications for sustainable PPPs is discussed in the companion briefing, *Public-Private Partnership Health Check: Managing Partnerships During their Lifetime* (Semple & Turley, 2013).

Financing Infrastructure Projects

In order to understand the financial sustainability of PPPs, it is helpful to consider the very nature of the large-scale infrastructure projects they may be used to facilitate. Regardless of whether the finance comes from the private sector (through a PPP) or public sector (via traditional procurement), funding infrastructure has certain distinct features from the perspective of an investor. This section will briefly highlight some of these features.

Infrastructure investment is generally characterized by large up-front **capital intensity** during the construction phase, with relatively smaller operational costs. Roads or hydroelectric dams, for example, are expensive to design and build, but once their construction is complete they have significantly lower operating and maintenance costs. Economies

of scale act to ensure that infrastructure projects are large: once completed, the more a utility is used (i.e., the more output is increased) the lower the operational costs per unit will be. This creates an incentive to ensure projects are large scale, while simultaneously reinforcing the need for initial capital investment. For other projects, such as the construction and operation of schools or hospitals, multiple developments may be bundled together to create more attractive investments.

Another characteristic of infrastructure investment is that the assets provide **limited flexibility** compared to other commercial activity. Infrastructure must physically fit into, and interconnect with, the existing array of utilities and networks (electrical lines, drainage pipes, water networks, etc.) in order to be functional. Not only that, but infrastructure development projects themselves must integrate into regional or national development plans. Furthermore, it is not likely that infrastructure can be easily converted to another use, meaning that infrastructure investment is generally defined by investment into **single-purpose assets**. What is an alternative use for a water treatment plant, for instance? These features ultimately have an impact on lenders' decisions about whether or not to finance a project.

While high initial capital investments into single-purpose assets can be considered risky, the nature of such public infrastructure projects is that demand for their use will often, but not always, be stable after construction. Some infrastructure investments are **natural monopolies**, such as providing electricity distribution networks, water networks, airports and hospitals, to name a few. This degree of certainty in stable, long-term demand is a great source of comfort and confidence for investors and lenders.

The Internal Financial Sustainability of PPPs

The private sector can raise financing by taking out commercial loans (debt finance) or by drawing on equity from bond markets (equity finance). Thus, to be internally financially sustainable in the most rudimentary sense, infrastructure projects must be able to repay interest and principal to commercial lenders, and produce acceptable dividends to owners. The following section outlines some of the basic concepts of project finance, and highlights the key concepts and strategies required for attaining internal financial sustainability.

Special Purpose Vehicles

In a PPP, the private firm or consortium of private firms undertaking the project typically establishes a specific project company, called a *special purpose vehicle* (SPV). The SPV independently signs the PPP contract with a public entity in order to build, own and operate a specific infrastructure project.¹ On the one hand, establishing a SPV is a practical mechanism to delegate a specific entity to undertake negotiations and operations; on the other, it is also a form of security. If a sufficiently large project fails, it could lead to insolvency for the private partner(s). An SPV acts as a legally distinct entity, reducing liability to the parent company, and generally finances large new stand-alone projects off the corporate balance sheet.

The company owners in an SPV will not usually finance all project requirements themselves; instead, they will provide a proportion as equity and either borrow the remainder of the required financing from financial institutions or place debt securities in the capital market. Importantly, an SPV needs to secure long-term debt maturities to match project cash flows. The SPV must therefore demonstrate to lenders how its estimated revenues over 15–30+ years will repay the initial investment costs, and also cover the regular maintenance and operation costs of the new project. In this way,

¹ Build, own and operate represents only one of several possible PPP arrangements. See IISD's *Harnessing the Power of PPPs* for a more complete summary (Colverson & Perera, 2012).

infrastructure investment could be said to require “patient” capital, for which repayment can gradually be made over the project lifespan. Revenues will normally consist of a **unitary payment** paid annually or at another agreed interval by the public sector client. For some projects additional revenues will arise through user fees paid directly to the operator.

Project Finance

Over the years PPPs have developed a distinctive form of debt financing termed *project finance* that is ideally suited to providing the kind of funding needed for new, large, long-term, single-purpose assets described. The first notable element of project finance is that lenders’ **assessments of risk rely entirely on the future cash flow** that a project is expected to generate throughout its entire operational lifetime. This cash flow is what enables the SPV to service its debt obligations and generate a return for investors. By contrast, corporate lenders to other types of commercial projects would look to projected profits over cash flow, and within a much shorter (1–3 year) time frame.

Particularly important to lenders is the free cash flow that remains once operating costs have been covered—the *debt service coverage ratio*—indicating how much cash is available to repay each \$1 of debt service payments that are owed to lenders. As a general rule, the project may be considered viable for lenders when the debt service coverage ratio is greater than 1.1 or 1.2, and 1.5 is desirable (Asian Development Bank, 2008). Estimates on future cash flow can and should be independently verified.

Credit Risk

Risk is a key element of PPP contracts, and indeed structures the financing of the PPP. A basic tenet of modern finance theory tells us that there is a positive correlation between risk and the cost of finance (expressed as return), such that the more risk a lender is expected to take, the higher the required rate of return on the investment. Funds that are lent to governments tend to have the lowest risk and therefore the lowest interest rates. At the other end of the spectrum, private sector equity is high risk and thus demands the highest rate of returns.

Lenders to PPP projects such as infrastructure development refer to credit risk, or the overall risk that the lenders will not be re-paid. In this regard, any delay in project completion, or reduced demand, currency depreciation or other changes could delay repayment and thus be considered a credit risk. Broad categories of credit risks are outlined in Box 1 below. It is the prerogative of the contracting partners to **minimize credit risk**, which should be identified, articulated in detail in writing and allocated appropriately in the early stages of contract negotiations. Generally speaking, risks are divided into “commercial” (e.g., operating costs) and “political” (e.g., legislative change) risks, which are best handled by the private and public sectors respectively.

BOX 1: CATEGORIES OF CREDIT RISK

Technology/Design Risks
Construction/Completion Risks
Operational Risks
Market/Demand Risks
Economic Risks
Counterparty Risks
Political/Regulatory Risks
Force Majeure Risks
Foreign Exchange/Currency Risks
Environmental Risks

The credit rating of a project, undertaken by an independent agency, is very important to debt financing and can significantly enhance investors' and lenders' confidence in the project. The due diligence process undertaken by the rating agency assesses, among other things, various risks involved in the project and its business case. Keep in mind, however, that it may not be possible to have independent credit ratings for all projects, as one may be the first of its kind in a particular country context. PPP projects should seek to achieve optimum (as opposed to maximum) risk transfer between the public and private sectors and also to subsequently allocate risk within the private consortium.²

Gearing Ratio

In funding PPPs, the private sector uses a mix of funding sources in proportions that are not very common to business outside this realm of activity. Usually PPP funding from the private sector exhibits a high level of *gearing*—meaning a high proportion of debt (75–80 per cent) to relatively small equity finance (20–25 per cent). As debt is lower risk and requires lower returns on investment, this suits the nature of infrastructure projects, as discussed above, that require long-term investments in projects that are generally stable and low risk. Thus, in order to be financially sustainable, PPP projects generally seek to use as **much low-cost debt as possible in their financial structure**. This can also be known as *highly leveraged*, as a small amount of equity is used to leverage a high amount of debt.

Financing for major PPP projects may be provided by commercial banks, international financial institutions (such as the European Investment Bank) or directly from the capital markets. While high levels of gearing are generally the most affordable option for financing PPPs, the higher proportion of debt financing naturally requires a large cash flow for debt servicing to these institutions. This can be problematic, particularly in the early years of project operation when the revenue earnings are generally low, and the risk of default in such a scenario would be considered high. Avoiding such a situation requires thorough financial modelling in the preparation of the PPP agreement.

² For further information on risk transfer see the ECEP PPP Guide, available at <http://www.eib.org/epec/g2g/annex/1-project-finance/index.htm>

As lenders decide whether or not to engage in highly leveraged finance arrangements, credit risk is a key consideration. This sets the playing field for the back-and-forth negotiations that must take place between the private and public PPP partners: the SPV seeks a degree of political risk insurance in order to keep borrowing costs low (e.g., securing demand and planning permission, exclusive rights to the project, protection of natural monopolies), while the public entity has engaged in a partnership precisely to share a degree of risk (e.g., construction and operational risks) with the private sector.

Collateral

Since projects undertaken as PPPs are often single purpose and generally have no alternative use other than the one they are designed to provide, these projects provide **limited collateral** for investors. In contrast with other commercial lending agreements that pledge property or assets in case of default, project lenders will instead seek to secure “step-in” rights to use the assets in order to continue to operate the utility until its debt obligations have been repaid. This sort of potential constraint on management is not present, or is limited, in other forms of corporate lending and is another consideration for the internal financial sustainability of a PPP. For example, the public partner will want to ensure that the step-in conditions ensure that operation of the asset will continue and that service standards will not be compromised.

Compensation of the Project Company

In an infrastructure PPP in which the private partner finances the building and operation of a given project, it may be compensated with a combination of user fees and government payments—compensation options that will be briefly addressed here—in the context of attaining internal financial sustainability.

User fees

User fees can be an efficient way of putting money in the hands of the private partner, as they link compensation directly to the level of service provided. Examples of user fees would be tolls on a highway or waterway, or charges for waste collection. The tariffs charged to customers should reflect the following prerogatives (Asian Development Bank, 2008):

- » Fairness and equity
- » Incentives for efficiency
- » Cost recovery/return on investment
- » Simplicity and comprehensibility

Fairness and equity imply that fees for use of infrastructure or services will be in line with the ability to pay of the intended users. Where access to similar infrastructure or services has historically been provided free of charge or for a minimal charge, the effect of introducing new fees should be assessed in consultation with the affected people. Undertaking such consultation to set reasonable fees not only addresses fairness, it can also help to ensure user fees do not undermine the efficiency and viability of the project. For example, if public transport tariffs are set too high, potential users are likely to opt for alternative means of transport.

An appropriate level of base tariff should also take into account the cost of capital. Ideally, the internal rate of return (IRR) of a project should be equal to its cost of capital. If the IRR is greater than the cost of capital, the concessionaire/investor makes excess profit; if IRR is less than the cost of capital, the concessionaire/investor loses money. Pricing should thus ideally be set at levels that allow fair rates of return on investment to cover the cost of financing and to meet contractual obligations (United Nations Economic and Social Commission for Asia and the Pacific, 2009). It is the responsibility of the government (or the economic regulator) to prevent any excessive profit to the private sector in a PPP deal. One way of doing this is to require that any excess profits are reinvested in the project or shared with the public partner. The Scottish Non-Profit Distributing model of PPP aims to address the issue of excessive investor profits by eliminating dividend-bearing equity. This model is explored further in the companion briefing, *Public-Private Partnerships Health Check: Managing Partnerships during their Lifetime*.

Government Support

Governments may subsidize the private party under a PPP agreement. This can take many forms, including: debt or equity finance, grants, cash subsidies, revenue guarantees, output-based aid, access to cheap capital, in-kind grants, land acquisitions and tax exemptions. From the perspective of the private sector, negotiating some degree of government support can make projects more commercially viable. Governments also may provide subsidies to reduce tariff levels for the purposes of helping the poor, addressing public health issues, addressing environmental issues, and/or because of political constraints on raising tariffs.

Importantly, however, this will only make sense if the aggregate cost to the government under PPP (including subsidy) is lower than the cost to the government of building and operating the service fully under the public sector, or the cost of not providing the service at the required service levels. A test known as the public sector comparator (PSC) is often used to determine the cost effectiveness of a PPP relative to delivery by the public sector. The reason for engaging the private sector in the first place should be kept in mind: namely, limited public sector budgets. Thus the focus for the public sector should be on the initial assessment of risk allocation and the terms of the contract that make it sustainable for all parties, and not in developing creative support mechanisms.

There are, however, problems in applying the PSC concept, ranging from methodological issues to various practical limitations. Some of the major problems include lack of consensus on discount rates, high costs of financial modelling, omitted risks, lack of realistic data for meaningful comparison of implementation by the public sector and non-existence of a public sector alternative. In view of these serious limitations of PSC, it may not always be a feasible proposition to apply the concept (United Nations Economic and Social Commission for Asia and the Pacific, 2009).

Designing Sustainable Compensation Packages

In preparation for undertaking a PPP, an iterative and multistakeholder process is necessary in order to determine: the costs of the service to be provided; the users' ability and willingness to pay for services; the tariff required to achieve full cost recovery; and the availability and goals of government subsidies. The objective in these initial discussions is to provide affordable services, and to encourage their use, while providing the private partner with revenue sufficient for commercially viable operations. Furthermore, such a process may shed light on more fundamental reforms needed in public administration before engaging in PPPs, such as customer databases, improvements to the billing system, the status of receivables and the merits of existing funding arrangements.

Financial Sustainability of PPPs in the Wider Economy

There are many project finance options available to those interested in pursuing the PPP route, some aspects of which have been outlined above. Once a request for tender has been issued by a public authority, the market and its array of private firms can and will respond with project finance solutions to meet nearly any project demand. In large part, the onus is on governments to attain broad financial sustainability of infrastructure projects through clearly identifying and developing good projects that they can afford in the long run. It is this initial assessment that is crucial—the financing will come. Furthermore, the regulatory environment, policy frameworks and investment protections that create confidence in the stability of the schemes will ultimately come from the public sector.

Though the responsibility for arranging the financing of an infrastructure PPP rests largely with the private sector (the SPV), it is important for the public sector client and its advisers to understand the financing arrangements and their consequences. The public authority must be able to rigorously assess whether the proposed PPP contract is bankable in light of the market conditions and practices prevalent at the time, particularly if they are to play a direct role in some part of the financing package (European PPP Expertise Centre, 2012).

Early analyses, such as feasibility studies and financial modelling, must be conducted thoroughly, and the long-term finance implications of a PPP adequately addressed. Otherwise, PPPs risk becoming a default procurement option merely due to attractive budgetary optics; just because capital investment is sourced off the public balance sheet does not mean government will not eventually pay for it. As a PPP project progresses and matures, and government payments are activated, the long-term costs may—and often do—exceed the initial budgetary “savings.” For this reason, it is important to keep alternatives to PPP financing on the table wherever possible.

To be financially sustainable in the wider economy, a PPP needs to offer value-for-money to the public purse. In this respect, it is not only vital to ensure competitive processes and due diligence are observed, but also that the necessary capacity is available to manage complicated financial structures and monitoring requirements. It is imperative to have access to the appropriate commercial and professional skills in order to realize the benefits of PPP contracts. This may necessitate hiring and training staff, retaining external advisers and/or availing of the expertise available from dedicated PPP units at the national level. Dedicated PPP units can provide a point of coordination, quality control, accountability and information related to PPPs either within a single sector or across a range of sectors. For public stakeholders and the public at large, the units are able to disseminate information and provide specialized management of a specialized process. The independence of these units is key in establishing their credibility and added value.

PPPs in the Post-Financial Crisis Era

Most of the immediate impacts of the financial crisis relate to the private sector finance component of PPPs described above, namely the increased cost and decreased availability of both debt and equity finance options. Sourcing financing certainly has become more difficult in many markets, and the related depreciation of property and asset values further limits options for collateral securities. Taken together, this implies increased risk for the private sector, affecting their willingness to engage in PPPs, while also affecting the compensation the government is willing to provide in exchange for the risk borne by the private company.

Governments can seek to balance the increased risk through certain intervention methods, and throughout the financial crisis we have seen governments respond in a variety of ways to assist the private sector to secure financing. A parallel question to the financial viability and sustainability of a project—relevant to public authorities undertaking traditional procurement or going the PPP route—is this: with the various project finance options available, how can capital be mobilized into more sustainable investments?

PPPs and Broader Sustainability Goals

PPPs can be used not only in the creation of physical assets and services, but also to meet wider environmental and social goals. In terms of environmental sustainability, PPPs have the potential to realize broad positive impacts such as reducing carbon emissions, promoting energy efficiency, creating green jobs and promoting new thinking about infrastructure needs for the future (e.g., adaptive or ecological infrastructure). Insufficient investment has gone into innovations such as the conversion of biodegradable waste and sewage into energy through anaerobic digestion; these and other investments show huge potential for PPPs to trigger positive externalities in the communities in which they operate.³

Furthermore, future project financing options for infrastructure PPPs might include “green” revenue sources such as carbon funds; or arrangements similar to Mexico’s “green mortgages,” which incentivize the construction of sustainable buildings; or by achieving investment ratings for sustainable infrastructure that reflects its quality and durability as an asset class. What is broadly needed to move in this direction is:

1. Collection of data on infrastructure stocks/assets in order to manage infrastructure portfolios and to set targets.
2. Sensitizing financial institutions to the economic benefits of energy efficiency and sustainable supply chains.
3. Discussions about how to internalize environmental and social externalities in PPPs and procure assets in a way that looks at value-for-money across the entire life cycle of a project.

In terms of social sustainability, many countries have used conventional public procurement processes as a means to further social goals, and PPP contracts should follow suit. The civil rights movement in the United States, for instance, led to the use of procurement preferences to advance affirmative action policies for economically discriminated groups, and in South Africa, a preferential procurement policy has been implemented since the end of apartheid to promote black empowerment (Hall, 2008).

The contract is the cornerstone of the PPP and can be used a powerful tool through which to ensure fair wages, employment security and healthy workplaces, while also furthering broader social objectives such as the employment of disabled workers, and the elimination of racial, gender or religious discrimination. This will require informed and thoughtful PPP design and assessment, as well as enabling legal and regulatory frameworks within which to uphold such commitments.

For PPPs to be leveraged for environmental, social and economic sustainability, leadership and political will are key, both in terms of the overall policy framework for PPPs and from contracting parties at individual project level. This briefing and its companion aim to provide a background for this process and stimulate ideas and motivation for making PPPs more sustainable.

³ For an example of waste to energy in practice, one is municipal waste recycling at GENeco: <http://www.geneco.uk.com/>

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