



**NIGERIA INFRASTRUCTURE
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Financing Sustainable Urban Transportation: Public Private Partnerships and other Options

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1 INTRODUCTION TO PPP

The term Public Private Partnership (PPP) can include a wide range of contract forms and acronyms (BOT, DBFO, BOOT etc). It can be said to include outsourcing and partnering, performance based contracting, design, build, finance and operate (or build operate transfer), and sometimes concessions. These forms of contract will have the following characteristics:

1. They are long-term contracts (typically between 7 to 30 years) between a public sector authority and private sector contractor for the provision of a public service. The contract may require the construction of new public infrastructure or other assets, in which case the private sector contractor may finance the investment and recover its financing costs over the remainder of the contract from service charges or payments by the public authority;
2. Payment to the contractor is linked to the quality of the service delivered. This means that the contract includes an output specification rather than a definition of inputs. Payment may be based on the availability of an asset such as a road provided it is meeting the standard required in the specification;
3. There is more risk transferred to the contractor than is the case with other traditional forms of contract. The general principle is that the project risks are allocated to the party best able to manage them. Often these risks arise between the different phases of a project so these will be integrated into one contract – eg design, construction, maintenance and operation. This feature, when combined with a contract term which matches the economic life of the underlying asset, means that there is an incentive on the contractor (provided the contract is awarded under competition) to minimise the whole life costs of providing the service. These incentives are much less in the public sector, which will usually contract for each phase separately and where there is an emphasis on the lowest up front cost (possibly leading to higher maintenance costs later).

2 CONCESSIONS

Concessions are sometimes included in the broader definition of PPP since they have most of the features of PPP described above, but they also transfer demand and revenue risks to the concession company. The output specification may include requirements with regard to the frequency of services or levels of charges. This is because the service may create a local monopoly and political considerations may require some element of cross-subsidy between different users, or a minimum frequency of services for wider social reasons¹. Since the underlying purpose of these contracts is the provision of a service to the public it is important that the political aspects are considered fully at the outset, including the need for some public subsidy to capture wider social benefits and ensure that the fare structure is affordable for all potential users. However PPPs and concessions allow a clearer separation between the policy and regulatory aspects of public services and their day to day management and operation. The use of private financing of the capital costs may also make the true cost of the service more transparent

¹ An example of these considerations may be a light rail project where certain fares may be controlled and a minimum service specified during the working day and at weekends.

since all investment projects carry a degree of risk and this will be reflected in the cost of financing the investment.

3 PARTNERING AND JOINT VENTURES

In some projects the full scope of the service requirement may not be clear at the outset, or the underlying technology may be subject to rapid change. Defining a long term contractual requirement under a PPP may be difficult and these contracts are less flexible in responding to changing circumstances, particularly where further investment may be required. There are other ways that the public and private sectors can work together to increase operational efficiencies. These include partnering contracts or the creation of a joint venture company to manage the project or operate the services. However, these arrangements may be more complex and there may be potential conflicts of interest between the private sector objective of maximising profit and the public sector objective of maximising social benefits. They should therefore not be used as a pretext for delaying the difficult decisions and compromises that the proper planning and provision of public services requires. The involvement of the public sector in day to day management of the service may itself create internal conflicts between its policy and operational roles, and in managing operational risks such as demand, safety, or maintenance. Some of these conflicts may be resolved by a clear separation between the public authority role as client for the services (on behalf of the wider public) and its role as investor. The way that this separation may be achieved is discussed further below in the context of funds.

4 RISK AND THE FINANCING OF PROJECTS

All projects can contain a number of specific risks that need to be managed. Some of these risks can be quantified and others may be difficult to quantify but can be identified as having a potentially high or low impact or high or low probability of occurrence. Public transport projects often have a particularly high level of risk and there is strong data to suggest that the promoters of these projects usually underestimate their cost and overestimate their benefits². In the private sector the riskiness of an investment will have an effect on its price (or cost, if the investment is financed by borrowing). The public sector can reflect this principle in the techniques it uses to appraise projects and allocate resources between competing demands for public investment. This can be done through the calculation of the expected cost of risks in the project cash flows, and the inclusion of an optimism bias factor in the discount rate used in economic appraisal³.

Although the public sector may appear to borrow to finance investment at a more favourable rate than the private sector, this is because investors perceive that lending to the public sector carries a lower risk than lending to the private sector, because the risk of default is less. However the fact that the public sector may be able to raise tax or increase borrowing in the future to offset risk in its investment decisions may disguise the true cost of public sector debt and could encourage excessive investment in high risk projects. If we factor the risks inherent in these projects into the appraisal process then it is possible to compare the costs of public versus private financing (which already incorporates the cost of risk) on a comparable basis. In practice the costs of the same project risk may differ between the public and private sectors because of differences in the ability of each party to manage the risk (in large part because of the way that different contracts are structured). In order to obtain better value and lower overall cost, PPP projects therefore follow the dictum that risks should be allocated under the contract to the party that is best able to manage them.

² See Flyvbjerg, B., Skamris Holm, M. and Buhl, S. (2002), 'Underestimating costs in public works projects: error or lie?'. *Journal of the American Planning Association*, Vol 68.

³ Discounting is a technique for reflecting time preference for receiving benefits now and paying for them later. Cash flows or benefits that occur in the future will have a lower value than those that occur now and the higher the discount rate the lower this value.

The techniques of project finance were developed in the 1970s and 1980s when high cost investments were required in the oil, gas, and power sectors. The capital value of a project was often greater than the value of the companies contracting to design, construct and operate it. Investment was therefore provided through bank debt (or now through the bond market as well) where the investors had limited, or no, recourse to the parent companies in the event of project failure. To achieve this a Special Purpose Company was created to deliver the project under contract to the client (under a Take or Pay or Power Purchase Agreement). The Special Purpose Company (also known as a Special Purpose Vehicle or SPV) then entered into financing agreements with investors and subcontracts with specialist firms for the design, construction or operation of the project assets. The third party investors would have first call on the after tax project revenues and would ensure through the use of a financial model that the project revenues would under most scenarios be sufficient to repay the capital and interest costs. They would also require the project sponsors to have a certain amount of equity capital in the Special Purpose Company and this provided an incentive on the sponsors (often the construction companies themselves) to manage the project risks effectively. They would realise a return on their investments through dividends and/or capital gains.

This project financing structure matched the cost of finance to the risk taken by the investor, with senior lenders taking less risk and accepting a lower return than the providers of equity. The same approach is taken in most PPP projects where there is a need for a significant capital investment up front to construct the public infrastructure, such as the road, water treatment plant, track and signalling, etc. from which the public service is to be delivered.

Project finance uses competition (either between banks, or between banks and the bond market), to drive down the cost of finance. The public sector needs to use competition in the procurement of PPP to ensure that the different elements of the project, including the pricing of risk, are provided at the lowest cost, although all of these elements are combined to give a single overall price for delivering the service. Financial models are used during the bidding process to provide transparency of costing to both the public authority and investors, and these models can be tested using sensitivity analysis to ensure that the pricing is robust against changes in the input assumptions. The involvement of international financial institutions such as the African Development Bank can help to reduce the cost of finance by providing some of the senior debt, or other financial instruments to reduce political risk or other financial risks.

5 BENEFITS OF PPP

If a project is properly structured than PPP can be used to deliver better value public services, by:

- Integrating the different phases of the project such as design, construction and operation in to a single contract which combines each element to give a single unitary price for the service to be delivered;
- Providing a structure which encourages the whole life costs of providing the service to be minimised and for maintenance costs to be factored into the design and financing requirement;
- Allocating risks to the party best able to manage them and thus minimising their expected cost;
- Linking payment to the quality of service delivered and thus providing stronger incentives for the efficient management of the services to meet the requirements set out in the contract;
- Encouraging innovation by specifying outputs, not inputs, and ensuring that the policy and regulatory functions of the public authority are not compromised by direct involvement in service delivery;

- Providing greater transparency in terms of cost and risk within these projects and involving third party investors who ensure that the project finances are robust and management achieves the expected outcomes.

6 THIRD PARTY EQUITY AND THE ROLE OF FUNDS

It can be seen that equity plays an important role in the financing and management of PPP projects. Providers of equity are the effective 'owners' of the SPV created to deliver the project, although their management of the company is constrained by the various agreements it enters into with other investors and the public authority. Equity takes a greater share of the risk but can achieve potentially higher returns through the future sale of its ownership to other (secondary) investors. PPP projects have increasingly been seen as an attractive investment opportunity (which has helped to drive down the cost of finance by increasing competition) because they provide relatively predictable long term revenue streams which can match the long term liabilities of institutional investors such as pension funds. The bond market can be used to match the needs of these investors with the relatively low risk and therefore low cost financing of the senior debt in the SPV.

But investors can also diversify risk by investing equity in these projects through a fund, and the use of funds has increased internationally in recent years. Many of these funds specialise in particular markets or classes of infrastructure. Project sponsors have sometimes been able to sell on their equity in the SPV to funds, acting as secondary investors once the project enters the lower risk operational phase. The recycling of equity to other projects is beneficial since contractor equity is a relatively scarce resource. Funds can also help to spread expertise and management resource across different projects, since the equity fund, as part 'owner', will participate in the management of the SPV (and often assist in the bidding process). Funds have therefore helped to increase the availability of capital, and enabled investors to spread risks across a portfolio of different projects. They can also be used to involve multilaterals such as the World Bank, or even government itself, in the management and funding of these projects. This role of government acting as a minority investor in SPVs in order to improve understanding and communication between the public authority acting as client and the private sector acting as service provider is still developing. But it could lead to better management of services as these evolve over time and help achieve continuous improvement in service delivery. It may also encourage third party investors to participate in projects where there is a high degree of political risk or regulatory uncertainty.

7 CONCLUSIONS

PPP can provide greater efficiency in public procurement and the delivery of public services by providing a strong incentive to manage project risks and ensure that services are provided to meet the requirements specified in the contract. It can help to minimise whole life costs by integrating the different elements of a project and linking payment to the quality of the outputs rather than inputs. It can provide greater transparency in the cost of providing public services by eliminating some of the hidden costs and risks in traditional public procurement, and avoid conflicts of interest between the public sector policy and regulatory role and the management of operations. It can increase the depth and liquidity of the financial markets to the benefit of the wider economy and be used to bring in international financial, technical and operational expertise in partnership with local firms. It should therefore be considered alongside alternative forms of contracting with the private sector as Nigeria seeks to address its infrastructure deficit and provide new public services, including transportation, to its rapidly growing urban population.