PRIVATE FINANCING OF CONSTRUCTION PROJECTS AND PROCUREMENT SYSTEMS: AN INTEGRATED APPROACH

LUCY W. CHEGE
CSIR, Division of Building and Construction Technology, P.O. Box 395, Pretoria 0001, South Africa
e-mail: lchege@csir.co.za

P.D. RWELAMILA
Graduate School of Business Leadership, University of South Africa, P O Box 392, Unisa 0003 Pretoria, South Africa

ABSTRACT

Budgetary constraints in several countries have led governments to seek alternative methods of financing infrastructure provision. Public private partnerships (PPP) have received widespread attention in several countries in recent years. These PPP initiatives have enabled the public sector to utilize private sector finance and expertise for the provision of public infrastructure through various schemes such as Design Build Finance and Operate (DBFO), Build Own Operate (BOO) and Build Operate and Transfer (BOT). This paper reviews these procurement systems and examines the relationship between these procurement systems and the financing of the project.

One of the aims of utilizing these alternative procurement routes is to enable the client to obtain value for money and it is suggested that selection of an appropriate procurement system for a project would assist clients to attain their objectives regarding the financing of the project. This paper presents various PPP initiatives and utilizes the South African experience of the procurement of prison facilities through PPP as a case study reflecting the financing of these types of projects. This paper forms part of a broader study geared at developing a methodology for the selection of appropriate procurement systems within Southern Africa.

KEYWORDS

Project financing; procurement systems; Public Private Partnerships; value for money

INTRODUCTION

The private sector is playing an increasingly crucial role in the financing and provision of services that were traditionally the domain of the public sector. The reasons for this are multifarious. One of the key reasons is that governments are unable to cope with the ever-increasing demands on their budgets. Most infrastructure expenditures in developing countries have been funded directly from fiscal budgets but several factors such as macroeconomic instability and growing investment requirements (particularly following the debt crisis of the 1980s), have shown that public financing is volatile and, in many countries, rarely meets crucial infrastructure expenditure requirements in a timely and adequate manner (Ferreira and Khatami, 1996). Furthermore, there are efficiency gains arising from innovation, management and marketing skills offered by the private sector and greater incentives for the control of construction, operating and maintenance costs; the provision of additional finance for infrastructure projects, enabling economically justifiable projects to be freed from public-expenditure constraints and brought forward in time, thus generating earlier economic benefits; and where foreign finance is involved, the overall level of investment in the economy can exceed the country’s savings rate (Haley, 1996).
Procurement systems have played an important role in this respect due to the fact that most of the privately financed projects have been procured through public private partnerships involving various forms of private sector participation. Confoy et al. (1999) state that to decrease expenditure, deficit reduction programs to control government debt have stimulated the use of innovative procurement and financing methods. This paper does not aim to go into details about the different financing instruments available for financing the project but rather it aims at reviewing different procurement systems involving public private partnerships and the linkage to the overall client objectives regarding the financing of the project.

OPTIONS FOR PRIVATE SECTOR PARTICIPATION

In order to perceive the linkage between procurement systems and the financing of the project, it is imperative to review the various procurement arrangements involving private sector participation. There is a range of options for involving private sector participation that vary with regards to ownership, operations and maintenance, financing, risk allocation and duration. A summary of these options can be viewed in Table 1. For purposes of brevity, only a short description of each of these options is provided hereafter.

Table 1: Allocation of key responsibilities under the main private sector participation options

<table>
<thead>
<tr>
<th>Option</th>
<th>Asset ownership</th>
<th>Operations and maintenance</th>
<th>Capital investment</th>
<th>Commercial risk</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service contract</td>
<td>Public</td>
<td>Public and private</td>
<td>Public</td>
<td>Public</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Management contract</td>
<td>Public</td>
<td>Private</td>
<td>Public</td>
<td>Public</td>
<td>3-5 years</td>
</tr>
<tr>
<td>Lease</td>
<td>Public</td>
<td>Private</td>
<td>Public</td>
<td>Shared</td>
<td>8-15 years</td>
</tr>
<tr>
<td>Concession</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>25-30 years</td>
</tr>
<tr>
<td>Build Operate Transfer</td>
<td>Private and public</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>20-30 years</td>
</tr>
<tr>
<td>Divestiture</td>
<td>Private or private and public</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>Indefinite</td>
</tr>
</tbody>
</table>


Service contract
Under this option, the private sector performs a specific operational service for a fee, for example meter reading, billing and collection.

Management contract
In this option, the private sector is paid a fee for operating and maintaining a government-owned business and making management decisions.

Lease
Under the lease option, the private sector leases facilities and is responsible for operation and maintenance.
Concession
Under concessions, the private sector finances the project and also has full responsibility for operations and maintenance. The government owns the asset and all full use rights must revert to the government after the specified period of time.

Build own transfer (BOT) /Build own operate (BOO)
These are similar to concessions but they are normally used for new greenfield projects. The private sector receives a fee for the service from the users.

Divestiture
This option can take two forms – partial or complete divestiture. A complete divestiture, like a concession, gives the private sector full responsibility for operations, maintenance and investment, but unlike a concession, a divestiture transfers ownership of the assets to the private sector (World Bank, 1997).

After looking at these various procurement arrangements, the next section seeks to provide a more detailed discussion on how these different arrangements have important implications with regards to the financing of the project.

PROCUREMENT SYSTEMS AND FINANCING APPROACHES
Several authors have discussed the importance of the selection of the most suitable procurement system (Latham, 1994; Love et al., 1998; Rwelamila, 2000). Central to this debate has been the issue of selection criteria to be used in determining the most appropriate procurement method. NEDO (1985), Skitmore and Marsden (1988) and Singh (1990) have suggested certain criteria in this respect. One of the criteria they have suggested is price completion – covering critical issues such as value for money. One of the main aims of PPP approaches is to achieve value for money and it has been widely recognized that by using private sector finance, skills and expertise, services can be procured at a cheaper cost and value for money can be attained.

Confoy et al. (1998) referring to Woodward (1995) state that the major difference between financing projects of the BOOT/BOO type and the more conventional approaches is that lenders have only the project’s expected cashflows to indicate its economic viability. These projects are mainly funded through the technique known as project finance. Project finance helps finance new investment by structuring the financing around the project’s own operating cash flow and assets, without additional sponsor guarantees (IFC, 1999). Further, the technique is able to alleviate investment risk and raise finance at a relatively low cost, to the benefit of sponsor and investor alike. The project finance technique has been used for several years in mining and natural resource projects, but in construction projects it is a relatively new concept in several countries.

It can be seen from Table 1, that under concessions, Build Own Transfer (BOT) and Divestiture methods, the private sector is responsible for the financing and the commercial risk. In these three options, the private sector takes full responsibility for the financing of the projects. On the contrary, under service contract, management contract and lease the public sector is responsible for the financing.

The BOT model and its variants will be discussed in more detail because the South African case study discussed in this paper has applied the Design Build Finance Operate (DBFO) model which has characteristics similar to the Build Own Transfer (BOT) model. Table 2 reviews the BOT option and its variants, describes some characteristics of these different procurement arrangements and depicts the relationship between these different procurement methods and the financing of the project.

It can be viewed from Table 2 that under BOT and its variants, the private sector is responsible for financing of the project. The DBFO model that has been applied in South Africa is similar to the
BOOT model described in Table 2 hence the private sector is fully responsible for providing the capital investment of the project, design, construction, operations and maintenance.

Table 2: BOT project procurement structures

<table>
<thead>
<tr>
<th>Contract type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build Own Operate Transfer (BOOT)</td>
<td>• The service provider is responsible for design and construction, finance, operations, maintenance and commercial risks associated with the project.</td>
</tr>
<tr>
<td></td>
<td>• The service provider owns the project throughout the concession period</td>
</tr>
<tr>
<td></td>
<td>• The asset is transferred back to the government at the end of the term, often at no cost.</td>
</tr>
<tr>
<td>Build Own Operate (BOO)</td>
<td>• Similar to BOOT projects, but the service provider retains ownership of the asset in perpetuity.</td>
</tr>
<tr>
<td></td>
<td>• The government only agrees to purchase the services produced for a fixed length of time</td>
</tr>
<tr>
<td>Design Build Operate (DBO)</td>
<td>• A design and construction contract linked to an operation and maintenance contract.</td>
</tr>
<tr>
<td></td>
<td>• The service provider is usually responsible for financing the project during construction.</td>
</tr>
<tr>
<td></td>
<td>• The government purchases the asset from the developer for a pre-agreed price prior to (or immediately after) commissioning and takes all ownership risks from that time.</td>
</tr>
<tr>
<td>Lease Own Operate (LOO)</td>
<td>• Similar to a BOO project but an existing asset is leased from the government for a specified time.</td>
</tr>
<tr>
<td></td>
<td>• The asset may require refurbishment or expansion.</td>
</tr>
</tbody>
</table>

Source: Arndt (1999)

SOUTH AFRICAN CASE STUDY

South Africa like many other countries is faced with the problem of infrastructure backlogs and budget constraints. The Government of the Republic of South Africa through its Department of Finance recognized the need to cooperate with the private sector in order to address this problem. Consequently various PPP initiatives in various sectors were considered as an alternative way of delivering services. This paper will look at one initiative that has been implemented for the provision of public services by the private sector through Asset Procurement and Operating Partnership Systems (APOPS). The Department of Public Works (DPW) engaged in the APOPS programme in 1996. This programme lies within the broader PPP framework.

The Department of Public Works – APOPS Directorate is currently engaged in pilot projects for the procurement of correctional facilities structured along the design, build, finance and operate (DBFO) approach. Two of the contracts for the pilot projects were signed off this year and are currently under construction. The two pilot projects are: Bloemfontein maximum-security prison for R1.7 billion
Rands\(^1\) and the Louis Trichardt maximum-security prison for R1.8 billion Rands. The private sector consortium is responsible for the design, build, finance and operation of the facility and at the end of the concession period which is 25 years, the facility will be transferred back to the State. The government pays the private sector (referred to as the concessionaire) periodically for the services rendered.

In the APOPS programme, the three main objectives to be considered are to secure value for money, optimal risk allocation and affordability and these objectives have important implications with regards to the financing of the projects.

**Value for money**
This is an important criterion and the private sector must be able to ensure that they deliver the services required at a lower cost than the public sector would have delivered the same level of service. In the current ongoing APOPS pilot projects for the procurement of prison facilities, the private sector is expected to provide a higher level of service or same level of service at lower costs than the government would have provided these services. Dick and Akintoye (1996) reiterate this in their discussion of Private Finance Initiative (PFI) of the UK and state interalia that the benefits of PFI to the public sector include improvements in the quality of service to the taxpayer and achievement of value for money. The Public Sector Comparator (PSC) was used to ascertain whether value for money has been attained. The PSC has been defined by the Treasury Taskforce (1999) as a hypothetical risk-adjusted costing, by the public sector as a supplier, to an output specification produced as part of a PFI procurement exercise.

APOPS projects have adopted a similar definition of the public sector comparator. The details on how to calculate the PSC number is detailed by the Treasury Taskforce (1999) and therefore this paper will not go into details of the calculation but instead will highlight some important factors in this respect. In the APOPS pilot projects this process of deriving a PSC was complex due to the fact that the new Correctional Services Act specifies a higher level of service than was previously provided in public sector prisons. The aim of the PSC number was to compare and illustrate the operating costs for private and public sector operation of the facility under the level of service stipulated in the Request for Proposals (RFP). The PSC number was used to evaluate the bids offered by the private sector. The private sector consortium had to be able to structure the financing of the project in order to be able to meet these levels of service whilst at the same time ensuring that value for money is attained and maintaining affordability.

**Risk allocation**
Risk allocation is very important aspect of PPP approaches and the APOPS approach is no exception. This relationship between risk and different procurement approaches has been discussed by several authors (Chege and Rwelamila, 2000; CUP, 1993; Lowe and Whitworth, 1996) and the Figure 1 seeks to illustrate the relationship between risk and different procurement approaches.

From Figure 1, we can see that when making the decisions regarding the choice of procurement approach as we move towards fully private, more risk is transferred to the private sector and vice versa.

---

\(^1\) The currency exchange rate at the close of business on 1\(^{st}\) October 2000 was 1 US Dollar = 7.3121 Rands
In APOPS, the principle is to transfer the risks to the party that is most able to manage them. It can be viewed in figure 1 that in the DBFO approach more risk is borne by the private sector. The risk matrix was used for the allocation and sharing of risks between the parties. The issue of risk transfer was an important aspect when considering the financing of the project because the private sector consortium had to consider the associated costs due to large amounts of risks transferred to them. The public sector on the other hand had to be careful in their risk allocation because transfer of too much risk to the private sector would have made the project unaffordable. It was therefore crucial to develop a model for optimum risk sharing between the parties bearing in mind affordability and value for money considerations.

**Affordability**

Prior to embarking on an APOPS project, the public sector client had to be sure that the project was affordable and that they would be able to manage the payment streams. This is extremely crucial due to the long duration of the projects (25 years). The affordability considerations began right at the preliminary stages when the public sector advisors were preparing the business case. Due to the fact that the public sector can borrow at lower rates than the private sector, the advisors had to develop models incorporating innovative ways of financing, design and construction of the projects in order to prove that the projects were affordable and justify the need to use the APOPS - DBFO approach as opposed to the traditional procurement method.
PPP projects can be complex in terms of implementation. There are indications that certain challenges have been faced in the South African case study discussed above. These challenges relate to issues such as the costs of the process, the need for a clear consistent definition on the various private sector participation options, organisational differences between public and private sectors teams, the issue of stakeholders and forming empowerment partners.

CONCLUSION

This paper has demonstrated that the use of PPP approaches has resulted in a deviation from the traditional procurement method with regards to the financing of the project. In the traditional method, projects were financed mainly with public sector funds but with increased use of PPP models, private sector financing is playing an important role in this respect. The increased need to use the PPP approach cannot be overemphasized and as a result decision makers need to be clear about how their needs surrounding financing of the project can be best met with the differing procurement approaches.

The South African case study presented in the paper has illustrated that due to the fact that it was necessary to use alternative financing besides the fiscal budget, an appropriate procurement method had to be utilized in order to achieve financing objectives of the client. The traditional procurement method would not have been a suitable procurement method for utilizing private finance mechanisms. One the main aims of selecting amongst the different procurement approaches is to balance the clients objectives of cost, scope, time and quality, in order to derive an optimal agreement between the parties. It is now evident that for public private partnership arrangements, this choice of procurement system becomes even more crucial because of the necessity to clearly state which party will be responsible for important aspects such as financing involving capital investment in the project.

RECOMMENDATIONS

As discussed above, the fact that the use of PPP approaches in South Africa, like in other countries, offers the benefits of additional finance for infrastructure and efficiency gains in construction and operation while allowing the public sector to retain long-term strategic control of infrastructure cannot be debated. However, the emergence of PPP should not be heralded as a panacea for all previous procurement problems. It is important that government and private sector experts should not ‘jump’ on PPP approaches without understanding their potential merits and demerits; and requirements for their success. Essentially, it is important that researchers and practitioners in the South African construction industry should understand the theoretical framework on which to derive either an ideal or an optimum PPP approach. They should avoid reactive evolution of modus operandi of procurement practices which have caused many problems and which are still affecting construction project efficiency in the South African construction industry.

There is enough evidence on PPP projects around the world to suggest that a variety of interrelated factors combine to bring about the success or failure of any project. It is important, therefore, to note a few practical ways to improve a project’s chances of success by those experts and practitioners. These include: sound organisational planning – technical and financial ability on the part of investor; promoters must be evident and their commitment to carry out the project must be unquestionable; thorough analysis of the project’s economic and financial viability; appraisal of the political and economic outlook of the host country; consideration of the relative strength of the financial markets; ascertainment of political will and promoting good relations with the host government; avoiding unreasonable risk allocation; establishing an effective project – management structure; and learning from past experience.

PPP projects are also being implemented in other SADC countries such as Tanzania, Mauritius, Zambia and Mozambique. The discussion in this paper has highlighted some of the issues the practitioners in these SADC countries are facing or are likely to face as they seek to utilize these different procurement routes to achieve their financing objectives.
ACKNOWLEDGEMENTS

The authors wish to convey sincere appreciation to Mr. Eric Manchidi, Director of APOPS in the Department of Public Works South Africa for his valuable comments and suggestions throughout this research.

REFERENCES


