1

Mapping of the PPP's Processes and Concepts

1.1 Introduction

Over the last two decades the demand for public services and infrastructures has increased dramatically. This increase has not been matched by the availability of finance to fund the required services to improve economic development and the wellbeing of society. The problem of funding is coupled with the public sector's inability to deliver services efficiently and effectively. In contrast to the public sector, it has been argued that the private sector has the financial capacity and managerial skills to improve the efficiency of delivering public services. It was suggested (EIB 2005) that the 'private sector is expected to bring rigour and expertise in the design, implementation and operation of a project that will benefit the society as a whole'. This notion has intensified the need for the private sector in the delivery and management of public projects. Although the participation of the private sector in the development of infrastructure projects is not new, a raft of financial and contractual legislations have been introduced worldwide to allow the private sector to participate in the development of public services and infrastructure. Several frameworks for project delivery emerged from this feverish legislation. Among the well-established frameworks is the concept of Public Private Partnerships (PPPs). Almost all forms of private sector participation are delivered under this partnership framework. The purpose of this chapter is to present the current mapping of PPPs' processes and concepts. To achieve this aim, this chapter introduces the rationale for advocating PPPs as an efficient procurement route for public services and infrastructure projects; explains the complexity of the procurement process in PPPs; discusses the evolution of PPPs as a driver

Risk Pricing Strategies for Public-Private Partnership Projects, First Edition.
Abdelhalim Boussabaine.

for risk transfer and efficiency of production and presents the concept of value for money; and demystifies the relationship between value for money and risk. The last section discusses issues emerging from the current financial crisis.

1.2 Rationale for PPPs

Before we embark on explaining the rationale for the evolution of PPPs, we provide a brief précis of the various definitions of PPP, which are subject to context of use and vary from country to country. There are several definitions in literature. For example, the UK Commission on PPPs defined it as 'a risk-sharing relationship between the public and private sectors based upon aspiration to bring about a desired public policy outcome'; whereas as the Canadian National Council for PPPs defined it as 'a contractual agreement between a public and private sector entity. Through this agreement, the skills and assets of each sector are shared in delivering a service or facility for the use of the general public. In addition to sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility' (Infrastructure Canada 2007). These definitions and others are centred on the following concepts (Malone 2005, HM Treasury 2006, Deloitte 2009)

1.2.1 Risk Transfer

One of the primary reasons for the evolution of PPPs is the transfer of risk to the private sector. Normally, risk transfer is used as one of the drivers for value for money computation. PPP procurement is based on the principle that risks should be transferred to the party best able to absorb and manage them.

1.2.2 Risk Sharing

The private partner normally bears a large portion of PPPs risks. However, the public sector retains those risks that carry a large price. The greater the proportion of risks borne by the private sector, the betterthe incentive to minimise whole life cycle costs and improve operational performance.

1.2.3 Sharing Skills

One of the most cited arguments for PPPs is that the private sector has superior management skills. If the skills are shared with the public sector, this would lead to better efficiency, i.e. lower capital and operational costs and better quality of public services' delivery.

1.2.4 Sharing Assets

Collaboration between the private and public sectors entails sharing skills and assets in providing public services. It is expected that the private sector will provide efficient asset management. The private sector operates and manages the assets, whereas the public sector plays a role as regulator and controller of performance. The concession agreement dictates how assets are shared. However, it is expected that, at the end of the contract, property and residuals of all assets will be returned to the public sector.

1.2.5 Sharing Resources

In some instances, PPPs are defined as collaborative endeavours that combine resources (i.e. finance, human, technical, expertise, knowledge, etc.) and skills from both the private and public sectors to delivery efficiency in public services.

1.2.6 Sharing Rewards

In PPPs, the project agreement sets out the rewards, and terms and conditions of such rewards for both the private and public sectors. It is assumed that best value/reward is better achieved through long-term partnerships.

1.2.7 Sharing Responsibilities

PPPs have evolved to share risks, responsibility and accountability in the delivery of public services. It is stated that, by sharing responsibilities, PPPs will aid in minimising the risk of conflict, assuming the parties share the same vision for the project. All contracting parties in the PPP model of delivery have responsibilities and obligations. These responsibilities are shared through a PPP contract's legal framework. Thus, the level of responsibility varies according to the type of PPP model used in the delivery of the public projects and services. Also, responsibilities are proportional to the risk-bearing capacity of the contracting parties.

1.2.8 Mutual Benefit

This is cited as key to successful partnerships. It is said that both the public and private sectors can benefit from medium- and long-term engagement in several ways, including strategic planning (i.e. focus on the specific part of shared tasks, effective business processes and organisational opportunities to exploit skills, etc.).

1.2.9 Achieving Value for Money

That is, maximising the efficiency of public services by reducing the cost associated with the design, construction and operation of public projects. Value is created by using the management skills of the private sector. Value for money is determined by using public and private sector comparators (see section 1.5).

1.2.10 Pursuing Shared Objectives

PPP collaboration must revolve around shared objectives and values between the partners. This is viewed as essential for delivering public services efficiently. This concept underpins the PPP contract framework. Shared objectives guide the PPP process from inception to the cessation of the contract. Hence, an agreement on such shared objectives is fundamental in risk transfer and value creation in PPP procurement.

1.2.11 Saving in Project Life-Cycle Costs

This is based on the assumption that because the private sector bears most of the operational risks, thus there is a huge incentive for the private partner to create further value by acquiring better building specifications in order to lower operation and maintenance costs over the life span of the concession. This approach helps minimise whole life-cycle costs through a trade-off between capital expenditure and operational cost.

1.2.12 Business Model

'A PPP is a business entity—such as a corporation, partnership, limited liability company, or grantor trust—that is established by the private sector for a single specified purpose' (Standard & Poor's 2006).

Although there is a long history of private sector participation in the delivery of public services, the emergence of PPPs as one the main procurement routes to public infrastructure and services was due to the shift towards private sector participation and privatisation in general in the 1980s. The need for such a shift was dictated by public sector reform to improve efficiency in the provision of public services. This led to the quest to find new innovative methods of delivering public services. Not surprisingly, the public sector has turned to the use of market mechanisms to bring about both the efficiency and the funding required to change public services. This paradigm move has resulted in the widespread utilisation of PPPs and other forms of private–public collaborations throughout the world. The use of PPPs is now widespread in all types of public sector, including housing, health, IT, energy, waste, water, etc.

Also, legislation to cope with such rapid expansion of PPPs has evolved globally in order to create and maintain contractual frameworks. According to McKinsey and Company (2009), one of the key rationales for PPPs evolution is 'the recognition that many challenges do not fall neatly into either the public, civil or private sectors; instead, they require joint efforts from all sectors. For example, efforts to promote economic development are more likely to succeed when they include both the public and private sectors'. Boeuf (2003) attributed the evolution of PPPs to three aspects:

- *Volume*: PPPs increase the volume of investment in projects. This is not possible without private sector contribution as the public sector does have the finance to fund the required services.
- *Efficiency/quality*: the private sector has developed the capacity and experience to provide highly efficient services at lower cost.
- *Competitiveness and fair competition*: this is part of market mechanisms: the encouragement of competition to improve efficiency. It is thought that providing liberalisation and deregulation will lead to market competitiveness, thereby adding significant value to the delivery of public services.

One of the most rehearsed arguments for the adoption of PPPs as one of the main drivers for public services delivery is advocated by Palmer (2009): it 'can help alleviate chronic underinvestment in capital intensive projects. They can serve as a vehicle for the injection of private sector financing while allowing government to maintain their fiscal targets and avoid taking on additional debt'. For example, the EC (2010), in its strategy for Europe 2020, advocated the use of PPPs as one of mechanism to eleviate the chronic shortage of finance to fund public projects. It states it is necessary to 'pursue new avenues in using a combination of private and public finance and creating innovative instruments to finance the needed investments, including public-private partnerships'. It is clear from this passage that the public sector uses PPPs as a leverage mechanism to get around budgetary constraints. This view was supported by UK Treasury rule budgetary control in the 1990s: 'The golden rule: over the economic cycle, the Government will borrow only to invest and not to fund current spending' (HM Treasury, 1995).

From the public point of view the attraction of PPPs is based on:

- The need for innovative solutions to meet the ever-evolving needs of public services.
- Public infrastructure and services suffering from underinvestment.
- Increasing public efficiency by using private sector contracting and financial expertise.
- Spreading the cost of providing public services over a long period of time.
- Providing better value for money in the provision of public services.
- Provision of better maintenance and operation of public assets.

From the private sector point of view, PPPs allows:

- Diversification in a portfolio of investments.
- A stable business model, i.e. using long-term relationships will help to avoid boom and bust cycles.
- Managing project risk efficiently through innovative contracting methods, i.e. special purpose companies.
- Integration across all specialities of a company to provide whole life-cycle solutions.
- The opportunity to change from contractor status to investor and service provider, i.e. act as developer, operator and investor.

Despite the above benefits, there are many opponents of PPPs who argue that PPPs do not provide value for money because the cost of borrowing is substantially lower for the public sector than it is for the private sector. Also, there is insufficient risk transfer to the private sector to justify the perceived added value for money (Hall, 2008). Opponents also argue that the risk of additional costs of time and budget overruns should be added to the cost of borrowing before a value for money comparison is carried out. Another aspect of PPPs that has attracted criticism is the complexity of the financial transaction and accounting procedures, which lack clarity, accountability, and are costly to run. Some opponents also claim that private sector providers should not gain large profits for delivering low-risk public services, and they argue that the excessive profit would be better invested in public infrastructure. Adversaries of PPPs also dismiss the notion that the private sector brings innovation and efficiency to public services' delivery. They cite the fact that the evidence from past PPPs projects shows that R&D investments have not increased. Hall (2010) argues passionately that PPPs contracts are subsidised: 'apart from this lobbying, governments and international public sector bodies are supporting PPPs through substantial state aid, in the form of privileged access to government guarantees or public finance'. He goes on to suggest that, for example, the EU Commission 'has already developed a number of "financial engineering" instruments to help PPPs, by making it easier for them to use EU (public) money from the cohesion funds'. Our view on this is that PPPs are still evolving as a credible alternative for delivery of public services. There are shortcomings, but if these are addressed properly this will enable them to mature into a viable alternative procurement route. To arrive at this status, partners need to tackle the issue of risk pricing and transfer through new innovative, equitable and ethica methods. Also, the question of efficiency and value for money should be based on credible assumptions and analysis. It is also imperative that the public sector must not subsidise PPP contracts in any form or shape. We must also not forget the necessity for more public finance public services. It must be remembered that the sole purpose of partnering is to create mutually beneficial relationships and equitable value creation between all participants in a project.

1.3 Key Stages in the PPP Procurement Process

PPP is now widely used as an alternative procurement method for public services worldwide. Hence, public authorities and private institutions in different countries have produced their own guidelines and frameworks for the implementation of PPP processes. Hence, the reader may find slight variations in the content details of a typical PPP project life cycle. However, all PPP projects share the generic strategic life cycle outlined in Figure 1.1. As shown in the figure, the strategic life cycle consists of four main stages. These are:

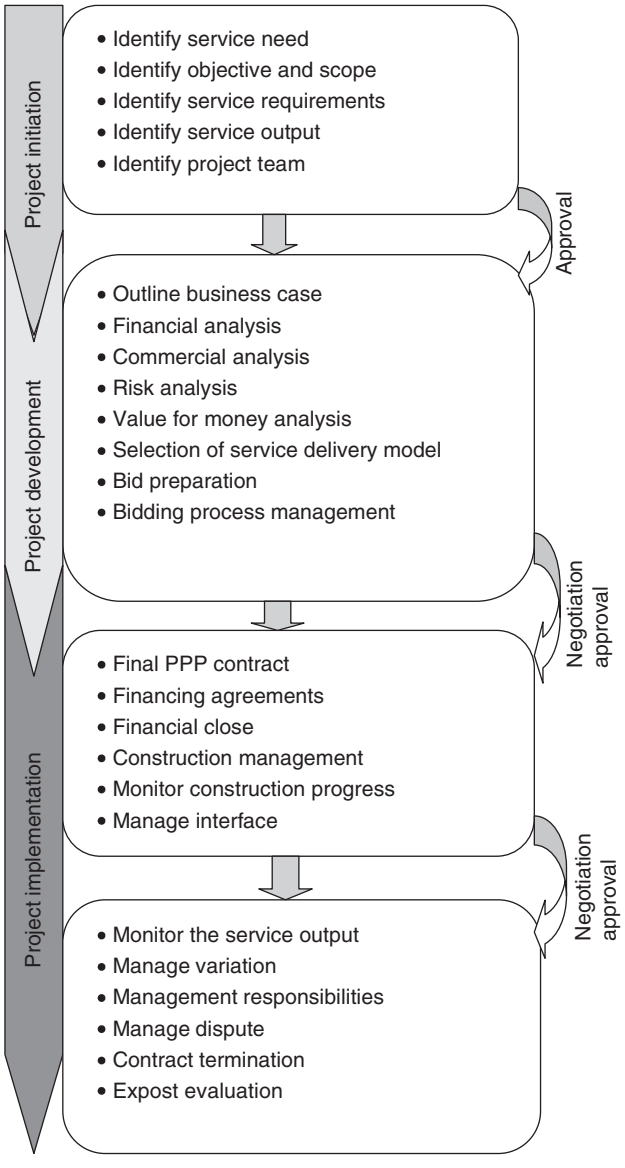

Figure 1.1 A generic PPP project cycle.

1.3.1 Strategic Analysis

This is the stage where the need for service procurement is established. In the UK at least this strategic analysis process consists of the following key phases:

- *Establish service need*: the analyst is required at this early phase to identify the extent of need for a particular public service and how this maps onto the public authority's priorities. In doing so, the strategic analyst is expected to focus on service output specification requirements rather than on input requirements. The analysts are normally encouraged to consider broad, or scenario, needs for the services in question over a long time horizon. They are also required to take into consideration any possible future scope for innovation in the provision of the services.
- *Optional appraisal*: Projects are appraised at very early stages by the procuring authorities. The purpose of the appraisal is to check the economic and commercial viability of the proposed service development. It is also necessary to demonstrate that the proposed development adheres to the goals of value for money and affordability agenda objectives. Normally, the service output key assumptions are used to derive the appraisal process and develop capital cost plans. The financial appraisal is the ultimate determinant of affordability and it is based on developing an assumption for revenue costs, income projection and sensitivity testing; whereas the economic appraisal determines if the proposed service development via PPP mechanisms provides value for money to the tax payer. Service provisions are ranked based on the economic appraisal in terms of the relative cash impact of the scheme on the procurer's overall financial status, taking into account the timing of cash flow occurrence and the cost of capital. There is also the issue of commercial appraisal, which deals with the procurement process, the resulting contract and its key elements, risk transfer and payment mechanisms. The ultimate outcome of this process is to evaluate financial risk, commercial risk and benefits to determine the base-line for taking the decision to proceed with the project via the PPP route or other alternatives. If the outcome of the appraisal is approved by the appropriate authority concerned, an Outline Business Case (OBC) will be drawn up to ascertain proposed project benefits.
- *Outline business case*: the OBC will define service requirements in detail, based on service output specification. The content of the OBC includes the pricing of service output specifications, option appraisal and a public sector comparator. The OBC will also examine in detail whether the project should be financed and provided by the private sector or public sector. It does this by comparing the PPPs option with a theoretical Public Sector Comparator (PSC). The outcome of this economic and financial appraisal will feed into the cost computation at this stage. However, the cost plans developed at the appraisal stage must be updated to reflect the more detailed design information that emerges from the outline design. All cost benefit analyses are carried out and approved at this stage. In most PPP frameworks, approval is obtained before proceeding to the next stage.

- *Project development*: as explained above, an outline business case is developed before the announcement of tenders. The outline deals with objectives, desirable outputs and benefits of proposed PPP projects.

The project development phase is associated with the assembly of an effective and qualified team to oversee and manage the procurement process. The team should be composed of multi-skilled and experienced negotiators who have been involved with, and have the skills to deal with, the private sector. The team should include experts with knowledge of how to deal with procurement regulatory systems. This is imperative for the successful completion and capture of value for money in PPP projects. It is very common that external advisors with previous experience in PPPs are appointed to assist in-house teams in providing good legal and financial advice. Usually, the procurement team is led by an experienced manager, who represents their interests and acts as the project's focal point for its day-to-day management. The procurement team is usually organised around the procurement functions, such as finance, legal and technical groups. It is accepted that at this stage the final approval for the project will be sought from the appropriate authority.

The outcome of this stage will be the issuing of an invitation for expression of interest for project tender. The key tasks for the team at this stage might include (Boussabaine 2007):

- Setting timetables for all stages of the procurement process.
- Monitoring progress.
- Negotiating the deal.
- Drawing up the contract.
- Resolving problems as they arise.
- Investigating the market for the services in question with a view to developing a procurement strategy of how to present the project to the market.

1.3.2 Tendering

The procurement process begins with the approval of expressions of interest from bidders. In EU counties, this will be followed by the advertisement of the project notice in the OJEC. At this stage it is expected that the procuring authority will produce a marketing brief, describing the project and the form of procurement in more detail, and a preliminary selection questionnaire. Those documents are sent out to all those bidders who have expressed interest in the project. The pre-qualification process is based on the information from the returned questionnaire and it is normally evaluated against a predetermined set of criteria. The outcome of the evaluation is the invitation of a number of preselected bidders for further discussion and interview regarding their bid proposals. Based on the outcomes of these interviews and discussion, the procuring authority will select an appropriate number of bidders to be issued with the Invitation to Negotiate (ITN) documentation. The procuring authority may conduct further interviews with the bidders if

necessary. The invitation to tender documentation is exhaustive, and it is normally thoroughly checked and cross-checked to reduce the need to issue amendments during the tender period as well as the need to clarify a tender during appraisal. The ITN documentation usually includes the following sections (Boussabiane 2007):

1. *Instructions to negotiate*: includes information about the procurement process, compulsory items that have to be considered or included in the bid, and the evaluation criteria for selecting the preferred bidder.
2. *Building design output specification*: this document lays down the design requirements for building assets and the associated accommodation concerning the operational management and its relevant policies, as well as the operational and capacity requirements.
3. *Building service output specification*: this comprises all performance requirements and quality standards for the estates and management service; catering services; caretaking, security and safety services; and the equipment provision and maintenance services.
4. *Contractual framework*: this is the basis on which the contract will be awarded, such as the standard contact model (HM Treasury 2007).

The bidders return the ITN by a predetermined date. These ITN documents are then used as the basis for selecting a preferred bidder based on selection criteria such as the legal, financial and technical aspects of the bids. The purpose of the evaluation is to compare the offerings of each bidder against the affordability limits in the outline business case and to test assumptions about value for money. In doing so, the procuring authority is expected to seek further clarification from the bidders. Depending on the outcome of the evaluation, one of the bidders will be awarded preferred bidder status and another bidder might be selected as a reserve bidder. The selected bidder, and in some cases the reserved bidder, will enter into contract negotiation.

The ultimate aim of the negotiation is to reach financial closure as soon as possible, based on a sound legal framework. The existence of contractual standardised frameworks and processes worldwide, which have considerably improved, and reduced the length and cost of, the PPP bidding process, helps attain this goal. NAO (1999) produced a list of recommendations regarding how a procuring authority might be able to reduce the length of the bidding process in PPP projects. The items on the list include:

- Demonstrate a clear purpose and a strong vision of the desired outcomes from the scheme.
- Establish a simple output specification and eliminate or minimise changes to specification.
- Get early commitment to the scheme from key stakeholders.
- Develop a project management structure that allows for an appropriate level of delegation to key officers and is integrated with existing decision-making processes (as discussed above).
- Establish a robust project plan with project milestones and monitor progress against the plan on a regular basis.

- Establish and agree the key contractual terms, including payment mechanisms and risk transfers, prior to issuing the invitation to negotiate, in order to force bidders to indicate their position early on in the negotiation process.

1.3.3 Contract Completion

There is a considerable workload, for all parties, between preferred bidder selection and the contract award stages. Hence, a realistic and achievable timetable with key milestones should be agreed upon at the earliest opportunity so that the contract negotiation does not extend beyond what is necessary. The contract completion stage is used to negotiate and refine the key commercial and financial terms between all parties. Formalisation and standardisation of PPP contract and bidding process documentation will allow bidders and clients to limit negotiations to the key commercial terms, rather than technical ones. Normally, at this stage, the partners in PPP projects produce a detailed negotiation brief and the key points that need to be discussed with each relevant contracting party. The issues that are normally included in the negotiation briefs include risk allocation, variation, payment mechanisms, etc. Inconsequential issues should be left until essential matters have been negotiated. Both commercial and financial contracts are negotiated at this stage. This can be done in parallel or in tandem. If commercial and financial agreements are negotiated as one package, a quick negotiating result can be reached with minimal impact on the overall contract. If this is not possible, usually the financial and commercial close of the project aspect will be negotiated separately.

At this stage, it is expected that project funding bodies will appoint financial experts, usually accountants, and technical experts to carry out due diligence on the bid. Financial experts will audit the financial model for consistency, accuracy, sensitivity and so on. Technical experts usually carry out audits on the construction programme and maintenance proposals. If the funders are satisfied with the outcome of the auditing process, the concerned parties will then be in the position of closing the deal. It is normal practice at this point of the project procurement that the unitary charge is fixed by reference to base rates. If all of the above issues are resolved, then the final outcome will be the execution of the contract and financial close.

1.3.4 Project Operation and Contract Management

The operation phase of PPP contracts lasts throughout the project concession term. By this stage, the mechanisms to manage and control the implementation of the contract have already been agreed at the financial close stage and embedded in the contract terms. Once the project agreement is signed, the parties responsible for implementing and managing the contract will trigger the mechanisms for managing its progress. The process starts with monitoring of the programme, budget and quality of construction at the early stages of project

implementation. During the construction phase, the work is usually inspected regularly by the independent tester and progress observed by representatives from the client's organisation to ensure that the building meets agreed contractual technical requirements. At the construction stage, the provisions relating to time control and delay events normally follow the standard form of project agreement. It is the responsibility of the provider to complete the PPP project on time and, until the project starts operation, he will not receive any payment. Time/cost overrun risks (except in the case of delay events and/or any changes approved by the client) in PPP projects are normally transferred to the private sector. Once the construction process is complete, the commissioning process will start. The procuring parties normally form a commissioning team, comprising different managerial and operation skills and users of the new facilities, that is responsible for bringing the new facilities smoothly into operation. Arrangements for commissioning might include (Boussabaine 2007):

- Preparation of commissioning and services planning, including risk management and operation strategies.
- Preparation of handbooks and operational guides for operating the new facility or service.
- Detailed equipment installation schedules.
- Training and induction for new facilities.
- Set up of service PPP monitoring team.
- Set up of evaluation procedures and strategies.

Once the above processes have been completed then the operation of the project is kick-started. Operational and maintenance performance play an important role in the procurement of PPP facilities. Normally, the project agreement sets out the process and principles for measuring the delivery of facilities management services by which technical and financial performance measurement systems will operate. PPP contracts are based on 'self monitoring' in that the PPP provider is responsible for providing and reporting on quality service aspects. However, the procuring authority has its own team to lead supervision and monitoring of the provider's performance in terms of meeting the required standards for the availability of the PPP facilities and the delivery of FM services, to confirm satisfactory delivery of the contract obligations. This information is then used as the basis for approving regular contract payments to the PPP provider. The procurer has control over operating cash flow through payment deductions for underperformance; financial performance also plays a pivotal role in PPP projects. In PPP projects, the lenders have great control over how the cash flow of the project is used and distributed during both the construction and operation periods of the concession.

1.4 Financing PPP Projects

PPP projects are financed, completed and executed under a stable legal framework. A typical framework is project finance, which is defined as the creation of a legally independent project company, sometimes referred

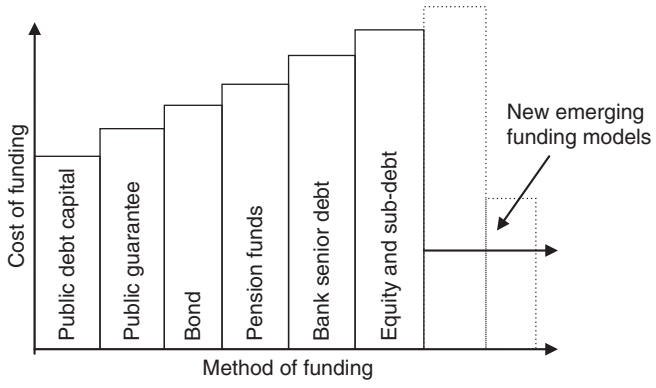

Figure 1.2 Some PPP funding instruments.

to as a Special Purpose Vehicle (SPV), financed with non-recourse debt for the purpose of investing in a capital asset, usually with a single purpose and limited life (Esty 2003). The creation of the SPV entity amounts to risk management via organisational form. In the majority of PPP projects, the SPV is capitalised up to 90% with senior debt and the remaining 10% is capitalised with equity contribution from investors. The funding of a PPP is based on the theory of non-recourse beyond the SPV. This is necessary in case the SPV goes bankrupt; the sponsor has no right to recover any losses from any other parties. Thus, project finance is a risk-sharing tool for the private sector and is based on the principle of non-recourse financing for highly capitalistic projects. The idea is very simple: the private sector invests money in a PPP project and seeks an equitable return as remuneration of the equity as well as for carrying the risk. However, this sort of project finance is driven by large teams of lawyers, bankers and other advisory teams necessary to reach a legal agreement and create the SPV. This makes the project finance option very unrealistic for small projects. From 2008 to date, the PPP market has been affected by the worldwide financial crisis. This has resulted in the public sector seeking better ways of financing projects and balancing risks between PPP partners (TIF 2011). For example, the UK reviewed PPP procurement with the aims of finding a system that was less expensive than the current one and diversifying the sources of funding to include pension funds and even contributions from the public sector (Treasury Committee 2011). The Committee found that the current funding system is very complex and relies extensively on advisors. The Committee also pointed out that the cost of finance has increased due to the financial crisis (Parker 2012). Figure 1.2 shows typical funding instruments available for PPP projects. As can be seen from the figure, there are several sources of funding. Each source of financing will take differing levels of risk and have different financing terms attached to it (Yescombe 2002). Normally, PPP projects are funded from a combination of these sources.

1.4.1 Senior Debt Funding Principles

The source of this type of funding is bank debt and bond issuance. It is called senior debt because it must be repaid before equity or subordinate debt. This debt is referred to as senior (non-recourse) debt where the bank funding liability is non-recourse beyond the SPV; that is, in the event of the SPV failing, the bank has no rights to recover losses from any other party. The debt is normally issued by large commercial banks, either individually or through syndicates. The latter is preferable from a risk point of view. Senior debt can be drawn down as required and there can also be a standby facility to be called upon if required. In the UK, senior debt is normally priced with reference to the London Inter Bank Offered Rate (LIBOR). Pricing can be through either the variable interest rate or fixed rate. It is the responsibility of the fund arranger to put together the best deal possible. The risk of the PPP project to the senior debt issuer is normally commensurate or reflected in the pricing of the debt. Thus the paradigm of passing down risks from SPV to relevant subcontractors. To achieve the best value for money from the investment, the risk of loss for senior lenders is mitigated through contract terms, such as step-in provisions and recovery in termination analysis scenarios. The senior debt issuer's repayment security is based on the future revenue stream from the PPP project. Hence, the issuer or lender uses an extensive analysis to assess the viability of PPP projects' cash flows. Also, the lenders exercise significant control and monitor the operation of the SPV and its cash flow. Normally, senior lenders use the following financial ratios to exercise their control over SPV:

- ***Debt service coverage ratio (DSCR)***: DSCR is one of the key indicators of the creditworthiness of a project. A measure of the ability of a project to service its debt, it reveals the relationship of annual cash flow to the amount of debt outstanding. DSCR is the ratio of cash flow available in any period to the level of cash needed to cover the debt repayment (principal and interest). The ratio is computed on a yearly basis to provide a continuous view of the project's ability to service its debt.
- ***Loan life cover ratio***: this concerns the present value of all future surplus cash flow. Note that the present value must be discounted at the loan interest rate. Note also that all reserve account balances are added to the present value and the total is divided by the capital outstanding on the debt at the test date.
- ***The debt to equity ratio***: Lenders and investors use the relationship between equity and debt to evaluate financial risk. The debt to equity ratio indicates how much the project or SPV is in debt or leveraged and provides a window onto how strong the project finances are. A high debt to equity ratio indicates that the project may be overleveraged, and also that the project is financially risky. If the level of debt to equity ratio is low, this implies that the project might generate less profitability to investors due to the fact that the profits are shared by equity investment in the project.

- ***Project life cover ratio (PLCR)***: PLCR compares the net present value of cash available over the remaining project life with total loan balances at the time of testing, and gives the sponsors reassurance as to their likely value of return. The PLCR value is usually greater than the LLCR. PLCR is computed using the value of a project's cash flow available for debt service until the end of the project divided by the principal outstanding.

1.4.2 Junior Debt

Sometimes this debt is referred to as subordinated debt. Basically, this is a layer of debt between the sponsors' equity or subordinated debt and the senior debt. However, it ranks above equity both for distributions of dividend and for liquidation if this occurs. It is junior because the senior debt lenders are entitled to repayment of their interest and principal before the lenders of junior debt. Hence, it has less security than the senior debt and has a higher rate of interest. This type of debt is sometimes used as a proxy for risk reduction to senior debt, but is not always used in PPP projects. Junior debt is usually formed from:

- Mezzanine loan tranches: provided by banks and other institutions like insurance fund holders. Usually, these are for short durations and are more expensive to service.
- Mezzanine bond issuances: This type of funding interest on a loan is paid during the term of the loan and principal at maturity, i.e. at the end of the loan period.

1.4.3 Shareholders' Funds

This is also a subordinate debt and is normally referred to as equity. It is simply an investment by SPV in exchange for ownership and earnings after all other investors (e.g. debt-holders) have been paid. The sources of the funds are sponsors and shareholders. It represents the risk and liabilities of the SPV. It is possible to sell these equity shares after the project is operational. In fact, most contractors and other investors sell on their interest instead of taking smaller, longer-term dividends which offer investors lower-risk and guaranteed returns. This attractive certainty of return has led to the development of a secondary market in PPP projects and consequently pushed up prices. It is argued that the early sale of equity by the holders can undermine the value for money analysis that is conceived at the early stages of PPP projects.

1.4.4 Funding Concepts

1. **Debt term**: this concept refers to the duration of senior debt. The duration of the debt varies from project to project. But most PPP projects are procured around a 20–30 year debt term. Also, in most PPP funding

agreements there is a requirement for a tail between final repayment of senior debt and project finance expiry or end of the PPP contract, during which the debt service continues to be paid. Sometimes it simply means residual fund. This is important from the debtors' point of view in the sense that, if the project gets into revenue difficulties, then there will be enough revenue at the end to pay off the debt. The length of the tail depends on the degree of risk associated with the project revenue. The greater the risk the longer the tail period and consequently the higher the debt service will be.

2. **Reserve accounts**: contain a separate amount of cash to service debt or maintenance payments. They are created to provide additional financial support and short-term liquidity for the SPV. Normally, they are funded from the CAPEX budget and controlled by the lenders or trustees.
3. **Term loan tranches**: normally, a tranche is related to non-senior debt financiers with a different margin and term. It also refers to the tranches for funding CAPEX. These tranches are drawn down against the construction progress and certification of completion. By and large there is no repayment of debt during the construction phase, the interest due at the construction stage is capitalised, i.e. is added to the capital cost of the project.
4. **Standby, variation and change in law**: this is a funding reserve put aside in case of variation, e.g. in the contract terms and exchange rate, unexpected CAPEX escalation and general changes in law. The latter is related to issues that are associated with the project company, such as taxation.

1.5 Rationale for Value for Money and Risk Transfer in PPPs

One of the key benefits cited for procurement of PPPs is the transfer of whole life risks to the private sector. It is argued that this can only be achieved through long-term contracts. The long-term relationship is also viewed as a catalyst for bringing value for money to the public sector and realising potential investment returns for the private sector. The well-rehearsed argument is that best value leads to efficiency of public services delivery. This is based on the notion that the combination of construction, operation and maintenance contracts into one is looked at as a means of efficiency or value for money generation. The problem with the value for money agenda is that it very hard to convince the sceptics that the two opposite objectives – that is, the public sector seeking to maximise social benefits while the private sector is aiming to maximise profit – can be reconciled. Opponents of PPPs argue that they do not represent good value for money because the cost of borrowing to the public sector is much lower than the returns on debt and equity made by the private sector. However, proponents of PPPs argue that this view is too simplistic and is misconceived, and it ignores the benefits of value for money generated to the public sector through risk transfer and life costing savings. No one can argue against the fact that the public sector can finance projects at lower costs;

what is in contention is the notion that procurement of PPPs provides better value for money over the life cycle of the project, created through improved delivery of efficiency, performance and lower whole life costing. In our opinion, the existing test of value for money is mainly restricted to the financial aspects of PPP deals. The test ought to cover a broader range of issues that includes both tangible and intangible values. The following are the key drivers of value for money.

1.5.1 Life-Cycle Costing

In most traditional procurement routes the cost planning process is mainly used to drive the asset CAPEX budget. In contrast, it is a requirement of all PPP projects that they include all whole life-cycle costs at an early stage of project development. This usually includes life-cycle maintenance and replacement projection over the term of the PPP concession. Life-cycle costing is also used for scenario analysis in making design and construction choices to optimise upfront investment in CAPEX, life-cycle maintenance and operational costs. Despite these claims, currently no data is available to test the assertion that life-cycle costing over the PPP contract term delivers lower maintenance and operational costs. Also, up to now there have been no studies or data available to analyse the extent of cost savings. This may require a new transparency strategy on the part of PPP project operators to release data on asset performance so that life-cycle costing saving claims can be verified. This view is supported by the recent review of PPPs by the UK Treasury Select Committee (2011), who cast doubt on the notion that PPPs deliver benefits by taking into consideration life-cycle costing. The issue of the service life of an asset's components, in our opinion, is more important than the life-cycle costs.

1.5.2 Output-Based vs. Input-Based Specification

It is argued that the purpose and expected outcomes of public sector projects must be clearly defined. An output specification defines the performance standards to be achieved by the delivery of a particular service. It is assumed that the application of output-based procurement allows the use of whole life-cycle strategies for asset management. The idea behind this philosophy is simple: the concession or contract sets out targets and performance incentives and penalties.

1.5.3 Risk Transfer

It is believed that risk transfer improves risk management and can make PPPs more cost-efficient than traditional public procurement. However, a recent examination by the UK Treasury Select Committee (2011) suggested that a Design, Build and Operate procurement system, financed directly by

the public sector, could achieve the same benefits. The fact that the SPV fully carries construction risks as well as the majority of maintenance and operation risks suggests that the price of these risks must be incorporated somehow into the unit cost of construction and operation of PPP projects. Theoretically, this should lead to higher construction and operation costs of PPP contracts, more than if they were built and operated by the public sector. In an ex ante analysis of infrastructure projects procured under PPP, Blanc et al. (2006) found that PPP projects were more expensive in terms of unit construction costs than those delivered by the public sector. The authors stated that 'the construction costs under bundling are unambiguously higher than under unbundling, the difference being equal to the cost-saving investments'. The authors go on to suggest that 'construction costs are expected to be higher in PPPs than in traditional public procurement because of the explicit recognition and pricing of construction risks transferred to the private sector'. According to the authors, this discrepancy of higher construction unit costs in PPPs might be attributed to the fact that the SPV could have injected higher CAPEX to achieve greater operational cost savings over the long term. It could also have been a consequence of risk pricing and transfer.

1.5.4 Competition

In some instances, PPPs are used as an instrument to bring competition into the provision of public services, which increases efficiency gains, i.e., better quality and cost-effective delivery of services, better asset management, clearer output specification linked to performance measurement and on-time delivery of necessary public services and projects; although long-term contracts like PPPs could be viewed as anti-competitive due to their lack of short-term exposure to market discipline.

1.5.5 Performance Measurement and Incentives

Performance measurement is perhaps one of the most interesting aspects of PPPs. The use of quantitative and qualitative indicators to benchmark the quality and performance of public service delivery linked to payment mechanisms is a real innovation that was introduced to the public sector via PPPs. The output specification is necessary for both control and monitoring as well as for designing incentive-oriented payment mechanisms. In a PPP project, SPVs receive their income based on the usage of the facility, assuming that the service provided meets a range of key performance indicators that are stated in the output specifications. Linked to the payment mechanism are abatement clauses in the concession contract, which can penalise the SPVs for not providing the services at the agreed standards. Consistent lack of performance can lead to termination of the contract. This sort of incentive payment contingent on meeting performance targets is viewed as a creator of value for money.

1.5.6 Private Sector Management Skills

It has been suggested that the private sector will induce in public service delivery the ethos of (PWC 2005):

- *Vision and values*: the private sector is very effective in strategising for their businesses and translating this into goals and values that foster successful relationships among their core business units and external alliances. It is this connection between the strategic value of public services and asset development where the private sector can bring skills to provide added value.
- *Leadership*: it is believed that leadership in the public sector is weak and is not agile, especially in communication and cooperation between public authorities; whereas the private sector is skilled in negotiation, contract management and risk analysis.
- *Training and development*: the idea here is to increase the pool of experience, management appetite and skills in public sector management. This will help to improve their efficiency and capacity to manage and administrate complex projects.
- *Innovation*: it is well understood that the private sector is driven by innovation to improve efficiency and increase shareholders' value. Hence, using the innovative solutions and skills of the private sector will have an impact on the quality and effectiveness of public service delivery.

1.6 PPP Project Structure

The PPP procurement model is becoming increasingly accepted around the world as an effective option for delivering public services. From a contractual point of view, PPPs refer to a variant of contracts that range from contracting out public services to full privatisation (see Table 1.1). The scale and range of public–private partnerships are normally based on several factors such as ownership, risk sharing, duration of the contract, risk allocation, sharing of responsibilities, funding, decision-making power, etc. The full spectrum of public and private collaboration is illustrated in Figure 1.3. Probably the most widely used characterisation of partnerships is the transfer of risks to the party best able to manage them. The characterisation shown in Figure 1.3 builds on the classification developed by the British Colombia Task Force, the World Bank, the European Commission and the United Nation Development Agency (Infrastructure Canada 2007, European Commission 2003). As the figure demonstrates, the continuum of contracts runs from operating a simple public contract, with less risk transfer to the private sector, to running public services as a standalone business with maximum risk transfer to the public sector. In between these two extremes there are several possible collaborations through which the private sector can contribute to the delivery of public services.

Obviously, each contractual arrangement has its modality of risk allocation, funding and control. The risk allocation characteristics of the different forms of PPPs are demonstrated in Table 1.1. Hence, there is no single model

Table 1.1 Risk allocation according to PPP forms.

	Build Own Operate (BOO) Contract			DBFO Contract			Build Own Transfer (BOT) Contract			Design & Build			Management Contract		
	Public Sector	SPV	Contractor	Public Sector	SPV	Contractor	Public Sector	SPV	Contractor	Public Sector	SPV	Contractor	Public Sector	SPV	Contractor
Financial Risk		✓		✓	✓		✓			✓			✓		
Construction Risk			✓			✓			✓			✓	✓		
Technology Risk			✓			✓			✓			✓			✓
Sponsor Risk		✓			✓			✓		✓			✓		
Environmental Risk		✓			✓			✓		✓			✓	✓	
Commercial Risk		✓			✓		✓	✓		✓			✓		
Operating Risk			✓			✓			✓	✓					✓
Legal Risk	✓	✓		✓			✓			✓			✓		
Regulatory Risk		✓			✓		✓	✓		✓			✓		
Political Risk	✓			✓			✓			✓			✓		
Force Major	✓			✓			✓			✓			✓		

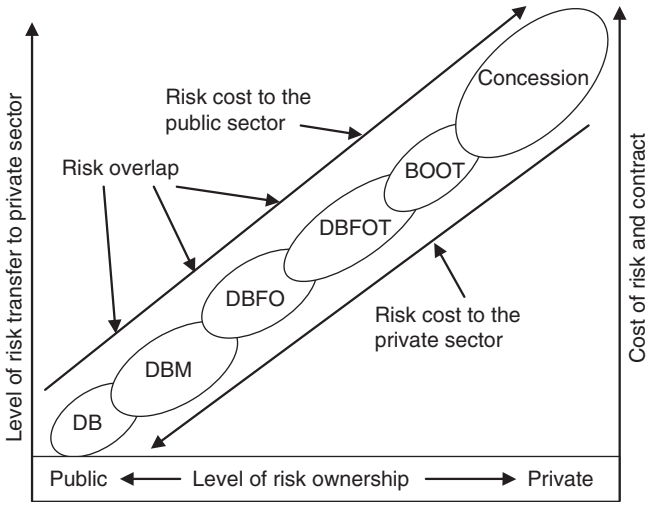

Figure 1.3 Public–private partnership contracts adapted from the Canadian Council for Public–private partnerships (Design-Build (DB), Design-Build-Operate (DBFO), Build-Own-Operate Transfer (BOOT)).

that fits all circumstances. The best contracting method should be selected based on the technical and financial features of the services or projects that the public sector wants to contract out. However, the efficiency of risk transfer and best value for money should also be used as main criteria for selection. Efficiency in procurement of PPPs is achieved by using whole life-cycle costing decision strategies and by allocating risks to the party that is best able to manage them. Risk allocation between the PPP parties has contributed to the evolution of contractual arrangements between a number of parties, including the government, project sponsor, project operator, financiers, suppliers, contractors, consultants and equity investors. As shown in Figure 1.4, a typical PPP structure can be quite complex, involving several contract arrangements and transactions. In the typical PPP model shown in Figure 1. 4, the parties to a PPP transaction are as follows.

1.6.1 Procuring Authority

The role of the authority – sometimes referred to as offtaker (when the authority buys back a product from the SPV) – is to define and grant specific rights to an SPV to build and operate a facility for a fixed period of time. In return, the government will purchase the services from the SPV through a long-term agreement. The government will pay the SPV an annual capital charge for the asset over the life of the contract and an annual O&M charge to the service provider. This is essential so that the SPV can recover the costs of construction, operation and maintenance. The payment by the government is subject to performance benchmarking and quality standards, with penalties imposed for any failure to maintain service standards on a continuing basis, as documented in

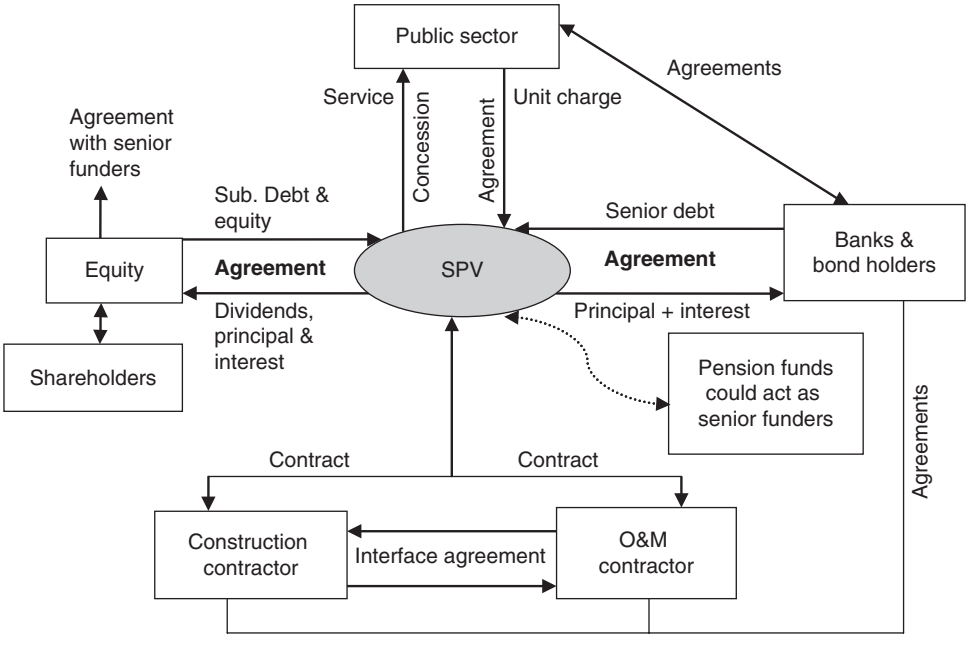

Figure 1.4 A typical PPP project contract structure.

the output specification. The procuring authority will require the PSVs to secure funding before bid submission. The authority could insist on the SPV carrying out a funding competition among lenders to achieve the best financing value. As shown in Figure 1.4, the procuring authority has a direct agreement with the senior lender. This creates financial liabilities to the government in any event of default of a public or private entity on non-guaranteed loans and loan guarantees provided to lenders. Figure 1.4 also shows that the government enters into a contract with SPVs through a project agreement, to provide a basis for the PSV's design, construction and operation (see the next section for further explanation). According to 4Ps (2007), the procuring authorities are responsible for managing and administrating the PPP contracts from the contract award stage to the end of the service periods. 4Ps state that the main aims of the PPP contract management are that:

- the local authority's agreed contractual position is protected;
- the agreed allocation of risk is maintained and best value is achieved;
- monitoring of the service provider's performance against the output specification is undertaken to ensure that the financial implications of any failure to perform have been taken into consideration and appropriate action taken;
- payment for the service is conditional upon the quality of performance of the service provider;
- services are delivered in accordance with the contract;
- continuous improvement in contract performance and service delivery is maintained.

1.6.2 Special Purpose Vehicle (SPV)

Typically, this a standalone company formed by the private sector promoters and equity investors. The purpose of SPV creation is exclusively to finance, build and operate a PPP project. The main structural feature of an SPV company is its limited managerial discretion to the project level, and its focus mainly on the project with regard to expenditure, investment and effort. SPV structure is created in a legal manner to encourage non-recourse against the promoters' businesses in the likelihood of project failure. Hence, SPV contractual arrangements are used as a mechanism for risk management. Risk management is achieved through a complex process of risk transfer to subcontractors, and treatment of accounting, fiscal, regulatory and financial transactions. Normally, PSVs do not hold risk themselves but subcontract the finance, design, construction, maintenance and services to other companies. In most cases, these companies are shareholders in SPVs. The key structural features of SPVs are (Cell 2012):

- Separate legal incorporation
- Costs more and takes longer to structure
- Equity is usually privately held and concentrated in a few shareholders
- High gearing, e.g. >50% debt
- Debt usually held by banks as opposed to institutions
- Contract extensive
- High transaction costs: 3–5% of amount invested but could be 10% for smaller or unique projects

What is striking from the above is how lightly PSVs are capitalised. Just 10% of equity is not much of a financial buffer to deal with complex projects if they do not work out as planned. In a PPP project, SPVs receive their income based on the usage of the facility, assuming that the service provided meets a range of key performance indicators stated in the output specifications. Linked to the payment mechanism are abatement clauses in the concession contract, which can penalise the SPVs for not providing the services at the agreed standards. Consistent lack of performance can lead to termination of the contract. This sort of incentive payment, contingent on meeting performance targets, is viewed as a creator of value for money.

As shown in Figure 1.4, the SPV will enter into several contracts. The most important of these is the project agreement with the authority. This agreement provides the framework under which the SPV carries out its obligations. There are two types of agreement: the offtake contract (under this contract system the SPV produces a product and sells it to an offtaker) and the concession contract (under this contract the SPV provides a service either to the government or directly to the public). The SPV will enter into a credit and hedging agreement with the senior lender. The hedging agreement will enable the SPV to fix interest rates on some or all of its debt and to limit its exposure to currency exchange if applicable.

1.6.3 Equity Shareholders

The majority of equity from investors in SPVs is from subcontracting companies. These are called contracting equity investors or, sometimes, subordinate debt holders. These investors will receive a profit from their construction and operation contracts as well as a financial return from their equity investments. There are also pure equity investors, such as equity fund holders and pension schemes, who are solely seeking a good return on their investment. In most, if not all, PPP schemes, the ratio of pure equity to subordinate debt is very minimal. This is because pure equity investors require a high return on their investments. The shareholders of the SPV will normally inject sub-debt/share capital into the SPV via a holding company. As shown in Figure 1.4, the SPV enters into a subscription agreement with the equity shareholders, which sets out the terms by which the shareholders are to subscribe for equity in the SPV. The equity shareholders will also enter into an agreement with the SPV in relation to their management, percentage of share ownership, distribution of profit, control, etc.

1.6.4 Senior Funder

The senior funder provides funds to SPVs under the terms of a loan agreement. The loans are to be paid in accordance with a loan repayment schedule based on an agreed financial model. This loan is referred to as senior debt and, in general, it is in the ratio of 90% senior debt to 10% equity. As described in the project finance section, the senior debt is sought either from a bank loan or bond providers. The details of the full term of the financing will only be completed after due diligence approval. It is also expected that the senior lender will examine and be satisfied with all other contracts that the PSVs enter into. The direct agreement between the senior lender and the government will allow senior lenders to step in or take over the project under very exact conditions specified in the PPP contract. The senior lender will also enter into inter-creditor agreements with equity and sub-debt holders. This is necessary to document the responsibility and relationship between the lenders and the SPV; and to set out the ground rules in case project performance does not progress as anticipated. The senior lender will also enter into a credit agreement with the SPV that sets out the terms of the financial deal including conditions, order of drawdowns, project accounts, voting powers for waivers and amendments

1.6.5 Construction Contractor

SPVs typically enter into a Design-Build Agreement to design and build the facility. The contractor is responsible for designing and building the asset and managing any related risks. The asset is transferred to the SPVs. Again, the contracting company is more likely to be from among the equity investors. In most cases, the construction contractor will in turn sub-contract some of the

work to fulfil their own contractual obligations. The construction contractor is expected to enter into an interface agreement with the operation and maintenance contractor and the SPV. This agreement is regarded as a way for the construction contractor to pass on risks to the O&M contractor. The interface agreement addresses the issue of the construction contractor's access to the site to undertake snagging and rectifying defects.

1.6.6 Operation and Maintenance Contractor

SPVs enter into a contract with the facility's management providers to operate and maintain the asset. The O&M contractor is also expected to enter into an interface agreement with the construction contractor and the SPV. The interface agreement should set out in detail what the O&M contractor is expecting from the construction contractor. In general, this is accomplished by the provision of a list of requirements as an appendix to the interface agreement.

1.7 Payment Mechanisms in PPPs

One of the key fundamentals in PPPs is the payment mechanism. There are several ways in which a private provider can be compensated in PPP procurement systems. These include charging users, e.g. road users, capital tax gain, grants and subsidies and payment from the government. The latter is the most widely used method by the public-sector party to allocate risks and give incentives to private providers. Under the PPPs, the modality of contracting the SPV receives a unitary charge from the asset usage by the public sector. The payment mechanism sets out the details of how payment and deduction are to be made to the service provider. The payment mechanism is linked to the output specification and performance measurement systems. The first defines the levels and terms under which the service should be provided so that the targets to be met are clearly understood by the contracting parties, whereas the latter sets out the systems and methods to be used to monitor the service being provided by the SPV as required by the procurer. The documentation of the output specification, the performance measuring system and the payment mechanism is normally drafted at an early stage of the procurement process and finalised before the financial close. Boussabaine (2007) reported on three main categories of payment methods, which are:

- **Cost-plus payment**: The procurer reimburses the provider for construction and operation costs plus a fixed – and in some case a variable – fee. The level of fee is usually tied to performance.
- **Fixed-price**: The procurer pays the private provider a fixed charge for a pre-specified service that must achieve agreed quality standards. In this arrangement, all operational risks (with some exceptions like change in law service specifications, force majeure, etc.) are borne by the facilities' contractors.

- **Incentive payments:** This system is based on a fixed-charge plus a variable payment that partially compensates for the costs incurred to the private provider. The contractor's repayment is based on the availability of the service and is usually computed based on an agreed formula for unity charge. Also, the private provider may be entitled to bonus payments for an extraordinary project performance.

1.7.1 Payment Principles

According to 4Ps (2007) the payment mechanism is at the core of the PPPs contract: 'The payment mechanism is at the heart of the contract, as it puts into financial effect the allocation of risk and responsibility between the local authority and the service provider'. Clearly this indicates that payment mechanisms are used as means of risk allocation to incentivise the private sector to deliver value for money to the public sector. This is the mechanism by which the public sector can ensure that the services' objectives are met. The key principles of a good payment system are listed by 4Ps (2007) as:

- Puts into effect service obligations
- Determines payment
- Incentivises good performance
- Fair and equitable to both
- Best value
- Establishes relationship
- No payment until services are available
- Single unitary charge for the service (incorporating availability and performance)
- Deductions for substandard performance
- Deductions reflect severity of failure
- No payment unless the facility is available

The above list noticeably stresses that the delivered services and payments are linked to the output of the defined services as stipulated in the output specification contract documentation. The above criteria dictate that the private sector is compensated based on service usage, availability and performance. If the above principles are followed, the private providers will be incentivised to perform and receive an adequate return on their investment.

1.7.2 Payment Process

On the whole, PPs agreements provide reference to payment, insurance, provider insurances, custody of the financial model, information and audit access, changes in law and variation procedures (Boussabaine 2007). In most PPP contracts the payment mechanism is based on the principle 'only pay for what you receive'. The payment is linked to performance, availability of assets, quality of services provided and sometimes to level of use. Thereafter, the provider executes

services as required by the contract. The private provider is required to self-monitor, record and report on performance. Based on his performance, the provider will submit invoices for payment. The procuring authority is expected to audit the performance of the service provider through a monthly monitoring meeting. In this meeting it is expected that the two parties negotiate and agree performance levels and actual payment due. The time-scale for this process is, by and large, outlined in the contract documents. Before payment is made, deductions due to lack of performance are carried out and computed in accordance with the agreed payment mechanism. Typically, payment to the service provider is made often a month in arrears with catch-up for adjustments. If the service provider does not deliver services to the required standard on a consistent basis, the procurer might require him to produce a remedial action plan to improve the services to the agreed standards. If the service provider fails to deliver then the step in procedure might be triggered by the project lenders. In complex and long-term contracts, it is expected that disputes may arise between the two contracting parties. These disputes are in most cases related to payment and monitoring of performance processes. It is accepted that the process of dealing with such situations, if they arise, is outlined in the contracts and should be followed in order to resolve the disputed issues. If, however, the dispute is not resolved it can be referred to an adjudicator. The long-term nature of PPP service provision contracts is very susceptible to variations and changes to services and procedure. If this occurs it will have an impact on the unitary charge. Typically, change can be due to change in law or variations to the contract, e.g. change in service type and quantity. The former change is obligatory in the sense that all private and public providers are required to deliver services in compliance with legislation and regulations. If this scenario occurs, the private provider will assess the cost implication and procedure for services change and submit the assessment to the procurer. If the two parties agree on the assessment then the changes are implemented and the unitary charge is amended accordingly. However, if the parties do not concur on the cost implication the matter should be referred to an adjudicator. If the service change is instigated by the procuring authority, then a change proposal is drawn up by them and submitted to the service provider. The service provider will then cost the change and update the service method statement. Then the two parties will meet to discuss and agree on a payment schedule and the variations that should be included in the unitary charge at the annual contract review. Further detailed discussion relating to invoicing and payment arrangements, manner of payment, disputes, late payments, amounts overpaid or wrongfully paid by a party dealt with in this subsection can be found in Boussabaine (2007).

1.7.3 Benchmarking and Market Testing

The aims and purpose of benchmarking market testing are described by 4Ps (2007) as 'to ensure best value and service performance is maintained for soft services. Benchmarking and market testing provisions should have been drafted into the contract. It is important to ensure that benchmarking or market testing exercises are carried out in accordance with the contract, and

that the agreed drafting properly reflects the needs of the service/project'. The O&M service agreement between the procurer and the service provider in some PPP contracts requires the components of the soft operational service provision to be market tested. Market testing is used as a vehicle to ensure that value for money principles are adhered to during the operation phase of the project. A market testing mechanism is used to adjust the payment for the service provision in the operational phase. The exercise of market testing takes place on pre-specified dates in the contract period. The service provider, SPV, will invite bids for a soft operational service component from a number of pre-selected providers. The lowest price obtained from the market will become the new price for the service component and the unitary payment will be adjusted accordingly (Boussabaine 2007). In the UK, guidance on benchmarking and market testing is published by PPP operational taskforce. The checklist of their guidance includes (4Ps 2007):

- Contract terms should be used to create benchmark processes.
- Preparation for benchmarking and market testing should take place at least nine months before the project operation.
- Benchmarking and market testing plans should be accepted by all parties prior to implementation.
- The testing process should allow for dispute resolution and clarification.
- The testing process requires skilled personal and adequate resources.
- If testing is carried out by a third party, then the party must be reputable and engaged in delivering services of a similar nature.
- It is advisable to used independent managers to oversee the testing and benchmarking process.
- Benchmarking data and its sources must be established and agreed upon.
- The quality of provided services must be consistent with the output specification and competitiveness.
- The cost of testing should be paid for by the service provider.
- Benchmarking/market testing must be based on 'open book' accounting procedures.
- Consultation on how to set and carry out market testing should be undertaken by all the service providers and other stakeholders.
- Output specifications need to be reviewed at regular intervals to make sure that future service requirements are accommodated.
- Modality for incorporating changes in post-benchmarking and market testing must be agreed.
- The unitary payment must revaluated following benchmarking and market testing.

1.8 PPP Emerging Issues

The recent financial crisis has prompted a review of how public projects are financed under the PPP regime. For example, the UK Treasury Select Committee of the House of Commons has instigated an investigation into PFI deals in order to examine if the contracts truly deliver value for money to the public authorities. Among the remits of the review is renegotiation of existing

contracts. The UK Treasury claims that £1.5bn of savings were realised over a number of years. The Treasury review aimed to create a new model of delivering PFI projects based on the following principles (HM Treasury 2011):

- is less expensive and that uses private sector innovation to deliver services more cost effectively;
- can access a wider range of financing sources, including encouraging a stronger role to be played by pension fund investment;
- strikes a better balance between risk and reward to the private sector;
- has greater flexibility to accommodate changing public service needs over time;
- maintains the incentive on the private sector to deliver capital projects to time and to budget, and to take performance risk on the delivery of services;
- delivers an accelerated and cheaper procurement process; and gives greater financial transparency at all levels of the project, so that the public sector is confident that it is getting what it paid for, and that the taxpayer is sure it is getting a fair deal now and over the longer term.

The above points are clearly aimed at reducing the cost of financing public projects. The cited reason for this is that the cost of funds to the public sector based on gilt yields are substantially cheaper than the finance terms under the PFI model. This imbalance could be rectified through equitable risk ownership. The public sector should own more risks so that the funding terms are optimal for both parties. One overdue reform is streamlining of the bidding process. The current system is cumbersome and expensive to operate. Also, there is the need for a transparent and accountable system wherein the project performance is publicly audited. Probably one of the most challenging concerns over the next decade is the supply of capital. Both private and public sectors need to work on creating innovative funding methods. Among the postulated methods is the increased use of pension funds in financing public projects.

1.9 Summary

This chapter has attempted to highlight the current mapping processes and concepts behind the PPP procurement system. PPPs are on the rise worldwide and have matured to a sound business and risk management approach for delivering public services. At least in theory, PPPs systems will deliver better quality, and more reliable and effective public services. Nevertheless, the issue of whether these services can be delivered cheaply by the public sector will remain an open debate for a long time to come. There is also a certain degree of scepticism regarding risk pricing and value for money analysis. One must recognise that the risks allocated to the private sector are naturally priced higher than if they were kept by the public sector. This problem could be addressed by developing contracting frameworks that enable cost transparency, better risk management, competitive pricing, cost benchmarking and auditing. The processes and principles by which technical and financial performance measurement systems would operate to measure the delivery of facilities management services also should be looked at and developed further.

References

Blanc, F., Goldsmith, H., and Valila, T. (2006), Ex-Ante Construction Costs in the European Road Sector: A Comparison of Public-Private Partnerships and Traditional Public Procurement. European and Financial Report 2006/01, European Investment Bank.

Boeuf, P. (2003), Public-Private Partnerships for Transport Infrastructure Projects, Seminar on Transport Infrastructure Development for a Wider Europe, Paris.

Boussabaine, A (2007), *Cost Planning of PFI/PPP Building Projects*, London: Taylor and Francis.

Cell, C (2011), The Role of Project Finance in Obtaining Sufficient Funding for Successful Completion of your Project, premier.nwpg.gov.za.

Deloitte (2009), Closing the Infrastructure Gap: The Role of Public-Private Partnerships. A Deloitte Research Study, July.

EIB (2005), Evaluation of PPP Projects Financed by EIB. Evaluation Report: Operations Evaluation. European Investment Bank, March.

Esty, B. (2003), The Economic Motivations for Using Project Finance. Working paper, Harvard Business School.

European Commission (2010) EUROPE 2020 A Strategy for Smart, Sustainable and Inclusive Growth, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF [Accessed July 2013].

4Ps (2007) A Guide to Contract Management for PPP and PFI Projects. www.localpartnerships.org.uk/4ps/ [Accessed July 2013].

Hall, D. (2010), More Public Rescues for More Private Finance Failures – A Critique of the EC Communication on PPPs. Public Services International Research Unit.

Hall, D. (2008), PPPs in the EU – A Critical Appraisal. Public Services International Research Unit.

HM Treasury (2011), The Private Finance Initiative, Written Ministerial Statement by Chancellor of the Exchequer, 15th November.

HM Treasury (1995), *Private Opportunity, Public Benefit: Progress the Private Finance Initiative*. London: HMSO.

House of Commons Treasury Committee (2011), Private Finance Initiative, 17th Report, Session 2010–12,Volume 1, HC 1146, August, London: HMSO.

Infrastructure Canada (2007), Report on Plans and Priorities 2006–2007 http://www.infrastructure.gc.ca [Accessed July 2013].

Malone, N. (2005), The Evolution of Private Financing of Government Infrastructure in Australia – 2005 and Beyond. *The Australian Economic Review*, 38(4): 420–30.

McKinsey & Company (2009), Public-Private Partnerships: Harnessing the Private Sector's Unique Ability to Enhance Social Impact.

National Audit Office (1999), Examining the Value for Money Under the private Finance Initiative, London.

Palmer, G. (2009), Public Private Partnerships: Literature Review – Draft. Aid Delivery Methods.

Parker, D., (2012), The Private Finance Initiative and Intergenerational Equity, www.if.org.uk [Accessed July 2013].

PricewaterhouseCoopers, (2005). Delivering the PPP Promise: A Review of PPP Issues and Activity.

Standard & Poor's (2006), Infrastructure Finance Ratings: Public Private Partnerships. Global Credit Survey 2006.

TIF (2011), Learning the Lessons of PFI: Securing Lifecycle Finance For Public Services, London: European Policy Forum.

Yescombe, E. (2002), *Principles of Project Finance*, London: Academic Press.