DO PUBLIC-PRIVATE PARTNERSHIP PROJECTS CREATE VALUE-FOR-MONEY IN THE PUBLIC SECTOR? THE SOUTH AFRICAN EXPERIENCE IN OFFICE ACCOMMODATION PROJECTS

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Declaration

I, Refilwe Leonard Mokanse, declare that the entire body of work contained in this research assignment is my own, original work; that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

R.L. Mokanse March 2017

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Abstract

The provision of adequate and well-maintained infrastructure is a common problem facing many developing countries, including South Africa. The emergence of public-private partnerships provides an opportunity for partnership between government and private sectors in the provision of infrastructure. However, there is contradictory evidence on the effectiveness of public-private partnerships in creating value-for-money for government. Value-for-money is defined as the savings that accrue to government because of implementing a project as a public-private partnership relative to a traditional government project. Public-private partnerships are believed to be cheaper than traditional government projects, and value-for-money is used as the main rationale to justify procurement of public-private partnerships over traditional government projects. However, there are mixed reactions from economists and policymakers on whether public-private partnerships can indeed achieve value-for-money. This research examines whether public-private partnerships have been able to create value-for-money for the public sector in South Africa. The research compares the difference in costs between public-private partnerships and traditional government projects to establish whether indeed public-private partnerships are cheaper than traditional government projects.

The focus of the research is on six completed office accommodation public-private partnerships over the past 13 years. The research compares value-for-money at the feasibility planning stage, the procurement stage and at the financial closure stage to determine whether value-for-money envisaged during planning was achieved at implementation. The value-for-money at each stage has been expressed as a percentage to enable comparison. Although value-for-money has been criticised because of the belief that public-private partnerships do not create value-for-money for the public sector, the research shows that public-private partnerships in the accommodation sector in SA have managed to create value-for-money.

Key words: value-for-money, public-private partnerships, traditional government projects, risk transfer, affordability.

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List of acronyms and abbreviations

CBA	Cost-Benefit Analysis
COT	City of Tshwane
DIRCO	Department of International Relations and Cooperation
DOE	Department of Education
DOEA	Department of Environmental Affairs (DOEA)
DR	Discount Rate
DTI	Department of Trade and Industry
HMT	Her Majesty Treasury
IRR	Internal Rate of Return
NAO	National Audit Office
NCPPP	National Council for Public-Private Partnerships
NDP	National Development Plan
NPV	Net Present Value
NT	National Treasury
OECD	Organisation for Economic Co-operation and Development
PPPs	Public-Private Partnerships
PSC	Public Sector Comparator
SA	South Africa
StatsSA	Statistics South Africa
TA	Treasury Approval
TGP	Traditional Government Project
TR 16	Treasury Regulations 16
UK	United Kingdom
VfM	Value-for-Money

CHAPTER 1
INTRODUCTION

1.1 INTRODUCTION

The provision of adequate and well-maintained infrastructure is a common problem facing many developing countries, including South Africa (SA). The emergence of Public-Private Partnerships (PPPs) as a vehicle for private sector investment into public sector provision of infrastructure services has provided a window of opportunity for partnership between government and the private sector to deliver much-needed infrastructure. The demand for infrastructure is increasing, while funds to provide and maintain infrastructure to facilitate economic activity have increasingly become scarce. Given the lack of resources and the poor state of infrastructure in SA, government does not only require to collaborate with the private sector in the provision of funds, but for expertise and skill to escalate infrastructure investments.

It was for this reason that the SA government initiated a process to develop a framework for PPPs in SA. The PPP framework has been in existence since mid-2000 in SA. The process started in April 1997 when the SA government appointed a task team consisting of various departments to develop a package of policies and legislative and institutional reforms to create an enabling environment for PPPs in SA. These processes were effected after pioneering PPP projects were undertaken by the South African National Roads Agency Limited (SANRAL) in the construction of the N3 and N4 national toll roads; the Department of Correctional Services in the construction of two maximum-security prisons; and various municipal and tourism projects. To date, SA has a strong PPP framework with 27 PPP projects completed (National Treasury, 2016).

The South African National Development Plan (NDP) specifically identifies infrastructure investment in sectors such as water, energy, telecommunication, transport and social infrastructure to grow the economy, reduce inequality and halve unemployment. In order for the SA economy to grow to required levels and achieve the targeted objectives, infrastructure investment as a percentage of GDP needs to grow from 21 per cent to 30 per cent (National Planning Commission, 2011). The NDP recognises the importance of partnership between the public and private sectors to assist in escalating infrastructure investment to the required levels. In 2005, the public sector infrastructure as a percentage of GDP was 7 per cent, and needs to increase to 10 per cent of GDP as per the NDP target (South African Reserve Bank, 2015). This also requires private sector investment in infrastructure to grow to 20 per cent in 2030 from 14 per cent in 2015.

Infrastructure investment is vital in the stimulation and production of goods and services, and the welfare of people depends on it. The production of goods and services requires transport systems to move machinery, equipment and raw materials, while the factories need information and telecommunication systems to communicate with the market and advertise their goods (Fedderke, John & Perkins, 2005). Infrastructure facilitates economic activities and enables a country to grow to its full potential. The NDP plan acknowledges that in order to grow the SA economy by the 7 per cent needed to halve unemployment and reduce poverty by 2030, the establishment of a competitive infrastructure base is vital. The NDP also concedes that government does not have funds to build infrastructure on its own; it encourages public-private partnerships procurement and crowding-in of private sector investments in the provision of infrastructure. In addition, the global financial crisis of 2008 has hindered on the ability of governments across the world to raise the revenue required to provide infrastructure. The NDP recognises that greater use of PPP financing will most likely result in better decisions and improved discipline, resulting in more rigorous assessment and accountability of infrastructure projects.

1.2 BACKGROUND

In SA, national and provincial government PPPs are regulated under the Treasury Regulation (TR) 16 of the Public Finance Management Act (PFMA). TR16 requires all institutions pursuing PPPs to seek treasury approval (TA) in four phases of the PPP process (see Appendix A). These approval processes include TAI (feasibility study approval); TAIIA (issuance of procurement documents to the market to pre-qualify bidders' approval); TAIIB (issuance of proposals to pre-qualified bidders, and comparing bids received with each other and with the feasibility study approval); and TAIII (negotiation with the preferred bidder and financial closure approval). TR16 also requires that if at any time after granting TAI, but before issuing TAIII, the assumptions in the feasibility study are materially revised in relation to value-for-money (VfM), affordability and risk transfer, the institution initiating the project must seek a revised TAI (National Treasury, 2004).

Municipal PPPs are regulated under the Municipal Finance Management Act (MFMA), no. 56 of 2003, Municipal PPP Regulations, and the Municipal Systems Act, no. 32 of 2000. In SA, municipalities are regulated by different legislation to PFMA regulated institutions, but follow a similar process to the TR 16. The only difference between municipal PPPs and PFMA-regulated PPPs is that instead of granting TAs after each milestone, municipal PPPs are issued with treasury views and recommendations (TVR), and approval is granted by the municipal elected council. Unlike PFMA-regulated PPPs, municipalities are not obliged to

consider TVRs issued by the National Treasury (NT) in making a final decision on whether to implement or not to implement a PPP. However, to date no municipality has ever ignored the views and recommendations issued by the NT.

The NT PPP manual distinguishes between two types of PPPs: one where the private sector performs an institutional function or delivers a service traditionally provided by government, and another where the private sector uses state property for its own commercial use (National Treasury, 2004). In the service delivery option, the private sector performs an institutional function in terms of the specified outputs, and substantial project risk (financial, technical and operational) is transferred to the private party (National Treasury, 2004). In the private sector use of the state property option, the private sector uses state property such as land, equipment or buildings to generate revenue, and in turn compensates government based on a pre-agreed payment method usually based on revenue generated. TR 16 also recognises hybrid PPPs, which combine the characteristics of PPPs and traditional government projects (TGP). For the purpose of this research, emphasis will be on the service delivery PPPs instead of the private sector uses of state property PPPs. This is because the private sector use of state property PPPs are usually very small, and the objective is often not a profit motive or to create VfM by government, but rather to increase use of underused state properties. Of the 27 completed PPPs, only 18 are service delivery projects, and of these, the focus of this study will be on six office accommodation projects completed between 2003 and 2015.

1.3 PROBLEM STATEMENT

PPPs are believed to be cheaper than TGP, and VfM is used as the main rationale to justify procurement of PPPs over TGPs. However, there are mixed reactions from economists and policymakers on whether PPPs can indeed achieve VfM.

1.4 RESEARCH OBJECTIVES

This research aims to examine whether VfM in PPPs has been achieved. The focus of the research is to analyse data on six completed office accommodation PPP projects over the past 13 years. The research compares VfM at the feasibility study stage (TAI), at the procurement stage (TAII), and at the financial closure implementation stage (TAIII) to determine whether VfM envisaged at planning was achieved at implementation.

1.5 RESEARCH QUESTION

In answering the question “Do PPPs create value-for-money in the public sector?”, the questions to be answered at the end of the research project are:

- Is the presumption that PPPs create VfM correct (Grimsey & Lewis, 2007)? The analysis of this question has been broken down by comparing VfM at the feasibility study stage (TAI), at the procurement stage (TAII) and at financial closure (TAIII) to determine whether VfM envisaged at the planning stage was achieved at the implementation stage.

- What are some of the lessons learned and used by other countries to improve VfM in PPP (Sarmento, 2010)? This has been done through a review of the current literature on PPPs.

1.6 DATA

Data on the six office accommodation PPP projects under review have been extracted from feasibility studies, treasury approval documents, procurement documents and PPP agreements sourced from the NT PPP unit database. The research compares VfM at the feasibility planning stage, the procurement stage and the financial closure stage to determine whether VfM envisaged during planning was achieved at implementation. The data has been analysed by comparing VfM at the various stages of a PPP using Microsoft Excel. The VfM at each stage has been expressed as a percentage to enable comparison.

1.7 SIGNIFICANCE OF THE STUDY

The ultimate objective is to produce a research paper that can shape the understanding of the PPP environment better, and identify areas of interest and concerns that will enable the NT to monitor PPPs better, and possibly improve VfM in the public sector. This research could potentially have an impact on policy formulation for PPPs, and enable the NT to restructure PPPs and save government billions of rands.

1.8 ETHICAL CONSIDERATIONS

Owing to the nature of this study, the data used in it is not publicly available, and the process of requesting permission to use the data has been completed to address ethical considerations. A letter from the head of the Budget Office at the National Treasury serves as proof that permission has been obtained. In addition, ethical clearance will be sought from the University of Stellenbosch Business School's ethical committee.

1.9 LIMITATIONS

It is important to note that the data sample is small because PPPs are relatively new in SA, with only 27 completed PPP projects to date. Owing to the unavailability of data on the other

20 projects, this research will only be looking at whether savings were realised by pursuing a PPP procurement option relative to a TGP on the six office accommodation projects (representing only 18% of overall PPPs undertaken in SA). The scope of this research will not include whether certain PPPs should have been undertaken or not; whether cost of raising finance for PPPs was excessive or not; and whether risk transferred to the private sector was excessive or not. Those topics can be chosen for further investigation by anyone interested in pursuing studies in PPPs.

1.10 CHAPTER OUTLINE

This research paper is organised as follows:

Chapter 2 analyses the theoretical framework and the empirical literature review of PPPs. As part of the literature review, the research focuses on lessons learned from other countries.

Chapter 3 provides an overview of PPPs in SA.

Chapter 4 focuses on the research methodology used, and ethical considerations of the research study.

Chapter 5 highlights the main findings, and analyses VfM data on the six office accommodation PPPs under review.

Chapter 6 comprises the conclusion, policy considerations and recommendations.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

Chapter 1 provided an introduction and background on PPPs, and Chapter 2 will provide the literature review. Chapter 2 is divided into three main parts: the theoretical framework, the empirical literature review, and the lessons learnt from other countries. The theoretical framework seeks to describe the theory of PPPs and why there is currently contradictory evidence on the effectiveness of PPPs in achieving VfM, while the empirical literature review examines previous studies on PPPs and VfM undertaken in various parts of the world. Chapter 2 concludes with the lessons learnt and used by other countries to improve VfM in PPPs.

2.2 THEORETICAL FRAMEWORK

In SA, for any PPP to proceed to procurement, it is important that it demonstrates quantitatively through a VfM assessment that it is a superior alternative to a TGP. The VfM method is meant to justify why a project should be implemented as a PPP rather than as a TGP, but many experts believe that the method used to calculate VfM is problematic, and has become an expensive ritual to rubber-stamp the choice of PPP projects (Shugart, 2008). Shaoul (cited in Sarmento, 2005: 20), on the other hand, states that VfM is associated with the three “Es”: economy, efficiency and effectiveness. This chapter discusses some of the major benefits and contentious issues regarding PPPs, issues that are discussed in various areas of the literature: value-for-money, risk transfer, determinants of value-for-money, discount rates, excess returns, cost of PPP financing, affordability, politics of value-for-money, accounting of PPPs, and lessons learned from other jurisdictions.

2.2.1 Difference between PPPs and TGPs

There are various definitions of PPPs, but for the purpose of this research report, the World Bank definition was used. The World Bank (WB) describes a PPP as a long-term contract between a private party and a government department or institution for providing a public asset or service, in which the private party bears significant risk and management responsibility (World Bank and Public Private Infrastructure Advisory Facility, 2013). In SA, a PPP is described as a long-term contract between a public and private sector institution where the private sector provides a service that is generally provided by the public sector (National Treasury, 2004). In a traditional procurement process, government pays for the capital and operating costs and carries the risks of cost overruns and late delivery. In a PPP,

the public sector buys a full set of services, including new infrastructure, maintenance and facilities management, and it pays for these through monthly/annual payments made over the duration of the project. The private sector raises its own capital, and because of the financial risk involved, it is motivated to provide a high level of services, as good returns on equity will depend on the quality of the services it delivers (National Treasury, 2004).

In a typical TGP, once the construction of a project is completed, the operations and maintenance budgets are subjected to annual appropriations debates which may be cut or postponed when there are fiscal pressures to reduce government expenditure (NCPPP, 2012). Delaying maintenance and repairs of facilities have dire consequences in cost escalations. However, in a PPP all services are bundled together with the PPP contract, and the private sector receives an annual payment that includes the maintenance and operations based on a specified duration as stated in the PPP contract. PPPs therefore guarantee maintenance and repairs of facilities compared to TGPs (NCPPP, 2012).

2.2.2 Value-for-money

There are many studies written on VfM in PPPs, and there is no consensus on the best way to evaluate whether PPPs provide a superior service when compared to the TGP procurement. VfM was developed to benchmark the cost of providing a service when the private sector is the service provider against providing the same service and quality of service with the public sector as the service provider. According to Burger's (2008) study conducted on behalf of the OECD, VfM calculation was first initiated in the UK. Many other countries such as SA, Australia, Canada, Ireland, Chile and other emerging markets have since adopted the VfM approach from the UK (OECD, 2011). The OECD study on VfM analysis states that 19 of the 20 countries surveyed apply VfM assessment to proposed PPPs. However, even in countries with an established PPP framework, the approach to and use of VfM analysis have evolved and are often a subject of controversy between economists and policymakers.

Besides the PSC and PPP comparison before and after bids are invited to evaluate VfM in PPPs, there are various ways to evaluating VfM in projects, namely: cost-benefit analysis (CBA) and reliance on competitive bidding process (Sarmento, 2010). Grout (2005) describes CBA as a new terminology used by governments to determine whether or not to undertake a project. Sarmento acknowledges that there is no simple answer to the best approach for evaluating VfM, but believes the PSC option is best for the following reasons:

i) It is the best way to know the full cost of a project when the public sector is an implementer of the project. This enables the public sector to make well-informed decisions on the best way to procure a project, serves as a comparator to private sector bids, and assists the public sector to negotiate the best possible deal.
ii) Improves transparency and accountability, especially because the public sector does not often have the skill to undertake a detailed CBA.

Grimsey and Lewis (2004) argue that compared to all VfM evaluation tools, the PSC is much easier to compile and thus ensure that all private bidders are subjected to a comparison of the same analysis and test. The study recommends the calculation of the PSC prior to evaluation of bids to serve as a comparator to private bids. In addition, developing a PSC option is not only important to serve as a comparator, but the study argues that it assists public managers to fully understand the project, its risks and how to deal with them.

Sarmento (2010) mentions three preconditions for using the PSC:

i) In countries where there are strong fiscal rules, the decision to implement a project as a PPP should not have been made purely to implement one off balance sheet. Otherwise the VfM does not serve a role in the decision to implement a project as a PPP or not. If a decision has already been made, the assumption is that the private sector is more efficient than the public sector, which makes the VfM exercise useless.
ii) The project must be affordable, and the public sector must be able to pay the private sector upon completion of the project over the agreed concession period.
iii) There should be a need for the project, and the project should present the most economical use of taxpayers' funds.

Economic theories of PPPs suggest that the difference between PPPs and TGPs lies in the characteristics of what differentiates them. These characteristics are grouped into three areas: ownership, bundling and risk transfer (Sarmento, 2010). Under a PPP procurement option, the private sector is given full control and ownership of the asset including designing and building the asset over an agreed concession period. This incentivises the private sector to be more efficient, and to use the best possible technology to provide goods and services, an incentive that would not be available without the ownership in the PSC option. PPPs bundle the construction and operations cost, and many argue that the bundling of services makes PPPs more efficient. This view is supported by Vaillancourt Rosenau (cited in Hodge & Greve, 2007: 11) whose study states that the public and private sector have qualities that if combined can lead to better end results for all.

The WB study states that many countries turn to PPPs, not necessarily because PPPs offer the best VfM over other procurement models, but rather because there is no other

alternative owing to financial and capacity constraints. Many governments believe that PPPs create fiscal space to implement infrastructure projects as opposed to using VfM analysis as the decision criterion to implement a project as a PPP or not. This renders the VfM analysis irrelevant as a decision-making tool (World Bank & Public Private Infrastructure Advisory Facility, 2013). In some cases, VfM analysis is applied to projects that have already been decided will be implemented as PPPs. This view is supported by Hodge and Greve (2007), who state that the rationale for undertaking PPPs begins before VfM with the broader macroeconomic concern to reduce public debt through the use of private funding for infrastructure before VfM. Hodge and Greve (2007) believe that private finance enables government to shift resources to other areas of priority, hence the rationale.

2.2.3 Risk transfer

Transfer of risk from public to private is a huge part of PPPs, and according to the PPP manual in SA, the risk is transferred to a party that is best able to manage it at the least cost. De Clerck, Demeulemeester and Herroelen (2012) state that allocating risk in this way is not a bed of roses. The study cites the Eurotunnel PPP project, which failed because of dangerous exposure to risk. Maralos and Amekudzi (2008) argue that there should be a balance between transferring risk to the private sector and the government's retaining it.. Transferring too little risk to the private sector usually makes the project too inefficient, and transferring too much makes the risk premium higher, resulting in higher unitary payments to the private sector. This in turn reduces VfM. Sarmento (2010) states that the measurement of the methodology of risk transfer is problematic because all possible outcomes cannot be predicted and weighed when the issue is uncertainty and not risk. In addition, the study states that because government does not budget for uncertainty, the PSC can only budget for risk that can be quantified, and not uncertainty. The private sector, on the other hand, cannot ignore uncertainty.

2.2.4 Determinants of VfM

A UK study conducted by Her Majesty's Treasury (HMT) found that there are six main determinants of VfM, namely, risk transfer, performance management and incentive, output specifications, competition and private sector skill. Other determinants of VfM include design innovation and lifecycle costs (Hodge, 2004). Another study conducted by Ernst and Young (2013) identified factors contributing to the increase in VfM in the UK, Hong Kong and Australia. Participants in the study were asked to rank factors that have contributed positively to VfM in PPPs. The results were different according to country; however, on a weighted rank, risk allocation was found to be the single biggest contributor to VfM, with output specification and a lifecycle approach being rated the second and third VfM drivers in

PPPs (Ernst & Young, 2013). Other drivers highlighted in the study include competitive tender processes and the private sector management skills.

In Malaysia, a study by Takim, Ismai and Nawawi (2011) showed that there are six criteria that are important in achieving VfM in PPPs: optimum whole life costs; innovation in operations; fitness for purpose; comprehensive specifications; compliance to time, and innovation in technology. This correlates with HM Treasury's analysis that indicates that optimum whole-life cost is the most important determinant of VfM in PPPs. Takim, Ismai and Nawawi (2011) state that environmental requirements can hinder the financing of PPPs, and can potentially reduce VfM in PPPs. It is therefore important to ensure that as part of the planning phase, PPPs address any environmental issues that may arise.

In Canada, VfM drivers in the Canadian model of PPPs include allocation of risk to the private sector, and bundled contracts that incentivise the private sector to deliver on time and on budget. This includes lifecycle costing of projects, operations and maintenance (Siemiatycki, 2012). Maralos and Amekudzi's (2008) study on Partnership Victoria in Australia states that quantitative VfM is very important, but should not be the sole factor in determining VfM in PPPs. The study argues that it is also important to establish the qualitative factor of VfM after bids have been received in order to establish the competency and reputation of the winning private bidder in delivering the project. In Partnership Victoria, the state agency responsible for the implementation of PPPs has established that the qualitative factors of VfM have the potential to break the attractiveness of a project, especially if the private party is unknown, and if the PSC is very close to the PPP procurement option.

The WB states that VfM typically includes a combination of qualitative and quantitative analysis. Quantitative analysis includes, among other things, ensuring that the proposed project is suitable for a private financing model (World Bank & Public Private Infrastructure Advisory Facility, 2013). Other suitable criteria includes predictable need for the service, a competitive bidding market, and commercial attractiveness. In SA, all PPPs have to undergo a need analysis as part of the feasibility study. Institutions undertaking PPPs have to prove that there is a concrete need for the project, that the proposed project aligns with the objectives of government; and that the institution proposing the project is acting within its mandate (National Treasury, 2004). In addition, all projects have to undergo socio-economic and economic analyses to prove that the implementation of the projects will result in net economic benefits to the society.

Nevertheless, even though there are various researches in the literature on the determinants of VfM in PPPs, there are no significant criteria that are more important than all the others in ensuring VfM in PPPs. What is important is to ensure that in looking at VfM, both qualitative and quantitative aspects should be considered. Equally important is to ensure that VfM is assessed throughout the PPP project cycle, from inception to implementation.

2.2 EMPIRICAL LITERATURE REVIEW

2.2.1 Value-for-money

According to the HMT analysis of 29 departmental projects in the UK, PPP demonstrated a 17 per cent cost saving compared to TGPs. The analysis also focused on specific Private Finance Initiative[1] (PFI) projects, and found cost saving of between 10 and 20 per cent. The report states that most of the cost savings were achieved through risk transferred to the private sector. Another research into 61 PPPs in the UK showed that all projects were within budget, and 89 per cent showed on time or early delivery (Grimsey & Lewis, 2007: 171-188). The UK National Audit Office (NAO) states that of the 10 sampled PPP projects analysed, 10 showed VfM. The NAO (2011) report states that before 2000, 81 per cent of authorities indicated that they viewed VfM positively in PPPs, with only 19 per cent indicating that PPPs have poor VfM. In Australia, a review of Victoria Partnership showed that there was an 8 per cent average cost saving across all PPP projects examined (Grout, 2005).

In Germany, an analysis found VfM of between one per cent and 25 per cent before tender and six per cent to 15 per cent after tender (Beck, 2010). A case study of eight PPP projects in the USA, Australia, the UK and Pakistan in a wastewater project, two hospitals, two prisons, and a rail and road project showed VfM ranging from nine per cent to 16 per cent (Grimsey & Lewis, 2004, 2007). The NCPPP (2012) paper on PPPs in the state of Virginia in the USA found that cost savings were between seven to 10 per cent over the life of the project, and that in one project, the cost savings were 24 per cent. The NCPPP (2012) White Paper on PPPs cites the Regional Transportation District FasTracks Commuter Rail Lines PPP project in the state of Colorado, where the winning bidder saved government $300 million, and the project was completed 11 months ahead of the deadline. A study conducted by the OECD (2011) shows that of the 20 countries surveyed, 12 reported that PPPs performed better than TGPs in relation to timely and on-budget delivery of projects.

An OECD (2011) study quotes several studies that were conducted in the USA, Australia and UK to establish whether PPPs create VfM compared to TGPs. The studies emphasised the comparison of actual costs and time spent on projects before completion. The 2011

[1] PFIs are the UK version of PPPs. In this study, PFIs and PPPs will be used interchangeably.

study states that in all countries, PPPs outperformed TGPs both in terms of costs and cost overruns, with a notable difference in costs. The OECD replicated the study conducted in the USA, Australia and UK in 20 countries to determine whether the situation was any different there. Respondents to a questionnaire were asked to indicate, based on their experience, whether PPPs perform better in cost and timely delivery compared to TGPs. Of the 20 respondents, 12 indicated that PPPs outperformed TGPs in delivering on time, with eight respondents indicating that they do not have data to establish whether PPPs were better than TGPs or not. With regard to cost remaining within budget, nine indicated that PPPs outperformed TGPs, one indicated that performance was the same, and 10 did not have data to establish whether PPPs were better than TGPs.

However, the effectiveness of PPPs has been disputed by other researchers such as Pollitt (cited in Hodge & Greve, 2007: 6). The study argues that there has been limited success in hospital and school PPPs compared to high success for prisons and road PPPs in the UK. Another study in UK, by the Institute of Public Policy Research (cited in Quiggin, 2004: 27), echoes expresses the same sentiments, that the benefits of PPPs appear to be mixed. The study states that VfM was achieved in prison and roads PPPs, but was less impressive in schools and hospitals. Bloomfield (2006) analysed long-term PPPs in Australia and found that they were supposed to save money for government, but achieved the opposite.

Hodge (2004) specifically mentions the Latrobe Regional Hospital PPP project in Canada that failed two years into the contract because of inability to understand the mixed funding models, and government did not realise that in reality it was unable to transfer some of the risk to the private sector. Bloomfield (2006) states that VfM is compromised in some countries because PPPs involve unique structures that require special waivers from competition laws in order to accommodate them. In some cases, VfM can be compromised if there are few bidders responding to a bid. Few bidders increase the chances of opportunistic behaviour, given that bidding costs for PPPs are usually high (Burger, 2008). De Clerck, Demeulemeester and Herroelen (2012) argue that a large number of bidders might in some cases force formidable bidders to be reluctant to bid, especially because of the reduced probability of winning, while at the same time they are faced with sunk costs of preparing for a bid.

Hodge and Greve (2007) state that there are contradictory results regarding the effectiveness of PPPs. This view is echoed by Bowman (cited in Hodge & Greve, 2007: 15) who states that in the UK, PPPs are viewed as “screwing the taxpayer”, and accuses the private sector of making supernormal profits. The report by Bowman specifically mentions the London Underground PPP as the “Fat Cat” where the private sector made supernormal

profits. The project was over budget and delivered late with cost overruns averaging 20 per cent (Hodge & Greve, 2007). Hodge's (2004) study also mentions the provision of electricity in Manila, where independent power producers were contracted to build power stations in a PPP contractual arrangement. The project led to a more than 200 per cent increase in the electricity price in Manila, resulting in outraged protests in the Philippines. Bloomfield's (2006) study is highly critical of PPPs, and specially mentions the Massachusetts Correctional Facility in the USA, for which the PPP option was 7.4 per cent more expensive than the TGP. Vining's (cited in Hodge & Greve, 2007: 11) study on five transport, water supply and waste-disposal projects in North America found that there was an imperfect partnership with high complexity, and the public sector often lacked the contract management skills to manage the private sector. It was also found that in poor performing projects, government was unwilling to pull the plug.

Shaoul (cited in Sarmento, 2005: 8) states that PPP policy is in favour of expansion of PPPs, and that VfM in PPPs rested entirely on risk transfer. The study states that risk transfer was almost exactly the same amount needed to tip the VfM analysis in favour of PPPs. It specifically mentions unsuccessful information and technology projects where the private sector was meant to take the risk, but government ended up doing so when the project collapsed. The study concludes that in reality, government ends up taking more risk than specified, and that PPPs are more expensive. In addition, owing to the unavailability of information, it is difficult to learn from past experiences.

On the other hand, studies including Vining and Pollitt (cited in Hodge & Greve, 2007:14) in North America, Australia and the UK conclude that despite the disadvantages of PPPs (lengthy PPP processes and costly bidding processes), the advantages outweigh the disadvantages, and PPPs have a positive impact overall. The studies state that PPPs delivered on time and on budget, with significant risk transferred to the private sector. In addition, even though some benefits available in PPPs are hypothetically available in TGPs, in reality these benefits would not have been achieved had it not been for the learning experience and lessons learnt from PPPs.

2.2.2 Risk transfer

Grimsey and Lewis's (2004) study states that risk transfer accounts for as much as 60 per cent of total savings in PPPs in the UK. The UK NAO found that 22 per cent and 24 per cent of PPPs experienced cost overruns and delays respectively, compared to 73 per cent and 70 per cent. The European Investment Bank (2005) report found that only three out of 10 projects financed by the bank showed delays and cost overruns, and the private sector took the risk instead of the public sector.

Siemiatycki and Farooqi's (2012) study on 28 PPPs undertaken by Infrastructure Ontario, a state PPP agency in Canada, shows that retained risk premium averaging 49 per cent was added to the PSC option to swing the VfM in favour of the private sector. A recent audit by the provincial Auditor-General in Canada reviewed the VfM for one of the first hospital PPPs, and found that the risk transfer in the financial documents was excessive. Another study conducted in the UK by Ball, Heafy and King (2003) on the risk workshop approach, found that the method of pricing and allocating risk leads to overestimating the risk retained by the public sector in the PSC option. In addition, the risk that could have been well managed in a PSC option was transferred to automatically swing the VfM in favour of the PPP option. Furthermore, no data are provided to verify the risk allocation, making it difficult to ensure that the data are accurate and have been validated.

In PPPs, the private sector maintains assets over the term of the project and for that reason, the private sector is forced to be creative in the design and construction of the asset. However, Grout (2005) argues that when the private sector transfers the asset to the public sector at the end of the PPP term, it compromises on the quality of equipment as the transfer date approaches. A different matter of contention is that assessing transfer of risk is a difficult task given the legal complexity of PPPs. In many large PPPs, the government bears more risk than is indicted in the contract because of political pressure to bail out large PPPs that are too big to fail (Quiggin, 2004). In a counter-argument, Grimsey and Lewis (2007) state that PPPs force upfront consideration of the long-term view, and contractors are forced to think long-term because they cannot walk from the obligation to maintain the asset until it is transferred back to the government in a pre-agreed good condition.

The recent case involving the Gautrain Rapid Rail Link project in SA demonstrates that in reality, government carries more risk than is specified. The Gauteng government settled with the private sector for over R1.3 billion regarding issues of design and construction that ideally should have been at the expense of the private sector, especially because the risk was transferred to them in the PPP agreement (*The Times*, 2016). On paper, the private sector was responsible for the design and construction, but in reality government ended up taking the risk. In addition, it is often difficult for the public sector to impose significant penalties on the private sector when they have failed to deliver as per the agreement (Ball, Heafey & King. 2003).

2.2.3 Discount rates

The DR is another contentious issue in PPPs. It is based on the principle that money is worth more today than tomorrow. The DR measures the time preference of money, and is used in the calculation of the VfM. It is therefore important to understand why risk is affected

by DR. In SA, the DR is assumed to be the same as the risk-adjusted cost of capital for government. The NT PPP manual advises that a government bond yield over a comparable period should be used as it accurately measures the true cost of government raising funds. The government bond yield, however, excludes project risk because risk is covered in the cash flow and risk matrix. In cases where the risk cannot be quantified in this matrix, the NT supports the use of the bond yield, plus an additional risk premium on a project-by-project basis (National Treasury, 2004). De Clerck, Demeulemeester and Herroelen, (2012) suggest the use of the capital asset pricing model (CAPM) to calculate the risk premium where the total return includes the risk return and the premium.

Sarmento (2010) states that there are five approaches to DRs in PPPs. The first approach is the social rate of time preference. According to Grimsey and Lewis (2004), the social rate of time preference should have two elements: the first element should reflect the rate at which society is willing to pay for present consumption instead of future consumption; and the second element should account for risk that government is exposed to. The second approach is the social opportunity cost of capital, used in Canada and New Zealand. The social opportunity cost of capital uses the capital asset pricing model (CAPM) to determine the DR that should be used in PPPs. The third approach is a hybrid of the social rate of time preference and the social opportunity cost of capital. The hybrid approach uses the real interest cost of government debt plus tax paid and risk exposed. The fourth approach is the equity premium. This approach suggests that the DR should be the pre-tax government borrowing rates, since the true cost of capital for government is below the CAPM values. The fifth approach is the risk-free rate of the country, which is the risk-free rate for the public debt interest rate over the duration of the project.

Various countries' approaches to DR (Maralos & Amekudzi, 2008; Burger & Hawkesworth, 2011) are as follows:

i) The UK Green Book (2003) uses the social time preference of money derived from three concepts: the pure time preference rate (0.5%), the catastrophic risk rate (1%), and the time value-of-money (2%). The DR used in the UK is therefore 3.5 per cent.
ii) The Irish use the risk-free cost of debt and the yield of the long-term debt. Other countries that use the risk-free borrowing rate include France, Chile, Korea and the state of Virginia in the USA.
iii) The Australians use a different approach from the UK and Canada. They use the CAPM by means of the risk-free rate and the adjusted risk rate. The risk-free rate in 2003 was 3.5 per cent, the market risk premium rate was 6 per cent, and the risk-adjusted rate is based on three bands according to the type of project (0.3, 0.5, and

0.9). For example, water and transport projects are considered the middle bands, and the DR used will be calculated as follows: 3.5% +0.5*6=6.5%.

iv) In the Netherlands, the DR is closely related to the private sector weighted average cost of capital (WACC) for both the PPP model and the PSC. The risk premium is based on the CAPM, and ranges from 1.5 per cent to 4 per cent, depending on the project risk. The DR ranges from 5.5 per cent to 8.5 per cent.

v) The British Colombians in Canada use the adjusted project internal rate of return (IRR) set by the PPP unit, and it is based on previous experiences of concluded PPP projects.

Grout (2005) argues that it is important to understand how risk affects DR in PPPs, and that there are two types of risks in PPPs that should be dealt with separately, namely, idiosyncratic (specific) and systematic risk. These risks should be separated since they both affect VfM in PPPs differently. There is a difference between focusing on specific project risk and on systematic risk. Idiosyncratic risk is specific risk, which is unique to a project, while systematic risk arises from the concept of economics and finance (Grout, 2005).

Grout (2005) argues that the interest rate on debt finance of a PPP project and a DR that should be applied to a PPP in a VfM test are interrelated, but not equal. Quiggin (2004), however, argues that this approach does not take into account the fact that the cost of private equity capital is inflated by failures in the capital market. He concludes that there is no reason to believe that the premium associated with private equity investments is a useful guide to the cost of systematic risk returns on public investments. Grout (2005) points out that the specific risk can always be diversified. It is for this reason that he argues that a rate similar to the risk-free rate should be used, as witnessed in the UK, where the DR was slashed from 6 per cent to 3.5 per cent. CAPM is used to model how DR is impacted by systematic risk. In the systematic risk model, the DR is not determined by the total risk, but by its own risk.

There are various debates about whether the DR used to discount future cash flow statements for the public sector should be the same as the private sector projects (Grout, 2005). There is no consensus between policymakers and economists on whether the DR should be the same for PPPs and the PSC (Shugart, 2008). Many economists in the 1960s and 1970s believed that the DR should be lower for public sector projects because the public sector can pool risk. A survey in the OECD (2011) study on 20 countries shows that a similar number of countries use a single prescribed rate for either all PPPs or all traditional procured projects (seven and nine respectively). The same study shows that seven of the 20 countries use rates set on a project-by-project basis for PPPs compared to only two TGPs. Sarmento

(2010) argues that the PPP and the PSC should not be discounted by the same rate. He states that using the same DR will undermine the private sector's efficiency, and that the public sector risk is always lower than the risk faced by the private sector. He argues that there should be three DRs for the public sector and PPP. A summary of his finding is below:

i) For the PSC option, a risk-free DR should be used. This rate should be an interest rate of bonds on the maturity of the project.
ii) A default risk interest rate should be used to discount the cost of service and maintenance, and risk transferred to the private sector. He argues that the CAPM model should be used to calculate that risk.
iii) For the PPP, Sarmento argues that unitary payments to the private sector should be treated as public debt, and therefore the public debt interest of the maturity of the project should be used.
iv) For projects where there are already PPPs, a market benchmark should be established.
iii) Where a market benchmark cannot be used, an attempt to measure the risk associated with the project should be made.

Grout (2005) concludes that there is no reason to believe that the risk between government and private sector cash flow is the same. Grout (2005) therefore recommends that government and the private sector should use different DRs.

One of the criticisms of PPPs is that the cost of finance for the private sector is greater than the public sectors. De Clerck, Demeulemeester and Herroelen (2012) state that it is more expensive for the private sector to raise funds from the market than for government, and in order to achieve VfM, the higher cost of capital will need to be outweighed by the cost savings and efficiency gains. In the state of Virginia in the USA, the NCPPP admits that procurement and financing costs are high for PPPs, but its analysis shows that the higher costs are offset by a reduction in other costs such as the design, construction, maintenance and operations (NCPPP, 2012).

Grimsey and Lewis (2007) state that the argument that private sector capital is costly is flawed because private sector capital automatically builds in the risk in the cost of finance. whereas the government does not. Grimsey and Lewis (2004) argue that PPPs appear to work well, and that even though the public sector is able to raise funds more cheaply than the private sector, those funds have no relation to the project risk. The study therefore argues that the public sector administrators are usually insulated from underperformance of projects, whereas the private sector is not.

2.2.4 Excess returns

PricewaterhouseCoopers (PWC) study in 2002 (cited in Grimsey & Lewis, 2004:16) analysed whether PPPs returns were excessive or whether they were in line with what might have been earned by bidders from a competitive market. The study found the real internal rate of return (IRR) for all the 64 projects analysed was 7.7 per cent compared to the WACC of 5.3 per cent estimated using the CAPM. The difference of 2.4 per cent accounted for unrecovered bids from other projects and the higher cost of private sector borrowing (1.7 per cent and 0.7 per cent respectively), with only 0.7 per cent excess return. However, Bloomfield (2006) states that in Australia the Sydney Airlink private consortium achieved a real rate of return of between 21 and 25 per cent compared to two per cent for government. The study also specifies that in another Australian PPP M2 Motorway project the private sector's pre-tax return was 24.4 per cent.

2.2.5 Cost of PPP financing

The private sector cost of raising capital is usually higher than the government's. In order to deal with these problems, government PPP sponsors in Canada have opted to combine private sector funding with the public sector to lower the cost of capital. However, government sponsors should be careful to ensure that enough private sector debt and equity is included to incentivise the private sector to deliver on time and on budget (Siemiatycki, 2015). Infrastructure planners in Canada have applied short-term financing to ensure that private sector debt is repaid within a short time, especially immediately after construction of the project is complete (Siemiatycki, 2015).

2.2.6 Affordability

In SA, government institutions undertaking PPPs do not usually prefer to disclose the affordability limit to avoid limiting competition when PPPs are advertised in the market. According to a study conducted by the Government Technical Advisory Centre (GTAC) on lessons learned from head office accommodation PPPs, international best practice shows that most countries prefer to disclose the affordability limit to prospective bidders to avoid bidders proposing solutions that are unaffordable. The study states that disclosing the affordability limit has the potential to shorten the procurement process and provide bidders with an incentive to propose bids that are affordable (Government Technical Advisory Centre, 2015).

However, Hodge and Greve (2007) question the technicalities of affordability given that governments do not use present value calculation in their budgets. The other argument used

is that governments hardly use long periods when calculating their budget, which raises questions on how affordability is currently calculated, and how useful it is in its current form.

Since the world financial crisis, many countries have introduced fiscal rules that limit government spending/deficits. This raises the question on what happens when the fiscal law limits budget expenditure, and the PPP unitary payments exceed the fiscal limit. Is such a project affordable or not? (Hodge & Greve, 2007). Owing to variations, PPP project payment structures can change, which may make it unaffordable. In addition, these variations are usually not taken into account at the initial test of affordability. However, in SA all variations and amendments to the original PPP agreement need to comply with the three tests of a PPP in terms of affordability, risk transfer and VfM before they are approved. In SA, affordability is assessed throughout the project lifecycle. In Australia, PPPs compete with other capital projects for limited budget funding to ensure that they fall within the definition of affordable. A decision on how a project is funded is separate from why it is funded (Quiggin, 2004). In Brazil, a feasibility study includes an analysis of the next 10 years, and a commitment to PPP projects is limited to one per cent of the federal budget of the government's current revenue (OECD, 2011).

2.2.7 The politics of value-for-money

Various studies have been written on the politics of PPPs and VfM. There is often bias and conflict of interest among those preparing VfM documents (Sarmento, 2010). In Canada, the agency responsible for delivery of PPPs is also responsible for the VfM evaluation process, which creates an incentive for the agency to overlook certain aspects of VfM in order to gain more project work (Siemiatycki & Farooqi, 2012). Institutions such as the World Bank and the OECD have raised this as a concern and in order to disincentive overlooking aspects of VfM in order to gain more project work, they advise on the separation of the two functions (World Bank & Public Private Infrastructure Advisory Facility, 2013). In SA, the roles of advising public sector institutions on how to undertake PPPs and of approving PPPs were both previously undertaken by the PPP unit within the NT. They have since been split, and the advisory role is undertaken by the PPP unit which is part of the newly formed GTAC, a government consulting agency that reports to the Minister of Finance, while the approval role is with the NT. The head of the PPP unit within GTAC is the adviser, and the head of the budget office in the National Treasury is the regulator. The split was initiated to avoid conflict of interest and enable independent review of PPP projects.

Siamiatycki and Farooqi (2012) state that external consultants from major financial and technical institutions hired to conduct VfM are biased because they have divisions that

specialise in PPPs and advertise themselves as PPP experts. This implies that they have an interest in ensuring that the outcome shows PPPs as the best procurement option. External consultants' payment mechanism for services delivered is structured so that for every milestone achieved, the outcome should show PPP favourably relative to PSC. Government may otherwise make a decision to stop a project at the planning stage before it reaches the procurement stage, and as a result, consultants would lose as they would not have rendered their services. In response to these criticisms, the Canadian government make VfM reports public, and independent parties are appointed to review the reports. The Auditor-General is also involved in auditing and safeguarding the process. Major financial and technical institutions hired to conduct VfM have enhanced their quality and accounting rules to reinforce the integrity of the process (Siamiatycki & Farooqi, 2012).

In Canada, a Minister of Infrastructure, in an interview with Siamiatycki and Farooqi (2012), stated that Infrastructure Ontario and the VfM process have little to do with whether a project should proceed or not. The Minister stated that their role is not to tell government that a project is bad or good, but rather to ensure that a project gets implemented in the best possible way once a decision is made to implement the project. This implies that PPP projects that are implemented are not based solely on the technical assessment of VfM, but are often influenced by politicians and the community they serve.

In SA, the state agency responsible for construction and maintenance of roads (the South African National Roads Agency, Limited, known as SANRAL) has procured several national highways using a PPP approach for procurement. SANRAL is exempted from Treasury Regulation 16 that regulates PPPs in SA. This is because they have the capacity to undertake PPPs without the oversight of the NT. However, the recent upgrade of the Gauteng Freeway Improvement Plan highway between Pretoria and Johannesburg using a PPP procurement method has been dogged by controversies. The public, together with civil society organisations, have complained bitterly that they were not consulted as part of the implementation of the project, and have refused to pay the toll fees that are levied using an expensive electronic system. Since all PPPs are binding to the fiscus, the NT has since extended support to enable SANRAL to service the debt used to finance the construction of the highway. This brings into question the PPP method of procurement and the consultation process for such major projects.

The 2011 Audit Commission report by the UK NAO states that the PSC has lost the confidence of many people, and is seen as a hurdle to jump to implement PPP projects as opposed to a valuable exercise that can ensure better VfM. They argue that the PSC should be abolished and replaced with other ways of benchmarking. Some of the criticisms of PPPs

include the following (Hodge, 2000; Grimsey & Lewis, 2007: Sarmento, 2010; Siamiatycki & Farooqi, 2012; Government Technical Advisory Centre, 2015; Siemiatycki, 2015):

i) Some PPPs make it difficult or impossible for small companies to participate in the bidding process. Small companies are unable to participate in PPPs procurement processes because they are sometimes required to have upfront capital or a letter of support from the bank;

ii) In theory PPPs are seen to be transparent, with high accountability. However, in practice the information made available to the public is often misleading and inaccurate;

iii) Some economists and policymakers argue that PPPs structures are designed to milk government;

iv) PPP procurement is usually longer than TGP procurement because parties have to negotiate the transfer of risks and acceptable payment terms for both parties. In the UK, the process takes around 22 months, in Australia 12-18 months. In SA, the process takes between 34-84 months on average;

v) PPPs are usually criticised because of the high cost of procurement. In the UK it was found that the cost of procurement is on average 5 per cent of the total project cost. Bundling of projects into one to assist in spreading the cost of procurement is encouraged. It is also argued that in projects that have not been implemented before, a PSC should not be conducted, but should instead be replaced by a competitive bidding process to ensure VfM and to reduce the cost of procurement as previously done in France in the procurement of municipal and water projects;

vi) Most countries do not have the data to calculate accurately how much a project will cost in 20 to 25 years' time. Some of the assumptions made are therefore unrealistic and unachievable;

vii) Some risks are difficult to estimate. Such risks are omitted from the calculation of the PSC;

viii) No consensus on the DR. The DR is critical in calculating the PSC, especially because PPP terms are spread over a long period of time. High DRs favour the private sector and make it appear as though the sector is much more efficient than it really is. However, there is no consensus on how much the DR should be for various PPP projects;

ix) There is usually a great incentive in manipulating PPPs in favour of TGPs. This is usually done through the exaggeration of risks to justify PPPs;

x) The financial modelling done as part of the PSC and PPP reference model is very expensive and time consuming;

xi) In some cases there is no realistic alternative. The PSC should be carried out where there is no reasonable option for a public sector project;

iv) The problem is that when the final bid is compared to the PSC, the PPP project is usually higher, but by that time, the process would have got so far that it would be difficult to cancel the bidding process on the grounds that the project is costly;

Additional studies argue that PPPs are inflexible. However, Grimsey and Lewis (2007) argue that inflexibility in infrastructure procurement exists regardless of the mode of procurement. The study argues that with PPPs, the cost of changing from the original output specified is known, whereas the cost of changing in a TGP is usually unknown.

Other criticism of PPPs is that governments tend to use them as off-budget finance options to avoid increasing public debt. Sarmento (2010) argues that the reason to pursue a PPP should not be motivated by the government's decision to remove the project from its balance sheet because VfM in PPPs will not serve any role. Quiggin (2004) states that the first wave of PPPs in the UK and Canada were implemented purely because the governments were under pressure to provide for health and education services while the economies were declining. This meant that PPPs were favoured because governments could reduce public debt while providing infrastructure through private sector finance. Other economists such as Hodge and Greve (2007) argue that VfM in PPPs should rather be motivated by whether it is affordable or not, and whether the project will benefit both government and society in savings and positive economic returns.

Shugart (2008) argues that because PPPs account for a small part of infrastructure procurement compared to the TGPs (1 per cent in SA, approximately 14 per cent in the UK and 10 per cent in Australia), it is automatically believed that PPPs are more successful.

Siemiatycki and Farooqi (2012) found that while transaction costs for lawyers and consultants were relatively a small fraction of the total project cost, they amounted to $228 million (approximately 3 per cent) of the portfolio of 28 projects undertaken by infrastructure Ontario in Canada. Vining's study (cited in Hodge & Greve, 2007:13) in North America, on the other hand, found that it was difficult to capture the amount spent on transaction costs in PPPs.

Grout (2005) states that PPPs involve transferring work from the public sector to the private sector, and this is likely to lead to a reduction in wages and conditions of employment. The reduction in wages is motivated by the fact that the pay distribution in the public sector is more equal than in the private sector. This implies that in a PPP, employees may be paid different wages that are more unequal, and the conditions are likely to be different to those in

a TGP. This is further supported by a report published by Unison (cited in Grout, 2005: 15), which found that pay and conditions in the private sector were worse than in government. This brings into question how VfM should treat a possible decline in wages and conditions as a result of a PPP.

Grimsey and Lewis (2007) state that the advantage of PPPs is that they bundle the design, building, finance, maintenance and operations of separate contracts into one managed by the special purpose vehicle (SPV)[2] created to manage the project. Grimsey and Lewis (2007) argue that PPPs introduce a clear line of responsibility, transparency, assessment of risks and competition, and the private sector is usually motivated to succeed as opposed to the government. Unlike TGPs where there is input from the builder during the design process, bidders who have the opportunity to be innovative in providing the service develop PPPs. Grimsey and Lewis (2007) summarise the following as major advantages for PPPs:

i) Certainty on the project cost before construction begins;
ii) PPPs transfer significant risk to the private sector including cost overruns;
iii) The public pays only when the services are delivered based on a pre-agreed quality;
iv) PPPs are assessed using net present value (NPV) that considers short-term and long-term costs to test for true affordability of projects;
v) PPPs encourage and incentivise proper maintenance that can strengthen the life of the assets and their residual value at the end of the project term;
vi) PPPs take advantage of private sector skills and expertise;
v) PPPs introduce a clear line of accountability, transparency and performance.

An OECD (2011) paper, on the other hand, asked participants from 22 countries whether they think the rules in place hinder attaining VfM by creating preference for one procurement option over the other. The results show that there is a bias in favour of TGPs. This contradicts the belief that the proponents of PPPs are biased in favour of PPPs. The study state that the higher degree of rigour required from PPPs create a preference towards TGPs as opposed to PPPs. The report suggests that in order to eliminate this bias, the rigour applied to PPPs must be adopted when assessing TGPs. The study states that because the PPP process is viewed as rigorous, the incentive is to pursue TGPs based not on the VfM objective but because the TGP is viewed as an easier process. This is supported by the fact

[2] An SPV is a separate company formed sorely for the purpose of the development of the project. In a typical PPP, the SPV is usually responsible for the financing, design, construction, operation and maintenance of the project. Annexure G shows a typical structure of an SPV in a PPP.

that in 14 of the 20 countries surveyed, approval for PPPs is only granted subject to a demonstration of VfM.

2.2.8 Lessons learned from other jurisdictions

Flyvbjerg (2009) examined 258 transport projects in 20 nations over 20 years and found that 9/10 projects experienced cost overruns, and cost estimates have not improved over time. The study states that in almost all countries, project promoters tend to deliberately underestimate costs and overestimate benefits, and that there is often political pressure to undertake certain projects regardless of whether VfM would be achieved or not. The study is based on transport projects but the problems observed are not confined to them, but are observed in other sectors (Flyvbjerg, 2009). Politicians and project advisers have an incentive to intentionally underestimate cost and overestimate benefits to obtain funding approval, resulting in “Optimism Bias”. This phenomenon is called “Survival of the Unfittest”, because at the end of the day, projects that have the best potential to achieve VfM are not necessarily those that end up being implemented, but those that look good on paper.

The difficulty in addressing this problem is that there are often no data available for referencing in big projects. The study recommends reference class forecasting by comparing projects against large samples of similar projects that were undertaken in the past to determine misrepresentation of costs and benefits. As in Flyvbjerg (2009) study, VfM in PPPs can be improved by ensuring that completed PPPs are used as a benchmark for proposed projects to determine the extent to which costs may have been underestimated and benefits overestimated. This will ensure that VfM in PPPs improves over time.

2.2.9 UK approach to VfM (Her Majesty’s Treasury, 2006)

HMTreasury in the UK approaches VfM assessment in three stages:

i) HM Treasury makes an assessment of the best choice of procurement option and the appropriateness of the PFI for that particular sector. This is to ensure that PFIs are used where they are the best option for procurement, and where they offer VfM. VfM is tested in every choice of project development to assist in comparing options. The procurement option test should be transparent in the assumptions used to arrive at a particular solution. All procurement choices are explored by comparing discounted net present costs and net present benefits.

ii) HM Treasury uses the PSC, and its calculation takes into account optimism bias (the tendency to be overoptimistic about the key project parameters) given the experience that was observed with previous projects.

iii) The last stage focuses on potential market capacity to deliver projects, and this involves assessing the quality of competition among private parties, success in risk transfer, reasonableness and stability of costs of competition. If a project does not fulfil these criteria it may be delayed, or may be implemented as a TGP.

The UK uses VfM in two ways: through a CBA of project proposals, to test VfM in different options, and to test whether a project is amenable to private finance through a qualitative test. This is meant to establish the suitability of private financing in achieving VfM. VfM is conducted throughout the project's lifecycle, from project inception, before issuance of procurement bids to the market, and before a final PPP contract signature. The emphasis is put on the early stages of VfM to meaningfully influence project outcomes, as the ability to influence project outcomes changes over time. Previously, too much time was given to quantitative methods of VfM to the neglect of the qualitative aspects, which seek to determine the suitability of PPPs in particular sectors (Ballinghall, 2013).

The methodology of VfM was revised again in 2006 and 2013 in the UK. Some of the lessons learned from the revision of the VfM assessment include:

- PFIs were sometimes done for the wrong reason to obtain off-balance sheet finance;
- Project initiators deliberately underestimate project costs and overestimate benefits through the manipulation of PPPs to show PPP favourably compared to PSC projects.

HM Treasury has since responded by revising VfM in PPPs. HM Treasury realised that the VfM approach can be abused, and that judgement was still required in the procurement of PPPs. The revision included: procurement options other than PPPs and PSC models, and consideration of optimism bias in procurement of projects (Ballinghall, 2013).

Central to the UK appraisal and evaluation of projects is Her Majesty's Green Book (HMGB). HMGB is a comprehensive project appraisal and evaluation guideline for all policies, programmes and projects in the UK. It provides guidance on how proposals should be appraised before funding can be allocated. Its objective is to ensure that public funds are spent on projects that provide the greatest benefits to society, and to promote the efficient use of public funds. HMGB provides supplementary guidance which contains details on specific issues relating to the appraisal and evaluation of proposals. The guide explains how multicriteria decisions can be used to assess a mix of both monetary and non-monetary benefits. HMGB enables options identified and evaluated to be ranked to establish a list of projects that offer the greatest benefits to society. It requires all business cases to follow the five interconnected aspects of the case model to ensure affordability, and that VfM is created in government proposals before funding is committed (The Green Book, 2003). The five

case models include strategic, economic, financial, commercial and management cases. All PPP projects are required to go through the five case models to ensure that VfM is achieved in all projects undertaken by the government.

In addition to all the VfM stages and methodologies put in place to ensure that PFIs in the UK achieve VfM, the NAO also completes VfM reports every year to ensure that PFIs previously undertaken have achieved VfM. The NAO has also published a framework to be used in the evaluation of PFI in the UK (NAO, 2011).

2.2.10 Canadian experience with delivering projects through PPP procurement

According to a paper written by Siemiatycki (2015), the first wave of PPPs in Canada were undertaken with the following rationale: to bring new money into delivery of infrastructure; enable off-balance sheet accounting of infrastructure; structure the provision of public services, and drive VfM in public procurement. In Canada, it was believed that PPPs enable government to build high quality infrastructure without taking additional debt, especially where user fees can be used to repay private sector investments. However, many infrastructure projects do not have the revenue streams to repay the private sector investment, which means that the rationale for undertaking PPPs cannot be to avoid taking additional debt because ultimately government has to pay the private sector for the services rendered (Hodge, 2004).

The first wave of PPPs in Canada were undertaken with the belief that PPPs are treated as off-balance sheet financing, and government can continue to provide high quality infrastructure without breaching the fiscal spending limits. However, a study conducted by Siemiatycki (2015) argues that PPPs cannot be undertaken purely because they are treated as off-balance sheet financing. Off-balance sheet financing cannot be used as a rationale for delivering a project as a PPP. This resulted in the off-balance sheet rationale being abandoned in the second wave of PPPs. Projects in this wave are driven purely by the commercial merit of the transactions. The first wave of PPPs in Canada was criticised for decentralising decision making away from elected officials and line ministries and decision making powers were indirectly given to independent private sector companies and agencies.

Grimsey and Lewis (2004) argue in favour of PPPs by stating that bundling of construction with the finance and operation of assets in PPPs stimulates innovation during planning and encourages the lifecycle approach to the maintenance of assets through transferring risk to the private sector. However, those that oppose this idea argue that government ultimately bears more risk, especially because it cannot simply walk away from bad projects.

In responding to the criticism of PPPs in Canada, the second wave of PPPs focuses on the quantitative and qualitative elements involving three stages: the qualitative assessment, a comparison of the PSC and the PPP model, and a procurement test to fully establish VfM. The Canadian government also makes project documentation of PPPs available on the website to promote transparency and accountability in PPPs. The second wave of PPPs in Canada focuses on the separation of the design, financing and construction from the operations and maintenance of projects. This was in response to the criticisms that government loses control of public assets by transferring too much responsibility and risk to the private sector.

The Canadian province of Quebec was reprimanded by the Auditor-General for being biased in favour of PPPs even in cases where PPPs were not creating any VfM for the public sector. The government of Quebec responded by expanding the mandate of the PPP agency to provide expert advice on all procurement of infrastructure, including PPPs (Siemiatycki, 2015).

2.2.11 PPPs in Australia

As in Canada, the first waves of PPPs in Australia were undertaken because of the need for off-balance sheet financing. PPPs were seen as a method of procurement that would enable government to continue providing vital public services while also reducing public debt. The second wave of PPPs have since been formalised, and it is led by the Victorian Department of Treasury and Finance. As in the UK, VfM is calculated through a comparison of the PSC and the PPP model. The comparison strives to ensure competitive neutrality by removing the advantages that accrue to government by virtue of public ownership (Grout, 2005). All bids are compared to the PSC to establish VfM. In addition to the quantitative VfM used in the UK, there are strong qualitative aspects in projects that are taken into account as part of the VfM test; these include credit standing, bidder's reputation and the track record of the private sector.

2.2.12 VfM in France

In France, PPPs are subjected to preliminary comparative assessment on VfM, legal and economic analysis. PPPs may be awarded using two alternative options: competitive dialogue and tender (OECD, 2011). Ernst and Young (2013) define competitive dialogue as a procurement procedure which allows the public sector to discuss the solution of a contract with potential bidders before their tenders are submitted. Competitive dialogue is used when government is not able to identify the best option to satisfy its needs. The objective of competitive dialogue is to define and identify the best means to address government's

needs, and typically involves finetuning the risk matrix; discussion of the financial, technical and legal issues; drafting and finalising the PPP contract; and shortlisting candidates. Awarding of the tender usually goes to the bidder with the most economically advantageous offer as set out in the tender documentation. All PPPs have to be undertaken in accordance with the PPP guidance book.

In 2010, PPPs in France were made to take into account the time savings derived from the PPP use of procurement, and it is confirmed by statistical observations. This was done in order to account for economic efficiencies and non-financial benefits in PPPs. In 2008, France introduced a new rule in monitoring PPPs. The rule ensures that the public personnel responsible for PPPs in France report on the value of variables from which preliminary VfM calculation was established. The process starts before contract signature, and evaluates the competition process and how the preferred bidder was chosen. The information is then consolidated into a report to the Minister of Economy and Finance (OECD, 2011).

2.2.13 VfM in Germany

In Germany, both PPPs and TGPs undertake a CBA before approval can be granted. For PPPs, a suitability test is carried out before the cost is estimated in order to test whether or not the PPP option is the best procurement method. In Germany, there is no different framework applicable to PPPs and TGPs. All projects need to ensure that they generate a positive net economic benefit to the economy (Beck, 2010).

2.2.14 PPPs and VfM in Korea

In Korea, all PPPs that exceed 50 million South Korean Won (KRW), or 30 million KRW for those that require government subsidy, have to undertake a prefeasibility study. As in the UK, a comparison of the PSC with the PPP is required to establish whether there is VfM. VfM in Korea not only evaluates the quantitative aspects (demand, costs, revenue, etc.) of the project, it also evaluates its qualitative aspects (quality of service, risk transfer, etc.). However, in Korea, post-assessment of VfM is not a required process, but projects are often selected to evaluate cost overruns and delays by comparing the total costs and timelines of the project with the agreed costs and timelines issued in procurement documents.

2.2.15 Choosing PPPs as a procurement option

Except for the UK and the State of New South Wales in Australia, it is not always clear how projects become PPPs and how they become TGPs. The study by the OECD (2011) on 20 countries surveyed, shows that only a small number of countries apply criteria to all projects to determine the mode of procurement that has the potential to yield the best VfM. Traditional procurement is often the default procurement, and it is often up to the line

department or project sponsor to decide on the use of a PPP procurement option. This implies that there is no formal test for all infrastructure projects to establish the best procurement option for all infrastructure projects. In the UK and Australia, there is a set of criteria that provides systematic guidance to assess the most suitable procurement method that is likely to deliver the greatest VfM. Moreover, 11 of the countries indicated that they first decide on the procurement of an asset before they choose the method of procurement.

2.2.16 Accounting of PPPs

PPP accounting may damage the transparency of the fiscus when assets that are procured through a PPP procurement option are missing from the balance sheet of governments. When government debt is concealed through PPPs that are recorded off government balance sheet, the accounting may generate fiscal risks and potentially erode accountability mechanisms (Hodge, Greve & Boardman. 2010). An OECD (2011) paper states that accounting rules for PPPs may create an incentive to prefer PPPs over TGPs. This is especially true given that in PPPs the private sector usually raises funds to procure projects, and these transactions are recorded in the books of the private sector; whereas for TGPs such transactions will appear in the books of government. This view is endorsed by Hodge, Greve and Boardman (2010) and Quiggin (2010), who state that PPP accounting may result in distorted decision making on public investments when an off-balance sheet is the criterion used as opposed to VfM assessment. Quiggin (2010) argues that risk transfer may be deliberately made to appear as if the private sector is taking the significant risk so that the PPP can be an off-balance sheet transaction for government, while secret contractual clauses may be used to transfer the risk back to government. An impression may be created that because the cost of procurement is not recorded in government books, government is not paying for the service, whereas in reality government is obliged to honour payments and contingent liabilities over the duration of the project.

In ensuring that proper accounting of PPPs is applied, it is important to consider whether a PPP is a concession or a lease (Hodge, Greve & Boardman, 2010). However, this is not clear, and it is further complicated by the fact that there are various accounting rules and standards that are applied. Hodge, Greve and Boardman (2010) state that there are two parallel systems of accounting that are usually used in accounting for PPPs: financial reporting and national accounting. Financial accounting is usually used with recognised accounting standards, while national accounting is usually used by national statistical institutions, including the IMF and the OECD. In SA, for an asset to be off the balance sheet of government, there has to be significant construction and availability risk transferred to the private sector. This system of PPP accounting is called the risk and rewards system.

Office accommodation PPPs are considered finance lease PPPs because they meet the following criteria: i) the term of the PPP is at least equal to the economic life; ii) the asset is specialised; and iii) the asset cannot be easily replaced. The NT Accounting Guidelines define finance lease as “a lease that transfers substantially all the risk and rewards incidental to ownership of an asset. The title may or may not eventually be transferred”. In this case, the legal ownership is not relevant, but classification of a finance lease depends on significant risk transfer and rewards (National Treasury, 2014). Annexure I shows the accounting treatment of a PPP framework.

The OECD (2011) study suggests that in order to eliminate the incentive of balance sheet financing, government must set criteria that will provide for costs of PPPs and the associated contingent liabilities. In the case of SA, contingent liabilities are consistently monitored and updated to ensure that government is aware of the costs of each PPP project. The OECD study states that factors other than VfM can also favour one procurement option over the other. These may include:

- the political or strategic importance of a project;
- the complexity and difficulty of the project;
- the level of maintenance required on the project;
- projects with a high level of service delivery performance; and
- projects that require skills more readily available in the private sector than the public sector.

The study shows that overall; respondents felt that the rules in place hinder the achievement of PPPs in creating VfM by creating an incentive to prefer TGP to PPPs. However, it is important to emphasise that VfM is separate from PPP accounting. It may be possible to be critical of PPP accounting, but yet find a negative, positive and neutral relationship with VfM.

2.3 SUMMARY

The literature review shows that there is contradictory evidence on the effectiveness of PPPs in creating VfM for government. Overall it seems that the effectiveness and creation of VfM in PPPs is still subject to debate, with some studies highlighting that PPPs are costly and have become a mechanism through which the private sector makes supernormal profits from government, while others argue that PPPs have been successful. Those who state that PPPs have not been successful argue that PPP documentation should be made available for public scrutiny, to factually establish whether PPPs previously undertaken have generated VfM. Some economists argue that risk transferred to the private sector was almost exactly the same amount needed to tip projects in favour of the PPP option, while others argue that

the private sector is able to manage risk more effectively than government. Other contentious issues such as the DR are also subject to debates, with some institutions prescribing the use of the DR while others leave it to the private sector to use a suitable DR with justification. As in most studies, the risk transfer plays a major role in whether PPPs have managed to achieve VfM or not. Risk transfer/allocation is the single most influential determinant of VfM. Other factors such as lifecycle costing, output specifications and competitive procurement processes are also important determinants of VfM. Equally important is the need to ensure that VfM considers qualitative factors in assessing viability of PPPs. Chapter 2 has also focused on lessons learnt from other jurisdictions across the world.

Chapter 3 presents an overview of PPPs, and lists all the 27 PPPs completed in SA.

Table 1: Summary of empirical literature

Author	Title	Country/ Region	Period	Methodology	Summary of Findings
Sarmento (2010)	Do PPPs Create Value-for-Money for the Public Sector? The Portuguese Experience,	Portugal	2010	The study used a controversial Portuguese SCUT highway PPP project case study.	The analysis confirmed that the PPP procurement option did not generate VfM. The study therefore concludes that there should be no biased beliefs that PPPs create VfM. A decision to undertake a project should be assessed independently.
Siemiatycki & Farooqi (2012)	Value-for-Money and Risk in PPPs	USA	2012	The research examines 28 PPPs in Ontario Canada. The study was supported by interviews with 18 senior politicians, government officials and private sector participants.	The study found that construction risk transfer is the main driver of VfM. It recommends unbundling of construction from operations. It also suggests the use of competitive dialogue to increase collaboration in PPPs, and the inclusion of contract rebalancing to share risks.
OECD (2011)	How to Attain Value-for-Money Comparing PPP and Traditional Infrastructure Public Procurement	31 OECD countries	2011	The study used questionnaires and surveys circulated to 31 OECD countries.	Many countries do not have criteria to determine which procurement option to choose from between PPPs and TGPs/.
Ngamlana (2009)	Improving Public-Private Partnership Deal Flow for Infrastructure Delivery In South Africa	South Africa	2009	The research used data on closed PPP projects collected and analysed through Microsoft Excel to establish the causes of delays in the PPP cycle.	There is need to simplify the calculation of the PSC to enable key decision makers to make decisions on the viability of PPPs. In addition, capacity building in municipalities has also been identified as a key constraint in improving PPP deal flows.
Maralos & Amekudzi (2008)	The State of the Practice of Value-for-Money Analysis In Comparing PublicPrivate Partnerships to Traditional Procurements Experience	USA	2008	The study provides state of the art practical views of VfM using examples from Australia, Canada, Europe, Africa and Asia.	VfM needs to consider qualitative factors in assessing viability of PPPs. Qualitative VfM factors also need to incorporate social costs and benefits. In addition, there is a need to improve knowledge sharing and calculation of risks probabilities and cost estimates.
Hodge & Greve	Public-Private Partnerships: An International Performance	USA, Australia	2007	The study reviews a range of available evidence from	Evaluation of international literature shows that there is a contradictory result about the

(2007)	Review	and Canada		international literature/	effectiveness of PPPs. The study concludes that greater care is needed to strengthen the evaluation and assessment of PPPs..
Quiggin (2004)	Risk, PPPs and the Public Sector Comparator	Australia and The United Kingdom	2004	The study reviews the first generation of PPPs in Australia and The United Kingdom.	In most cases, PPPs involve inappropriate allocation of risks between government and the private sector and excessive cost of capital. The main conclusion of the report is that the PPP method of procurement should only be used under special circumstances.
Grout (2005)	Value-for-Money Measurement in Public-Private Partnerships.	The United Kingdom, USA, Australia, Canada and Europe	2005	The study summarises various VfM approaches that have been adopted around the world, and explores the evidence of past PPPs in the UK.	The study concludes that there is no reason to believe that the risk between government and private sector cash flow is the same. The study recommends that different DRs be used by government and the private sector. It also found that a possible reduction in wages and conditions of employment as a result of the PPP is not captured in the VfM analysis.
Takim, Ismai & Nawawi. (2011)	A Value-for- Money Assessment Method for Public-Private Partnerships: A Lesson from Malaysia	Malaysia	2011	The results were analysed by descriptive and analytical statistical analysis. One-way analysis of variance (ANOVA) was used..	The results showed that that there are six criteria that are important in achieving VfM in PPPs: optimum whole life costs; innovation in operations; fitness for purpose; comprehensive specifications; compliance to time and innovation in technology.
Ball, Heafey, & King (2003)	Risk Transfer and Value-for-Money in PFI Projects	United Kingdom (Scotland)	2003	A participant observation study was carried out to assess how risk was evaluated in a PFI project.	The study found that, on the risk workshop approach, the method of pricing and allocating risk is subjective and may be overestimating the risk retained by the public sector to swing VfM in favour of the PPP option. The study found that there is lack of evidence-based approach to risk assessment, and that there are difficulties in imposing penalties to the private sector for non-delivery as per PPP contract.

Source: various research papers

CHAPTER 3
OVERVIEW OF PPPS IN SOUTH AFRICA

3.1 INTRODUCTION

Chapter 3 presents an overview of PPPs in SA, including the number of PPPs completed to date and detailed information about the three regulatory tests of a PPP. It concludes with a brief summary of the six office accommodation PPPs on which this research is based.

Table 1 shows a list of 27 completed PPPs undertaken in SA to date. The total value of all projects amounts to R58.7 billion in present value terms of the different years they were implemented. Of the 27 PPPs, 19 are Design Finance Build Operate and Transfer (DFBOT) PPP models, three are Design Finance Operate (DFO) models, three are Design Build Operate and Transfer models (DBOT), one is an equity partnership model, and one is a facilities management project model. These projects include hospitals, transport and roads, tourism and head office accommodation projects.

Table 2: List of PPP projects completed in South Africa

Project name	Government institution	PPP model	Date of financial close	Contract duration	Project value (NPV) R million	Form of payment
SANRAL N4 East Toll Road	SANRAL	DFBOT	Feb-98	30 years	3000	Revenue generating
SANRAL N3 Toll Road	SANRAL	DFBOT	Nov-99	30 years	3000	Revenue generating
Mangaung and Makhado Maximum Security Prisons	Department of Correctional Services	DFBOT	Aug-00	30 years	-	Unitary payment
SANRAL N4 West Toll Road	SANRAL	DFBOT	Aug-01	30 years	3200	Revenue generating
Inkosi Albert Luthuli Hospital	KwaZulu-Natal Department of Health	DFBOT	Dec-01	15 years	4 500	Unitary payment
Eco-Tourism Manyeleti Three Sites	Limpopo Department of Finance, Economic Affairs, Tourism	DFBOT	Dec-01	30 years	25	Revenue generating
Universitas and Pelonomi Hospitals Co-location	Free State Department Health	DFBOT	Nov-02	21 years	81	Revenue generating
Information Systems	Department of Labour	DFBOT	Dec-02	10 years	1 500	Unitary payment
Chapman's Peak Drive Toll Road	Western Cape Department of Transport	DFBOT	May-03	30 years	450	Revenue generating and guarantee
State Vaccine Institute	Department of Health	Equity partnership	Jan-04	4 years	75	Once-off equity contribution
Humansdorp District Hospital	Eastern Cape Department of Health	DFBOT	Jun-03	20 years	49	Unitary payment
Fleet Management	Eastern Cape Department of Transport	DFO	Aug-03	5 years	553	Unitary payment
Head Office Accommodation	Department of Trade and Industry	DFBOT	Aug-03	25 years	870	Unitary payment

Cradle of Humankind Interpretation Centre Complex	Gauteng Department of Agriculture, Conservation, Environment and Land Affairs	DBOT	Oct-03	10 years	39	Revenue generating
Gautrain Rapid Rail Link	Gauteng Department of Public Transport, Roads and Works	DFBOT	Sep-06	20 years	30 000	Revenue generating and patronage guarantee
National Fleet Management	Department of Transport	DFO	Sep-06	5 years	919	Service fee
Western Cape Rehabilitation Centre and Lentegeur Hospital	Western Cape Government	Facilities management	Nov-06	12 years	334	Unitary payment
Polokwane Hospital Renal Dialysis	Limpopo Department of Health and Social Development	DBOT	Dec-06	10 years	88	Unitary payment
Head Office Accommodation	Department of Education	DFBOT	Aug-09	27 years	512	Unitary payment
Port Alfred and Settlers Hospital	Eastern Cape Department of Health	DFBOT	May-07	17 years	169	Unitary payment
Western Cape Nature Conservation Board	Western Cape Government	DFBOT	Jul-05	30 years	40	Concession fees
Northern Cape Fleet	Northern Cape Government	DFO	Jun-05	5 years	-	Unitary payment
Head Office Accommodation	Department of International Relations and Cooperation	DFBOT	Jan-05	25 years	1 959	Unitary payment
Phalaborwa Hospital	Limpopo Department of Health and Social Development	DFBOT	Jul-05	15 years	90	Concession fees
Head Office Accommodation	Statistics South Africa	DFBOT	Mar-14	24 years	2 533	Unitary payment
Head Office Accommodation	Department of Environmental Affairs	DFBOT	May-12	25 years	2 731	Unitary payment
Head Office Accommodation	City of Tshwane	DFBOT	Mar-15	25 years	2 005	Unitary payment

Source: National Treasury PPP database

3.2 THREE REGULATORY TESTS OF A PPP

In SA, all PPPs are required to go through regulatory tests of PPPs to test for compliance before implementation. These three tests include value-for-money; affordability and risk transfer.

3.2.1 Value-for-money

To decide whether or not to procure a project as a PPP or through a TGP process is a decision made after a VfM assessment. The UK, the first country to introduce VfM in PPPs, defines VfM as "the optimum combination of lifecycle costs and quality of the good or service to meet the user's requirements". This definition has since been adopted by the World Bank as a standard definition for VfM (World Bank and Public Private Infrastructure Advisory Facility, 2013). In addition, the definition states that VfM is not the choice of goods and services based on the lowest bid (The Green Book, 2003). The United Kingdom National Audit Office (UKNAO) defines VfM as the minimum economic resources required to generate and sustain a desired capability. Siamiatycki and Farooqi (2012) define VfM as the least cost option for the same output and quality of service. NT describes VfM as "the provision of an institutional function by a private party that results in a net benefit to the institution, defined in terms of cost, price, quality, quantity, or risk transfer, or a combination of these" (National Treasury, 2016).

VfM is demonstrated by comparing the NPV of the PPP reference model[3] with the NPV of the Public Sector Comparator (PSC is a risk-adjusted financial model that estimates how much a project will cost as a public sector project, and is based on actual or best estimates). The difference between the two scenarios is called VfM. The VfM concept is influenced by the belief that government working together with the private sector is able to deliver projects with a much better outcome than any one party can deliver on their own (Huxham & Vangen, 2000; McQuire (cited by Siemiatycki & Farooqi, 2012:9). Table 2 shows how VfM is calculated.

According to the NT PPP manual, VfM is conducted at TAII (the procurement stage) when government has received and evaluated bids from bidders. Government then enters into a negotiation phase with the preferred bidder to finalise the agreement, leading to financial closure of the project. As part of TAIII, the bidder's final negotiated price is then compared to the initial VfM assessment conducted at TAI (the feasibility study stage), which compares how much a project will cost as a PPP versus how much the same project will cost as a PSC after adjusting both scenarios to risk. A final VfM report includes a letter from an independent

[3] PPP reference model is an artificial bid that estimates how much a project will cost as a PPP.

firm confirming that the project has achieved and demonstrated VfM for government. In simple terms, VfM can therefore be defined as the savings that accrue to government as a result of implementing a project as a PPP relative to a TGP. Appendix B shows an overview of quantitative VfM analysis and key methodological issues in calculating VfM.

Table 3: Value-for-money calculation

Value-for-money comparison	PSC	PPP
Financial model		
Legal, financial, technical, commercial, socio-economic, institutional impact of the institution		
Costs		
Assumptions for the model (inflation, interest rate, tax, VAT, depreciation, budget, Medium-Term-Expenditure-Framework		
Funding options		
Any contribution by government		
Net-present-costs	PSC	PPP
Risk-adjustments	RA	RA
Risk-adjusted net-present-costs	RA-PSC	RA-PPP

Source: National Treasury, 2004: 19

PSC=Public sector comparator; RA=Risk-adjusted

1.2.1 Affordability

An affordability test of a PPP determines whether the public sector institution initiating the project can afford to pay the private sector unitary payments over the duration of the project. The NT PPP manual states that affordability is critical in PPPs, and if a project creates VfM but is not affordable, the project should not be implemented. In a case where a project is not affordable, options analysis needs to be revisited, and project outputs should possibly be reduced to make the project affordable. In addition, an upfront capital contribution by government into the project can be used to make a project affordable. The NT Manual notes that there are advantages to injecting a capital contribution early in the design and construction. However, there needs to be a balance between lowering the financing costs to make the project affordable, and providing adequate incentive to the private sector to deliver the project on time and on budget. This requires careful timing to avoid diluting the efficiency incentive for the private sector to deliver when too much capital is injected upfront (National Treasury, 2004). Furthermore, it is important to ensure that there is a mechanism to guarantee that the upfront capital contribution is for the construction works, and not for any other costs such as the advisory costs, bid costs or indirect costs for the equity and debt

returns for the shareholders. In SA, many projects in the office accommodation sector have had an upfront capital contribution by government to reduce the unitary payments paid to the private sector. Another project is the Gautrain Rapid Rail PPP project, which had 90 per cent of the project cost as an upfront capital contribution by government (Ngamlana, 2010).

To test for affordability, both the risk-adjusted PSC and the risk-adjusted PPP should be compared to the budget of the public sector institution initiating the project. Figure 1 below shows how affordability and VfM are calculated.

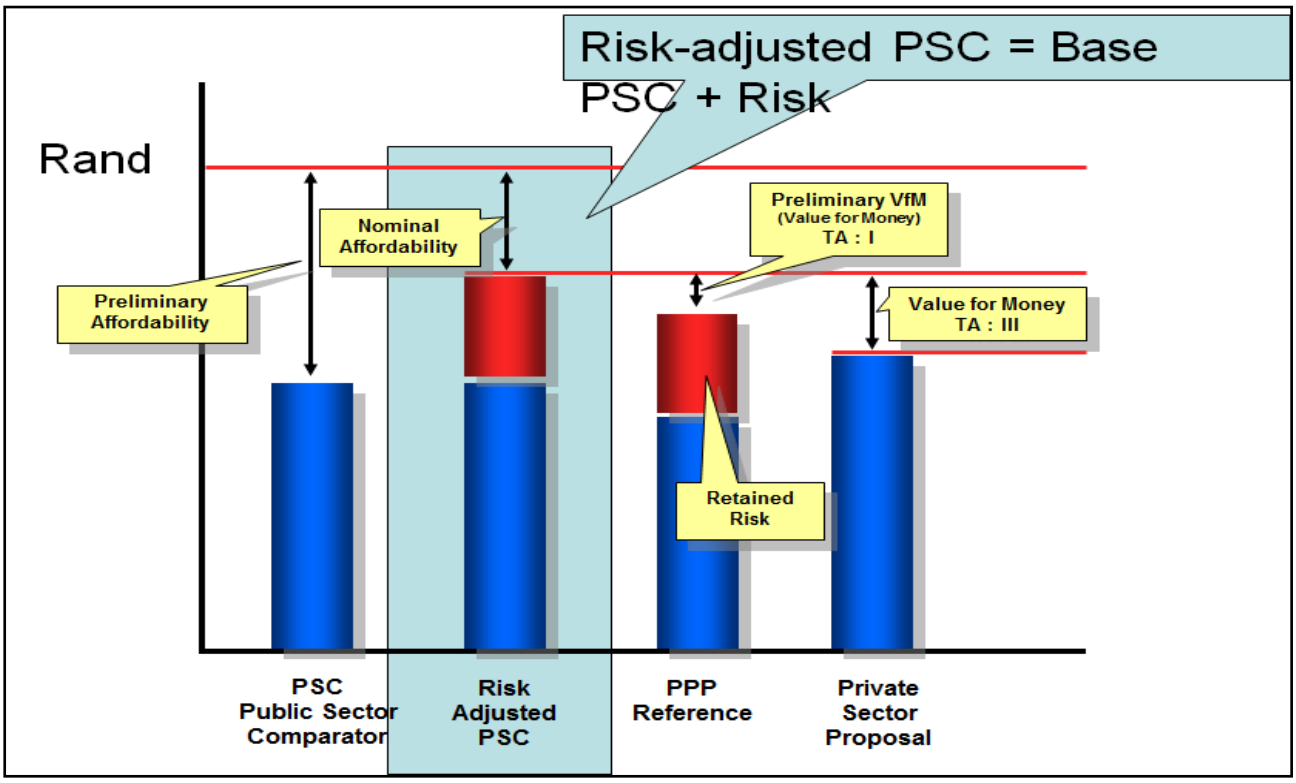

Figure 1: Calculation of affordability and value-for-money

Source: National Treasury, 2004: 36

1.2.2 Risk transfer

Risk is usually transferred to a party that is best able to manage it. However, a balance needs to be maintained in transferring risk. Li, *et al.* (2005), cited in De Clerck, Demeulemeester and Herroelen (2012), suggest that site availability risk and political risk should be carried by the public sector, the private sector should be responsible for most of the project risk, and relationship and legislation risks must be shared. Not all risk can be managed: in some cases, there could be risk to a project that both the private sector and the government are unable to manage. The Organisation of Economic Co-operation and Development (OECD) (2011) study states that such risk is called exogenous risk, and mentions *force majeure*, or an act of God, as an example of risk that cannot be managed.

Risk that can be managed is called endogenous risk. Li, *et al.* (cited in De Clerck, Demeulemeester & Herroelen, 2012: 7) classify risk into three levels: macro risk, which includes exogenous risk that occurs outside a project; meso risk, which occurs within the boundaries of a project; and micro risk, which occurs because of the essential difference between public and private sectors.

TGPs are often associated with cost overruns and delays. In a PPP such risk will be carried by the private sector, and government only specifies the output that it requires from the project (National Treasury, 2014). In PPPs, the private sector is motivated to complete projects on time as government payments are linked to the completion of the project. The private sector often raises its own funds from financial institutions, which monitor to ensure that projects are completed on time and on budget. The risk matrix consolidates all risk, their impacts and costs. Figure 2 below shows a typical conventional PPP risk matrix.

Table 4: Risk matrix

	Private party	**Contractor**	**Operator**	**Lenders**	**Institution**	**Insurers**	**Sponsors**
Market risk	•			•			
Design risk		•					•
Construction risk		•				•	•
Operating risk			•			•	•
Political risk					•		
Environmental risk		•	•	•		•	•
Inflation risk		•	•	•			•
Interest risk				•			
Exchange rate risk				•			
Regulatory risk	•	•	•	•	•		•

Source: National Treasury, 2004: 75

In coming up with the risk matrix, two risk workshops usually take place. The first is the identification of the risk workshop, and it is conducted by the technical advisers appointed to advise government on the PPP project, the NT's PPP unit and the government institution initiating the project. A second workshop is conducted separately from the first to ensure that the identified risk is assessed and quantified accurately. The PPP manual encourages the separation of the two workshops to ensure that adequate time is allocated to each process.

The following steps are followed in the construction of a risk matrix for the PSC (National Treasury, 2004):

i) Identify the risk;
ii) Identify the impact of each risk;
iii) Establish the likelihood of the risk occurring (using statistical risk analysis methods);
iv) Estimate the cost of each risk in the cash flow statement to arrive at the nominal value of each risk in NPV terms (the estimated cost of risk is multiplied by the likelihood of each risk occurring). Estimating the cost of each risk separately also accounts for separate time implications: e.g. construction risk at the beginning of the project, operation risk after completion of the construction risk, etc.;
v) Identify strategies for mitigating the risk;
vi) Allocate risks between government and the private party (after risk has been identified and costed);
vii) Construct the risk matrix (all risk is consolidated into the risk matrix, its impact and costs associated with it). The draft PPP agreement (standardised PPP contract) is also part of the process to enable negotiations with the preferred bidder before financial closure;
viii) Construct the risk-adjusted PSC (includes the base PSC plus the risk) and compare the Risk-Adjusted Public Sector Comparator (RAPSC) with the institution's budget to test for affordability.

See Appendices C and D that show a standardised risk matrix and risk valuation tables adopted from the NT's PPP manual.

The PPP costs are calculated using the same output specification and assumptions used in the PSC. The only difference in the calculation of the PSC and the PPP models is that PPPs are expected to take into account the innovation design, and construction and operational efficiencies that are usually expected from the private sector. PPPs usually follow a project finance structure which requires the development of a cash flow statement, and includes debt and equity shareholders' contributions and government's contribution to the project. Like the PSC model, the PPP model is also presented as a discounted cash flow to enable comparison with the PSC. For a PPP model, the inclusion of calculation of key ratios such as the Debt Service Capacity Ratio (DSCR), and the Loan Life Coverage Ratio (LLCR) are important for financial institutions interested in providing finance to the private sector. Unlike in the PSC model where risk is evaluated by assessing it, the likelihood of it happening and the cost of mitigating it, the PPP model does not involve the risk evaluation method. Risk is

incorporated into the costing of the project, including the risk identified and transferred from the public to the private sector.

As part of the risk analysis, a sensitivity analysis is conducted to determine how key assumptions affect both the PSC and PPP models. A Monte Carlo Simulation is a popular tool for conducting a sensitivity analysis. The determination of how variables such as the discount rate (DR), inflation, construction costs, etc. affect VfM, affordability and risk transfer is an essential part of the PPP process, and it is usually done by the technical advisory team. For major projects, the PPP manual advises that an independent party be appointed to assess whether assumptions made are realistic and reasonable.

The estimation and calculation of risk transfer can be difficult in cases where there is insufficient data available to estimate the cost of providing a service, or to procure goods as the public sector. In such cases, using a benchmark of other sectors can serve as an example of the risk to be transferred to the private sector. In Australia, the government uses 8 per cent of the project value to estimate transferable risk (Sarmento, 2010).

According to an OECD (2011) survey on 31 countries, since the early 2000s many OECD countries have started using PPPs as a preferred mode of procurement to deliver projects previously procured using traditional means of procurement. These countries preferred PPP procurement because they believed PPPs create value-for-money (VfM) for the public sector. Of the 20 countries that responded to the survey, PPPs represent less than 15 per cent of the total public sector investment. In Chile and Mexico, PPPs represent over 20 per cent of the total public sector investment. According to a Deloitte Ireland (2009) paper (cited in OECD, 2011: 35), PPP deals reached a peak between 2003 and 2007, and started slowing down as a result of the global financial crisis in 2008. In SA, PPPs account for approximately one per cent of the total public sector investment (National Treasury, 2016).

3.3 SUMMARY

PPPs have been a success in SA with 27 projects completed to date. The discipline and the planning rigour of PPPs have also been used in the procurement of the largest public sector infrastructure project in the renewable energy and rail transport sectors. The PPP framework in SA has also been adopted by the Southern African Development Community (SADC) region, a PPP network which was established to assist SADC countries in building the capacity and undertaking PPPs. However, the success of PPPs in SA has also had its own challenges. Over the past five years, PPP deal flow in SA has been declining, from an estimated R10.7 billion in 2011/12 to R4.8 billion in 2016/17 (National Treasury, 2016). The decline in PPPs can be attributable to some of the criticisms of PPPs in SA, which include

that PPPs do not create any VfM for the public sector; that PPPs are more expensive than TGP; and that it takes a long time to conclude a PPP cycle and implement projects (Africa Public Private Partnership Network, 2012).

PPPs involve multidisciplinary skills from engineering, law, economics and finance, and as a result have various challenges. It is important to research and establish whether PPPs previously undertaken have indeed achieved VfM. The focus of this study is on six office accommodation PPPs that were implemented between 2003 and 2015. These include the Department of Trade and Industry (DTI); the Department of Education (DOE); the Department of International Relations and Cooperation (DIRCO); Statistics South Africa (StatsSA); the Department of Environmental Affairs (DOEA); and the City of Tshwane (COT). Central to the research is finding out whether envisaged benefits that PPPs are believed to create during the planning phases were realised after completion of projects. Increasing private sector investments as required by the NDP depends on ensuring that there are well understood motives and credibility in delivering VfM in PPPs. This research aims to investigate whether VfM in PPPs has been achieved. The ultimate aim is to ensure that the methods used in assessing VfM in PPPs are easily understood, with the possibility of assisting decision makers about the viability of PPPs.

CHAPTER 4
RESEARCH METHODOLOGY

4.1 INTRODUCTION

This research project applied a methodology similar to Siemiatycki and Farooqi's (2012) which compared the PSC and the PPP of completed projects before and after risk adjustments to determine the extent to which risk affects VfM. Siemiatycki and Farooqi (2002) state that PPP documents in Canada were not made available to fully establish whether PPPs delivered envisaged benefits. It is for this reason that the proposed research attempts to establish whether PPPs in SA have achieved VfM. This will be done through comparing VfM at the feasibility study stage (TAI), the procurement stage (TAII), and the financial closure stage (TAIII) to determine whether the presumption that PPPs create VfM is accurate.

4.2 RESEARCH METHODOLOGY

Most PPP research studies are based on qualitative technique methods using questionnaires to determine the determinants of VfM in PPPs; hence this research paper aims to scrutinise empirically, using data from completed PPP projects, whether PPPs indeed create VfM for the public sector. Siemiatycki and Faqoori (2012) acknowledge that in most countries technical evaluations of PPPs and VfM reports are not made public, so there are few studies that have taken the empirical approach. This view is echoed by Hodge (2004), who state that the governance risk for PPPs seems to have increased due to the unavailability of project evaluation reports for public scrutiny.

Data on the six office accommodation PPP projects under review have been extracted from feasibility studies, treasury approval documents, procurement documents and PPP agreements sourced from the NT PPP unit database. The comparison between VfM at the feasibility study stage (TA I), the procurement stage (TA II) and the financial closure stage (TAIII) was conducted using Microsoft Excel. The VfM at each stage has been expressed as a percentage to enable comparison. A table and a bar graph have been showcased to compare VfM at the different approval stages.

4.3 SUMMARY

The main rationale is to determine whether the private sector's innovation, efficiencies and risk management realised through a PPP procurement, including the higher cost of borrowing and transaction costs, outweigh the public sector's cost of providing the same

output and quality of service. The difference between the two will establish whether there was any VfM created by PPPs in comparison to TGPs. To complement the analysis on VfM, lessons from other countries have been drawn to validate or invalidate some of the concerns that have arisen from the data analysed with the expectation of improving VfM in PPPs in SA.

CHAPTER 5
FINDINGS

5.1 INTRODUCTION

This research was carried out by reviewing six office accommodation buildings that have reached financial closure between 2003 and 2015. These include DTI, DoE, DIRCO, StatsSA, DOEA and CoT. The total value of the six PPP accommodation projects is R10.6 billion (representing 18% of overall PPPs undertaken in SA), and all the six were constructed using the DFBOT PPP model that bundles the operations and maintenance of the facility with the concession.

5.2 DESCRIPTION OF THE SIX ACCOMMODATION PROJECTS

A brief description of each project is given below (GTAC, 2015):

5.2.1 DTI

- The DTI was the first office accommodation PPP project to reach financial closure in August 2003;
- The total project cost, including construction and maintenance of the building, was R870 million at 2003 prices discounted at 9.09 per cent;
- The total size of the building is 70 529 m², making it the second biggest office accommodation PPP project in SA after the Statistics South Africa building, with a size of 90 288 m². The total size of the DTI building includes 30 293 m² office space, 32 290 m² basement space, and 7 946 m² special area;
- The building was constructed to house an estimated 1 703 employees of the DTI and its entities;
- The unitary payment in year 1 of the operations was estimated to be R94 million over 25 years, escalating by inflation every year;
- The funding structure of the project was 80 per cent debt, 15 per cent equity and 12 per cent government capital contribution

5.2.2 DoE

- The DoE office accommodation PPP project reached financial closure in August 2007;
- The total project cost, including construction and maintenance of the building, was R512 million at 2007 prices, discounted at 11.14 per cent;
- The total size of the building is 57 778 m², which includes 34 000 m² office space, 15 832 m² basement space, and 7946 m² special area;

- The building was constructed to house an estimated 1 200 employees of the DoE;
- The unitary payment in year 1 of the operations was estimated to be R70 million over 25 years, escalating by inflation every year;
- The funding structure of the project was 87 per cent debt and 17 per cent equity;
- There was no capital contribution by the DoE.

5.2.3 DIRCO

- The DIRCO office accommodation PPP project reached financial closure in August 2009;
- The total project cost, including construction and maintenance of the building, was R2 billion at 2009 prices, discounted at 11 per cent;
- The total size of the building is 67 275 m², making it the third biggest office accommodation PPP project in SA after the Statistics SA building (90 288 m²) and the DTI building (70 529 m²). The total size includes 42 026 m² office space, 21 542 m² basement space and 3 707 m² special area guest houses;
- The building was constructed to house an estimated 2 285 employees of the DIRCO;
- The unitary payment in year 1 of the operations was estimated to be R99 million over 25 years, escalating by inflation every year;
- The funding structure of the project was 79 per cent debt and 21 per cent equity;
- The capital contribution by DIRCO was R746 million.

5.2.4 DEA

- The DEA office accommodation PPP project reached financial closure in May 2012;
- The total project cost, including construction and maintenance of the building, was R2.7 billion at 2009 prices, discounted at 7.8 per cent;
- The total size of the building is 45 422 m², which includes 27 422 m² office space, and 18 000 m² basement space;
- The building was constructed to house an estimated 1 305 employees of the DEA;
- The unitary payment in year 1 of the operations was estimated to be R94 million over 25 years, escalating by inflation every year;
- The funding structure of the project was 48.9 per cent debt, 15 per cent equity and 36.1 per cent capital contribution (R366 million) by DEA.

5.2.5 StatsSA

- The StatsSA office accommodation PPP project reached financial closure in March 2014;

- The total project cost, including construction and maintenance of the building, was R2.5 billion at 2014 prices discounted at 8 per cent;
- The total size of the building is 90 288 m², making it the biggest office accommodation PPP project in SA. The total size includes 40 324 m² office space, 38 064 m² basement space, 10 591 m² for the data processing centre, and 1 309 m² heritage buildings;
- The building was constructed to house an estimated 2 458 employees of StatsSA;
- The unitary payment in year 1 of the operations was estimated to be R162 million over 24 years, escalating by inflation every year;
- The funding structure of the project was 56 per cent debt, 10 per cent equity and 40 per cent capital contribution;
- The capital contribution by StatsSA was R617.1 million.

5.2.6 CoT

- The CoT office accommodation PPP project reached financial closure in March 2015;
- The total project cost, including construction and maintenance of the building, was R2 billion at 2014 prices, discounted at 11.25 per cent;
- The total size of the building is 45 098 m², and includes 35 098 m² office space, 5 000 m² council chambers, and 5 000 m² rental space;
- The building was constructed to house an estimated 1 501 employees of the CoT;
- The unitary payment in year 1 of operations was estimated to be R117 million over 25 years, escalating by inflation every year;
- The funding structure of the project was 82.5 per cent debt and 17.5 per cent equity;
- There was no capital contribution by CoT.

5.3 DATA ANALYSIS: VALUE-FOR-MONEY

Table 5: Value-for-money comparison at feasibility study stage (TAI), procurement stage (TAII) and financial closure stage (TAIII)

Government institution	PPP model	Risk Adjusted PSC (R million)	Risk Adjusted PPP (R million)	VfM at Feasibility Study Stage (R million)	VfM at Feasibility Study Stage (%)	Winning Bidder's Price (R million)	VfM at Procurement Stage (%)	VfM at Financial Closure (R million)	VfM at Financial Closure (%)
Department of Trade and Industry	DFBOT	808.5	414.5	394.0	49%			870.0	-8%
Department of Education	DFBOT	623.9	595.7	28.2	5%			512.0	18%
Department of International Relations and Cooperation	DFBOT	2 226.8	2 094.0	132.8	6%	1 709.1	23%	1 958.8	12%
Statistics South Africa	DFBOT	4 497.3	2 728.0	1 769.3	39%	2 393.0	47%	2 533.0	44%
Department of Environmental Affairs	DFBOT	3 292.0	3 093.7	198.3	6%	2 869.0	13%	2 731.0	17%
City of Tshwane	DFBOT	2 412.2	2 053.0	359.3	15%			2 004.5	17%
Total		**13 860.7**	**10 978.7**	**2 881.9**	**20%**	**6 971.1**	**28%**	**10 609.3**	**17%**

* Data not available where there are open spaces

Table 3 shows that RAPSC for all the six projects was R13.9 billion, and the RAPPP was R11 billion, resulting in R2.9 billion VfM created at TAI stage. This represents a 20 per cent initial VfM created. Table 3 also shows that when the initial VfM is compared with the winning bidders' price at TAII, the VfM improves from 20 per cent to 28 per cent. This may imply that the rigorous PPP procurement method assists in creating VfM in PPPs. However, when VfM at the TAII procurement stage is compared to the VfM at the TAIII financial closure stage, the VfM decreases from 28 per cent to 17 per cent.

On an individual level, the StatsSA office accommodation project generated the highest VfM (44 per cent at financial closure) compared to the other five projects, whereas the DTI office accommodation projects generated the least VfM (-8 per cent at financial closure). Other office accommodation projects that generated positive VfM include the DOE (18 per cent at financial closure), DEA and CoT (both projects generated 17 per cent VfM at financial closure), and DIRCO (12 per cent at financial closure). Overall, the average VfM created for the six office accommodation projects is 17 per cent (R3.2 billion savings as a result of pursuing a PPP approach instead of a PSC approach).

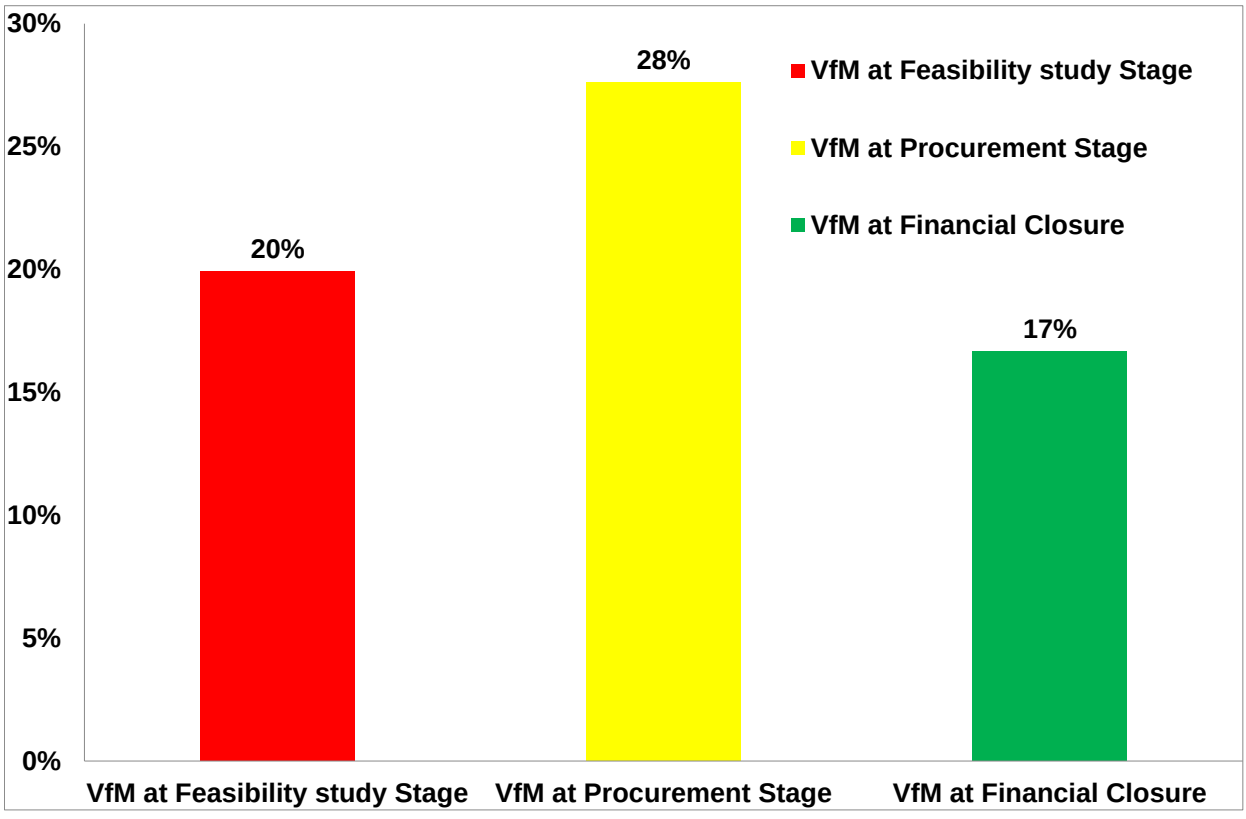

Figure 2: Graphical illustration of value-for-money comparison at feasibility study stage (TAI), procurement stage (TAII) and financial closure stage (TAIII)

The graphical representation of VfM shows that overall, PPPs create VfM for the public sector. From the projects analysed, PPPs seem to confirm the presumption that PPPs create VfM. The graph has used robot colours to illustrate the importance of each stage of the PPP. At the TAI stage, 20 per cent VfM was envisaged, and at the TAII stage, 28 per cent VfM was achieved compared to the final TAIII VfM stage, at which 17 per cent VfM was created. However, the graphical illustration shows that VfM was positive, although it decreased from 28 per cent to 17 per cent, an 11 per cent decline.

5.4 SUMMARY

Given that most research papers on PPPs are not based on actual project data, this research was able to use actual project data to determine value-for-money in the public sector. Empirical data analysis demonstrates that the PPPs created VfM for the public sector. The six accommodation projects show a 17 per cent VfM savings for government. However, VfM was positive in spite of a 11 percent decline. This may imply that government needs to strengthen its negotiations with the private sector to improve VfM in PPPs. The premium could also be suggestive of the risk profile of the project as evaluated by the private sector in which case government should consider introducing further measures for mitigating so-perceived risks.

CHAPTER 6
SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

Chapter 5 presented the main findings of the analysis, provided a description of the six accommodation PPP projects, and the VfM data analysis. Chapter 6 builds on Chapter 5 by providing the conclusions, policy considerations and recommendations that can be adopted to improve VfM in PPPs.

6.2 SUMMARY OF MAIN FINDINGS

This research gave an overview of how VfM in PPP projects is determined. The literature shows that various economists and policymakers do not agree on several aspects of VfM, and whether PPPs create VfM for the public sector or not. The study shows that VfM is one of the leading tools available to compare the cost of procuring goods and services by the public sector versus the private sector. Although VfM has been criticised because of the belief that PPPs do not create VfM for the public sector, the analysis shows that PPPs in the accommodation sector in SA have managed to create VfM for the public sector. However, accommodation projects in SA represent only 18 per cent of overall PPPs undertaken in SA. The study was motivated by the fact that there is little ex-post VfM data information based on real projects analysis to establish whether VfM in PPPs was achieved or not.

Even though many economists and policymakers argue that the PPP procurement process takes a long time, the study shows that the process aids assists government to plan better and to have better knowledge and grasp of various project scenarios that it would not have outside the PPP process. Government is better able to understand the various costs and risks before a project can be implemented. All this can be very good for project planning, and enables government to choose between implementing a project as a PPP or as a TGP. The study shows that PPPs have created VfM for government in the public sector, mainly because the PSC served as a benchmark to negotiate with the winning bidder.

International literature shows that various countries have undergone the process to refine and address some of the challenges and criticisms PPPs face. Lessons have been drawn from these countries, and SA must draw from the lessons if PPP deal flow is to increase. If PPPs are to change the perception that they are costly and do not create any VfM for government, projects documents should be made available to the public to engage in

debates and research on the merits of PPPs undertaken. This may increase the credibility of PPPs.

DR is a major factor in calculating VfM in PPPs. The NT PPP manual currently does not prescribe the use of the DR by the private sector. The manual advises that a rate similar to the private sector cost of capital must be used, although this is not compulsory. As in many countries, SA must learn from other countries and establish a rate for discounting a project as opposed to leaving it up to the individual project advisers. Countries such as the UK and Canada can serve as a good basis for SA to establish a DR for PPP projects.

In addition, SA should explore whether examples of other countries such as Canada and the UK, where PPP projects have been unbundled by separating the construction of projects from the operations, can improve VfM in PPPs. In the UK and Canada, soft services such as cleaning and security have been internalised. This view is echoed by Quiggin (2004), who supports the separation of the construction and maintenance of services in a PPP except in exceptional cases. He maintains that there is no reason to believe that bundling of services in a PPP will result in optimal allocation of risks. He claims that in any case, PPP contracts are unbundled as soon as the deals have been concluded. In a bundled PPP project, there is no process set up to check whether the individual processes of a PPP that would otherwise be tendered for competition in a TGP results in savings for government. If government were to individually tender for each service, the bids would be subjected to competition, and the market would possibly generate savings for government that would otherwise not be realised in a PPP bundled approach.

In the case of office accommodation projects, policymakers must benchmark the cost of PPPs, and where there are noticeable differences with other PPPs previously undertaken, care should be taken to investigate the cause of the difference. This includes ensuring that the rate of return earned by the private sector reflects the low risk that the private sector is facing post-construction. The Renewable Energy Independent Power Producers Programme (REIPPP), that has been praised for attracting an estimated R194 billion of private sector investment in the energy sector, has been a success mainly because the tariff offered to the private sector has decreased from the first window to the third window, and by so doing increased the VfM that government has attained from the process (Department of Energy, 2015). Accommodation PPPs in SA should also follow the example of the REIPPP by ensuring that the VfM that government earns from PPP projects improves over time, and by so doing improve the credibility of PPPs.

In other countries, such as the UK, refinancing of PPPs has been implemented in order to share in private sector returns. In SA, refinancing is usually provided for in the PPP agreements/contracts, but it is rarely triggered. Given the number of PPPs that have been successfully implemented, refinancing should be explored to establish whether VfM cannot be improved.

6.3 CONCLUSIONS AND POLICY IMPLICATIONS

6.3.1 Globally

Any project, either a PPP or TGP should only be implemented if it creates VfM, and the choice of procurement should be informed by the best procurement option that delivers VfM for government. This may be difficult to establish as VfM is often distorted and influenced by other factors. To eliminate this influence, other countries have ensured that there are no incentives that favour any particular procurement choice rather than VfM. This includes ensuring that both PPPs and TGPs face the same rigour of analysis and monitoring. However, this may pose a challenge given that in many countries, TGPs are often used as the default procurement options, and PPPs are often undertaken if there is a project champion who requires certain projects to be undertaken as PPPs. In addition, PPPs usually require highly skilled personnel that are mostly procured from the private sector, and government does not often have these sets of skills. This demonstrates that there are no set criteria to establish the best procurement option to deliver VfM, and if the SA government is to truly create and improve VfM in projects, a set of criteria needs to be established. .

A combination of PPPs and TGPs has been used in the past to address some of the challenges that pure PPPs are known to have. This combination is called hybrid PPPs, and have been previously recommended to address the problems that pure PPPs are known to have. Pure PPPs are known to be complex, costly and difficult to manage and implement. Hybrid PPPs are aimed at introducing flexibility while retaining the PPP incentive structure, and lowering transaction costs (Grimsey & Lewis, 2007).

The International Monetary Fund's (IMF, 2015) study on making public investment more efficient proposes a unified framework approach to public investments that covers PPP and TGPs. The study identified that in the absence of a unified framework of investment management, there are often delays in the completion of projects; poor selection of projects leading to white elephants; cost overruns; corrupt procurement practices; and failure to operate and maintain assets (IMF, 2015). The study makes recommendations based on a review of international best practice in the UK and Australia, and it illustrates the need to compare both PPPs and TGPs to ensure that the best possible procurement option that

offers VfM is chosen. The study states that politicians often have a vested interest in PPPs, and push for projects to be implemented as PPPs, some of which would have been rejected using an objective procurement assessment (IMF, 2015). The study proposes eight critical must-have features of a public investment management system that provides a systematic approach to creating the institutional capacity to manage investments. The eight critical features are listed below (IMF, 2015):

1. Investment guidance, project development and preliminary screening
2. formal project appraisal
3. independent review of appraisal
4. project section and budgeting
5. project implementation
6. project adjustment
7. facilities operations
8. project evaluation

The eight critical features of a public investment management system provide a logical and consistent system through which even poorly capacitated countries can attempt to establish basic principles of project selection and management (IMF, 2015). Figure 4 below shows a unified framework for public investment management. Central to this is the decision tree. A decision tree can assist countries to decide on the procurement strategy between PPPs and TGPs. All projects should be subjected to a CBA to establish whether an investment results in the most efficient use of society's resources. A CBA identifies and monetises costs and benefits to the society to enable a comparison of options (National Treasury, 2016). A unified public investment management framework provides a framework from which all investments will be subjected to a CBA. An independent review and selection process should be undertaken to decide on the project best able to achieve VfM. An independent process will ensure that the appropriate procurement choice that offers the best VfM is chosen as opposed to implementing PPPs because they are considered off government balance sheet. An important step in the process is the evaluation of projects post-implementation to ensure that lessons are learned, communicated and applied in assessing new projects (IMF, 2015).

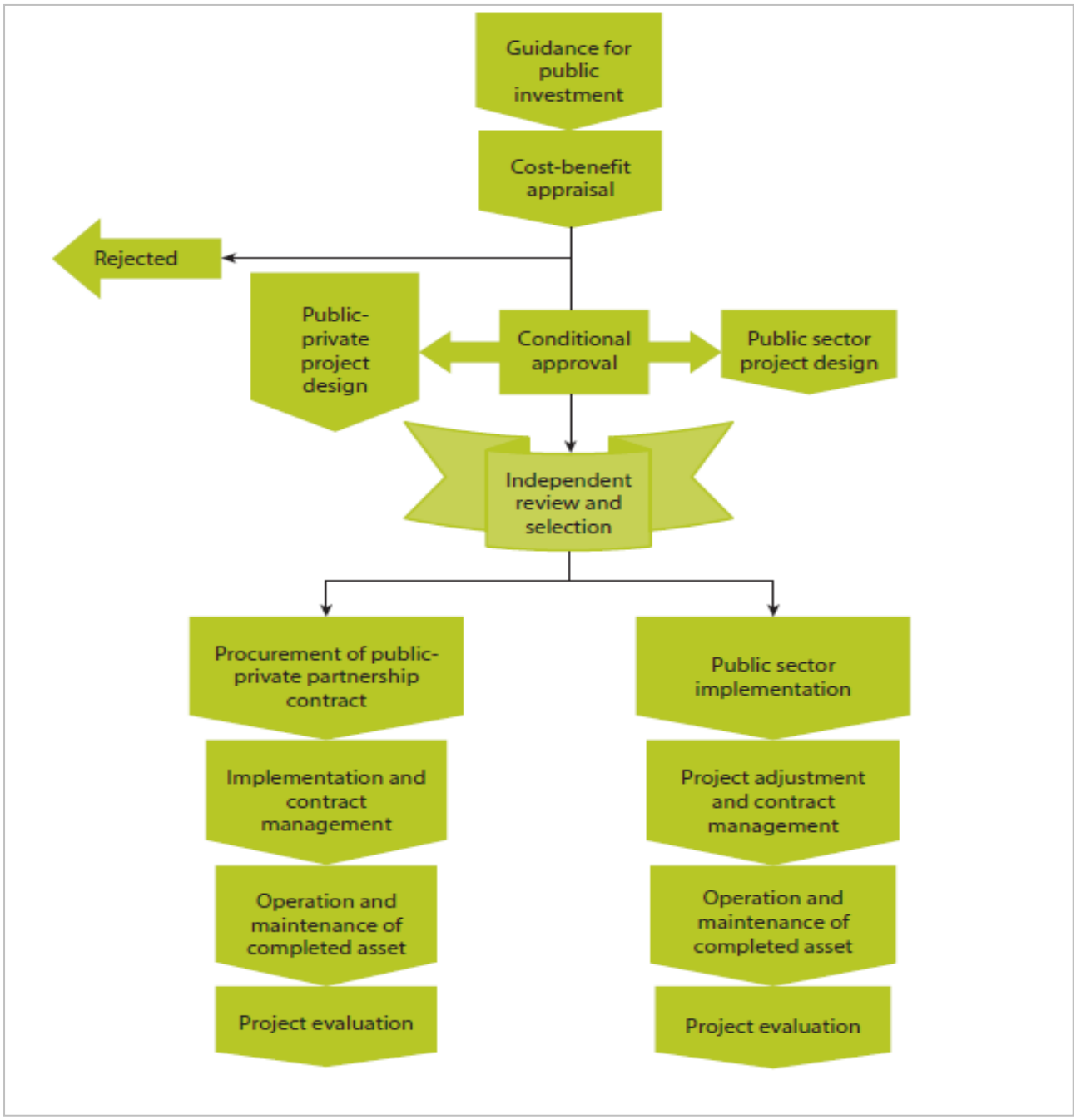

Figure 3: Unified public investment management framework

Source: International Monetary Fund, 2015: 35

6.3.2 South Africa

SA should also explore integrating PPPs in the overall public investment planning. This will ensure that a decision is not made upfront on a PPP procurement, but that PPPs undertaken

are based on a broader public investment appraisal system that evaluates the viability of all projects regardless of whether they are PPPs or not. The IMF and OECD both suggest that projects should be subjected to a procurement option test early in the procurement stage. This will most likely ensure that the best procurement option that delivers the greatest VfM is chosen regardless of the procurement choice.

6.4 PRIORITIES GOING FORWARD

There is a need to publish PPP documentation to encourage debates about the viability of PPPs. This will in turn educate the public about PPPs, create awareness and encourage public participation in infrastructure projects, including PPPs. Siamiatycki and Farooqi (2012) advocate the public release of PPP project documents during the planning process and before approval to enable the public to see documents and debate the merits of VfM findings in the reports. In Canada, Infrastructure Ontario, the government agency responsible for PPPs in Canada, now makes project documents available to enable the public to see reports and debate the merits of VfM in PPPs in comparison to the PSC options. SA should reconsider and make VfM assessment reports publicly available to improve the credibility of PPPs and potentially increase PPP deal flow.

In addition, the PPP framework has been in existence for more than 20 years in SA. There is a need to review all the PPPs that were completed, and draw lessons that can in turn improve VfM in future PPPs. This process should be done in parallel with learning from other countries that have managed to improve VfM in PPPs over the years.

6.5 RECOMMENDATIONS

There is a need to explore whether some of the recommendations listed below can assist in improving VfM in PPPs. The NT should explore some of the recommendations made and assess the possibility of improving VfM and where possible, to restructure PPPs. Some of these recommendations are based on lessons learned from other countries, and are also based on research done by international institutions such as the OECD, IMF and WB. These lessons have been found to improve VfM in PPPs in other countries. The following recommendations can assist in identifying areas that can improve VfM in PPPs:

1. Siamiatycki and Farooqi (2012) recommend that PPP policymakers should be unbundled by separating construction, operations and maintenance of projects The private sector should ideally only be involved in the design, financing and construction phases of the project, and the public sector should be responsible for operations and maintenance. The study states that this will shorten the duration of projects, and lower the cost of

borrowing. Long-term PPP concessions are only better if there are long-term concerns for the quality and maintenance of the facility. In the case of SA, accommodation PPPs are relatively easy, and the country can potentially benefit from separation of the construction, operations and maintenance of PPPs.

2. The rate of private sector return in office accommodation PPPs during the construction period is the same as post-construction. There is a need for the SA government to look again into PPPs previously undertaken, and where possible renegotiate the private sector's return to reflect the current risks the private sector is facing. Refinancing of PPPs should ideally be explored to ensure that, where possible, PPPs previously undertaken should be refinanced to improve VfM in SA.
3. Siamiatycki and Farooqi (2012) state that in order to develop innovative solutions to major infrastructure problems, some PPP agencies have adopted the tendering practice called "competitive dialogue". The public sector enters into a multiple dialogue with potential bidders to refine its output specifications. The study shows that competitive dialogue has the potential to increase competition among bidders leading to increases in VfM in PPPs. An adoption of a strategy such as competitive tendering may also improve VfM in PPPs in SA.
4. The DR is a major factor in calculating VfM in PPPs. SA must learn from other countries and establish the rate of discounting a project as opposed to leaving it up to the individual project advisers. Countries such as the UK and Canada can serve as a good basis for SA to establish a DR for PPP projects.
5. SA can learn from the Canadian experience where the PPP agency responsible for implementation of PPPs' mandates was broadened to include procurement of all projects, including PPPs. This meant that the well-capacitated personnel working for the PPP agency were given a mandate to start working on other projects, including TGPs. This implied that there was no need to implement certain types of projects as PPPs, even though the PPP procurement was not the most viable procurement option.
6. The IMF (2015) study on VfM analysis recommends that countries should pay equal attention to qualitative and quantitative VfM analysis. This has the potential to assist in understanding the risk of projects, and in so doing improve the VfM in PPPs.
7. The IMF (2015) study on VfM also states that VfM analysis is only part of the PPP process. Institutions undertaking PPPs should invest in contract management structures, and put in place appropriate structures to ensure that PPPs achieve VfM throughout the lifecycle of the project.
8. The OECD (2011) report states that, in order to strengthen the VfM in PPPs, there should be a requirement to do ex-post evaluation of PPPs to determine whether or not

VfM was actually achieved. In addition the Auditor-General of SA should not only audit the financial process of each PPP, as is currently done, but should expand the scope of audit to include conducting VfM audits to determine whether benefits envisaged in PPPs were achieved. The OCED lists criteria that should be considered in a procurement option test (see Annexure H).

9. Flyvbjerg (2009) recommends reference class forecasting by comparing projects against large samples of similar projects that were undertaken in the past to determine misrepresentation of costs and benefits through optimism bias. Similarly, VfM in PPPs can be improved by ensuring that completed PPP projects are used as a benchmark for proposed PPPs to determine the extent to which costs may have been underestimated and benefits overestimated. This will ensure that VfM in PPPs improves over time.
10. Hodge and Greve (2007) recommend that in order to continue ensuring that PPPs generate the type of benefits expected, parliamentary committees and the regulators need to be strengthened to interrogate PPPs and guard against overestimation of benefits to obtain approvals. In addition, Hodge and Greve (2007) state that the responsibility for PPP policy and its implementation need to be separated to continue to improve VfM in PPPs.
11. Because of the significance of risk transfer in determining VfM in PPPs, there is a need to scrutinise the method of pricing and allocating risk in the risk workshop, and ensure that risk retained by the public sector is not overestimated to swing the VfM in favour of a PPP option.

6.6 FURTHER RESEARCH

The scope of this research did not study whether certain PPPs should have been undertaken or not; whether the cost of raising finance for PPPs was excessive or not; and whether risk transferred to the private sector was excessive or not . Those topics can be chosen for further investigation by anyone interested in pursuing studies in PPPs.

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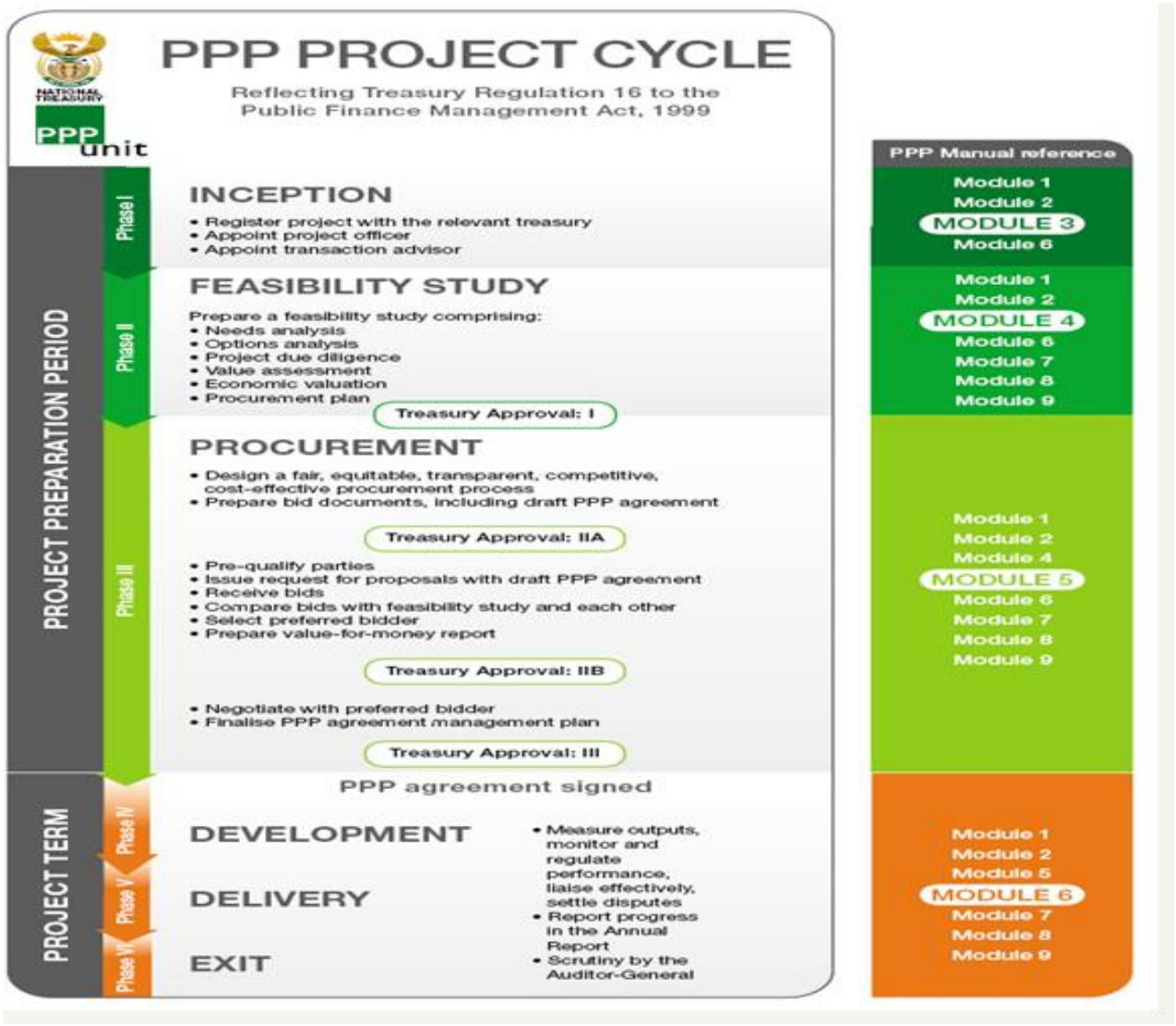
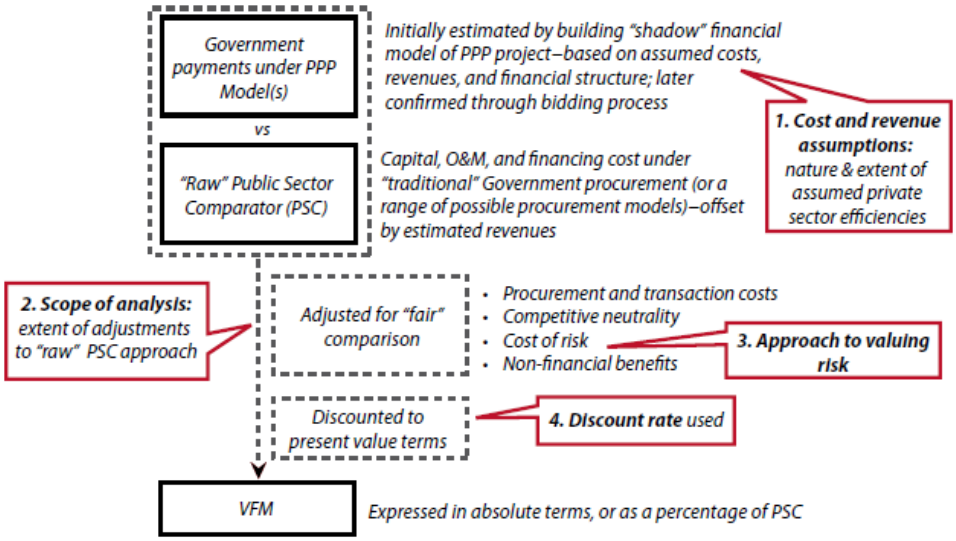
APPENDICES:

A. PPP PROJECT CYCLE



Source: National Treasury, 2004: 12

B. OVERVIEW OF QUANTITATIVE VFM ANALYSIS AND KEY METHODOLOGICAL ISSUES



Source: The World Bank & Public Private Infrastructure Advisory Facility, 2013: 24

C. STANDARDISED RISK MATRIX

Categories	Description	Mitigation	Allocation
Completion risks	The possibility that the completion of the Works required for a project may be (i) delayed so that the delivery of the Services cannot commence at the Scheduled Service Commencement Date, or (ii) delayed, unless greater expenditure is incurred to keep to the Scheduled Service Commencement Date, or (iii) delayed because of variations.	Special insurance (project delay insurance). Appointment of an Independent Certifier to certify the completion of the Works. Liquidated damages, construction bonds and other appropriate security from the Private Party to achieve completion, unless caused by the Institution. Relief Event.	Private Party, unless delay caused by Institution (including, Institution Variations).
Cost over-run risk	The possibility that during the design and construction phase, the actual Project costs will exceed projected Project costs.	Fixed price construction contracts. Contingency provisions. Standby debt facilities / additional equity commitments; provided that these commitments are made upfront and anticipated in the base case Financial Model.	Private Party.
Design risk	The possibility that the Private Party's design may not achieve the required output specifications.	Clear output specifications. Design warranty. Patent and latent defect liability. Consultation with and review by Institution (but review must not lead to input specifications by Institution). Independent Expert appointment to resolve disputes on expedited basis.	Private Party.
Environmental risk	The possibility of liability for losses caused by environmental damage arising (i) from construction or operating activities (see operating risk) during the Project Term, or (ii) from pre-transfer activities whether	Thorough due diligence by the bidders of the Project Site conditions. Independent surveys of the Project Site commissioned by the Institution at its cost. Institution indemnity for latent pre-transfer	In relation to (i), the Private Party. In relation to (ii), the Institution, but Institution's liability to be capped (subject to VFM considerations).

Categories	Description	Mitigation	Allocation
	undertaken by the Institution or a third party and not attributable to the activities of the Private Party or the Subcontractors.	environmental contamination, limited by a cap (subject to value for money ("VFM") considerations), for a specified period. Remediation works to remedy identified pre-transfer environmental contamination as a specific project deliverable. Independent monitoring of remediation works.	
Exchange rate risk	The possibility that exchange rate fluctuations will impact on the envisaged costs of imported inputs required for the construction or operations phase of the Project.	Hedging instruments (e.g. swaps).	Private Party.
Force Majeure risks	The possibility of the occurrence of certain unexpected events that are beyond the control of the Parties (whether natural or "man-made"), which may affect the construction or operation of the Project.	Define "Force Majeure" narrowly to exclude risks that can be insured against and that are dealt with more adequately by other mechanisms such as Relief Events. Relief Events. Termination for Force Majeure.	If risks are insurable, then they are not Force Majeure risks and are allocated to Private Party. If risks are not insurable, then risk is shared insofar as Institution may pay limited compensation on termination.
Inflation risk	The possibility that the actual inflation rate will exceed the projected inflation rate. This risk is more apparent during the operations phase of the Project.	Index-linked adjustment to Unitary Payments or user charges.	Institution bears risk of inflationary increases up to the limit of the agreed index. Increases in excess of this are for the Private Party.
Insolvency risk	The possibility of the insolvency of the Private Party.	SPV structure to ring-fence the Project cash flows. Security over necessary Project Assets. Limitations on debt and funding commitments of the Private Party. Reporting obligations in respect of financial information and any litigation or disputes with creditors.	Private Party.

Categories	Description	Mitigation	Allocation
		Institution has right to terminate the PPP Agreement. Substitution of Private Party in terms of the Direct Agreement. Substitution of the Private Party with a New Private Party if there is a Liquid Market and the Retendering procedure is followed.	
Insurance risk	The possibility (i) that any risks that are insurable as at the Signature Date pursuant to the agreed Project Insurances later become Uninsurable or (ii) of substantial increases in the rates at which insurance premiums are calculated.	In the case of (i), at the option of the Institution, self-insurance by the Institution or, if the uninsurable event occurs, then termination of the PPP Agreement as if for Force Majeure with compensation to the Private Party. Reserves.	In relation to (i), if the Private Party caused the Uninsurability or, even if it did not, but the Private Party cannot show that similar businesses would stop operating without the insurance in question, then the Private Party bears the risk. Otherwise, the risk is shared between the Private Party and the Institution. In relation to (ii), the Private Party (unless caused by Institution variations).

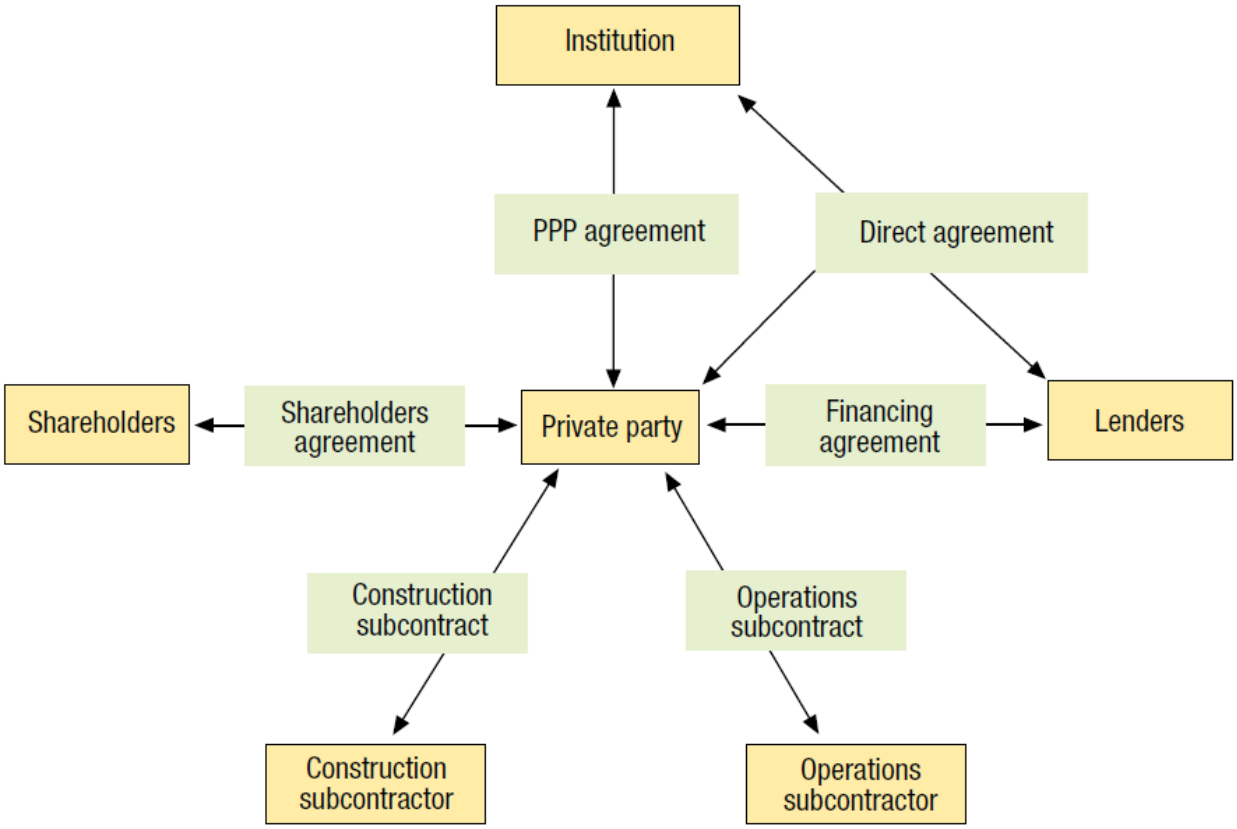
Source: National Treasury, 2004: 63-66

D. RISK VALUATION

Rand thousands	Effect on PSC cost assumption	Impact of risk	Likelihood of risk occurring	Value of risk
Design and construction risk (D&C)				
Cost overrun (% of D&C cost: R100 million)				
Below base PSC	-5%	-5 000	5%	-250
No change from base PSC	0%	0	10%	0
Overrun: likely	15%	15 000	50%	7 500
Overrun: moderate	30%	30 000	20%	6 000
Overrun: extreme	40%	40 000	15%	6 000
				19 250
Operating risk (% of direct operating costs: R8.25 million per annum)				
Below base PSC	-5%	-413	5%	-21
No change from base PSC	0%	0	25%	0
Overrun: likely	15%	1 238	40%	495
Overrun: moderate	30%	2 475	25%	619
Overrun: extreme	40%	3 300	5%	165
				1 258
Maintenance risk (% of maintenance cost: R4 million per annum)				
Below base PSC	-5%	-160	5%	-8
No change from base PSC	0%	0	25%	0
Overrun: likely	15%	480	40%	192
Overrun: moderate	30%	960	25%	240
Overrun: extreme	40%	1 280	5%	64
				488
Technology risk (% of plant and equipment: R50 million)				
Below base PSC	-20%	-10 000	20%	-2 000
No change from base PSC	0%	0	10%	0
Overrun: likely	30%	15 000	40%	6 000
Overrun: moderate	40%	20 000	20%	4 000
Overrun: extreme	50%	25 000	10%	2 500
				10 500

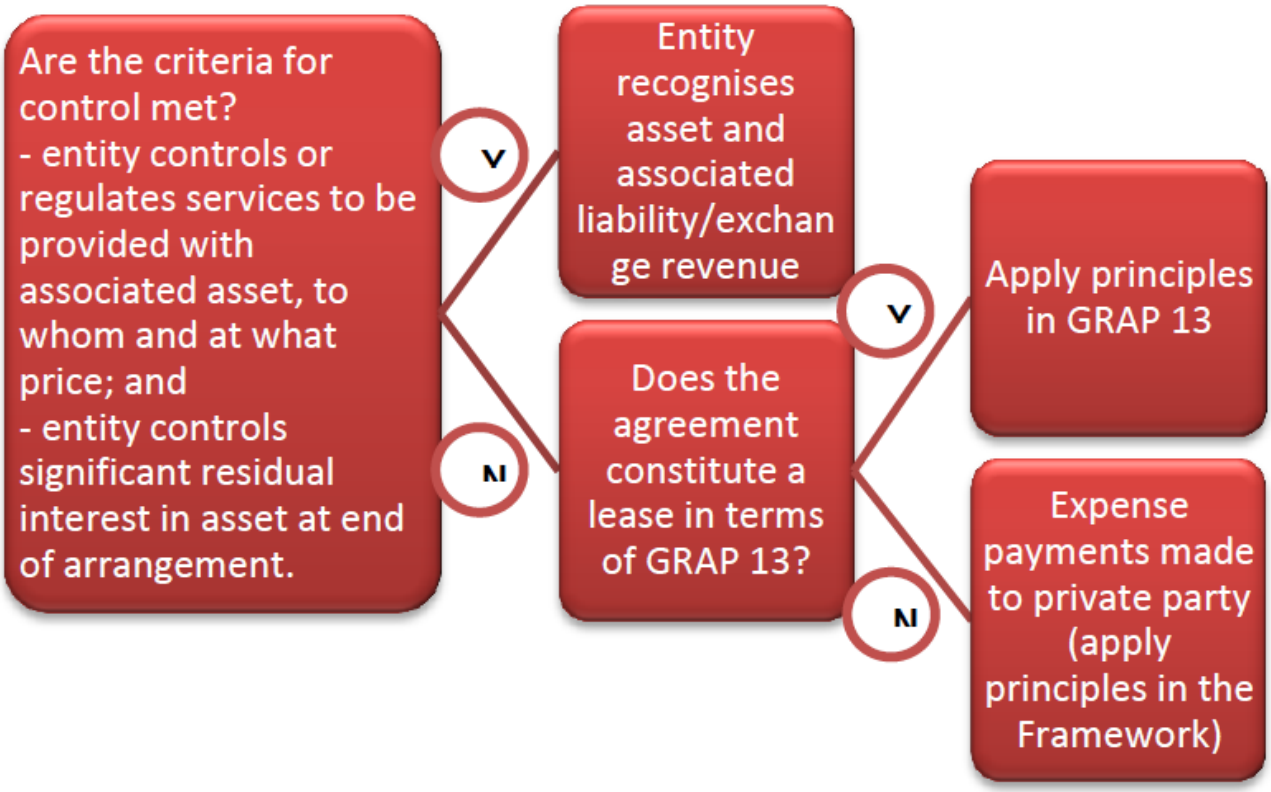
Source: National Treasury, 2004: 51

E. TYPICAL STRUCTURE OF A PPP



Source: National Treasury, 2004: 6

F. AN ACCOUNTING TREATMENT OF A PPP



Source: National Treasury, 2014: 36