

## **GOVERNMENT SPACE PROCUREMENT OPTIONS: TESTING THE MYTHS**

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### **ABSTRACT**

*The belief that the community is best served when government departments and instrumentalities lease space provided by the private sector rather than own their own real estate is tested using an Australian case study. A government department (The Department) needing a new head office in an Australian capital city presented researchers with eight options for providing commercial space to analyse using actual market data. This paper presents the results of the analysis as a test of financial efficiency for Public-Private Partnership (PPP) delivery of government commercial space.*

*The eight options range from self managed construction on The Department's own land, through various private/public strategies to leasing available commercial space on the open market. The analysis found that the ultimate financial cost increased with increasing private involvement and the optimum risk strategy was to retain a builder to construct on The Department's land. The final decision of The Department was not consistent with the risk and return analysis but did reflect the bias of common opinion on appropriate policy.*

*Social and strategic implications are reviewed in terms of financial effectiveness to provide a financial analysis of the costs of moving public services into dependence on private sector space. It is found that a more nuanced approach to public debt is appropriate that distinguishes between debt used for productive purposes and that used for the provision of services.*

Keywords: Government Funding, Public Private Partnerships, PPP, BOOT, VfM, PSC

### **INTRODUCTION**

The supply of property for governmental use has undergone a massive strategic change over the last generation from governments occupying their own property, to the current tendency to lease space from the market. Various arrangements for Public Private Partnerships (PPP) exist and have the capacity to provide innovative solutions to public needs. However, Pangeran et al (2010) pointed out that "*PPP does not automatically provide the solution for the financing scheme due to value for money (VfM) issues.*" This study is a test of the financial effectiveness of various PPP possibilities for an actual case study where other selection criteria have been normalised. It asks the simple question: 'What procurement option provides the best value for money in a case where all non-financial variables are normalised?'

In many countries, including United Kingdom, Japan, Italy, France, Germany, Malaysia, Australia and USA, PPP financing utilises Private Finance Initiative (PFI) procurement strategies (Takim, Abdul-Rahman et al. 2008). These recognise that the primary rationale for PPP arrangements relate to finance. Jefferies et al (2006) supports this view regarding Australia where PPPs were primarily a strategy for lightening the government balance sheet by shifting the financing of public works to private sector. While it was initiated at a time when the private sector itself was experimenting with strategies to lighten its balance sheets, there was additional impetus in the case of the public sector due to the perception that public sector debt was excessive. Pangeran, Pribadi et al. (2010) cite a listing from Skliros and Perrins (2007) of the various policies enacted in various jurisdictions in Australia showing that PFI strategies were supported by all branches of state and federal government.

The notion of private provision of infrastructure is not new. It has been common in the USA and Winch (2000) outlined its successful use in Great Britain in the nineteenth century, although the British experience soured in the financial crash of 1866 which resulted in a return to a preference for governmental provision of infrastructure.

The success of PPP strategies has not been consistent and there is considerable debate over appropriate measures of effectiveness. The PPP to supply water to Jakarta has experienced considerable difficulties, not the least of which has been price and delivery outcomes considerably inferior to expectations (Jensen 2005). While many of the problems encountered by Indonesia in this case were complicated by unexpected political turmoil, there emerged considerable questions regarding the prudence of the initial contracts. John Perkins (2004) was an economist engaged in the supply of infrastructure and development to developing countries and has catalogued the strategies whereby development initiatives can be sold to governments without adequate financial testing that result in considerable costs to the recipient communities. In the developed world Peter Fitzgerald found that an audit of UK PPPs revealed that "*The findings included the observation that traditional procurement has a better performance for standard buildings and standard civil engineering than for non-standard.*" (Fitzgerald 2004, p.19).

The general starting point for assessment of PPPs is their ability to deliver value for money. Value for Money (VfM) has therefore become the reference point for PPP acceptability. The matter of assessing VfM is the subject of considerable debate due to the variety of schemes, governmental policies, parameter dimensions and analytical approaches. In the UK HM Treasury defines VfM as "*the optimum combination of whole-life costs and quality (or fitness for purpose) to meet the user requirement*" (Pitt and Collins 2006, p.364). This fairly general concept can be interpreted in a variety of ways spanning from simple cost benefit analyses to complex discounted cash flow models and economic impact studies. In NSW value for money spans several dimensions since:

*"The aim is to deliver improved services and better value for money, primarily through appropriate risk transfer, encouraging innovation, greater asset utilisation and integrated whole-of-life asset management."* (NSW Government 2006, p.1).

The issue of risk transfer complicates VfM evaluation because some form of risk calibration is necessary, since the inference is that financial performance alone is insufficient as an evaluator. The RICS Public Sector Asset Management Guidelines (2008) list financial effectiveness as only one performance criteria for effective asset performance amongst others that include internal excellence, innovation, learning, stakeholder views, and social economic and environmental impacts. This is reflected in the Australia where all branches of government have adopted a common set of guidelines issued by Infrastructure Australia (Australian Government 2008). When dealing with the selection of space in an existing market these additional concerns can be significant. In this case study all but one of the options involve financing alternatives for the provision of new space on a single parcel of land. Since it concerns various ways of procuring a new building with identical specifications, the building can be considered identical in each case. While the last option does involve the use of existing space, since the precise location of that option is not specified, it may be assumed that the selection will be made to be comparable on all the non-financial measures that would be expected for the new space. Hence the case study considers the relative risk management benefits from various scenarios as a moderating influence on purely financial metrics.

Dorothy Morallos and Adjo Amekudzi (2008) considered a cross section of governmental approaches and critically evaluated the "public sector comparator" (PSC) approach. This approach tests PPP strategies by evaluating the VFM in terms of relative cost to the government in comparison to traditional procurement. Morallos and Amekudzi outlined a strategy for evaluating the PSC derived from the Victorian government guidelines<sup>1</sup> as a Net Present Value (NPV) after adjusting for risk and ensuring competitive neutrality. The NPVs are computed relative to that for traditional procurement. In this way the PSC NPV provides a simple decision tool where positive PSC NPVs represent value for money with respect to traditional procurement. In the case of competing PPP options, the highest PSC NPV is the most desirable since risk has been normalised for all possibilities.

This paper adapts this general approach for the case of providing office space for the head office of an Australian government department. PSC NPVs have been computed for a number of competing options for the supply of office space for a government department. For reasons that will become apparent through the text, risk will be dealt with at the end of the study, rather than at the outset as suggested by Morallos and Amekudzi. The case study relates to a consulting project undertaken between 2010 and 2011 and for reasons of confidentiality obligations to the client the department, branch of government and urban location will not be published. Likewise, the precise floor area has been modestly adjusted to ensure anonymity, and the selection of interest rate has been developed slightly, however all other parameters have been left intact. In this way the case study represents an actual recent analysis of a PPP proposal using parameters that represent actual industry values in use at the present time.

## CASE STUDY DETAILS

The client presented the consultants with their need for a head office to be built in an Australian capital city. The space requirements were in the vicinity of 15,000m<sup>2</sup> (this area will be adopted for this paper). The client had vacant land adjacent an urban CBD suitable for the construction of the office space. However, the client wanted advice on how best to procure the required space and suggested a number of possible scenarios. The following eight scenarios were derived by the consultant based on those suggested by the client:

Scenario:

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<sup>1</sup> Partnerships Victoria (2003). Use of discount rates in the Partnerships Victoria process—Technical note. Melbourne, Australia, Victorian Department of Treasury and Finance.

- 1) Engage a builder to design and construct a purpose built building for The Department that will be owned and financed by The Department.
  - a. In this scenario The Department will experience only cash flows associated with the construction and the eventual notional sale of the property at the end of the analysis period.
- 2) Engage a builder to design and construct a purpose built building for The Department that will be owned and financed entirely by debt
  - a. In this scenario, due to the use of debt, The Department will experience cash flows associated with regular interest payments and the eventual notional sale of the property at the end of the analysis period.
- 3) The Department will sell land to a developer/investor who will design and construct a purpose built building to be leased back to The Department with a commitment for 20 year term
  - a. In this scenario The Department will experience cash flows associated with revenue from the sale of its land and regular rental payments only.
  - b. A triple net lease is assumed wherein the tenant will be responsible for all outgoings including capital expenditure related to major refurbishments.
- 4) The Department will lease land to a developer/investor who will design and construct a purpose built building to be leased back to The Department with a commitment for 20 year term.
  - a. This is a Build, Own, Operate & Transfer (BOOT) scheme and it is assumed that the investment company that takes it on will expect an IRR of 13.5%. Under this scenario the rental payment will not necessarily be at market as the investor will expect to make a return on the construction expenses sufficient to amortise their investment over the 20 year term with their required rate of return.
  - b. In this scenario The Department will experience cash flows associated with rental revenue from the rental of its land and regular rental payments and will gain ownership at the end of the analysis period that is recognized in the analysis as a notional sale.
  - c. The NPV of this scenario will be dependent upon the required rate of return of the investor and sensitivity to this will be considered separately.
  - d. A triple net lease is assumed wherein the tenant will be responsible for all outgoings including capital expenditure related to major refurbishments.
- 5) The Department gives land to a developer/investor who will design and construct a purpose built building to be leased back to The Department with a commitment for 20 year term.
  - a. Within this scenario the developer/investor has the advantage of the value of the land at no cost and will be expected to discount the rent by the value of the applicable ground rental over the term of the relationship.
  - b. In this scenario The Department will experience cash flows due to the net rental of the building and will gain ownership at the end of the analysis period that is recognized in the analysis as a notional sale.
  - c. A triple net lease is assumed wherein the tenant will be responsible for all outgoings including capital expenditure related to major refurbishments.
  - d. At the end of the lease The Department will have no rights to the property and rents could be expected to revert to market.
- 6) The Department will build a purpose built building using its own funds and sell to investor with commitment to lease back for 20 years.
  - a. Within this scenario The Department constructs the building and thereby benefits from the development profit that would otherwise go to another party. By selling the building with a commitment to lease back the financial exposure of The Department is limited to the construction period.
  - b. In this scenario The Department will experience cash flows associated with the construction, property sale and rental costs.

- c. This scenario is similar to scenario 3 except the development profit is retained. The Department will be required to fund the construction which will demand the commitment of the cost of building over the construction term.
  - d. A triple net lease is assumed wherein the tenant will be responsible for all outgoings including capital expenditure related to major refurbishments.
- 7) The Department will build a purpose built building using debt funds and sell to investor with commitment to lease back for 20 years
- a. This scenario is identical to Scenario 7 except The Department uses debt funds to finance construction.
  - b. Borrowings are assumed to be via a facility that capitalizes interest as is typical in the development industry
  - c. In this scenario The Department will experience cash flows associated with the property sale (adjusted by the repayment of the construction debt obligation) and rental costs.
  - d. This scenario avoids the commitment of The Department funds while still capturing the development profit.
  - e. A triple net lease is assumed wherein the tenant will be responsible for all outgoings including capital expenditure related to major refurbishments.
- 8) The Department leases existing available office space for 20 years.
- a. This scenario is the simplest possibility and requires no special action or relationships with external parties.
  - b. The only cash flows experienced by The Department in this scenario are rental payments.
  - c. It offers The Department the greatest flexibility but also comes at the highest cost.
  - d. A triple net lease is assumed wherein the tenant will be responsible for all outgoings including capital expenditure related to major refurbishments.

The following data was also adopted from research into the market:

**Table 1: Parameters selected for the case study analysis**

<b>Constants</b>			
Date for base values	2010		
Land Value	\$ 8,600,000		(adjusted)
Space Required	15,000	m <sup>2</sup>	(adjusted)
Average Market Rent (net)	\$400	/m <sup>2</sup>	\$ 6,000,000 pa
Initial Yield	9.00%	net	
Terminal Yield	10.00%	net	
Lease term	20	years	
Construction Period	2	years	Jan-12 to Dec-13
Construction Cost	3,500	/m <sup>2</sup>	
Car Spaces	\$5,640,000		(adjusted)
Total Building Cost	\$58,140,000		(adjusted)
New Building Value	\$66,700,000		(adjusted)
Implicit Developer Margin	14.7%		
Building Life	40	years	
Bank Interest	7.00%	pa	
Discount Rate	7.00%	pa real	10.21% actual
Property Growth Rate	4.00%	pa	
Inflation Rate	3.00%	pa	
Property investment IRR	13.50%	pa	
Ground Rental Yield	9.00%	pa	

In addition the following assumptions have been made:

- 1) All cash flows are annual and assumed to occur on the last day of the period.
- 2) Outgoings in all scenarios will be paid for by The Department and are therefore ignored.
- 3) Borrowing will be for all construction related costs and will be on the basis of an interest only loan over the analysis period.
- 4) If the land is to be transferred to a developer/investor it will be done at the beginning of 2012.
- 5) Lump sum design and construct procurement will be used for scenarios where The Department builds the office space.
- 6) Borrowing will be on the basis of interest only loans.
- 7) Lease contracts will be triple net (the Department takes on all outgoings including building maintenance) and have terms of 20 years and where rent is charge at market rates will adjust to market annually.
- 8) In scenarios 1-7 the building is identical and will meet all non-financial objectively equivalently.
- 9) In scenario 8 the space to be leased will be selected to be functionally equivalent to that of the other scenarios and will meet all non-financial objectively equivalently. Any practical difference between the actual selection and that provided in the other options will have its value difference reflected as an adjustment to the rent.

The items marked as adjusted have been proportionally changed in line with a modest change in the floor space demand to ensure confidentiality. All other factors are considered fair market estimates at the time of analysis for the subject market.

The scenarios in the analysis have the advantage that they span the entire range of major procurement possibilities while simultaneously equating all non-financial performance criteria. In this way the case study provides a valuable opportunity to examine the relative financial performance of the various possibilities.

## **ANALYSIS METHOD.**

A discounted cash flow approach was adopted and applied to the cash flows anticipated for the client (hereafter referred to as The Department) using the analysis guidelines set out by Infrastructure Australia (Australian Government 2008) which are now adopted by all branches of government in Australia. In this case it involved adopting a discount rate of 7% pa real, and testing for discount rates of 4% and 10% real. 7% is equivalent to 10.21% actual for the estimate of inflation adopted.

All scenarios adopted a holding period of 20 years and for those scenarios where The Department retained or obtained control of the property, it was assumed that the property was sold at the end of the period for a price reflected by the escalated rental capitalised by the adopted terminal yield rate. This method ensured that each scenario was treated identically. Triple net leases were assumed for all scenarios involving leases. This ensured that regardless of the procurement method, capital expenses and outgoings were common, further equating the options. Experimentation with possibilities suggested that various possibilities for their payment only further deepened the trends exposed by the basic comparison. Further research into lease form may be warranted in the future but it is not pursued here to minimise the variables. A redacted DCF cash flow for each scenario is included in a table at the end of the paper. These show all items but only list the cash flows for the first and last few years of each scenario for brevity.

The basic output from the DCF analysis is a set of NPV figures that permit direct comparison between the scenarios. A sensitivity analysis was then applied to key variables to examine the impact of uncertainty on the VFM rankings. Overall these results permit a more nuanced appreciation of the behaviour of the various options, however it is important not to lose sight of what is not captured in a set of NPV values. These include risk issues, other objectives, such as macroeconomic goals and limitation of DCF itself.

## **RESULTS AND DISCUSSION.**

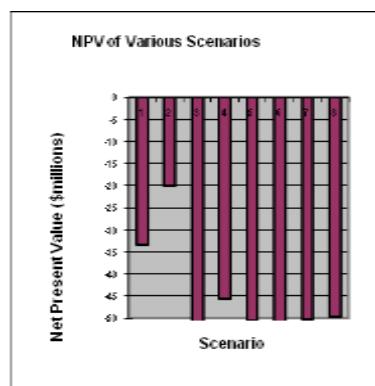
The NPVs of the various scenarios is listed in the table below:

**Table 2: Net Present Values and Public Service Comparators for Various Scenarios**

Scenario	NPV (\$m)	PSC NPV (\$m)
1	-33.31	0.00
2	-19.97	13.34
3	-50.88	-17.57
4	-45.59	-12.27
5	-50.53	-17.21
6	-51.04	-17.72
7	-50.30	-16.98
8	-49.81	-16.50

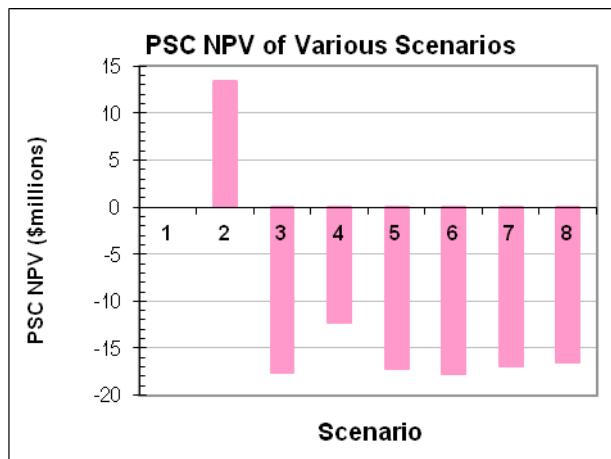
The NPVs all represent net present costs of procuring head office space for The Department for the next 20 years. For this reason they are all negative. They can be visually compared in the following graph:

**Figure 1: Net Present Values for Various Scenarios**



It can be seen that the five of the scenarios exhibit very similar NPVs for the parameter values selected with scenarios 1, 2 & 4 representing smaller net supply costs. The PSC approach is a variant of the standard DCF method of differential cash flows for the identification of the relative merit of competing projects. The PSC NPV is the difference between a given scenario and the traditional procurement method. In this case scenario 1 represents what can be taken as the traditional procurement method for governmental property and it will be used as the reference scenario for the others. In this way procurement options that represent better VfM options will display as positive values, while inferior options will be negative.

**Figure 2: PSC NPVs showing the NPVs relative to Scenario 1**



The chart demonstrates the relative financial feasibility of the other Scenarios. It can be seen that Scenarios 3-8 are less attractive than the base case by between \$12 million and \$17.5 million, whereas Scenario 2 is more attractive by about \$13 million. Considering the initial construction cost of about \$45 million, this represents a saving of about 23% for Scenario 2 compared to cost premiums of between 44% and 54% for the other scenarios.

Scenario 2 involves the use of long term debt, however the debt is secured against a real property asset. The Loan to Value Ratio (LVR) is initially 75% and falls over the analysis period to 35%. As an investment loan for an owner occupied property this would be an attractive proposition to any bank. The debt servicing cost in Scenario 2 is initially 62% of the alternate rental cost and this also falls over the analysis period to 30%.

In summary, at first sight Scenario 2 represents the most attractive financial strategy for the parameters given.

## SENSITIVITY ANALYSIS

The parameters adopted for the scenarios are estimates and the impacts of their variation may have an influence on the relative merits of the scenarios. Many of the variables adopted in the scenario analysis apply to all cases and as a result the impact of uncertainties in their estimation will tend to cancel out. Some will affect the relative merits of some scenarios and these are analysed in this section.

### Property Investor Rate of Return

Scenario 4 is sensitive to the rate of return expected by the investor that develops and operates the building. This rate of return will be reflected in the rental which has been determined on the basis of a constant payment over the rental period in accordance with standard financial methods.

Ten year returns for property taken in 2007<sup>2</sup> reveal that the average return of direct property investment and listed property trusts were 12% and 14.6%. The future returns may be considered to be expected to be more like that period (1997-2007) than more recent years due to the destabilizing impacts of the Global Financial Crisis which for this study is assumed to be now resolved and will have no impact on property performance 2014-2033. From an investor's view the investment is similar to a property investment but it does not benefit from the eventual capital gain influencing the value of the property at the end of the analysis period. For this reason, and on the basis of comparable public/private BOOT investments, it may be expected that an investor will expect a rate of return higher than applicable to direct property.

Conversely, the investment does not suffer from any income risk, given the reliability of The Department as a government tenant, which makes it substantially less risky than BOOT schemes connected to enterprises such as infrastructure. Likewise, the construction and provision of developed space cannot be compared to a common development that suffers from significant sales risks as the implicit pre-commitment has little risk and there is no eventual sell down risk at the end of the holding period. All of these reasons suggest that the investment should be perceived as a low risk project warranting a conservative rate of return.

Weighing these factors up has led to the adoption of an anticipated rate of return expected by an investor counter party of 13.5%, however the actual result could vary significantly.

The impact of variations in the expected rate of return for the property investor who become the counter party in the BOOT scheme in Scenario 4 is shown in the figure below. It shows that PSC NPVs to The Department could range from about equivalent to traditional procurement (+\$0.7m) to -\$22 million for investor returns between 10%-16%.

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<sup>2</sup> Source: IPD/PCA (2007)

**Figure 3: Sensitivity of Scenario 4 to Investor Required Rate of Return**

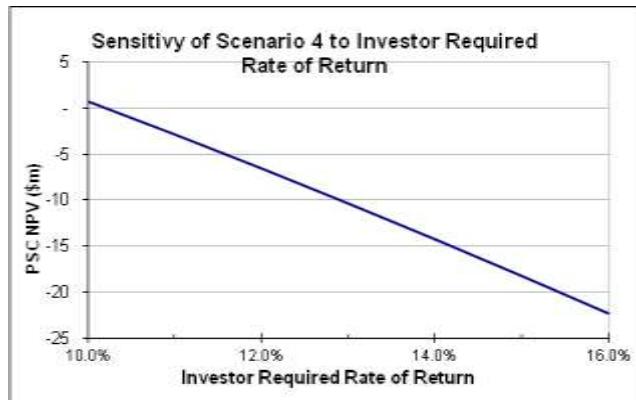


Figure 3 reveals that scenario 4 approaches the attractiveness of the base case (Scenario 1) only if an investor can be found who would be willing to act as counter party and accept a rate of return of 10.2% pa. As a property investment, the counter party will enjoy considerably less than full property rights and is unlikely on this basis to accept a rate of return lower than direct property investment. By contrast, if the investment is viewed as a quasi loan with government guaranteed repayments, a lower rate may be arguable, especially if it is secured with governmental guarantees, which in Capital Asset Pricing theory represent the lowest available risk.

Viewed in this light, scenario 4 strongly resembles a financial lease. This is because unlike BOOT schemes for infrastructure such as transport, the income stream in this case is not a function of any capricious public market, such as toll road usage, but a stable long term government contract. However, if it is interpreted as a finance lease, and considering the risks to the financier, even a 10% rate of return may be excessive since it merely substitutes a property investor for the creditor of Scenario 2. That is, if the counter party in Scenario 4 were willing to accept a rate of return of 10.2% the cost to The Department is still some \$6.4 million greater than Scenario 2 which in terms of the situation of the counter party is in all essential respects identical except for the rate of return..

Implicitly Scenario 4 is an alternate form of construction loan, especially from the point of view of The Department: it consists of a set of equal and certain payments that amortise the construction cost over the analysis period. The major differences are that the counter party does not have the security of a mortgage right over title and the implicit interest rate is somewhat above that applicable for a conventional mortgage loan. The NPV of Scenario 4 is equal to Scenario 2 only if the counter party is willing to accept a rate of return of 6.18%, or 0.82% below the adopted interest rate on debt<sup>3</sup>. This contrast is aggravated by considerations of the appropriate interest rate on Department borrowings discussed in a subsequent section.

### Discount Rate

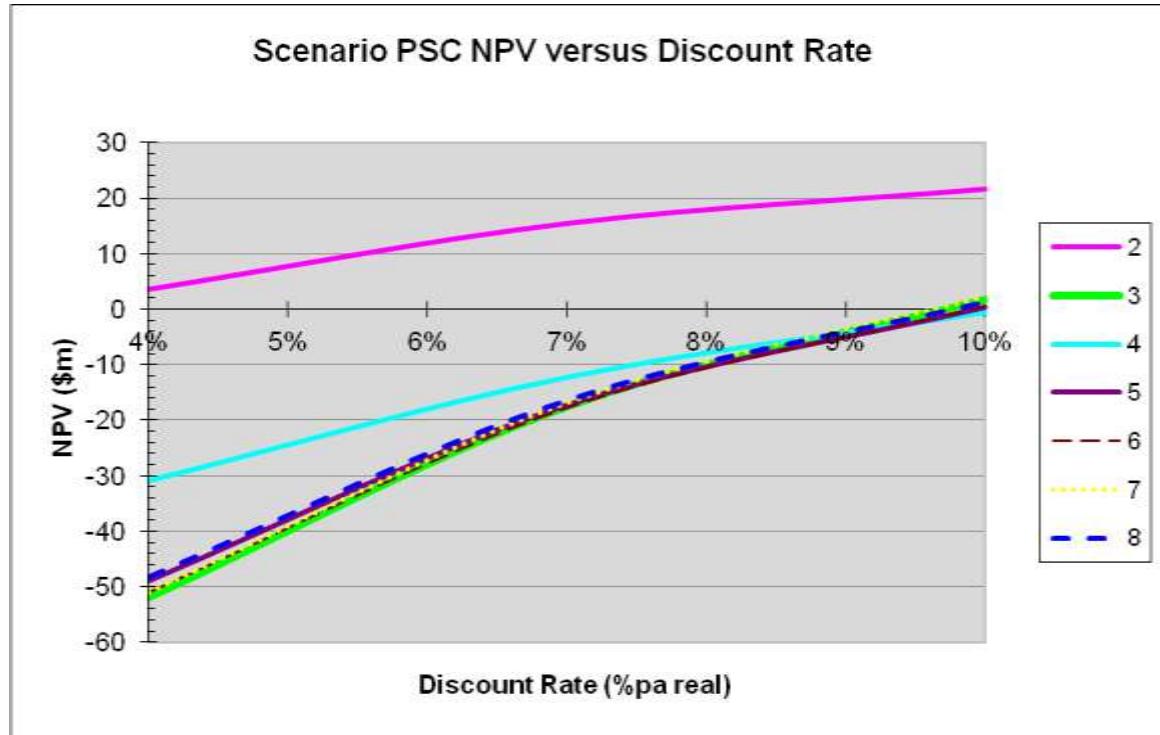
The discount rate applicable to The Department is difficult to establish using usual financial methods and the rate that has been adopted is taken from State Treasury Guidelines. The guidelines specify that government projects should be tested at a discount rate of 7% pa real with sensitivity tested for 4% and 10% real. These are the parameters that will be used in this sensitivity analysis.

The various scenarios represent a wide variety of cash flow patterns and these respond to changes in the discount rate in ways that often unusual. In particular, because a number of them have negative cash flows dominating towards the end of the analysis period, the change in NPV due to discount rate is opposite to the more common situation where positive cash flows (incomes) dominate the end of the cash flow period.

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<sup>3</sup> The difference here is due to the fact that Scenario 4 acts like a credit foncier loan, amortising the principle over the holding period, whereas Scenario 2 is an interest only loan.

**Figure 4: Scenario PSC NPV versus Discount Rate**



The figure above graphs the behaviour of the PSC NPVs for each scenario for the range of real discount rates from 4%-7%. It will be noticed that all of the scenarios have reverse slopes to the usual downward sloping trend. This means that for Scenarios 2-8 NPVs actually increase with increases in discount rate. While this result is unfamiliar, it is the typical trend found in cash flows where the project has more of the character of a debtor position (receive now, pay back later) than the more usual creditor position (pay now, get back later) normally implicit in property investment.

The graph illustrates the depth of equivalence between Scenarios 3, 5, 6, 7 & 8. These are not only close to identical in the most likely case, but respond very similarly to discount rate changes. Scenario 4 outperforms them but is still inferior to traditional procurement (Scenario 1) except for the case where the real discount rate is about 10% or above.

Scenario 2 is financially preferable over the entire range, though it closes on traditional procurement at the low end of the range. It should be remembered that the discount rate is notionally tied to other market rates of return suggesting that if the discount rate falls, then interest rates will also fall. Hence, for example, if discount rates did fall to 4%, then the interest rates applicable to the loan in Scenario 2 may be expected to also fall significantly, say to 4% also, in which case Scenario 2 would have a PSC of about +\$18m. Hence, the apparent underperformance at low discount rates may be more an artifact of the method of analysis than a real possibility<sup>4</sup>.

### Sensitivity to Property Growth

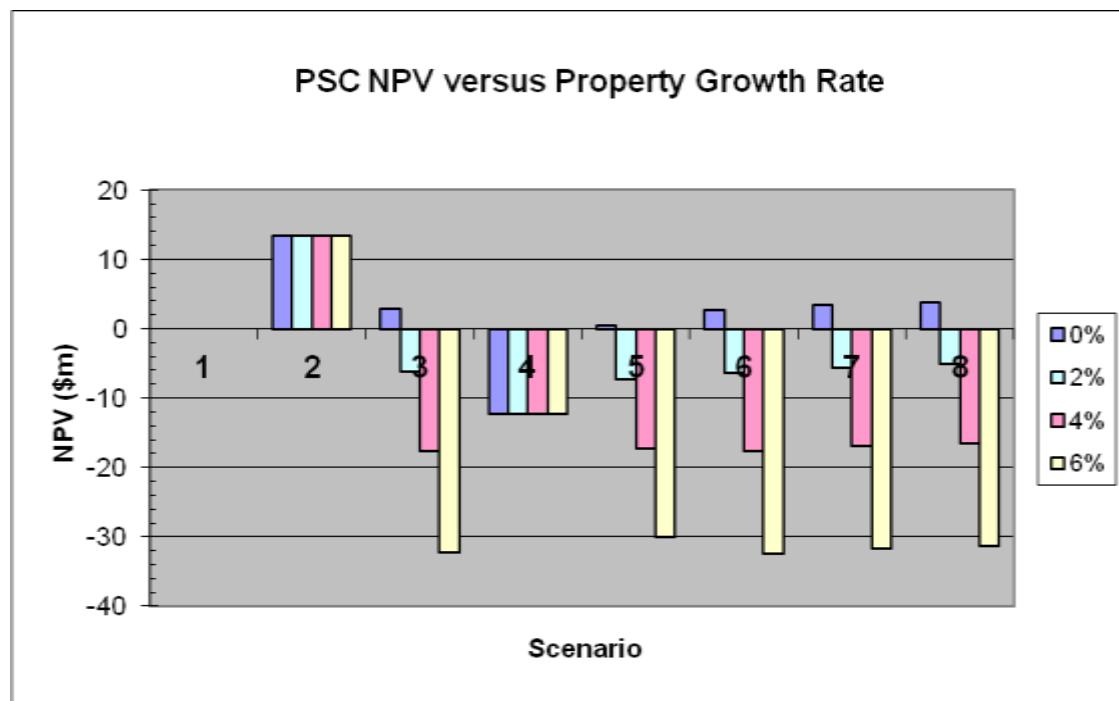
The following figure charts the sensitivity of the various scenarios to the rate of property growth over the analysis period. Generally it shows that Scenario 2 has a stable PSC NPV and outperforms most of the others more strongly as property growth increases. The only exception is Scenario 4 which also stable though significantly inferior.

The scenarios have also been tested for a zero property growth rate. While this rate is not consistent with recent historical trends, it may be considered for sensitivity purposes given the emerging possibilities occasioned by the ageing population and possible long term impacts of recent economic turbulence. Under this case Scenarios 3, 6, 7 & 8 have positive PSC NPVs, despite remaining inferior to Scenario 2. This means that only under conditions of long term total stagnation of the property market do these scenarios outperform traditional procurement

<sup>4</sup> Likewise the outperformance of Scenario 2 at a discount rate of 10% is probably similarly overstated because in such an environment it would be likely that interest rates would be higher and therefore reduce its attractiveness.

This sensitivity distinguishes those strategies where The Department benefits from the long term behaviour of the property market from those that do not. It suggests that if there is confidence that the long term future of property is positive, then it implies that The Department should consider strategies that leave it with the property rights in the long term (Scenarios 1, 2 or 4).

**Figure 5: PSC NPV versus Property Growth Rate**



### Sensitivity to Interest Rates

Interest rates affect the various scenarios due to some of them requiring The Department to go into debt to finance the project. The appropriate interest rate for a government department is debateable. Capital Asset Pricing Theory (CAPM) is content to assume that government debt (government bonds) are approximately risk free, and therefore should attract the lowest interest rates of any entity in the economy. Ten year Commonwealth bonds averaged 5.31% over the period July 2010 to June 2011 and NSW Treasury Bonds averaged 5.72% over the same period<sup>5</sup>. If 0.5% is added for treasury administrative costs, this would suggest interest rates to The Department of between 5.81% and 6.22%. This compares with the private market where the RBA suggests that over the same period housing loans averaged between 6.82% and 7.67% depending on source and conditions and bill finance to large business was available at about 6.35%<sup>6</sup>.

Long term interest rate trend expectations may be inferred from the spread between short and long term bonds. There has been an average spread between 2 and 10 year Commonwealth Bonds of 0.30% from January 1995 and August 2011. This may be considered the long term average. The average spread between these bonds between July 2010 and June 2011 was 0.23%. A lower than average spread suggests that the market is of the opinion that interest rates are likely to modestly fall over the next decade (Wilson and Keers 1990). For this study it is sufficient to conclude that it is unlikely that interest rates will rise over that period, suggesting that current interest rates are not likely to be exceeded over the next decade.

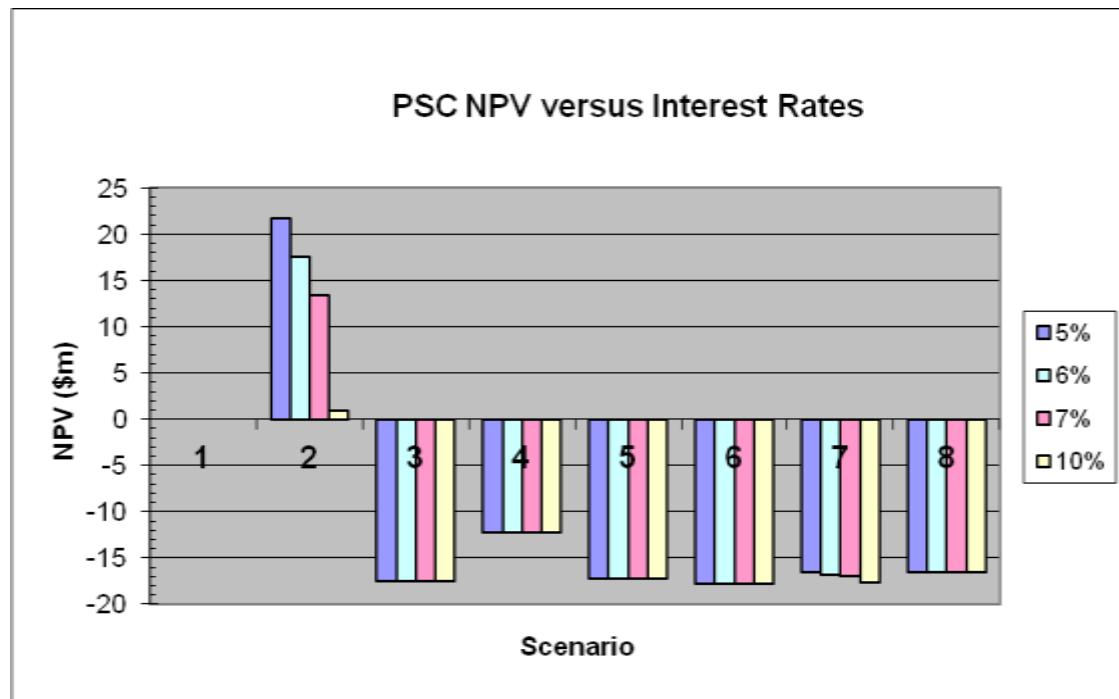
Taken together it would appear debt should be available to The Department somewhere between 6.22% and 7.67%. Considering the borrower is a substantial State government department and in addition the loan could be secured with real estate, it would be likely that debt could be obtained near the lower end of this spectrum, say 6.22% to 6.35%. For this analysis 7.00% has been conservatively adopted. Sensitivity analysis will examine the behaviour of the PSC for the various scenarios for interest rates of 5%, 6%, 7% and 10%.

<sup>5</sup> RBA interest rate statistics '02hist' accessed 20/9/2011

<sup>6</sup> RBA interest rate statistics '05hist' accessed 20/9/2011

Interest rates affect only Scenarios 2 and 7. The attractiveness of both diminishes as interest rates rise above expected. At 10.2% Scenario 2 is comparable to Scenario 1. Conversely Scenario 2 becomes more attractive at lower interest rates. There are arguments to suggest that interest rates may stabilise at levels lower than those common since 1970 which places this possibility within the range to be considered (Small 2009).

**Figure 6: PSC NPV versus Interest Rates**



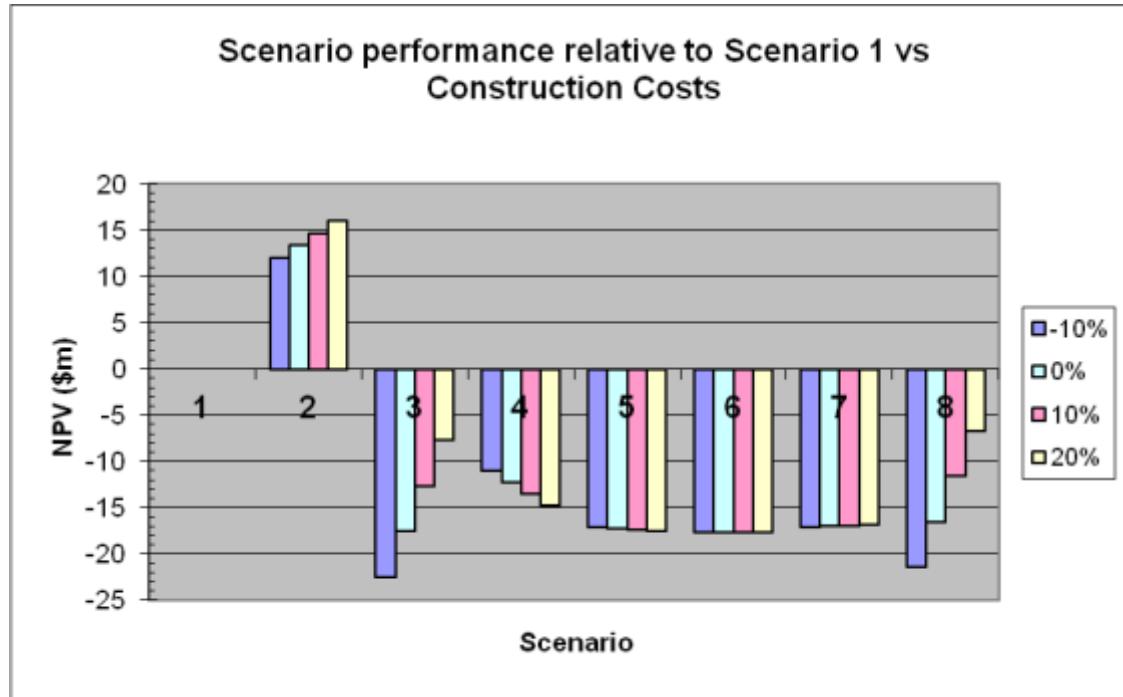
### Sensitivity to Construction Costs

Construction costs affect most Scenarios. The cost adopted was taken from Rawlinsons (2010) construction cost guide and represents an industry standard reference costing appropriate for early stage planning analysis. The actual construction cost could vary significantly from this early estimate. The figure below shows the NPVs for each Scenario as building costs vary from -10% to +20% of the estimate. It must be kept in mind that in addition to these sensitivity margins, escalations have been applied to construction costs to adjust for price rises between 2010 and the actual time of construction. For this reason the sensitivity margins are considered to represent the realistic outer range of possibilities.

It can be seen that Scenarios 3 & 8 are strongly affected by construction cost with 10% lower costs making them both over \$20m less attractive than traditional procurement while 20% higher costs bring them closer to Scenario 1. Scenario 2 is affected in the same direction, however it means that its attractiveness increases as construction costs increase. By contrast Scenario 4 becomes less attractive as construction costs increase.

Overall, Scenario 2 maintains its superiority regardless of changes in construction costs, and despite considerable variation in the behaviours of Scenarios 3 to 8, they continue to be uniformly less attractive than traditional procurement.

**Figure 7: PSC NPVs for Various Scenarios versus Construction Costs**



### Conclusions from Sensitivity Analysis

Overall the sensitivity analysis has revealed that Scenario 2 is robustly superior to the other scenarios in the face of variations to the major variables. There are many other sensitivity tests that could be performed, especially by considering movements of more than one variable, but it appears that the overall conclusion is unlikely to alter substantially.

### RISK ALLOCATION

One of the conceptual merits of PPP strategies is that they have the capacity to reallocate risk from government, that is believed to be less competent to manage it, to the private sector which is understood to be more positively disposed to risk. BOOT schemes for the supply of transport infrastructure where patronage and usage charges are uncertain represent examples where this question of risk re-allocation may have beneficial outcomes. The appropriateness of a PPP for the supply of office space for a government department therefore hinges partly on an understanding of the risk allocation that results from the strategy.

Part of the question of risk relates to the nature of the contractual relationships that are envisioned in the overall strategy. The important elements include the following:

- The construction in all cases, at least those that involve The Department retaining the builder (Scenarios 1, 2, & 7) would be completed via a lump sum design and construct contract. If counter parties in Scenarios 3, 4 & 5 choose other procurement methods the risks introduced would be entirely their responsibility.
- The lease contracts between The Department and the counter party in Scenarios 3 – 8 would be for a term of 20 years.

On the basis of the above, several substantial risks can be identified. The table below outlines the possible major risks and how they are allocated as a result of the various scenarios.

**Table 3: Risk Allocation Assessment**

Risk	Description	Allocation	Impact on Department	Impact on counter party
Construction Risk	Failure of builder to reach time, cost or quality objectives in building delivery.	Transferred to builder in all cases where using a design and construct lump sum construction contract.	Nil Risk in all scenarios	Nil Risk in all scenarios
Building Company Failure	Supply of building thwarted by collapse of building company	Held by entity that employs the builder.	Adopted in Scenarios 1, 2, 6 & 7	Adopted in Scenarios 3, 4 & 5
Interest Rate Risk	Interest rates move adversely increasing debt servicing costs	Exists in cases where The Department relies on debt to fund construction	Adopted in Scenarios 2 & 7	Not impacted
Lease Contract Risk	Tenant breaks lease with impunity.	Only exists for sub-optimal scenarios; Scenarios 1 & 2 naturally exempt	No benefit	Slight risk in Scenarios 3 - 8
Rental Default	Tenant fails to pay rent.	Only exists for sub-optimal scenarios; Scenarios 1 & 2 naturally exempt. Unlikely to be realised given nature of tenant.	No benefit	Slight risk in Scenarios 3 - 8
Tenancy Risk	Tenant fails, is wound up or otherwise ceases to exist and occupy space.	Only exists for sub-optimal scenarios; Scenarios 1 & 2 naturally exempt. Unlikely to be realised given nature of tenant.	No benefit	Slight risk in Scenarios 3 - 8
Building Failure	Major unforeseen building maintenance costs	For triple net lease The Department would carry the risk of building failure regardless	Retained in all scenarios	Not adopted in any scenario
Growth limitations	The Department may outgrow its space.	Contractual obligations would force The Department to continue the space even if no longer suitable.	Risk increased in Scenarios 3 - 8	Mitigated by strength of contract.
Counter Party Failure	Counter party is wound up or otherwise fails	May destabilise lease arrangements leading to tenure and rental uncertainty	Risk increased for Scenarios 3 - 8	Entirely an internal matter

It can be seen from the above that in Scenarios 1 2 & 7 The Department carries the Building Company Failure Risk and Interest Rate Risk for scenarios 2 & 7, whereas the PPP scenarios (3, 4, 5 & 8) relieve it of those risks. All other risks either have no impact on The Department, or in the case of Growth Limitations and Counter Party Failure, it experiences an increased risk exposure. By contrast, the counter party adopts most categories of risk, at least for some scenarios and in most cases they are artefacts of the PPP itself.

Building Company Failure Risk is curious in that it comprises of the very attribute in The Department's relationship with a private sector counter party that the notion of a PPP is meant to control, that is, private sector organisations are believed to be able to thrive in uncertain environment and successfully deliver more reliably than the public sector. However, this risk consists of the hazard faced by The Department by electing to have its space needs constructed by a private sector entity that proves incapable of successful performance. Scenarios 1& 2 can be conceptualised as PPPs in that The Department does rely on a private sector counter party for the realisation of some public need, in this case the construction of office space. The increase in this risk to The Department exactly complements Counter Party Failure risk

that is the same risk applied to the counter parties engaged in Scenarios 3 – 8. That is, regardless of which scenario is adopted The Department is exposed to the risk of their failure.

Interest Rate Risk is especially significant as it is a major risk related to the adoption of Scenario 2. Since that scenario is the only option with a positive PSC, interest rate risk is the major risk that the other scenarios do have the capacity to mitigate. It has already been seen that Scenario 2 persists in having a very substantial positive PSC over a very wide range of interest rate possibilities and there is good cause to believe that the interest rate selected in the analysis is already very conservative to the extent of perhaps 0.65%. In addition, if government bonds are used to supply the debt funds they could be fixed for ten years, or half of the holding period.

This means that the interest rate risk in reality consists of the risk that interest rates in 2022 are substantially above present levels. Quantitatively, that jump would have to be to at least to 16%pa to reduce Scenario 2's PSC to close to zero. Historically, interest rates over the entire history of Australia up to 1970 were lower than the last decade and the elevated rates between 1970 and 1990 were historically aberrant. While there was one period during the 1980s when bond rates did reach levels of 16-17% Small (2009) outlined the reasons why they were most likely the result of unique cultural circumstances that of their nature are never likely to occur again. This would suggest that the risk of a return to extremely high government bond rates is extremely remote.

Apart from the low probability of those future rates, there are other variants of Scenario 2 that would go some distance to mitigating the interest rate risk. For example, if procurement was obtained following Scenario 2, but the Department undertook to make debt service payments equal to the equivalent market rent (such as is found in Scenarios 3, 6, 7 & 8), the debt would be amortised by 2024, making interest rates from that point onward irrelevant. Such a strategy would still return a positive PSC of \$9.4m, or 16.2% of construction cost. Using Treasury bond finance it would be likely that such a strategy could be executed with rates locked into current rates.

The interest rate risk is therefore manageable. If it is considered in contrast to Scenarios 3 – 8 it can be seen that magnitude of this risk is such that the absolute worst case (16%pa interest rates from 2022) would be about equivalent traditional procurement and the cost of mitigation using one of the other scenarios would be between \$12m and \$17.5m. Selection of Scenarios 3 - 8 is hardly VfM on the basis of their ability to mitigate risk cost effectively.

## THE POLITICS OF PUBLIC DEBT

The use of debt to fund public works was championed by Keynesian economics and was the dominant approach in the three decades following World War II. Keynesian theory suggested that if debt was used to fund public works that in turn facilitated national economic growth, then the cost of the debt could be paid out of the growth in national productivity. Under that strategy Australia experienced considerable economic growth, but also considerable increase in public debt. The interest rate and inflationary experience of the period 1970 – 1990 changed public opinion about the desirability of public debt and Australia has followed a neo-liberal strategy of public debt minimisation ever since.

It is undoubtedly true that funding many types of public expenditure, such as welfare, using debt is problematic. It resembles a householder maintaining a standard of living based on rolling up credit card debt. However, recent political rejection to public borrowing ignores circumstances where government borrowing may be prudent. The present case study would appear to be such an example. The borrowing would be made to fund the acquisition of basic property needs for a major government department. Given the prudence of having the department exist, its space needs are a certainty and must be provided in some manner. This differentiates this spending from some public works whose success is dependent on some uncertain future income expectation, such as a railway or a concert theatre.

The nature of the subject expenditure is such that its provision is fundamentally very low risk. Unlike a speculative office development, the tenant is certain so there is now tenancy or sales risk. The examination of Scenarios revealed that it functioned similarly to a finance lease in the private sector.

Private companies popularised finance leases in the 1980s as a strategy to lighten their balance sheets by removing both assets and debt liabilities related to holding capital assets. While the strategy created the illusion of superior leverage ratios, analysts soon realised that the finance lease obligations represented invisible fixed costs that were every bit as problematic as debt obligations and often significantly more expensive, but absent from the balance sheet. Accounting standards have been developed whereby these fixed cost obligations are now shown as notes appended to balance sheets and these notes have become a key element in understanding the financial situation of firms (Wilson and Keers 1990).

A parallel exists in the present case. Recent political thinking has tended to discourage public borrowing in all cases and the lightening of the public balance sheet by the use of what are effectively finance lease analogues. Like private firms who sell down their capital assets to improve their leverage ratios, but then lease them back again in order to operate, various levels of government have sold down their assets, but the community still needs them to function so they are re-acquired using alternate strategies. This case study has shown that the alternative strategies are all significantly more expensive and bear no rational connection to contingent benefits to the public such as through improvements in cost or

quality of delivery. Indeed, the genuine PPP options of Scenarios 3 – 8 all represent procurement strategies that are substantially financially inferior to traditional procurement or its leveraged variant (Scenario 2).

The strength of the political aversion to direct provision of The Department's space needs is reflected in the fact that after receiving advice from consultants outlining basically the above financial analysis and sensitivity investigation, The Department did not decide in favour of any of the three most cost effective scenarios. The public will indirectly pay for the provision of The Department's new head office requirements through their taxes at a level somewhere between 30% and 50% higher than would have been possible had not government property ownership and government borrowing been so politically unpalatable.

## CONCLUSION

This study has investigated the claim that PPP procurement strategies provide good value for money in the case of office space required for government tenants.

There has been considerable debate regarding governmental property ownership and borrowing, but much of it exists as high level theorising based on prevailing beliefs regarding the relative efficiencies of the private and public sectors. All major branches of Australian government have developed policies and procedures in place to facilitate PPP provision of public works based on these beliefs which have now been standardised within the Infrastructure Australia framework. Following these, the use of privately owned office space for government use is now widespread.

The existence of inefficiencies in the public sector is not the centre of this debate, despite usually being cited as one of core reasons for the need to curtail government activity. What is at the centre is the question of whether the private sector can outperform the public sector in the provision of public works. This question is complicated by the reality of risk in the matter of financial effectiveness. It is possible that for some public works where risk can be shown to be a substantial component of the project, the balance may favour private sector provision, however it is certainly not a blanket conclusion.

The current case study represents an instance of public works that will be necessary regardless of the procurement method and an opportunity to rigorously analyse the financial merits of risk and return for various procurement options. By its nature the physical quality of provision is constant across all procurement options and a close examination of risk has revealed that no significant risk is reduced in moving a PPP scenario. This has permitted a like-for-like financial comparison. In this case the financial analysis has had the benefit of coming from an actual consulting project where the data is the best quality available to the industry and has been implicitly reviewed for quality and realism by the client.

The breadth of the scenarios considered permitted analysis of virtually all major possibilities for PPP procurement. They included land sale & lease back (Scenarios 3 & 5), BOOT (Scenario 4), construction, sale & lease back (Scenarios 6 & 7), and simple lease of private space (Scenario 8). Most of these can be interpreted as functioning as finance leases, especially Scenario 4. The consistency between the PSC NPVs of these options, especially Scenarios 3, 5, 6, 7 & 8 is outstanding. While they may be partly due to chance circumstances, it is more likely that they owe their similarity to the market forces in operation in the property market that implicitly work to reduce arbitrages between different space provision options in the general market.

The analysis has found that PPP strategies for private sector provision of office space are uniformly inferior to traditional procurement (Scenario 1), especially when the public sector is able to use debt (Scenario 2). The extent of this inferiority is substantial being 20% to 30% more expensive than traditional unleveraged procurement and 40% to 50% more expensive than leveraged traditional procurement. Moreover, sensitivity testing suggests that this significant level of inferiority is robust over a wide range of possibilities. This is consistent with analysis of the various risks that reveal that the risk transfer to the private sector is minimal compared to the financial cost, partly because the Australian government is a uniquely low risk tenant. This leads to the conclusion that PPP strategies for the provision of government office space do not deliver value for money (VfM).

Table 4: Redacted PSC NPV Cash flow for Various Scenarios (years 2016-2030 omitted)

	2012	2013	2014	2015	2031	2032	2033
<b>Scenario 1</b>							
Construction Sale	-30,840,363	-31,765,574					147,882,933
Annual Cash flow	-30,840,363	-31,765,574	0	0	0	0	147,882,933
PV	-25,390,864	-23,729,779	0	0	0	0	15,806,474
NPV	<b>-33,314,169</b>						
<b>Scenario 2</b>							
Sale							
Debt Service Cost		-2,158,825	-4,382,416	-4,382,416	-4,382,416	-4,382,416	85,276,996 -4,382,416
Annual Cash flow	0	-2,158,825	-4,382,416	-4,382,416	-4,382,416	-4,382,416	80,894,580
PV	0	-1,612,703	-2,970,500	-2,695,309	-568,948	-516,240	8,646,421
NPV	<b>-19,974,590</b>						
<b>Scenario 3</b>							
Land Sale	8,600,000						
Rental payments			-7,019,151	-7,299,917	-13,672,608	-14,219,513	-14,788,293
Annual Cash flow	8,600,000	0	-7,019,151	-7,299,917	-13,672,608	-14,219,513	-14,788,293
PV	7,080,378	0	-4,757,739	-4,489,655	-1,775,049	-1,675,030	-1,580,647
NPV	<b>-50,884,689</b>						
<b>Scenario 4</b>							
Property Sale							147,882,933
Property rent (BOOT)			-9,791,806	-9,791,806	-9,791,806	-9,791,806	-9,791,806
Annual Cash flow	0	0	-9,791,806	-9,791,806	-9,791,806	-9,791,806	138,091,126
PV	0	0	-6,637,107	-6,022,236	-1,271,223	-1,153,455	14,759,876
NPV	<b>-45,585,863</b>						
<b>Scenario 5</b>							
Property rent (adjusted)			-6,118,343	-6,363,076	-11,917,923	-12,394,640	-12,890,425
Annual Cash flow	0	0	-6,118,343	-6,363,076	-11,917,923	-12,394,640	-12,890,425
PV	0	0	-4,147,150	-3,913,471	-1,547,247	-1,460,064	-1,377,794
NPV	<b>-50,526,072</b>						
<b>Scenario 6</b>							
Construction Sale	-30,840,363	-31,765,574					
Rental payments		75,028,429					
Annual Cash flow	-30,840,363	43,262,855	-7,019,151	-7,299,917	-13,672,608	-14,219,513	-14,788,293
PV	-25,390,864	32,318,572	-4,757,739	-4,489,655	-1,775,049	-1,675,030	-1,580,647
NPV	<b>-51,037,359</b>						
<b>Scenario 7</b>							
Interest + Principal Sale		-64,764,762					
Rental payments		75,028,429					
Annual Cash flow	0	10,263,667	-7,019,151	-7,299,917	-13,672,608	-14,219,513	-14,788,293
PV	0	7,667,248	-4,757,739	-4,489,655	-1,775,049	-1,675,030	-1,580,647
NPV	<b>-50,297,819</b>						
<b>Scenario 8</b>							
Imputed rental on own land	774,000	804,960	837,158	870,645	1,630,701	1,695,929	1,763,766
Rental payments			-7,019,151	-7,299,917	-13,672,608	-14,219,513	-14,788,293
Annual Cash flow	774,000	804,960	-6,181,993	-6,429,273	-12,041,907	-12,523,583	-13,024,527
PV	637,234	601,328	-4,190,294	-3,954,184	-1,563,343	-1,475,253	-1,392,127
NPV	<b>-49,813,142</b>						

See Table 1 for assumptions used in computing the above.

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