Risk Management in Public-Private Partnerships: Emerging Issues in Social Infrastructure Projects

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ABSTRACT
Australian governments are turning to the private sector to form partnerships in the finance, design, construction, ownership and operation of social infrastructure projects. This has become a major challenge for both public and private sector stakeholders. The emergence of Public-Private Partnerships (PPPs) provides an alternate means for developing infrastructure using private sector expertise. Social infrastructure projects are generally smaller in scale than economic infrastructure projects, but, tend to be more complex. Social Infrastructure projects include schools, hospitals and prisons. Potential private sector stakeholders for social infrastructure PPPs are often presented with a situation where government policy, such as risk allocation, toward the sharing of the business operation is a restricting factor for the development of a successful revenue stream. The fundamental principal of risk management is that risks should be proportionally allocated to the individual or group on the basis of the ability to carry that risk. In PPPs risk allocation must motivate all parties to take responsibility for their actions and delivery to make projects more accountable. Australian examples of social infrastructure PPPs must allow for the private sector to utilise its expertise and gain a broader scope of work and an increased transfer of responsibility (risk). The paper focuses on how PPP consortiums manage the many risk factors involved. The results are presented from a Private Sector point of view.

KEYWORDS: Australia; Public-Private Partnerships; Public Sector Comparator; Risk; Social Infrastructure

1.1 INTRODUCTION
This paper describes a research project that is investigating both the bidding costs and risk management process for Public-Private Partnership (PPPs). The Australian PPP market is maturing and according to Duffield (2005), PPPs in Australia can now be defined to be in their second generation of development.

In terms of defining PPPs, Argy et al (1999) make the following useful distinctions between types of PPPs:

- hard economic infrastructure e.g. roads
- soft economic infrastructure e.g. financial institutions
- hard social infrastructure e.g. hospitals
- soft social infrastructure e.g. social security

This research project is mainly directed at hard social PPPs as defined by Argy.

Over the last 15 years or so research has been conducted into the field of risk management of various public-private sector joint venture projects, particularly the Build-Operate-Transfer (BOT) approach, in developing countries (Tiong, 1990, 1995; Tiong et al 1992; McCarthy and Tiong, 1991; Nielsen, 1997; Donnelly, 1997; Tam and Leung, 1999; Wang et al, 1998a, 1998b, 1999). However, there has been little research to date that has focused specifically on the management of risk factors of PPP projects in general and social PPP projects in particular in Australia.

1.2 AUSTRALIAN ORIGINS OF PPPS

PPPs are a natural progression from both the Build-Own-Operate (BOO) contracts such as the 1986 Gateway Motorway and Bridge in Brisbane and the Build-Own-Operate-Transfer (BOOT) contracts such as the 1992 Sydney Harbour Tunnel [Jefferies (2003); Jordan and Stillwell (2004); and Duffield (2005)]. Duffield (2005) has also classified Australian PPPs into ‘first’ and ‘second’ generation with the
first generation of PPPs primarily motivated by the public sector gaining access to private sector expertise via finance provision and risk transfer, whereas in the second generation of PPPs the public sector has attempted to retain direct control of ‘core services’.

1.3 SOCIAL PPPS

There is a body of opinion that the scope of work needs to be enlarged to make Social Infrastructure PPPs more attractive to the private sector. (Curnow et al. 2005). Jefferies et al (2006) claim that if a comparison is made between a large teaching hospital (social PPP) and a tollway (economic PPP) then the contrast in terms of complexity of operation and interaction between the private sector operator and the users is quite marked. In the hospital situation, staff costs will represent at least 90% of the total annual operating costs and by comparison, staff costs within a tollway are minimal with the majority of expenditure being maintenance.

Whilst both types of PPP do carry a number of public and private sector risks, the potential for risk over the operating period would appear to be greater in social PPPs than for economic PPPs. For instance, the operational life cycle of hospitals is difficult to predict due to technological advances that can mean that the future of health care and its demand on hospital buildings is largely unknown. A typical PPP consortium structure for a social infrastructure project is illustrated in Figure 1 and is adapted from McGeorge et al (2007).

1.4 RISK

Identifying risk is an important step prior to risk analysis. In order to correctly manage risks through analysis, comprehensive identification at the preliminary stage is required (Salzman and Mohamed 1999). In further support of this proposition, and in making a distinct link to procurement, Akintoye and Taylor (1997) state that managing risk is an integral part of the procurement process. Much of the research into risk factors inherent in PPP projects was initiated by Tiong (1990). The focus of his research was the Build-Operate-Transfer (BOT) approach with literature frequently referring to his work, and in many cases finds its foundations on the technical, financial and political risk categories first described by him. Tiong (1995) considered the political category of risk to be the most significant and difficult to manage. Tam and Leung (1999) agreed with the assessment of ‘political risk’ as being the most difficult to deal with.

1.4.1 Risk Identification

Due to recent changes in the nature of asset planning and procurement strategies undertaken by the Australian Government, there has been greater importance placed on the need for incorporating risk management in project developments.

The New South Wales Government published its ‘Working with Government: Guidelines for Privately Financed Projects’ in November 2001. These guidelines confirm the shift in attitudes toward asset planning and procurement by stating:

“The government aims to maximise private investment in infrastructure to the extent that this results in net benefits to the community beyond those from public provision. It also strives to promote an efficient allocation of risk between the public and private sectors to parties best able to manage them” (NSW Government, 2001).

These changes have indeed opened new avenues to government for the procurement of buildings and infrastructure. The utilisation of the PPP concept is an example of the increased acceptance of these alternative forms of procurement (Jefferies, 2003).

1.4.2 Risk in PPP Projects

At the uppermost level, basic risk allocation for the individual PPP project is defined in the project agreement between the project company and the host government awarding the concession. The importance of comprehensive risk analysis in large and complex PPP infrastructure projects helps to establish financial and technical feasibility and allocates risks through the agreement of suitable and equitable contract clauses and insurance. Subsequently, a more positive and rational risk-taking attitude results from a carefully prepared risk analysis as the risk takers know where they stand.
Although the difference between project success and disaster is more complex than managing or not managing risk (Smith, 1999), it appears that the track record of successful projects would have been greatly improved if more companies had included risk as an integral part of the project control and quality system.

According to Salzmann and Mohamed (1999), within the PPP consortium there are many risks that need to be addressed in order to ensure that investment into the project is viable. Woodward et al (1992) divided PPP project risks into the classifications of global and elemental risks.
Elemental risks are those specific to a particular project and include:

- **Technical** – Physical conditions, construction, design, technology
- **Operational** – Operation, maintenance, training
- **Financial** – Form of financing, evaluation, ownership, return, currency
- **Revenue** – Demand, toll/tariff, development
- **Global risks** have a wider range of influence and include:
  - **Political** – Government, technology
  - **Legal** – Framework, type of agreement
  - **Commercial** – Market, input, currency
  - **Environmental** – Impact, ecological

Ma et al (1998) provided additional development and identified five main risk categories under the headings of political; construction and completion; market and revenue; operating; and financial risks. The authors suggest that the identification, management and allocation of these risks is best served by the undertaking of comprehensive feasibility studies.

In Australia one of the main objectives for adopting the PPP approach is to transfer risk which the public sector is unable to manage (Webb and Pulle, 2002). However, it would appear that some of the key historical issues relating to PPP risk factors have not been successfully managed. Current political risk within Australian social infrastructure PPP projects relates mainly to inefficient Government risk guidelines and risk transfer procedures that have led to unsustainably high bidding costs. This view is supported by Curnow et al (2005).

The finance of PPPs involves thorough scrutiny, particularly by the financiers. This involves the thorough analysis of risks, their consequences and likelihood of occurrence. Most financiers are risk averse, and often aim to ensure all benefits of a project are carefully balanced with the management of risks. Therefore, risk management by financial institutions assumes very high importance in PPP risks (Hardcastle et al, 2005). According to Curnow et al (2005) the impact of PPPs on the economy at large is likely to be considerable over the next decade. Whilst bidding is an essential component of the PPP process in ensuring both a competitive and corruption resistant environment, it is in essence a non-value added feature of the overall process. A recent PPP, Melbourne City Link, incurred bidding costs of $24 million at financial close.

### 1.5 RESEARCH APPROACH

A comprehensive review of related literature and industry reports was used to generate a list of major challenges facing the Australian construction PPP industry. Industry Partners, comprising three construction contractors representing a substantial sector of PPP contractors in Australia, then nominated 1-2 experts from senior management to participate in interviews. A semi-structured interview process focused on key themes and a compilation of case studies consisting of current major PPP infrastructure projects was established. Qualitative data was analysed using a combination of content analysis and grounded theory to group the findings. The research findings will be validated as an on-going process via Industry Workshops. A detailed illustration of the research method is presented in Figure 2.

<table>
<thead>
<tr>
<th>Review of recent literature</th>
<th>Comprehensive review of related literature and critical industry reports used to generate list of major challenges facing Australian construction PPP industry. Analysis identified key issues and themes.</th>
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</thead>
<tbody>
<tr>
<td>Industry Reference Group</td>
<td>Industry Partners made up of three construction contractors representing a substantial sector of PPP contractors in Australia. Each industry partner nominated 2 experts experienced in PPP bidding and part of consortium.</td>
</tr>
<tr>
<td>Research Method</td>
<td>Semi-structured interviews and workshops conducted with nominated experts &amp; support staff. Interviews conducted over series of stages to establish dialogue between researcher and participants and gain both qualitative and quantitative data. Information gained from interviews establishes case studies on various PPP projects.</td>
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<tr>
<td></td>
<td><strong>Quantitative</strong> data collected to establish the costs of bidding <strong>Qualitative</strong> Semi-structured interviews focus on key themes</td>
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Figure 2: Project Research Method
1.6 PRELIMINARY RESULTS

The following initial findings were identified during the first rounds of data collection, i.e. workshops and interviews with key stakeholders in the PPP bidding process. These stages helped to identify the characteristics of social PPP projects in Australia; map the development of these projects and identify some of the initial issues critical to successful risk management of PPP projects.

1.6.1. Characteristics of Australian Social Infrastructure PPP Projects

Respondents generally agreed that social infrastructure projects, such as schools and hospitals, are characterised as being smaller in scale than economic infrastructure projects in the form of motorways, bridges, tunnels etc. Social infrastructure projects also tend to be complex, particularly in terms of ongoing involvement with the community and private sector bidders for social infrastructure PPPs are often presented with a situation where the financial rewards are less and the operational demands are more complex than for economic PPP projects. Current social infrastructure projects in Australia are generally not regarded by the private sector as true partnerships and there is seen to be a clear need to reduce their ‘tokenism’. Government needs to make social PPPs more attractive to the Private Sector and clarify the identification of risk in order to transfer more responsibility to the Private Sector. This issue is supported by other recent industry criticism of PPPs concerning the ‘narrowness’ of the scope of work that is offered to the private sector.

1.6.2 Development of Australian PPP Projects

The following table (Table 1) is our summation of key events in the development of Australian PPPs and illustrates the first and the second generation divide.

<table>
<thead>
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<th>1990’s</th>
<th>2001 to date</th>
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<td><strong>1ST GENERATION OF PPP’S</strong></td>
<td><strong>2ND GENERATION PPP’s</strong></td>
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</table>

1990’s Victoria gives lead with privatisation, outsourcing and BOO & BOOT Projects

1996: National Competition Policy, supported by Competition Principles Agreement endorsed by all Australian governments.


Intergenerational report released with the Budget papers (Treasury 2002) warned that net
1.6.3 Risk Management in Australian Social Infrastructure PPP Projects

Despite the dissatisfaction expressed regarding high bid costs, legal fees and associated costs of expert advice, there was general acceptance that this was an integral part of risk mitigation. Much of the dissatisfaction is founded on the perceived inaccuracy of the Public Sector Comparator (PSC). The PSC is an approximation and is based on past experiences of costs, not always reflective of current costs or the cost of transferring risk to the private sector. The PSC affects all PPP consortium entities and it purports to provide a benchmark for the complete project life cycle. Interview respondents provided a range of views in relation to the value and effectiveness of the PSC. On the one hand the PSC was seen as a beneficial tool to guide decisions and ensure government accountability, whilst on the other hand the PSC is often seen as arbitrary and subjective, and consequently of limited value. A commonly held view was that PSC criteria could be manipulated to produce a result that cast the public sector client in a favourable light. These comments are indicative of the current debate by industry representatives in Australia regarding the usefulness and accuracy of the PSC. There was agreement that there should be more consistency in how the PSC is formulated, used and disclosed particularly as PSC polices across the jurisdictions differ in use and release, ranging from total secrecy to an open general policy of release.

The failure of some jurisdictions to fully disclose the PSC was particularly criticised by respondents, stating that it was unnecessary for it to remain confidential. Many believed that the process of withholding the PSC led to increased costs at the bidding stage and it would be more beneficial for the project outcome if the PSC was open for general comment. The practice of withholding the PSC during the negotiation stage means that bidders are measured against the comparator, but have no insight into it are effectively bidding “blind”. However, a shift towards partial disclosure of the PSC in States that currently withhold the information is evident with the recent recommendations made in February 2006 by the Victorian Department of Treasury and Finance to present the PSC early in the bid phase in an effort to reduce bidding costs. The rationale underpinning this is not to disclose the detailed costing of the PSC, but to further clarify the expectations of government.

Table 2 has been adapted from current risk management frameworks and the next phase of the research is to develop the framework further and ‘test’ via private sector stakeholders of current PPP projects.

1.7 CONCLUSION

All contractual relationships are inherently concerned with allocating risk and the penalties which arise from failure to comply with the contract conditions. As is demonstrated in Figure 1, the number of players in a PPP consortium is numerous and the relationships are complex. Moreover the responsibility and commitment of some of the players is for the life cycle of the project which in some
cases can be for a period of 40 to 50 years. Additionally, the operational complexity of social infrastructure, as opposed to economic infrastructure adds another critical dimension.


<table>
<thead>
<tr>
<th>Risk Management Process</th>
<th>Stage 1: Project Strategy</th>
<th>Stage 2: Project Options</th>
<th>Stage 3: Project Delivery</th>
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<tbody>
<tr>
<td></td>
<td>Scoping Study</td>
<td>Interim Business Case</td>
<td>Request for Tender</td>
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<tr>
<td>Establish Context</td>
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<tr>
<td>Identify Risks</td>
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<td>Analyse Risks</td>
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<td>Evaluate Risks</td>
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<td>Manage Risks</td>
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<td>Monitor &amp; Review</td>
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<tr>
<td>Consult &amp; Communicate</td>
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To date, the main findings of our data collection are:

- A PPP consortium is a temporary organisation with a complex network of stakeholders each with competing goals and objectives.
- The private sector views social infrastructure PPPs in Australia as being far more complex than economic infrastructure PPPs.
- Social infrastructure PPPs have relatively higher bid costs compared to economic PPPs.
- There appears to be great difficulty in developing true partnerships between the public and the private sector in the bidding environments of social infrastructure PPPs as they are frequently adversarial.
- The current PSC model is inaccurate and results in the public sector reducing the project scope before increasing the budget. The PSC is an approximation, based on past experiences and does not reflect current costs or the cost of transferring risk to the private sector.
- The private sector is increasingly deterred by the high transaction costs of social infrastructure PPPs as they offer only a marginal increase in business opportunity. This is in stark contrast to the opportunities that are available in the much lower cost-to-bid ratio of typical D&C contracts or even economic PPP projects where there is a clearly defined revenue stream from the likes of a tollway.

Current Government perception of PPPs are based around a ‘private funding for public infrastructure’ model. PPPs are a shift of risk, not funding, and they should motivate all parties to take responsibility for their actions and delivery, making projects more accountable and measurable. The initial findings of this research argue for an increased transfer of risk to the private sector.

1.8 REFERENCES


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