

# RISK ALLOCATION IN PUBLIC PRIVATE PARTNERSHIP (PPP) PROJECTS: THE NEW SOUTHERN RAILWAY PROJECT

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The technical, legal, political and economic complexity of PPP projects and the range of constituencies involved, make the optimal allocation of risk problematic. Too often, risks are under estimated and allocated to parties without the knowledge, resources and capabilities to manage them effectively. This paper presents a case study of the controversial \$920 million New Southern Railway project in Sydney, Australia. It demonstrates the complexity and obscurity of risks facing such projects and the difficulties in distributing them appropriately. The paper concludes with a series of recommendations to better manage risks in such projects.

Keywords: community, infrastructure, PPP projects, risk allocation, risk management

## INTRODUCTION

In PPP projects the government changes its traditional role from the service procurer (promoter, designer, contractor, financier and operator) to catalyst and regulator (Vega 1997). In such projects, concession contracts are the legal mechanism by which negotiations about the distributions of risks and rewards are recorded. A concession contract involves granting a licence to a private consortium which sets up a single purpose entity known as a Special Purpose Vehicle (SPV) using contracts secondary to the concession, to finance, design, build, operate and maintain an infrastructure project for a set period of time known as the concession period. The private consortium is normally formed by a joint venture (JV) between a range of organisations including contractors, facilities managers, banks, investors and suppliers which are willing to commit equity and/or resources to the project. Payments to the SPV to fund debt service normally commence after completion of the construction – when the services have been made available to the public. During the operating period, the SPV receives income based on the usage of the facility (which may be guaranteed) assuming that the service provided meets a range of key performance indicators. There are normally abatement clauses in the concession contract which can penalise (sometimes excessively) the SPV for falling below these standards. Furthermore, there are sometimes penalty points which if accumulated to a certain level can lead to termination of the contract for poor performance. At the end of the operating period, the fully operational project is transferred back to the host government, usually at nominal or no cost (Walker and Smith 1995).

Despite the existence of many complex risks which can interfere with the success of infrastructure projects, the private sector has been keen to take over the traditional role

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of the public sector in financing, procuring and managing such assets (Howe 1995, Cottle 2003). However, recent research has indicated that even on the largest Public, Private Partnership (PPP) projects, risk management practices are highly variable, intuitive, subjective and unsophisticated (Akintoye *et al.* 2001). In this context, the aim of this paper is to explore the considerations to be made in effective risk distribution between the public and private sectors on such projects.

## RISKS IN CONCESSION CONTRACTS

Given the complexity, size and time frame of concession contracts, there are an enormous range of potential risks which can affect expected outcomes. Never the less, in very simple terms, these can be classified into two main groups: *general risks* or *project risks*.

Project risks arise from the way a project is managed or from events in its immediate micro environment. They may include natural risks such as ground problems and weather conditions, technical problems associated with designs, plant and equipment, materials problems associated with suppliers, organisational problems associated with subcontractors, manpower problems associated with unions, contractual problems associated with JV agreements and environmental problems associated with pollution etc. In contrast, general risks are not directly associated with project strategies, yet can have a significant impact on its outcome. These normally arise from natural, political, regulatory, legal and economic events in the general macro environment surrounding the project. For example, the 2.015 MW Dabhol Power Plant in India was ordered to stop by the newly elected Maharashtra government in August 1995; the Tiananmen Square incident in China on 4<sup>th</sup> June 1989 resulted in the syndication of loans for the new Guanzho-Shenzen- Zhuhai super highway to be delayed until 1991 and; a 45km BOT toll road in Shenzhen was delayed because the consortium and government could not agree on appropriate toll charges (Walker and Smith 1995, Liou 1997). To help mitigate such risks, governments often guarantee exchange rates. For example, in the recent Sydney Cross City Tunnel project in Australia, the government undertook to compensate the project consortium if traffic flows and resulting toll income fell below a certain level Wikipedia (2006).

While general risk classifications such as the above are useful, it is also useful to consider the special risks associated with the PPP procurement process. After all, it is quite different to the traditional procurement process which separates financing, design, construction and operational responsibilities. In doing so, Standard and Poor's considers several broad areas that can potentially affect a PPP project's creditworthiness. These are:

- Credit risk of the public sector entity - Since the SPV relies on a payment stream from the government counterparty to satisfy its debt service obligations there is a significant risk in the counterparty's creditworthiness.
- Construction risks – although construction covers only 3-4 years of perhaps a 30 year total debt exposure, the successful completion of the construction period is paramount to servicing that debt. Delays can be disastrous and their potential is related to the design and technological complexity of construction; the contractor's management team and approach; existing workloads and problems on other projects; reputation; third party support via bonds and guarantees and; the contractor's experience, resources and capabilities.

- Revenue structure – How certain or controllable is the revenue stream, what is the level of penalty and abatement for under performance, what are the index linked payment periods etc.
- Operating risk – What are the maintenance and replacement regimes and costs? Is service provider liability for poor performance capped? Are levels of abatement appropriate and fair? How reliable are service providers? Do they have a presence in the bidding consortium? What are the levels of competition for service providers? etc
- Financial and legal structure – Typically, PPP projects have fully amortizing debt maturing in 30 years. Projects are typically highly geared at around 80%-90%. Thus the sufficiency and sensitivity of cash flows to different potential risks is crucial to establish how debt will be serviced. To manage this, structural protective mechanisms and financial security packages can be useful such as guarantees or bonds, operating accounts and reserves etc.

## **RISK ALLOCATION ON CONCESSION CONTRACTS**

In theory, the idea of transferring a risk is that some other party is provided with an incentive to manage it effectively. However, in order for this principle to work, there are several important and well established rules to follow (Loosemore *et al.* 2005). They are, that a risk should only be given to someone who:

- Has been made fully aware of the risks they are taking.
- Has the greatest capacity (expertise and authority) to manage the risk effectively and efficiently.
- Has the capability and resources to cope with the risk eventuating.
- Has the necessary risk appetite to want to take the risk.
- Has been given the chance to charge an appropriate premium for taking it.

Not following these simple rules will merely result in an illusion of risk transfer and cause a number of problems. These include: confused responsibility for monitoring and responding to risks; resentment for being forced to take them and; denial, conflict and dispute to avoid responsibility when they do arise. Unfortunately, there is considerable evidence to suggest that risk transfer is often handled poorly between parties to many concession projects and that that these types of problems are common in PPP projects. For a host of reasons, parties to concession projects take risks which they are not clear of, that they are not able to cope with, that they do not have the appetite for and cannot charge for (Arndt and Maguire 1999). It would seem that all too often the distribution of risk is influenced more by economics, commercial requirements, debt financier's requirements, bargaining power and company culture and policies than by the principles identified above.

Given the above problems and the major risks involved in concession contracts, the remainder of this paper presents the results of research into the \$920 million New Southern Railway project in Sydney Australia. This was one of the first major privatised railways in the State of New South Wales and has been a highly controversial project which has received much public criticism.

## METHOD

Data was collected about the project from a range of sources including: semi structured interviews with key project stakeholders from the public and private sector, primary documentary analysis of contract documentation and secondary documentary analysis of government and private sector reports, respectable newspaper articles, journal articles and conferences.

The objectives of the data collection were to identify the main project risks perceived by both public and private sector stakeholders and to assess the process and rationale underpinning the distribution of risks between them. Six detailed interviews were conducted with managers who were involved, at various stages of the negotiation processes where risks were allocated. The respondents' details are provided in more detail in Table 1.

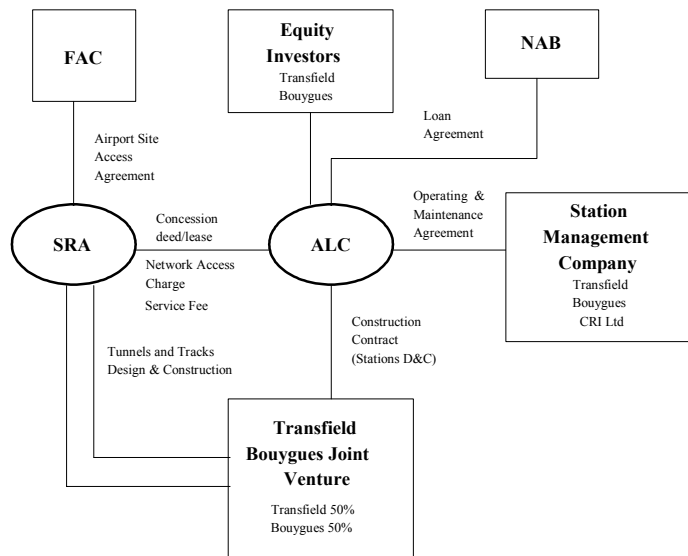
**Table 1:** Respondents' details

Sector	Position	Role
Public	Project Director, State Rail Authority	Project director for government. Involved in all stages of risk allocation negotiations. Particularly in final 100 days of finalising concession contract.
	Project Finance Manager, State Rail Authority	Responsible for financial feasibility and control of project. Involved in final stages of risk negotiation.
	Manager of Planning Department and Rail Access Corporation, State Rail Authority.	Member of the risk allocation team for the government. Involved in all project negotiations.
Private	General Manager of SPV	Involved throughout life of consortium in all risk-related negotiations. Particularly in final 100 days of finalising concession contract.
	CEO of major JV partner	Responsible for negotiations with JV partners, government stakeholders and private sector Banks.
	Chief Financial Officer of major JV partner	Responsible for financing and negotiations with funders – re: financing.

## CASE STUDY

The New Southern Railway (NSR) project was a 10km underground two-track railway which was designed to provide rail services between Sydney (Kingsford Smith) Airport and Sydney Central Station. The \$920 million project which commenced in June 1995 and finished in May 2000 included four new underground stations and was financed by the State Government to the value of \$700 million, the remaining \$220 million being provided by the National Australia Bank (\$190m) and shareholder equity (\$30m). This is a debt/equity ratio of approximately 86%. The concession period was 30 years and the concession contract was a BOOT agreement with fast track design and construct.

The project was initially considered in 1990 as an unsolicited bid by a consortium comprising CRI Ltd, Qantas and Westpac Bank. However, the government State Rail Authority (SRA) subsequently called for open tenders and received four bids. Two were short listed – CRI and Transfield/Bouygues and, in 1991, these bidders were encouraged to form a single consortium (calling the SPV the Airport Link Company - ALC), which eventually rebid for the project in 1993. This bid was accepted and the project then began to move forward, final contracts being signed in February 1995. Figure 1 illustrates the contractual relationships between key project stakeholders.



**Key:**

- NAB – National Australia Bank
- SAC – Federal Airports Corporation
- ALC – Airport link Company

**Figure 1:** Contractual relationships in NSR concession contract

**Risk allocation**

The concession contract involved ALC agreeing to finance, design, construct and operate the tracks, tunnels and four new stations over 30 years. The land on which the stations were built remained under SRA ownership. ALC would pay a lease for its use and recover initial capital costs by charging a fee on the tickets of passengers using the new rail service and earning income from station retail sales. Favourable tax concessions were also granted to limit tax liability until after debt servicing.

In the pre-design stage of the project, SRA took all approval risks – these being made a condition precedent to the contract. The airport link approval process was complex because the project passed through five local government areas in addition to the airport, which is located on Commonwealth territory. In the design stage, SRA carried the risks associated with delays or costs associated with dealing with the Federal Airports Commission (FAC). ALC took the risk of providing full design for tracks, tunnels and station infrastructure for a lump-sum price. During the construction stage, SRA purchased land along the track route and took the risk of site accessibility. SRA also bore force majeure risks, providing airline pedestrian links and those associated with general industrial disputes aimed at government policy. ALC took the Construction risk of delivering the stations, tracks, tunnels and associated infrastructure on time and within a lump-sum price (including fixed inflation allowance) and to an agreed level of quality. It also bore the risk of industrial disputes arising directly from its actions. During the operational phase, SRA took the risk of

operating trains, selling tickets and meeting agreed service standards. SRA also carried the risk of changes in requirements and changes in the law or government policies which could have directly or indirectly affected the usage of the rail link. ALC was responsible for station operation and maintenance costs associated with tracks, tunnels, stations and associated infrastructure. Other risks taken by ALC included the risk of fluctuating interest rates and exchange rate risks. While predominantly funded in local currency, some of the major items used in the construction (such as the tunnel boring machine) were imported. ALC also carried the ongoing market/revenue risk over the 30 year concession period, since the level of revenue was directly dependent on level of patronage using the train line. This was minimised by SRA agreeing to compensate ALC if patronage levels fell below the expected 48,000 trips per day (from extensive modelling which was carried out at the time). For example, the contract had a clause that required the government to purchase the four privately built stations if the rate of usage caused the consortium to default on their loans. ALC also was entitled to demand \$15 million compensation for low ticket sales. However, SRA considered this to be a relatively low risk and predicted that patronage would increase to 68,000 per day by 2013 due to population growth and development of the south Sydney area for business and residential developments.

### **Effectiveness of risk management**

Despite some accolades in achieving urban planning objectives, the project has attracted considerable public criticism and continues, to this day, to be labelled as a debacle. Six months after the line was opened passenger rates were only 12,000 per day rather than the 46,000 predicted. This was because the \$10 premium rail fare which was charged to customers using the link turned out to be well above the competitive price offered by alternative modes of transport such as busses and taxis. A taxi fare to the CBD from Sydney airport was approximately \$20 and there was waiting or baggage handling involved. This fare could be reduced to \$10 by sharing with one other person. Furthermore, the CBD was only 15 minutes by taxi using the newly built Eastern Distributor road and the new trains on the rail link did not have enough baggage room for tourists travelling to and from the airport. Another problem was that the service was part of an existing rail network that carried large numbers of commuters. Many potential travellers, tired after a flight, were put-off by the full trains as they arrive at the airport. Finally, the appearance of the City Rail trains did not entice people to use them and there were few incentives offered to do so.

Due to the low patronage ALC defaulted on its \$200 million loan only six months after the line opened and the government had to intervene to boost patronage from 12,000 people per day to 48,000 per day as stipulated in the contract. This involved offering concession fares to groups and multi-ticketing by offering combined airline and train tickets packages. Eventually, the state government shut down the airport bus service to force people to use the rail link. The cost of this and the contractual compensation to which SRA was exposed, was estimated to be an extra \$200 million at the time, bringing the prospect of taxpayer funding for the project to a total of \$900 million. Rather predictably, this generated a considerable amount of negative publicity for the project at the time.

In the end, rather than resume control of the project as a government enterprise, the government decided that the four station airport rail link should remain in private hands, the private consortium being heavily compensated for the shortfall in passenger rates which continue to this day. Not surprisingly, this series of events has led to

continued public criticism. Today, patronage is still far lower than predicted by the government and the private consortium continues to be compensated for patronage levels which have achieved less than 30% of that forecasted. Furthermore, fares on the line still cost approximately four times the cost of an equivalent trip on the public rail service and in November 2004 the state government announced it was contributing another \$98.3 million to the failed project. To date, the state government has paid the private consortium approximately \$700 million from tax payer revenues. This is a project that in 1990 was originally intended to be 100% privately funded. With problems of low patronage continuing to beset the rail link, the government is now faced with the prospect of continuing to compensate the private consortium into the future, buying out the contract for an extra \$300 million or being forced to renegotiate the contract. The problem is that if the new arrangements do not result in the lowering of the ticket surcharge and thus lower fares, then the project will continue to be under utilised.

## CONCLUSION

This paper has highlighted a number of problems with PPP projects. First, the scale and prominence of these project's make the approval process long, unwieldy and subject to political manipulation. In the case above, the contract was hastily signed in record time just prior to the 1995 elections, arguably, to generate votes for the state government. Second, it is clear that due to the long time frames of PPP projects such as this, revenues and patronage rates are extremely difficult to predict in advance. In this case, the government took most of this risk, agreeing to compensate the private consortium for any shortfalls in patronage levels. It was a decision which has cost the public many millions of dollars. Third, it became evident that the feasibility of projects like this cannot be guaranteed without intervention from the government to change people's behaviour. In this case, people were not educated about the benefits of using rail instead of traditional modes of transport to which people had become accustomed, or indeed, given any reason or incentive to do so. It is clear that the risks involved in concession projects are significant and need to be thoroughly analysed, researched and managed. This includes public perceptions of risk which have become negative as a result of high profile failures like this project. While the technical risks in such projects are enormous and complex, the success of large PPP infrastructure projects also depend on the support and behaviour of key stakeholders in the community. These risks can be far more unpredictable and difficult to manage than first thought and very difficult to distribute effectively.

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