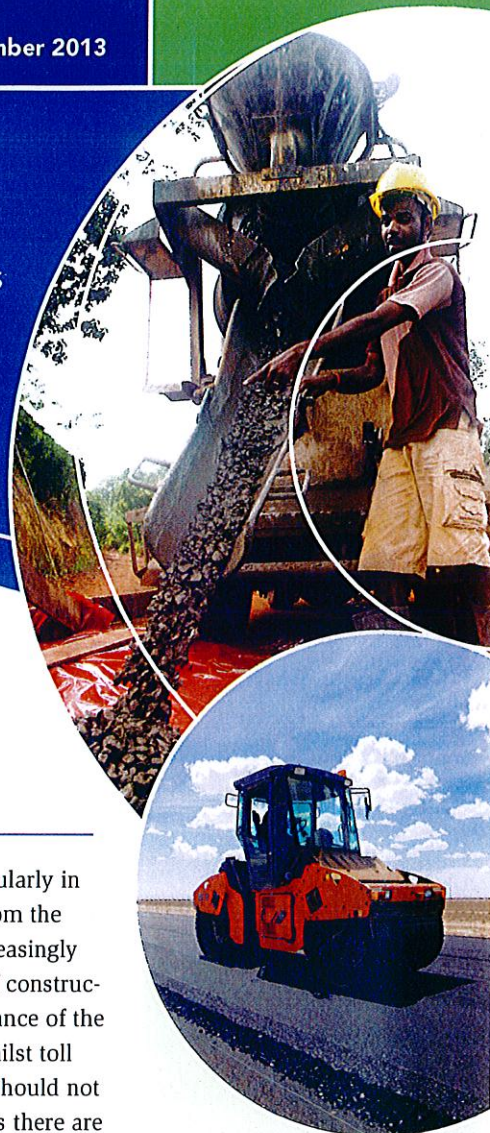


PPP INSIGHTS

AN EXPLANATORY NOTE ON ISSUES RELEVANT TO PUBLIC-PRIVATE PARTNERSHIPS



Road PPPs and Payment Mechanisms for Road PPPs

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Introduction

A well-constructed and maintained road system is important to both developed and emerging economies but they are expensive to build and properly maintain. In most countries, the majority of the road systems are designed, built, maintained and financed by government. Private sector contractors have been used by governments to carry out construction work but problems of bad design and construction, together with the tendency by governments to neglect maintenance, have led governments to look at alternative solutions and longer term contracts with the private sector.

Private sector initiatives for road development are not a new phenomenon: they have existed for centuries in parts of Europe, such and

the United Kingdom and France, particularly in developing bridges over waterways. From the 1970s onwards, governments have increasingly contracted out some of the functions of construction, operation, financing and maintenance of the road networks to the private sector. Whilst toll concessions are one form of PPP, tolls should not be considered synonymous with PPP, as there are many instances of publicly financed roads carrying tolls. This PPP Insight looks at the different ways that the private sector has been engaged in the road sector around the world and the extensive variety of payment mechanisms that have been developed for remunerating the private sector for participation in roads, in response to local and project specific challenges.

Traditional Approach (not PPP): Government Paying Private Sector to Design and Construct Road

The concept that the public sector is responsible for roads, whether at a local or national level, is prevalent around the world. Whilst in some jurisdictions all of the procurement was through public sector entities including state

owned construction companies, in others a contracting authority would engage a private sector firm to design the road and then engage a construction company to build it. Payment would be made based upon a pre-agreed set of rates

and on a work done basis (i.e., bill of quantities). Some jurisdictions, such as India and the UK have moved to contracting these works on a fixed sum design and build basis (so called turnkey contract) to, among other things and get a clearer estimate of costs, reduce interface risk between design and construction and so reduce the

number of claims arising from the split between design and construction. The contracting authority in those cases typically maintains the road and determines whether to raise funds for the costs of construction, operation and maintenance through public revenues or by other means.

Performance Based Contracts

Some governments, for example India, have been concerned that construction standards are unreliable even for turnkey contracts and are increasingly outsourcing road maintenance to private contractors for a fixed sum, or combining maintenance of a road for a number of years with a limited amount of rehabilitation. This enables governments to budget for rehabilitation and maintenance with certainty and also has the advantage that the party carrying out the rehabilitation will be responsible for maintenance afterwards, and so will be more attentive to quality of construction. Some of the more recent

examples are performance based and include as part of the remuneration a bonus for exceeding certain performance targets (and/or a penalty for failure to meet those targets). The World Bank has developed a draft sample performance based road contract, which can be accessed at <http://siteresources.worldbank.org/INTPROCUREMENT/Resources/OPRC-10-06-ev2.pdf>, and which is being used all over the world, from Argentina to Liberia. The longer duration contracts are considered a limited form of PPP.

Concessions with tolls (all traffic risk with private sector)

In the meantime, there has been a parallel approach on a much smaller scale in the use of road concessions, whereby the government grants to the private sector the right to exploit a right of way for a fixed period, such as in France in the 1950s and 1960s. Typically in the classic concession approach traffic risk is with the private sector and it is a purely private endeavor, with no government support. In Hong Kong, the private sector promoted a cross harbour tunnel and in 1969 was granted a 30 year concession. The tunnel opened in 1972 and was financially very successful even though there was no Government support other than the passage of legislation necessary to enable the concession to be implemented. The concession expired in 1999 and the assets were vested in the Government in accordance with the terms of the project agreement. The Government has continued to charge tolls.

In the UK, in the 1980s and early 1990s there were four concession type projects – Dartford-Thurrock Crossing over the Thames Estuary to

the east of London, the Second Severn Crossing between England and Wales, Skye Bridge in Scotland and the M6 Toll (previously known as the Birmingham Northern Relief Road). The first three had a regulated income with increases in tolls linked to the retail price index and the concession ended on the earlier of when a contractually agreed amount of money in real terms had been recovered or a fixed expiry date occurred. In the case of the Skye Bridge Concession in Scotland, political and public resistance to privately run toll roads resulted in the private sector being bought out and the concession ended. The M6 Toll Road, with a 53 year concession period, carried unregulated tolls thereby allowing the concessionaire freedom to set the tolls and to apply time of day adjustments.

Bidding documents and concession agreements for some of these projects can be found on the PPP in Infrastructure Resource Center website at www.worldbank.org/ppp.

Tolls + Traffic Guarantees (Cap and Collar)

This is a hybrid situation for a concession where the private sector takes some but not all of the demand risk of the road.

In the early 1990s, Chile started developing its own programme for concessioned roads using a variety of concepts, including in the case of the Santiago to Valparaiso route the same concepts as had been used on the UK bridge projects. In addition, the bidders were allowed to opt for a minimum usage guarantee (revenue guarantee) but were required to pay annually a premium of 0.75 percent of the value of the outstanding guarantee. In fact, the winning bidder opted not to buy the guarantee. Whilst it was not used in practice in that case, traffic guarantees have been used around the world to mitigate inaccuracies in traffic forecasting (traffic forecasts

have historically tended to be overly optimistic, as illustrated in Standard and Poors Traffic Risk Report (2005) - <http://www.robbain.com/Traffic%20Forecasting%20Risk%202005.pdf>).

Another variant of the traffic guarantee is the so-called “cap and collar” whereby a cash payment is made to the private operator if usage falls below a stated level and the public sector takes all (or a share) of the excess revenue over a stated percentage. This approach was used in Colombia in the Buga to Tulua scheme (where it is understood that the authority took all of the revenues exceeding 125 percent of the base case volumes).

Examples of toll road concession agreements can be found on the PPP in Infrastructure Resource Center website at www.worldbank.org/ppp.

Direct Payments

There are a variety of reasons why direct payments rather than tolling may be used:

- traffic volume forecasts may be insufficient to make tolling as the only source of concessionaire remuneration a satisfactory solution
- toll concessionaires will want exclusivity over the route, which may not always be appropriate
- it may be impractical to obtain land to create access routes or toll plazas in appropriate places
- political/ social acceptance of tolls may also be a difficulty (see Skye Bridge above).

Shadow Tolls – demand based

In the UK, as an alternative to concessions, the expression DBFO (design, build, finance and operate) was adopted under which the private sector would undertake the design, construction, financing, operation and maintenance of a facility, for example a road, and would derive a payment for this from government. Early UK schemes, where the Contractor was paid by the Authority, were based on the concept of tolling but with a shadow toll (rather than a real toll) paid based

on usage. Examples elsewhere include the Portuguese SCUTs, (sem custo para o utilizador or “without cost for the user”) (some 7 in all) and the first of the Mexican non-tolled private sector roads. Mexico had previous experience of tolls but the schemes had foundered due to a combination of a severe economic downturn coupled with foreign debt to finance the projects and a collapse of the peso against the US dollar.

Other remuneration mechanisms – non-demand based

In some circumstances, it may not be appropriate to base remuneration on demand risk - where traffic control measures are being planned, for instance, or where it is difficult to ascertain future demand (as currently the case in many countries due to the financial crisis and limited economic growth). A number of remuneration mechanisms have been developed that are not based on demand risk:

- **Availability Payment** - the Contractor has to meet certain output standards which are set out in detail in the PPP Agreement. So long as it does so, it receives payment of a pre-agreed monthly or other periodic sum. If

it fails to do so, then pre-agreed deductions are made on an accumulated points basis (each failure has attributed to it a certain number of points). In some cases, there has been a kind of reverse engineering. On road improvement and maintenance contracts, a scheme was introduced so that the construction contractor paid an amount per day for occupying a road lane. The more efficient the contractor was, the less time it occupied the lane and thus the less the traffic disruption. On the other hand, the contractor would have priced on an assumption of time occupying the lane and if it delayed then it would have to bear a higher cost. In lane availability, the benefit the contractor receives is that if a lane is clear then it receives full payment. There are also time of day weightings so that lane occupation during non-peak periods will be less penalized than during peak periods and in some cases there would be no penalty.

- **Indian Annuity** - A derivative of the availability payment is the Indian Annuity. Under the project agreement, there is a viability gap payment made following construction and commissioning of the road (adjusted for early or late completion) which covers part of the cost of construction. A periodic annuity payment during the operation period of the contract which will cover the rest of the cost of construction and financing thereof as well as the cost of operation (adjusted with deductions for failure to meet Assured Availability). The deduction is based upon the length of the non-available part of the lane and the number of hours of non-availability.
- **Congestion and Safety Payment**- in this case, the Contractor is remunerated on the basis that vehicles should be able to travel at a certain average speed between certain fixed locations on the road: if they are unable to do so for reasons for which the contractor is responsible under the PPP Agreement, then

deductions are made. Similar deductions are made where the failure is to meet the specified safety requirements. This mechanism has been used in the United Kingdom.

- **Rehabilitation Payment**- in Argentina, a PPP Agreement for roads known as CREMA (mainly for rehabilitation and maintenance) was developed. CREMA were for five years only and was a fixed price lump sum. They were used widely between 1997 and 1999 and covered 40% of the national road network. Sixty percent is paid at the end of the first year with monthly installments thereafter. Penalties are capped at one percent of the lump sum.
- **Blended Approach**- In Germany three model forms have been developed – A, F and K. Since 1994, under the Private Financing for Highway Construction Act, tolled concessions have been permitted for specific structures such as tunnels, bridges and mountain road passes. The K Model was designed for maintenance with some upgrades to the road and payment is made on the basis of road condition, quality, drive-ability and safety. The last form takes a blended approach: the contractor designs, builds, finances and maintains the road and receives, in part, a subsidy and, in part, a share of the revenue derived by government from the applicable tolls on HGVs (heavy goods vehicles).

In Ireland, on the M4/M6 Kilcock to Kinnegad Motorway project agreement which was signed in March 2003, in addition to the right to receive the income from tolls the contractor received Euros 146 million (indexed) during the construction period (which incentivized the contractor to finish construction early) and is entitled to a further Euros 6 million (indexed) over the operating period.

Conclusion

The payment mechanisms available for PPPs in road projects are many, with models being developed to meet the circumstances of the project and local needs. For examples of drafting remuneration mechanisms, the reader is encouraged to go to the World Bank PPP in Infrastructure Resource Center for Contracts, Laws and Regulations, www.worldbank.org/ppp where there are sample agreements for road PPPs,

whether concessions, DBFOs or performance based maintenance contracts. For information on other aspects of road PPPs, visit the PPIAF and World Bank toolkit for Road and Highways - <http://www.ppiaf.org/sites/ppiaf.org/files/documents/toolkits/highwaystoolkit/index.html>.

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Are you financing or structuring public-private partnerships in infrastructure?
The Public-Private Partnership in Infrastructure Resource Center for Contracts, Laws and Regulation (PPPIRC) contains sample public-private partnership (PPP) agreements and concessions, checklists and sample clauses, terms of reference, risk matrices, standard bidding documents, developed by government agencies and sample PPP and sector legislation and regulation. It is designed for government officials, project managers and lawyers involved in PPP infrastructure projects and will help you address contractual and legal issues related to infrastructure legal reform and PPP projects with reference materials in English, French, Spanish, Portuguese, Arabic and more recently, Mandarin Chinese, drawn from reform initiatives around the world.

What are public-private partnerships (PPPs)?
There is no one widely accepted definition of public-private partnerships. Broadly, PPP refers to arrangements between the public and private sectors whereby part of the services or works that fall under the responsibilities of the public sector are provided by the private sector, with clear agreement on shared objectives for delivery of public infrastructure and/or public services. More on public-private partnerships.

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PPP INSIGHTS

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