Public-Private Partnerships in Roads

Full Description

Payment Mechanism Options - How is Concessionaire to be paid

A key issue for roads PPPs is how the Concessionaire is to be paid and who is to bear the risks of traffic risk and revenue risk

- traffic risk is the risk of how many vehicles will travel up and down the road
- revenue risk is a factor of both traffic volumes/ toll rates and collection/ enforcement risk

Pure "Availability' based payment structures generally transfer neither of these risks to the private sector. "Shadow Toll" structures are seen as transferring traffic risk, but not revenue risk, and "Real-Tolled" structures are usually considered capable of transferring both risks.

	Real tolls	**Shadow tolls**	**Availability/Performance base mechanisms**
Features	Road users pay for use of asset	No actual tolls are collected from public	Concessionaire paid for making road available for public use
		Concessionaire is paid by authority on road use – the more the road is used the more the concessionaire is paid	Sometimes mixed with real tolls [e.g. Ireland] so that concessionaire pays a non-availability payment to authority for road or lane closures out of toll revenue.
		Usually have banding mechanism, which applies different shadow toll payments to different levels of traffic Common to have 4 bands: • **Base Case**: designed to service senior debt but not to provide return on equity • **Higher bands:** provide a return on equity • **Top band:** usually has a toll rate of zero to cap amount payable to concessionaire	Amount of deduction/ non-availability payment usually determined by reference to factors including: • length of project road that is unavailable • Number of lanes affected • Duration of unavailability • Time of day of unavailability

Advantages	Zero cost to the Government	Where environment is perceived to be hostile to real tolls, can introduce PPP structures	
	Government has fiscal space to fund other projects	Prepare way for real-tolled roads in due course by cultivating an industry used to taking traffic risk	Lower level of due diligence needed
		Multiple sources of funding can be drawn on by government	Reduces risk on concessionaire – making project cheaper
		Mechanism of traffic risk transfer should reduce complexity of project and reduce level of due diligence required	Removes emphasis on monitoring traffic flows during operational period
			No consumer resistance
Disadvantages	High capital construction costs mean that projects traffic volumes often considered an insufficient revenue stream to meet debt service and equity return for sponsors	No revenue generation device – total cost of project falls on public purse	No revenue generation device – total cost of project falls on public purse
	Often some form of subsidy/ very long concession period (see grant funding below)	If traffic volumes are significantly in excess of forecasts, government may find itself paying more “toll” than it budgeted for. [This happened in Portugal]	Concessionaire is not concerned how much traffic volume there is and so do not transfer traffic or revenue risk.
	Reluctance by investors to become involved – costs will be higher to reflect higher risks		
	Potential consumer resistance to paying for road use and how to mitigate this		

Hybrids/ Typical Added Features

Any of these mechanisms may be supplemented by various performance-based criteria, such as:

- safety improvements must be created
- rid-quality thresholds to be met
- rut-depth values not to be exceeded

- skid-resistance tests must be met
- loss of road surfacing must not exceed agreed thresholds
- services must be delivered (e.g. sign cleaning, grass cutting)
- reductions in end to end journey times

The grant funding authority may choose to support the project with a grant to reduce the level of senior debt required to complete the road and/ or operation grants to assist with ongoing operational costs. In some jurisdictions, such as UK, Government can get favorable balance sheet treatment of grants by balancing payment mechanism with sufficient demand risk.

An availability-based mechanism could be adopted that includes scope for increased payments for higher traffic volumes to compensate for increased maintenance.

Another consideration is whether to have variable toll rates for different types of vehicles and discounts for local vehicles.

One way to share risk is to include a ‘gain sharing’/ revenue sharing mechanism in real-tolled projects to share with concessionaire the benefit of higher than expected traffic volumes.

The road project authority could also retain revenue risk by having toll revenue paid over to it by the concessionaire – with concessionaire being remunerated by other means (e.g. shadow tolls).

This gives authority benefit of raising revenue to pay for project directly from users without transferring this risk to private sector.

Also read: Standard & Poor's Traffic Risk Studies

Key Risk Areas

Risk	Issues/ comments
1. Toll collection technology • toll plazas • free flow systems (no plaza or physical barrier)	Which system most suitable • cost • system performance • flexibility • environmental impact • ease of use Challenge of free flow system is the collection/ enforcement risk and cost thereof
2. Traffic Risk – shadow and real-tolled projects	Extensive studies required at various stages of procurement process
risk of not enough traffic	Few remedies available, other than lowering tolls to hope for increase of traffic volume

	Traffic guarantee – authority may grant a traffic guarantee – if actual levels of traffic fall below estimated threshold, payment is made by authority (may be for an initial period of concession) Impact of improvements to competing roads
3. Construction Issues	• complexity of construction (does it involve bridge/ tunnel?) • how will cost overruns be borne by consortium members? • capacity for design and construct contractor to manage issue
Long-term risk of construction overruns	
Maintenance structures	Is there to be a maintenance sub-contractor? How si this to be managed?
Control over road	Do local laws give third parties right to enter project road? Does any agency have right to prevent works from proceeding?
Change in law	Concessionaire will seek protection for changes to safety regulations General changes of law are usually borne by concessionaire – this can cause problems for the project's viability
Events of default that give rise to termination right of authority	Concessionaire will want to limit these, and ensure that they are objective and clear compensation on termination also needs to be clear
Rights of step in	When can funders step in when project is failing before termination? Funders usually want this right established in a separate direct agreement.
Compensation on termination	UK and Ireland provide for zero compensation for termination for concessionaire default. This is a concern for sponsors and financiers – and raises prospect of windfall gain for authority (free road) Likely to be resisted by private sector for projects in developing countries – more likely to have risk sharing between parties
Force Majeure	UK and Ireland have very limited circumstances when compensation is paid on termination. Developing countries unlikely to be able to pass as much risk to private sector.

Jurisdictional issues – these include:	• Does authority have legal power to enter into concession contract? • Population and migration levels • Political will • Stability of country – political stability • Transparency of procurement process • Deal flow • Which authorities are involved in award process? • Insolvency regime • Impact of accounting treatment

Risk Matrices

- Risk Matrix Road Concession Toll Road - long form

- Risk Matrix Road Concession Toll Roads - short form

Sample Bidding Document

- World Bank Sample Bidding Document - Request for Bids (RFB)- Works- Roads (Output and Performance-Based Road Contracts- OPBRC)

Sample Agreements

- Road Concession Agreement - Example 1 - concession agreement for design, construction, finance, operation and maintenance of a toll road prepared for country in Africa by international law firm (2006). Concessionaire receives income from tolls and Associated Facilities and Developments. Concessionaire agrees to pay a Concession Fee based upon share of surplus when a certain level of Shareholders' IRR achieved.

- Road Concession Agreement - Example 2 - concession agreement for development of upgrades to an existing road prepared for project in LAC by international law firm (2001). This document was extensively negotiated and is project specific. Care should be taken before replicating any of the provisions of the agreement - in particular those referred to in summary and annotation. The Concession envisages the creation of a Toll Regulator by statute but many issues are referred to an Expert. If the Regulator does not grant toll increases up to the Capped Toll Level as indexed in accordance with the Concession then Grantor has to pay balance. This may limit circumstances where the contract as drafted would be applicable.

- Road Concession Agreement Example 3 - concession agreement for design, construction, finance, operation and maintenance of a toll road prepared for country in Africa.

- Road Bridge Concession Agreement - Concession for the alleviation of congestion on an existing estuarial crossing by constructing an additional crossing and concessioning prepared by an international law firm for a country in Europe. Bidders had to identify in advance the income required to design construct and finance the second crossing and operate and maintain both. When the actual income from tolls equaled that amount after allowing for inflation the concession would terminate.

- Road Infrastructure and Renewal in an Urban Area Concession Agreement - Honduras- Siglo XXI Project, San Pedro Sula (Proyecto Siglo XXI) (Spanish)- concession agreement for the design, construction, financing, managing, maintenance and transfer of the road infrastructure works of San Pedro Sula. (*Concesión para el diseño, construcción, financiamiento, administración, mantenimiento y transferencia de las obras públicas de infraestructura vial de San Pedro Sula.)*

- Periphery Renewal Contract - Circuito Interior Bicentenario (IIC project) Mexico DF, Mexico (Spanish). Long term service provision contract for the urban improvement and integral maintenance of Circuito Interior Bicentenario, a periphery road for Mexico City

- Roadway Around the Periphery of Sao Paolo City - Brazil (Spanish). Concession for a peripheral road in Sao Paolo, Brazil, which is primarily for transport of goods and cargo from the interior of the country to the port of Santos. The project is divided in several subsections; each section finances the construction of the next phase.

Standardized Documentation/ Publicly available Documentation for Specific Projects

Australia

West Gate Tunnel Project – Project Agreement between Transurban (an Australia based toll road operator with a substantial international footprint) and the State of Victoria in late 2017, for Transurban to design, construct, operate and maintain the upgraded West Gate Freeway and the new West Gate Tunnel (which connects several existing arterial roadways in the greater Melbourne area). The agreement is for a term of 28 years (including the design and construction phase) ending in 2045 and is structured on a Build Operate Transfer ("**BOT**") model. It provides a useful example of a PPP infrastructure project where the demand / revenue risk is substantially passed onto the private sector through a tolling model. For the key features of the Project Agreement, read more...

Related project documents and more detailed project overview can be accessed on the Victorian Treasury website.

Canada

- British Columbia - Golden Ears Bridge Crossing DBFO - DBFO Project Agreement + Concession Agreement and Ground Lease for design, build and financing of Golden Ears Bridge, BC, Canada. The Concession is for 16 years. The DBFO Contractor is paid Capital Payments and OMR Payments (for operations) and DBFO Contractor pays to the awarding authority a licence fee of $50,000,000 for the licence to use the Facility Lands. DBFO Contractor is not to charge tolls/ user charges - such right rests with the awarding authority.

- British Columbia - Okanagan Lake Crossing Concession Agreement - Concession Agreement for design, build and financing of a new crossing over the Okanagan Lake, BC, Canada together with operation and then decommission of the existing crossing. The Concession is for 30 years. The Concessionaire is paid availability payments and performance payments (linked to traffic volume, safety, user satisfaction - clause 31 and schedule 10). Concessionaire is not to charge tolls/ user charges. Concessionnaire is granted a non-exclusive licence to the Site.

- British Columbia - Sea-to-Sky Highway Improvement DBFO - DBFO Concession Agreement for design, build and financing of improvements to Sea-to-Sky Highway in BC, Canada. The Concession is for 16 years. The DBFO Contractor is paid Total Performance Payments (based on Availability Payment, Vehicle Usage payment and Performance Incentives). DBFO Contractor is not to charge tolls/ user charges. Click on Project Schedules for other key documents.

- Quebec - Autoroute 25 Concession Project (French) - Concession Agreement entered into in September 2007 for design, build and financing of rehabilitation and development and operation and maintenance of a portion of Autoroute 25 in Montreal, Quebec, Canada. The Concession is for a maximum of 35 years. The Private Partner collects tolls on behalf of Government which it then remits to the Government. The Private Partner is paid a construction fee + an availability fee + a fee based on the levels of revenue achieved, less certain deductions (see articles 29 and 30). Construction is due to be completed in 2011.

- Quebec - Autoroute 30 Concession Project - Concession Agreement entered into in October 2008 for design, build operation, maintenance and repair (and financing) of Autoroute 30, which will provide a southern bypass of Montreal, Quebec, Canada. The Concession is for a maximum of 35 years. The Private Partner collects tolls on behalf of Government which it then remits to the Government. The Private Partner is paid a construction fee + an availability fee + a fee based on the levels of revenue achieved, less certain deductions (see articles 29 and 30).

Costa Rica

- San Jose to San Ramon Toll Road concession agreement (Spanish)

- San Jose to Caldera Toll Road concession agreement and RFP document (Spanish)

Honduras

- Corredor Turístico (El Progreso-Tela, San Pedro Sula – El Progreso y La Barca – El Progreso) - Concession Agreement for the construction, operation, transfer, and maintenance of a 122-km, four-lane highway along the Atlantic side of Honduras ("touristic corridor") under a design, finance, build, operate, transfer (DFBOT) scheme (Spanish).

India

The National Highways Authority of India Act 1988 establishes the National Highways Authority of India (“NHAI”) to develop, maintain and manage national highways in India, as well as to collect tolls on several highways

The Public Private Partnership in National Highways: Indian Perspective discusses various issues relating to road PPPs in India including an overview of the regulatory framework and existing models of PPPs.

- National Highways Authority of India - Model Concession Agreements - this is the latest version currently available on-line.

- Gomati Chauraha-Udaipur Project Toll Road – Concession Agreement between the NHAI and Shreenathji-Udaipur Tollway Private Limited ("**Concessionaire**"), a subsidiary of Sadbhav Infrastructure Projects Limited, to widen the Gomati Chauraha–Udaipur section of National Highway No. 8 ("**NH-8**") in the State of Rajasthan. The agreement is for a term of 27 years (including the design and construction phase) and is structured on a DBFOT basis. The agreement is based on the model concession agreement published by the NHAI, but contains a number of bespoke provisions. The concession agreement adopts a tolling model, which shifts demand / revenue risk to the private sector. The government undertakes not to develop competing road projects, so as to further protect this project's profitability. The concession agreement also contains an interesting profit-sharing mechanism which allows the government to receive some upside in the event of significant profits. For the key features of the agreement, read more...

United States

- Model Public-Private Partnerships Core Toll Concessions Contract Guide - Final (Part 1), United States Department of Transport, Federal Highway Administration (FHWA), September 2014. This guide presents key concepts for the structuring and development of legal contracts for highway transportation Public-Private Partnerships (PPPs) in the United States including sample wording for contract clauses.

Further Reading and Resources

- Climate Toolkits: Roads - The roads toolkit addresses key climate-related aspects in road projects by helping map climate policies and assess project alignment; focusing on climate risk assessment, carbon footprint estimation, and mitigation strategies; and guiding prioritization of climate strategies and checks their economic viability. The toolkit includes specific tools, reference libraries, and reporting templates. Module 4 provides road project-specific key performance indicators (KPIs) for the mentioned processes.

- Private Sector Involvement in Road Financing, Peter Brocklebank, Sub-Saharan Africa Transport Program (SSATP), World Bank December 2014.

- Tolling Principles by Matt Bull and Anita Mauchan, Public-Private Infrastructure Advisory Facility (PPIAF) October 2014.

- Model Public-Private Partnerships Core Toll Concessions Contract Guide - Final (Part 1), United States Department of Transport, Federal Highway Administration (FHWA), September 2014.

- Legal Aspects for Performance-Based Specifications for Highway Construction and Maintenance Contracts - TRB's National Cooperative Highway Research Program (NCHRP) Legal Research Digest

61, Transportation Research Board (TRB), July 2013 - This publication explores how performance-based specifications differ from traditional design or method-based specifications and the risk allocation differencesbetween the these methods. It includes a discussion of case law, commercial risks, and other aspects not often covered.

- Road and Rail PPPs, Handshake, International Finance Corporation's (IFC's) quartely journal on public-private partnerships (PPPs), Issue # 7, October 2012

- Private Participation in the Road Sector in Brazil: Recent Evolution and Next Steps - Adrien Veron and Jacques Cellier, World Bank Transport Papers, March 2010

- Performance Based Contracts in the Road Sector: Towards Improved Efficiency in the Management of Maintenance and Rehabilitation - Brazil's Experience by Eric Lancelot, World Bank Transport Papers, March 2010

- User Guidebook on Implementing Public-Private Partnerships for Transportation Infrastructure Projects in the United States, NCSL 2010

- Project Finance Primer 2010, Federal Highway Administration (FHWA) of the United States, 2010

- A Review of Institutional Arrangements for Road Asset Management - Lessons for the Developing World, by Cesar Queiroz and Henry Kerali, World Bank Transport Papers, April 2010

- Toolkit for Public-Private Partnerships in Roads and Highways, Public-Private Infrastructure Advisory Facility (PPIAF) 2009, (English and Russian)

- La experiencia española en concesiones y APPs: Infraestructuras de carreteras, by Andrés Rebollo, Programa para el Impulso de Asociaciones Publico-Privadas en Estados Mexicanos (PIAPPEM), October 2009

- Worldwide Trends in Private Participation in Roads: Growing Activity, Growing Government Support, Public-Private Infrastructure Advisory Facility (PPIAF), 2008

- Tolled Infrastructures within ASECAP (pdf), Association Européenne des Concessionnaires d'Autoroutes et d'Ouvrages à Péage (ASCAP), 2007 (English and French) - This report looks at tolling and concessioning within the European road network.

- Guidebook and Case Studies for Transportation Public-Private Partnerships, Federal Highway Administration (FHWA) of the Unites States, 2007

- Calculation of Toll Tariffs Amongst the ASECAP countries (modalités de calcul des tarifs de péage au sein des membres de l'ASCAP), Association Européenne des Concessionnaires d'Autoroutes et d'Ouvrages à Péage (ASCAP), May 2006 (English and French)

- Traffic Risk Mitigation in Highway Concession Projects - The Experience of Chile, Jose Vassallo, Journal of Transport Economics and Policy, September 2006

- Developing Best Practices for Promoting Private Sector Investment in Infrastructure - Roads, Asian Development Bank (ADB) 2000. This report is one of a series of five commissioned by the ADB to identify and recommend best practices to be followed and specific steps to be taken, by ADB's developing member countries in order to encourage both private sector investment and competition in infrastructure development. It contains sample term sheets.

- The World Bank online resource Toll Roads and Concessions provides a summary of tolling policies around the world. It also covers contractual options for private sector involvement, the extent of toll road provision internationally, the objectives, benefits, and costs of a toll road program, tariff setting and development issues, and involvement of the private sector.

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