Global Roundtable on Infrastructure
Using the Right Tools
Risk Allocation Tool

Maud de Vautibault, Principal advisor, GI Hub
Seoul, Republic of Korea, May 23-24 2019
Introduction

• Part 1: Overall presentation of the Tool/ Lessons learned from implementation of the Tool’s first edition

• Part 2 Main challenges that the Tool aims to address/How does the Tool contribute to better infrastructure governance

• Part 3: How the Tool aligns with the PPP Contractual Provision of World Bank

• Part 4: Risk allocation in PPPs: understand the rationale – Main Features of the Tool and Examples
Global Infrastructure Hub

The Global Infrastructure Hub (GI Hub) is an independent organisation, established by the G20 to increase the flow and quality of infrastructure investment opportunities in all countries.

We share data, knowledge and leading practices, and help the public and private sectors work more closely to deliver crucial public infrastructure projects.

The GI Hub is staffed by international infrastructure specialists from the public and private sectors.
Leading Practice Tools across the project lifecycle

Governmental Processes facilitating Project Preparation
PPP Risk Allocation Tool
Guidance on National Infrastructure Banks
Output Specifications for Quality Infrastructure PPPs

PPP Contract Management Tool

Procurement  Construction  Operations  Handback

Inclusive Infrastructure Tool
Future of Infrastructure
Cross-border infrastructure
Part 1

Overall presentation of the Tool
Lessons learned from the Tool’s first edition
Principles of Risk Allocation

Risks can be:

- Assumed by Contracting Authority
- Assumed by Private Partner
- Shared between Contracting Authority and Private Partner and mitigated
- Assumed by Private Partner and passed down to Construction/O&M Contractors
PPP Risk Allocation Tool 2016 Edition

First Edition of the tool 2016:

- Very detailed matrices
- First tool of its category – in coordination with the World Bank in its development of Guidance on PPP Contractual Provisions
- Based on global experience and case studies
- Economic infrastructure only
PPP Risk Allocation Tool 2019 Edition

Lessons learned from the Tool First Edition:
→ Feedback regional consultative workshops (Thailand, Tanzania, Colombia, Italy, Nigeria, Turkey, Singapore)

Considering feedback received, the 2019 Edition addresses:

• Expansion to Social Infrastructure
• New structure; easier to read, more practical (Sector specific key risks)
• Greater detail of key risks (e.g. social risk, environmental risk, currency exchange, financial risks and specifically on demand risk)
• Emphasis on Market Comparison Summary
• Focus on the two main legal system (civil law & common law)

Engaged law firm Allen & Overy and working closely with the World Bank on its Guidance on PPP Contractual Provisions

Specific matrices for:

- Transport (Road, Heavy Rail, Light Rail, Airport and Port)
- Social Infrastructure (Schools, Hospitals, Social Housing, Prison and Government Offices)
- Energy, communications and industrial parks (Solar, Hydro, Transmission, Waste-Energy, Gas Distribution and Submarine Cable)
- Water and Waste (Desalination, Water Distribution and Waste Treatment)
Sectors covered by the new Tool

- **Transport**
  - Roads, ports, airports, rail (light rail and heavy rail)

- **Energy and Utilities**
  - Power generation asset, hydroelectric power generation asset, power transmission line, natural gas distribution line, waste to energy power generation asset

- **Water and Waste**
  - Water desalination asset, water distribution line rehabilitation, waste to energy power generation asset, disposal

- **Social Infrastructure**
  - School, Hospital, Social housing, Prison, Government Office Accommodation, Industrial Park

- **Telecommunications**
  - Submarine Cable

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### Sector specific Key risks – Roads

<table>
<thead>
<tr>
<th>PROJECT REVENUES, INCLUDING PAYMENT MECHANISMS</th>
<th>Project revenues are generated either through availability payments by the Contracting Authority or user payments through tolls (i.e. in a demand/revenue risk-based project) or a combination of both. Deductions or penalties are typically applied to availability payments where the Private Partner has not met contractual availability and performance standard criteria. In a demand/revenue risk-based project, where user revenues are unlikely to be sufficient to cover the cost of the project, they may be supported by minimum traffic/revenue guarantees from the Contracting Authority. See Performance price risk under Operating risk and Demand risk.</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEY RISKS</td>
<td>Land acquisition and site risk: Due to the length and nature of a road, it may be challenging to acquire a suitable corridor of land, free of any restrictions, and with necessary planning consent. This is typically a Contracting Authority risk. See Land availability, access and site risk. Demand/revenue risk, if user payment: If any demand risk is transferred to the Private Partner and its financial model is reliant on toll payments by users, then the risks associated with user demand will be closely assessed by the Private Partner and its lenders. See Demand risk. Environmental/social risk: The impact of a road on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries, must be carefully assessed and managed by the parties. Issues such as pollution and noise, as well as the potential need for resettlement of affected parties and the impact on indigenous land rights, should be addressed in accordance with internationally recognised standards. See Environmental risk and Social risk. Completion/operation commencement risk: Completion of works on time and on budget will be a particular challenge for the Private Partner in difficult terrain and where design involves tunneling and bridges. See Cost overrun and Works completion delays under Construction risk.</td>
</tr>
</tbody>
</table>

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## RISK CATEGORY AND DESCRIPTION

<table>
<thead>
<tr>
<th>Risk</th>
<th>Sub-category</th>
<th>Risk Allocation</th>
<th>RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)</th>
<th>MARKET COMPARISON SUMMARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAND AVAILABILITY, ACCESS AND SITE RISK</td>
<td>Provision of main land – general</td>
<td>![bullet]</td>
<td>The Contracting Authority typically bears the risk of selecting the corridor and acquiring the required land interests for the project, whether through compulsory acquisition or other powers, because it has powers to do so which the Private Partner does not. It is also in the Contracting Authority’s interest because on expiry of the contract the asset will typically revert to public ownership and operation (and or the contract will be subsequently re-tendered). The Contracting Authority is generally responsible for providing a “clear” accessible site, with no restrictive land title issues. This is can be a key risk as due to the length and nature of a road, it may be challenging to acquire a suitable corridor of land, free of any restrictions (and with necessary planning consent). In some instances, the Private Partner may be able required to assist with payment in the expropriation phase or with stakeholder involvement procedures. During the feasibility stage (see PPP Project Preparation and Delivery in the Introduction), the Contracting Authority should undertake detailed assessments as regards ownership of the relevant land and ensure that it has a complete understanding of the risks involved in acquiring the site and those that will affect the construction and operation of the road. Such information should be disclosed to bidders as part of the bidding process. This includes consideration of matters such as rights of way, covenants affecting use or disposal and historic encroachment issues that may encumber the land, as well as how the Contracting Authority is addressing such issues and the extent to which bidders are required to price certain risks. To the extent the Private Partner has relied on information provided and priced any such risks, it will share in those risks provided that the information relied on was accurate. Some Contracting Authorities will guarantee only correctness of data provided, not completeness or interpretation. In certain markets, land rights (in particular reliable utilities records, and land charges) may be less clear than in other markets where established land registries and utility records exist and risks can be mitigated with appropriate due diligence. Where reliable information is not available, the Private Partner will not be able to take the risk. The rights of private landowners against forced sales or expropriation might be stronger in developed markets, so the Contracting Authority may need to allow more time to acquire the land. Third party rights to (access) land may not be easily identifiable in some jurisdictions, increasing risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risks.</td>
<td></td>
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<td></td>
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<td>![bullet]</td>
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<td></td>
</tr>
</tbody>
</table>

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Global Infrastructure Hub
## PPP Risk Allocation Tool 2019

<table>
<thead>
<tr>
<th>Sector</th>
<th>Example Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy</strong></td>
<td>Photovoltaic Power Generation Asset</td>
</tr>
<tr>
<td></td>
<td>Large-scale Hydroelectric Power Generation Asset</td>
</tr>
<tr>
<td></td>
<td>Power Transmission Line</td>
</tr>
<tr>
<td></td>
<td>Natural Gas Distribution Line</td>
</tr>
<tr>
<td></td>
<td>Waste to Energy Power Generation Asset</td>
</tr>
<tr>
<td><strong>Social</strong></td>
<td>School</td>
</tr>
<tr>
<td></td>
<td>Hospital</td>
</tr>
<tr>
<td></td>
<td>Social Housing Properties</td>
</tr>
<tr>
<td></td>
<td>Prison</td>
</tr>
<tr>
<td></td>
<td>Government Office Accommodation Building</td>
</tr>
<tr>
<td><strong>Transport</strong></td>
<td>Road</td>
</tr>
<tr>
<td></td>
<td>Airport</td>
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<tr>
<td></td>
<td>Municipal Light Rail</td>
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<td></td>
<td>Intercity Railway</td>
</tr>
<tr>
<td></td>
<td>Port Terminal for Containers</td>
</tr>
<tr>
<td><strong>Water &amp; Waste</strong></td>
<td>Water Desalination Asset</td>
</tr>
<tr>
<td></td>
<td>Water Distribution Line Rehabilitation</td>
</tr>
<tr>
<td></td>
<td>Waste to Energy Power Generation Asset</td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td>Submarine Cable</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>Industrial Park</td>
</tr>
</tbody>
</table>
PPP Risk Allocation Tool 2019

Compare Risks

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Mauris eu ullamcorper eros, sit amet cursus tellus. Quisque porta nulla at vehicula molestie.

Compare Project Types

Choose a project type
Choose a project type

Risk
Risk Sub-Category

Choose a risk
Choose a sub-category

Compare
Part 2

Main challenges that the Tool aims to address
How does the Tool contribute to better infrastructure governance
Main Challenges the Tool aims to address

Statement:
“Risks should be allocated to the party best able to manage them” (both in terms of effect and likely occurrence) – also depends on the market

Appropriate risk allocation means:
• Increased market participation and competition – lower financing costs
• Better value for money

Inefficient risk transfer will mean unnecessary risk premiums are charged by the private partner reducing value for money

Poor risk allocation may result in project failures – renegotiations, insolvencies, terminations – the appropriateness is not necessarily known at financial close
Effective Risk Allocation in PPPs
Main challenges the Tool aims to address

Appropriate risk allocation means also:

• **Better project structure**

• Bankability and viability of the project:
  • e.g. **Demand Risk** for greenfield Railway Project or Highway Project

• **Market practices standards**/transparency and creating market comfort
  • To attract more market participation e.g. MDBs, international investors (where applicable)...
  • Greater competition
Additional challenges the Tool aims to address

Using a common approach on risk allocation means also in:

• Reduction of the negotiation time and procurement processes
• “Standardization” or at least “Greater Consistency” in the risk allocation approach
• Greater understanding of key risks and how their allocation may have financial impact on the project
• Reduction of the transaction costs
The risk allocation Tool is above all a project preparation Tool for Governments:

- During the feasibility studies and readiness assessment, it can be a useful first approach on the key risks (“macro risk”)

- Later on, it can help the government to decide on the best contractual option

It can be also a comparative Tool for the procurement process:

- During the tender procurement process, it can be a useful tool for the procuring authority to compare the proposals of the consortia
Part 3

How the Tool aligns with the PPP Contractual Provision of the World Bank
WB Guidance on PPP Contractual Provisions

- First edition in 2015, then in 2017
- New Edition in 2019 includes new chapters related to contracting authority step-in rights, termination events, handback of the assets and new themes such as climate change.
Contribution to better infrastructure governance: using the Tools together

WB Guidance on PPP Contractual Provisions:

- Assisting contracting authorities in particularly emerging PPP markets obtain a better and comprehensive understanding of selected contractual provisions that are typically key to a project’s bankability

- Fostering discussion among all relevant stakeholders on contractual language usually found in PPP agreements with a view of further iterations to be developed as consensus/market practice evolves

- Contract Level with samples of drafting clauses
Complementary Tools for Governments:

- Once an appropriate allocation of risks between a Contracting Authority and a Private Partner is decided upon, the Parties need to appropriately document that risk allocation in an agreement or contract to ensure that each party can effectively enforce their rights.
## Contribution to better infrastructure governance: using the Tools together

<table>
<thead>
<tr>
<th><strong>GIH RAT 15 Risks</strong></th>
<th><strong>WB CP 11 Clauses</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Land availability</td>
<td>1. Force Majeure</td>
</tr>
<tr>
<td>3. Environmental Risk</td>
<td>3. Change in Law</td>
</tr>
<tr>
<td>5. Construction Risk</td>
<td>5. Refinancing</td>
</tr>
<tr>
<td>6. Variation Risk</td>
<td>6. Termination Events</td>
</tr>
<tr>
<td>7. Operating Risk</td>
<td>7. Lenders’ Step-in Rights</td>
</tr>
<tr>
<td>8. Demand Risk</td>
<td>8. Termination Payments</td>
</tr>
<tr>
<td>10. Strategic Partnering Risk</td>
<td>10. Confidentiality, Disclosure and Transparency</td>
</tr>
<tr>
<td>13. Material Adverse Government Action Risk</td>
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<tr>
<td>15. Early Termination Risk</td>
<td></td>
</tr>
</tbody>
</table>
Contribution to better infrastructure governance: using the Tools together

**Global Infrastructure Hub PPP Risk Allocation Tool 2016...2019**

Sector-specific guidance on key risks and allocation in a variety of sectors, according to:
- Markets of varying maturity in PPP or other domestic arena
- Different legal systems

**World Bank Guidance on PPP Contractual Provisions 2015... 2017... 2019**

Generic guidance on selected topics, comparing:
- Civil and common law systems
- Mature and less experienced PPP markets
- Markets with varying legal/political/economic stability

Generic example drafting
Risk allocation in PPPs: understand the rationale
PPP and Risk Allocation

To better understand the “risk allocation” concept:

- Need to understand what is a PPP, the Contractual Scheme and the interests of each parties
- Need to understand the rationale behind the allocation of a specific risk
- Need to understand the finance structure and the payments mechanisms
- Need to understand that a risk allocation may evolve over time and may be also market dependent
PPP and Risk Allocation

PPP Knowledge Lab World Bank

A long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility and remuneration is linked to performance.

Key drivers regarding the Risk Allocation approach

• What functions the private party is responsible for
• How the PPP Contractual Scheme influence the risk allocation and what are the stakeholders interest
• Type of asset involved (Social, Economic, greenfield, brownfield...)
• How the private party is paid (government payments, user payments...)
### PPP is a procuring model - Type of Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>Design</th>
<th>Built</th>
<th>Maintain</th>
<th>Operate</th>
<th>Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRADITIONAL PUBLIC PROCUREMENT</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Design-Bid-Built</td>
<td></td>
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<tr>
<td>DESIGN AND BUILT</td>
<td></td>
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<tr>
<td>DESIGN BUILD FINANCE</td>
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<tr>
<td>MAINTAIN</td>
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</tr>
<tr>
<td>DBFM or PFI Model</td>
<td></td>
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<tr>
<td>DESIGN BUILD FINANCE MAINTAIN</td>
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<tr>
<td>MAINTAIN OPERATE</td>
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</tr>
<tr>
<td>DBFOM CONCESSION Model</td>
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<td></td>
</tr>
</tbody>
</table>
## Traditional Procurement vs PPP Procurement: Functions and related risks

<table>
<thead>
<tr>
<th>Traditional Procurement</th>
<th>PPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contracting Authority develops detailed specification of needs – “input basis”</td>
<td>Requirements based on outputs to maximise private sector innovation</td>
</tr>
<tr>
<td>Contracting Authority enters into and manages multiple contract packages to deliver construction works and services (e.g. design, maintenance, operation) and financing</td>
<td>Contracting Authority enters into one contract with the Private Partner SPV and the SPV manages these contracts</td>
</tr>
<tr>
<td>Contracting Authority usually holds the risk of construction delays and cost overruns</td>
<td>Private Partner holds the risks of construction delays and overruns – this incentivises delivery as to time and costs</td>
</tr>
<tr>
<td>Contracting Authority pays for the capital asset upfront and service on an ongoing basis</td>
<td>Contracting Authority does not pay until asset constructed and operation commenced</td>
</tr>
<tr>
<td>Payments for maintenance and service are not generally linked to performance</td>
<td>Unitary charge payments are linked to availability criteria and/or a performance regime</td>
</tr>
</tbody>
</table>
PPP Risk Allocation Tool

Typical structure

- Shareholders/Sponsors
- Holdco SPV
- Private Partner SPV
- Lenders/Hedging Banks
- Contracting Authority
- EPC Contractor
- O&M Contractor
- Shareholders
- Insurers

Direct Agreements
- with lenders
- with EPC and O&M contractor

Debts
- Equity Subscription Deed
- Equity parent company guarantee

Contracts
- Project Contract
- EPC Contract
- O&M Contract

Risk Allocation
- Performance bond
- Retention bond
- Collateral warranty
- Direct agreement
- Parent company guarantee
- Collateral warranty
- Direct agreement
- Parent company guarantee
- Broker's letter of undertaking

Global Infrastructure Hub
PPP Risk Allocation Tool
Typical structure of a PPP

- Contracting Authority
- Private Partner SPV
- Shareholders/Sponsors
- Lenders/Hedging Banks
- Insurance Company
- EPC Contractor
- O&M Contractor
- Service Contractor

Back to back

Demand Risk Mitigation

Interface Contract
Stakeholder interests

**Construction and O&M Contractor interests include:**
- profit
- construction/operating fees for acceptable risk
- limiting ultimate exposure to liability

**User/Purchaser (Govt. entity?)**

**O&M Contractor**

**SPV (Private Partner)**

**Shareholders**

**Government (Contracting Authority)**

**Lenders**

**Commercial Lenders**

**Bilaterals/ Multilaterals**

**ECAs**

**Private Partner Counterparties**

Shareholder interests include:
- profit
- construction/operating fees for acceptable risk
- off balance sheet financing.

Contracting Authority interests include:
- operational asset by certain date
- payment upon performance
- access to private sector technological/operational solution
- value for tax payers’ money

Lender interests include:
- repayment of debt
- preservation of project
- maximum control
## Stakeholder interests

<table>
<thead>
<tr>
<th>Contracting Authority</th>
<th>Sponsor/Shareholder</th>
<th>Lender</th>
</tr>
</thead>
<tbody>
<tr>
<td>To achieve “value for money”</td>
<td>To extract profit – “investment return”</td>
<td>To make profit – “margins and fees”</td>
</tr>
<tr>
<td>To have adequate safeguards and assurances the project will be operated properly</td>
<td>To minimise interference with the project</td>
<td>To exercise control –</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(i) to maintain project profile and protect cashflow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ii) to manage key project decisions</td>
</tr>
<tr>
<td>To regain control of the project as a matter of last resort</td>
<td>To retain control of the project for as long as possible in times of hardship</td>
<td>To take control over the project as soon as possible in times of hardship</td>
</tr>
<tr>
<td>Generally to transfer risk from public to private sector</td>
<td>To share the risk in carrying out the project</td>
<td>To limit risks transfer to the SPV</td>
</tr>
</tbody>
</table>
(International) lenders and sponsors have broadly the same perspective to develop a successful project in an environment of contractual and legal certainty.

What does “successful” mean:
– for lenders, repayment of the debt (~80% of the project cost)
– for sponsors, maximising return on their investment (~20% of the project cost)

Lenders put the most money at risk for a lower expected return (cost of funds plus a margin) → Risk averse

Sponsors put less money at risk and seek higher returns (e.g. 10-20% IRR) → Will take greater risk.
Risk Allocation, revenues stream and payment mechanism

The PPP revenues stream and payment mechanism are key.

Two main systems, that can be combined.

- **User-pays PPPs**: the private party provides a service to users and generates revenue by charging users for that service. These fees can be supplemented by government payments or subsidies to investment at the completion of construction or specific construction milestones.

- **Government-pays PPPs**: the government is the sole source of revenue for the private party. Government payments can depend on the asset or service being available at a contractually-defined quality → availability payments.
Risk Allocation, revenues stream and payment mechanism

Typically only starts post construction

Commercial viability – do the cashflows actually work:
• to repay debt plus interest?
• to give Sponsors a fair IRR?

User pays (Demand risk)
- Cashflows from user payments
  - User tolls/tariffs
  - Subject to:
    - usage (accurate forecasts)
  - Price increases subject to:
    - regulatory/contractual restrictions
    - user reaction

Government pays (Availability risk)
- Cashflows from Contracting Authority payments
  - Availability Payment
  - Subject to:
    - availability (defined by specified criteria)
    - performance deductions (key performance indicators)
  - Fixed price subject to contractually permitted increases
Part 4 - 2

Risk Allocation – Keys questions and examples
Key Questions - Type of asset

**Greenfield** or **brownfield** Infrastructure:

- Land risk issues
- Historical data for Demand Risk
- Revenues structure

**Social** or **Economic** Infrastructure:

- Operating risk (interfaces...as the public authority is the user)
- Prescriptiveness and transfer of the design risk
- Revenue structure (availability payment, user payment...)
- Willingness to pay, public perception
Key Questions – Sector

Transport:

- Land issues (linear infra), demand risk (rail, roads, airports...), technology

Energy:

- Land issues, demand risk (energy prices...), climate change and resilience

Social Infrastructure

- Hospitals (design risks, complexity, safety...), prisons (social risk, design risk, disruptive technology....), schools (maintenance and operating risk, vandalism...)
Key Questions – “scope of the contract”

Typical functions include:

- **Design**: Developing the project from initial concept to construction ready design specifications → risk that the project design is not suitable for the purpose required

- **Build or rehabilitate**: require the private party to construct the asset and install all equipment → risk of construction costs exceeding modelled costs, completion delays, project management interface

- **Finance**: required to finance all or part of the necessary capital expenditure → inflation rises, change in law, adverse exchange rate and interest rate fluctuations, refinancing...

- **Maintain**: responsibility for maintaining an infrastructure asset → operating risk, risk of events affecting performance or increasing costs beyond modelled costs, vandalism...

- **Operate**: the operating responsibilities may include technical operation of the asset, providing services... → demand risk...

Each function is related to specific risks
Key questions : what are the key risks for my project ?

<table>
<thead>
<tr>
<th>Key Questions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land Availability, Access and Site Risk</strong></td>
<td>The risk of acquiring title to the land to be used for a project, the selection of that site and the geophysical conditions of that site.</td>
</tr>
<tr>
<td><strong>Social Risk</strong></td>
<td>The risk associated with the project impact on adjacent properties and people: resettlement, indigenous land rights and industrial action.</td>
</tr>
<tr>
<td><strong>Environmental Risk</strong></td>
<td>The risk with pre-existing conditions affecting the project and the subsequent risk of damage to the environment or local communities.</td>
</tr>
<tr>
<td><strong>Design Risk</strong></td>
<td>The risk that the project design is not suitable for the purpose required; approval of design; and changes.</td>
</tr>
<tr>
<td><strong>Construction Risk</strong></td>
<td>The risk of construction costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.</td>
</tr>
<tr>
<td><strong>Variation Risk</strong></td>
<td>The risk of changes requested by either party to the service which affect construction or operation.</td>
</tr>
<tr>
<td><strong>Operating Risk</strong></td>
<td>The risk of events affecting performance or increasing costs beyond modelled costs; performance standards and price; availability of resources; intellectual property rights compliance; health and safety; compliance with maintenance standards; industrial action; and vandalism.</td>
</tr>
<tr>
<td><strong>Demand Risk</strong></td>
<td>The risk of traffic levels being different to forecast levels; the consequences for revenue and costs; and government support measures.</td>
</tr>
<tr>
<td><strong>Financial Markets Risk</strong></td>
<td>The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.</td>
</tr>
<tr>
<td><strong>Strategic/Partnering Risk</strong></td>
<td>The risk of the Private Partner and/or its subcontractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.</td>
</tr>
<tr>
<td><strong>Disruptive Technology Risk</strong></td>
<td>The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.</td>
</tr>
<tr>
<td><strong>Force Majeure Risk</strong></td>
<td>The risk that unexpected events occur that are beyond the control of the parties and delay or prohibit performance.</td>
</tr>
<tr>
<td><strong>MAGA Risk</strong></td>
<td>The risk of actions within the public sector’s responsibility having an adverse effect on the project or the Private Partner.</td>
</tr>
<tr>
<td><strong>Change in Law Risk</strong></td>
<td>The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner’s costs.</td>
</tr>
<tr>
<td><strong>Early Termination Risk</strong></td>
<td>The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; the strength of the Contracting Authority’s payment covenant; and the asset condition at handback at the end of the PPP contract.</td>
</tr>
</tbody>
</table>
Appropriate Risk Allocation

PPP Contracts must provide for an acceptable allocation of risks to the parties best able to manage them and be acceptable to Lenders.

In less mature PPP markets lenders accept fewer risks to be borne by SPV and expect host government to assume more risk.

Do the PPP contracts strike a fair commercial balance? Practically, disputes tend to arise where a party feels unfairly treated.

Each stakeholder must be incentivised to make the project work.

Critical that all parties understand the risk allocation and the risk/return analysis.
Key Risk Considerations

1. Land Availability
2. Social
3. Environmental
4. Design
5. Construction (cost increases/delays)
6. Demand
7. Political/MAGA (change in law/expropriation/regulatory)
8. Early termination
9. Strategic/Partnering
10. Operating (cost increases/ performance/maintenance)
### Risk example: Land availability and acquisition

<table>
<thead>
<tr>
<th>Description</th>
<th>The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; addressing indigenous rights; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is bearing the risk</td>
<td>The Public Party but might be shared</td>
</tr>
<tr>
<td>Key Considerations</td>
<td>Sector considerations (linear infra), country specificities (specific legal regime for public ownership)</td>
</tr>
<tr>
<td></td>
<td>Greenfield or Brownfield infrastructure</td>
</tr>
<tr>
<td></td>
<td>Expropriation procures in the country – legal framework</td>
</tr>
<tr>
<td></td>
<td>Responsible for providing a “clean” accessible site, with no restrictive land title issues</td>
</tr>
<tr>
<td></td>
<td>Existing infrastructure (issues about pollution)</td>
</tr>
<tr>
<td>Examples</td>
<td>Heavy rails, light rails, highways, roads...</td>
</tr>
</tbody>
</table>
**Risk example: Design Risk**

<table>
<thead>
<tr>
<th>Description</th>
<th>The risk that the project design is not suitable for the purpose required; approval of design; and changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is bearing the risk?</td>
<td>The Private Party but might be shared (circumstance dependent)</td>
</tr>
<tr>
<td>Key Considerations</td>
<td>Sector considerations, country specificities</td>
</tr>
<tr>
<td></td>
<td>Greenfield or Brownfield infrastructure</td>
</tr>
<tr>
<td></td>
<td>Buildings (architecture) or infrastructure (telecom cable)</td>
</tr>
<tr>
<td></td>
<td>Broad or more prescriptive specifications, level of technical specifications draft by the Public Contracting Authority</td>
</tr>
<tr>
<td></td>
<td>Level of technical complexity of the building, end-user requirements (change in design)</td>
</tr>
<tr>
<td></td>
<td>Change in design following environmental authorizations</td>
</tr>
</tbody>
</table>
Risk example: Demand Risk

<table>
<thead>
<tr>
<th>Description</th>
<th>The risk of traffic levels being different to forecast levels; the consequences for revenue and costs; and government support measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is bearing the risk?</td>
<td>The Private Party but is mostly shared</td>
</tr>
</tbody>
</table>
| Key Considerations/ Mitigating measures | Sector considerations, country specificities  
Greenfield or Brownfield infrastructure  
Regulated sector – Tariffs imposed by the regulator – articulation with the contract Revenue structure (partly guarantee by the Contracting authority, tax affected to the project, upfront subsidies, availability payment) |
| Examples | Heavy rails, light rails, roads...                                                                                          |
Demand Risk – Australian Toll Road Project

• Traffic forecast bias
• Greenfield or brownfield?
Demand risk snapshot of the Tool

**DEMAND RISK**
The risk of traffic levels being different to forecast levels; the consequences for revenue and costs; and government support measures.

<table>
<thead>
<tr>
<th>General principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation of demand risk (the risk of traffic being higher or lower than forecast and total revenue subsequently being higher or lower than expected) is an evolving area. While there are general principles, the solution for any project depends on the particular project and its circumstances. Experience in projects to date is also key in informing subsequent market practice.</td>
</tr>
<tr>
<td>Where the Contracting Authority is considering allocating any demand risk to the Private Partner, it should do a full assessment of the risk as part of its feasibility studies, including independent traffic forecasting. If there is high uncertainty over traffic projections and uncertainty over revenues (for example, due to toll limitations and/or currency volatility), this may be one reason to structure the project on an availability payment basis. In addition, there may be political and other reasons which favour an availability-based contract or a toll-based scheme. For example, there may be public resistance to the idea of paying tolls which could result in the road being unused. Availability-based structures or a hybrid structure may be more viable. This could involve the Private Partner receiving some form of government payment or support, as well as user tolls. See also Government support measures under Demand risk.</td>
</tr>
<tr>
<td>If any demand risk is to be allocated to the Private Partner, bidders should want to carry out their own assessment of the risk and extensive traffic analysis in order to price their bids. The contract should appropriately address and allocate the risk for all factors that impact on demand, including social issues, and the parties should develop a comprehensive strategy to deal with the implementation of the project. Opportunities for additional third-party revenue streams through roadside facilities (to the extent these are permitted) should also be assessed and addressed under the contract.</td>
</tr>
<tr>
<td>It has become more common for toll road projects in all markets to provide for the Contracting Authority to retain at least some of the demand and toll revenue risk and to pay the Private Partner some availability-based payment. This trend has been observed in more mature markets which have seen some Private Partner insolvencies in earlier demand-based projects, despite the perceived access to data sources to help develop realistic and attainable traffic and revenue forecasts. It is also likely in less mature markets and even projects which purport to transfer demand risk typically involve some level of government revenue support underpinning the risk transfer (such as a minimum revenue guarantee). Broadly speaking, the trend across markets seems to be more for availability-based projects except where there are compelling reasons why a demand-based project will be viable.</td>
</tr>
<tr>
<td>Sharing demand risk may be particularly difficult in less mature markets, particularly in the case of market first projects, where there is likely to be a lack of relevant comparative market data to begin with. In some markets, the lack of any other viable traffic solutions on a particular corridor may give the private sector greater confidence to accept demand risk. Similarly, the private sector may be willing to accept demand risk where the capacity for – and anticipated pace of – economic growth is perceived to be high. This may counteract the comparative lack of data sources to develop traffic and revenue forecasts. A number of mature markets tender gas stations and service stations separately and this reduces additional potential revenue streams from the Private Partner.</td>
</tr>
</tbody>
</table>
Demand risk occurrence: HSR Perpignan Figueiras Concession

- 2004 Concession contract signed with TP Ferro (ACS-Dragados-Eiffage) for 50 years
- 1120 M€: 600 M€ Public Subsidies, 500M€ Private Financing
- 2013 Operating full train service
- 2013/2014: Traffic risk occurred (70% overestimated traffic forecast) – arbitration – liquidation of the SPV 2016 (payment default)
- Termination of the contract pronounced by Public Authorities for breach of the obligation to operate the train service
- Public Company created to operate the service
Demand risk mitigation: HSR Tours-Bordeaux Concession

• Concession contract signed between SNCF Réseau and LISEA (VINCI Concession, CDC, Meridiam, Ardian) in June 2011 (302 km of new track Tours – Bordeaux)

• LISEA responsible for financing, designing, building, operating and maintaining the line for 50 years

• Mixed Funded:
  • 7.8 billion euros estimated:
  • 3 billion debt: 1,060 M Debt Guaranteed by French State, 600 M commercial debt, 400 M EIB debt guarantee, 200 M EIB commercial debt, 700 M CDC guaranteed by SNCF Réseau/
  • 4 billion subsidies (French State, regional/municipal authorities, SNCF Réseau...)
  • 772 million equity
  • Commissioned in July 2017
  • Refinancing in 2018: State Guarantee released
## Risk example: Early Termination Risk

<table>
<thead>
<tr>
<th>Description</th>
<th>The risk of traffic levels being different to forecast levels; the consequences for revenue and costs; and government support measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is bearing the risk</td>
<td>The Private Party or the Contracting Authority depends who initiates the termination</td>
</tr>
</tbody>
</table>
| Key Considerations/          | Compensation (debt repayment) even in Private Partner default termination  
| Mitigating measures          | Calculation of the compensation: based on outstanding debt or market value, quid for social infrastructure or less mature market?  
|                              | Strength of Contracting Authority payment covenant  
|                              | Handback issues                                                                                                               |
| Examples                     | Heavy rails, light rails, roads...                                                                                           |
# GIH Risk Allocation Tool – Summary Matrix Example - Road

<table>
<thead>
<tr>
<th>Risk</th>
<th>Public</th>
<th>Shared</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land availability, access and site risk</td>
<td>⋅</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social risk</td>
<td>⋅</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental risk</td>
<td></td>
<td>⋅</td>
<td></td>
</tr>
<tr>
<td>Design risk</td>
<td>[●]</td>
<td></td>
<td>⋅</td>
</tr>
<tr>
<td>Construction risk</td>
<td></td>
<td></td>
<td>⋅</td>
</tr>
<tr>
<td>Variations risk</td>
<td></td>
<td>⋅</td>
<td></td>
</tr>
<tr>
<td>Operating risk</td>
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# GIH Risk Allocation Tool – Summary Matrix Example - Road

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<tr>
<td>Demand risk</td>
<td>•</td>
<td>[●]</td>
<td>•</td>
</tr>
<tr>
<td>Financial markets risk</td>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Strategic/Partnership risk</td>
<td>•</td>
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<tr>
<td>Disruptive technology risk</td>
<td>•</td>
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<tr>
<td>Force Majeure risk</td>
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<tr>
<td>Material Adverse Government Action risk</td>
<td>•</td>
<td></td>
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<tr>
<td>Change in law risk</td>
<td>•</td>
<td></td>
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<tr>
<td>Early termination risk</td>
<td></td>
<td></td>
<td>•</td>
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