Global Infrastructure Hub

ALLEN & OVERY

PPP Risk Allocation Tool 2019 Edition - Transport

In collaboration with Allen & Overy

Foreword

Tackling large infrastructure gaps remains a priority around the world and governments are increasingly looking to draw on the private sector through long-term public-private partnerships (PPPs) to help deliver major infrastructure projects, because they recognise that private sector involvement can drive innovation and efficiency and provide additional financing solutions.

The increased attention to PPP contracts means that governments need to take a longer-term approach to the identification, allocation and ongoing management of project risks, which is at the centre of every PPP transaction.

As part of its leading practices mandate, the GI Hub has developed an update to its PPP Risk Allocation Tool originally published in 2016. As was the case with the 2016 version, the new PPP Risk Allocation Tool 2019 Edition contains a set of annotated risk allocation matrices for PPP transactions addressing the risks and issues on a sector by sector basis.

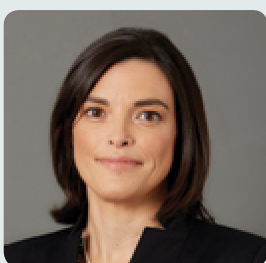
The PPP Risk Allocation Tool 2019 Edition contains matrices showing the allocation of risks as between the public and private partners in typical PPP transactions for 19 different types of projects, including both economic infrastructure (such as transport, energy, telecommunications and water projects) and social infrastructure (such as school and hospital projects). For each sector, there is also an identification of key risk areas and a discussion of risk allocation trends.

Each matrix is accompanied by annotations, explaining the rationale for the allocations, mitigative measures and possible government support arrangements. The annotations also describe alternative arrangements for countries with differing levels of PPP market maturity.

A deep understanding of the risk allocation arrangements is a precondition to the drafting of every successful PPP contract. The appropriate application of risk allocation principles is what determines whether a PPP project will satisfy the needs of the government, achieve value for money and be financially viable for the private sector (i.e. whether investors will be willing to commit financial resources to the project).

The GI Hub engaged the global law firm Allen & Overy to prepare the updated guidance tool. Norton Rose Fulbright, another global law firm, prepared the initial 2016 edition, and this 2019 edition builds on that work.

The guidance tool is closely aligned with the World Bank Group's Guidance on PPP Contractual Provisions 2019 Edition, which was also developed with the assistance of Allen & Overy.



"With a close alignment to the G20's focus on quality infrastructure and based on leading practices from around the world, the PPP Risk Allocation Tool provides important and practical information to governments looking to utilise PPP approaches to deliver the right outcomes for all parties. This tool complements nicely the existing PPP body of knowledge, and particularly the PPP Contractual Provisions report from the World Bank which was developed in close collaboration with the present tool."

Marie Lam-Frendo
Chief Executive Officer, Global Infrastructure Hub

"Robust and realistic risk allocation is vital for the long-term success of a PPP project. Allen & Overy is fully aligned with the mission of the Global Infrastructure Hub to build capacity to develop sustainable public-private partnerships. Built on global experience, these risk allocation tools support considered choices from the early onset of a PPP process and throughout negotiations to create value for all stakeholders. We aim for these tools to help unlock high impact infrastructure investment".

Helga Van Peer
Head of Global Public Law Group, Allen & Overy

Testimonials

"Risk allocation has a direct impact on the pricing of a PPP. It determines whether an investment will be perceived as fair, and whether it is affordable for tax payers and consumers on the one hand, while being financeable for the private sector on the other. The GI Hub Risk Allocation Tool is an important tool for contracting authorities when deciding whether and how to deliver an asset and/or service as a PPP.
This critical contribution to the global framework for private investment in infrastructure complements a long list of collaborative outputs from GI Hub and the MDB community, including the World Bank.
For example, the "World Bank Guidance on PPP Contractual Provisions" is a companion piece that complements the risk allocation matrix by providing examples of how some key risks can be allocated in PPP contractual agreements".

Jordan Schwartz
Director for Infrastructure Finance,
PPPs and Guarantees (IPG)
The World Bank

"Proper risk allocation and management is the cornerstone to the long-term success of PPP projects. It is quite simple, if project risks are not formally identified, analysed, and monitored or controlled there is great probability that the project scope, schedule, and budget may eventually be threatened. We normally have a lot to worry about when managing projects so why not stay in front of the curve and be proactive in managing risks? Each time the benefits outweigh the costs. The Risk Management Tool therefore, comes in handy in contributing to the significant body of knowledge required in PPP preparation and implementation".

Beatrice Florah Ikilai
Vice Chair
United Nations Economic Commission for Europe
Bureau of Public Private Partnerships,
Africa Representative

"Allocating risks appropriately among parties is essential to PPP project with the aim to improve quality and efficiency of services delivery and get value for money. It plays a vital role for both public and private sectors in their long-term partnerships. The PPP Risk Allocation Tool 2019 Edition has enriched risk system of PPP projects with a broad vision, containing identification and allocation matrices with annotations extracted from leading practices for 19 different types of projects. This will definitely give all PPP practitioners a more comprehensive perspective and deeper understanding on risks management in PPP contracts. Hope this new edition may facilitate further development of PPP projects worldwide".

Jiao Xiaoping
Director General
Head of China Public Private Partnerships Center

"Risk allocation is the epicenter or "heart" of every PPP transaction and remains a critical precondition for the successful delivery of any PPP project.
The appropriate application of risk allocation and management principles enshrined in the guidance tool developed by the GI Hub is vital to ensuring bankability, sustainability and long-term viability of PPP procurement interventions for infrastructure service delivery in Nigeria and other EMDE countries. The extension of the guidance tool to social infrastructure PPP projects critical to quality of life and HDI growth is indeed very welcome.

To ensure the success of PPP procurement methodology for infrastructure projects, it is crucial for all PPP procurement ecosystem stakeholders to manage risks via a flawless life-cycle perspective, in which risks are identified and assessed at the earliest possible stage, and are then optimally allocated to the parties who are in the best position to manage them effectively and efficiently. Undoubtedly, the GI Hub guidance tool is a critical contribution to the PPP body of knowledge for practitioners and an invaluable and indispensable document for PPP procurement methodology growth in EMDE countries and indeed worldwide".

Engr. Chidi K. C. Izuwah, Snr.
Director General/CEO
The Presidency, Infrastructure Concession Regulatory Commission, Abuja, Nigeria

"Proper risk allocation and its management is critical to the long-term success of a PPP. The PPP Risk Management tool is a must-use reference for PPP professionals, both in the public and private sector, as they look to structure transactions that deliver value for money. Allocating risks to the party most capable of managing and mitigating those risks ensures these long-term partnerships can stand the test of time".

Yoji Morishita
Head Office of Public Private Partnerships
Asian Development Bank

"Risk management stands at the center of successful PPP projects. GI Hub Risk Allocation Tool is a useful tool that reminds public and private parties of common risks associated with specific sectors and guides them in determining which party is best capable to manage it. This tool is an important addition to existing body of knowledge on contract development and management and will help to strengthen bankability of projects structured as PPPs".

Noman Siddiqui
Manager, PPP Division,
Islamic Development Bank

Introduction

The PPP Risk Allocation Tool 2019 Edition is the second edition of the guidance tool, with the first edition focused only on economic infrastructure in the transport, energy, water and waste sectors. The 2016 version of the guidance tool was delivered in 2016 by global law firm Norton Rose Fulbright with the GI Hub team led by Mark Moseley.

The updated PPP Risk Allocation Tool 2019 Edition was delivered by Allen & Overy and builds on the earlier 2016 work with the GI Hub team led by Jack Handford and close continued involvement from Mark Moseley, Morag Baird and Maud De Vautibault. In addition to economic infrastructure projects, the 2019 version of the guidance tool contains risk allocation matrices for social infrastructure projects (such as hospitals and schools), submarine cables and industrial parks.

The PPP Risk Allocation Tool 2019 Edition is based on the collective global experience of over 20 senior lawyers from Allen & Overy. These lawyers have extensive experience advising project grantors and regulators, sponsors, proponents, funders and contractors in both established and emerging markets in civil law and common law jurisdictions as well as those with Islamic legal systems and on a wide range of projects.

Two workshops were held, in Istanbul in November 2018 and in Singapore in April 2019, to garner feedback on earlier drafts of the PPP Risk Allocation Tool 2019 Edition. Additional feedback was sought more broadly from those working in the industry or representing various interest groups through online public consultation. Norton Rose Fulbright continued to play a role in contributing to the evolution of the PPP Risk Allocation Tool and additional key contributions were received from the World Bank, the European PPP Expertise Centre and the Asian Development Bank.

This document is one of four documents that make up the PPP Risk Allocation Tool 2019 Edition and is focussed on projects in the transport sector. It contains, an introduction to the matrices, with the glossary and the transport matrices (namely the road, heavy rail, light rail, airport and port matrices) contained in the Appendices. The remaining three documents that make up the compete guidance tool focus on social infrastructure, energy, communications and industrial parks and water and waste.

The diversity of experiences across markets means that particular risk allocation arrangements are not necessarily suitable for every market. Each of the matrices that will be found in the PPP Risk Allocation Tool 2019 Edition reflects positions reached in projects that have been shown to be bankable (i.e. they have reached financial close) but, as indicated, each matrix will contain annotations discussing alternative arrangements for different circumstances.

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Aim of the PPP Risk Allocation Tool 2019 Edition

The *PPP Risk Allocation Tool 2019 Edition* aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks between the government contracting authority (Contracting Authority) and the private counterparty (Private Partner) in a PPP contract. Risk allocation is at the centre of every PPP transaction, and a deep understanding of the risk allocation arrangements is a precondition to the drafting of every successful PPP contract.

The appropriate application of risk allocation principles is what determines whether a PPP project will satisfy the needs of the government, achieve value for money and be financially viable for the private sector (i.e. whether investors will be willing to commit financial resources to the project). The approach taken was to base the guidance tool on PPP transactions that have reached financial close, but drawing also on the experience of projects that have failed to reach that stage. Financial close is often seen as a proof of success, but reaching financial close does not mean that value for money has been achieved for the public sector. Reaching financial close does not automatically constitute proof of value for money. For example, where the risk allocation has been too favorable to the Private Partner (e.g. the public sector granting excessively generous guarantees) or the Private Partner is taking on and computing expensive risk premiums for risks that are not best managed by the private sector, these circumstances may not represent value for money for the public sector. Contracting Authorities will want to strike a balance between bankability and value for money. In addition, appropriate risk allocation will significantly increase the chances of procuring a project that is sustainable over the long term.

The essence of the guidance tool is a set of 19 risk allocation matrices, showing the allocation of risks between the Contracting Authority and the Private Partner in various types of PPP transactions, along with related annotations on the rationale for the allocations, as well as potential mitigative measures and government support arrangements. The sample matrices cover projects for both economic and social infrastructure facilities.

This guidance tool is aimed to be used in conjunction with the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. 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. The World Bank document provides drafting and guidance for specific provisions that are typically included in PPP contractual arrangements. In addition, it provides detailed analysis on the rationale underlying these provisions and how they have evolved over time.

Although the risk matrices in this reference tool focus on risk allocation that may be agreed in a PPP contract, more detailed risk matrices often play a broader role as a living tool that evolves and is refined through time, with different functions through the various stages of a project. For example, a more detailed risk matrix can be used to support ongoing decision-making post signature, during construction and operations (as a continuing tool for contract management). See also PPP Project Preparation and Delivery and Detailed Risk Identification and Analysis.

As well as PPP structures, there are other non-PPP contractual structures and procurement models that Contracting Authorities can use to deliver infrastructure with private sector involvement. These include more traditional procurement of just the construction (or rehabilitation) of infrastructure, or procurement of standalone maintenance contracts.

The risks addressed in this guidance tool and much of the risk allocation guidance will be relevant to different contractual structures, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending).

PPP risk allocation and contract drafting should be also considered in the broader context of project preparation. Project preparation is widely accepted as a key driver to ensure investment in infrastructure is transformed into positive outcomes for the public. This is particularly true in the case of PPPs, as they are complicated arrangements for the delivery of infrastructure. A PPP contract that is structured around a project that does not deliver the social benefits in a sustainable manner will have a negative impact irrespective of how well the contract is structured and drafted.

Together with the World Bank guidance, an ancillary aim of the *PPP Risk Allocation Tool 2019 Edition* is to help to develop greater consistency and standardisation in the way that PPP contracts are structured and drafted. With a growing focus

on delivering infrastructure using PPP methods, consistency and standardisation can play an important role in providing efficiency gains for governments, as well as predictability for private sector participants looking to enter new countries or markets, thereby reducing overall costs.

As is the case with any guidance, care must be exercised in adapting the guidance tool to the specific characteristics of any given project. PPP project risks vary depending on the country or region where the project is located, the nature of the PPP project and the assets and services involved. Even within the same sub-sector, the individual characteristics of each project make it inherently problematic to suggest a 'one size fits all' risk matrix. The risk categories contained in the matrices in this guidance tool set out the key risks that are generally applicable to the sub-sector in question. There will, however, inevitably be more detailed risk identification required in individual projects, as well as additional risks to take into account in building a risk matrix which is specific to the project concerned. Procuring Authorities should use the risk allocation matrices contained in this guidance tool as a starting point, but always recognise that there will be additional project-specific risks and issues that need to be addressed.

In addition, the risk allocation and contractual drafting processes should include consideration of local laws and market conditions. Specific market considerations and differences in local laws (including differences in civil law, common law and specific jurisdictions) are discussed in detail throughout this guidance tool, including in the sub-sector specific risk allocation matrices. The guidance tool can therefore inform Procuring Authorities procuring PPP projects in any jurisdiction, in conjunction with professional legal advice which is jurisdiction and project-specific.

Risk Allocation in PPP Contracts

The underlying principle of risk allocation in a PPP transaction is that risks should be allocated to the party best able to bear – or most incentivised to bear – those risks. This involves identifying which party is best able to manage the likelihood that such risks will occur, as well as to manage impacts if they do eventuate. Although the principle is widely known and accepted, operationalising the principle in a detailed PPP contract is a complex task, requiring deep analysis.

From the Contracting Authority's perspective, the bankability of a PPP project is often a key consideration in determining if an infrastructure project can be procured using a PPP approach. However, governments should not just consider bankability, but also value for money and robust risk allocation. i.e. a project can be bankable, but not deliver value for money because a Contracting Authority is transferring risks to the private sector that could be more efficiently managed by the government. PPP is not a procurement method which transfers all risk to the Private Partner. There will always be some risks for which the Contracting Authority should be wholly or partly responsible.

In general terms, the Contracting Authority should retain those risks that are not realistically capable of being properly assessed or efficiently priced by the private sector market or where the Contracting Authority can manage and price the risk in a more efficient manner. If risks are carefully assessed and transferred to the party best able to control or mitigate them, this should result in a reduction of overall project costs, and thereby improve value for money for the government. This can be achieved in several ways:

- less expensive risk premiums will be charged by bidders;
- projects will be attractive to multiple bidders, creating competitive pricing tension; and
- the infrastructure services will be delivered on a sustainable basis, due to lower rates of disputes, defaults, renegotiation and insolvency.

If risks are not allocated properly, the Contracting Authority may not be able to generate enough interest for the project, with the result that experienced bidders may not be willing to participate in the tender process or may withdraw after an initial expression of interest. This can lead to a failed tender process (where there are no or very few bidders) or to a flawed process with only inexperienced bidders or speculative bids.

The parties to a PPP contract should also strive to achieve a balanced and reasonable risk allocation that will provide an appropriate basis for a long-term partnership. PPP contracts typically run for a significant period of time, typically between 15 and 30 years, and poor risk allocation can result in the project failing before the end of its expected lifespan, due to excessive claims, disputes, requests for renegotiation, insolvency or termination.

It is important for Procuring Authorities to have an understanding of the corporate structure of a Private Partner in a PPP transaction, so as to better understand which risks can be appropriately transferred to the Private Partner, and which should be retained by the Contracting Authority. From the Private Partners' perspective, risk will be managed primarily by reallocating it to the main subcontractors, i.e. the construction contractor and the operations and maintenance contractor. The availability of insurance or hedging will also be a key consideration, and the Private Partner will be required to place certain insurances by both its lenders and the Contracting Authority. While PPP projects usually involve limited recourse to the Private Partner's shareholders, its shareholders may also provide some degree of support to lenders, or to the Contracting Authority, to cover specific risks.

In assessing the likely cost impact, the parties may look at each other's ability to bear such costs and the related impact on price, as well as whether and how the cost impact could be offset or passed on by, for example, increasing the price of the service to end-users (in the case of user-pay PPPs) and/or by spreading the cost across taxpayers (in the case of government-pay PPPs).

Conducting 'market soundings' of the risk appetite of the private sector (including potential lenders, equity investors and contractors) in advance of the formal procurement process will allow the Contracting Authority to inform itself of, and take into account, key issues before finalising the risk allocations for a proposed transaction and enable that risk allocation to be tendered among several competing bidders.

The Contracting Authority may also obtain some comfort (though not as a substitute for its own due diligence) from the involvement of private sector third party funders who go through a rigorous process to satisfy themselves that the PPP Project is bankable. This can give the Contracting Authority additional reassurance in terms of its own (and its advisers') assessment of the Private Partner's ability to successfully deliver the PPP Project.

Scope of the PPP Risk Allocation Tool 2019 Edition

The primary objective of this *PPP Risk Allocation Tool 2019 Edition* is to provide additional guidance to countries that wish to develop a programme of PPP transactions. The desired outcome is that countries will have a useful reference guide to assist with their understanding of typical PPP risk allocation arrangements. The risks identified in the *PPP Risk Allocation Tool 2019 Edition* are risks that can be allocated and mitigated between the Contracting Authority and the Private Partner, primarily addressed through the PPP, concession or project agreement or the underlying law. Other risks - such as government procurement risks, private sector financial and performance risks, third party intervention/delay and the risks particularly associated with unsolicited projects - are outside the scope of this guidance tool.

The matrices assume a project financed project structure. There may be projects (particularly smaller projects) that are not project financed but are, instead, corporate financed (such as projects financed on the balance sheet of a construction contractor or an operating company). The focus of this guidance tool is on more complex project financed structures, but although some of the risk allocation guidance is specific to project financed structures (such as termination compensation), much of the risk allocation will be relevant to both project financed and corporate financed PPP structures.

The document also provides guidance for a wider range of contract structures, as they address risks that are key to any infrastructure procurement method (whether that be a PPP contract or a more traditional design and build contract), such as land availability, environmental risk, design risk and construction risk.

The initial 2016 edition of the guidance tool provided commentary in the transport, energy and water and waste sectors. In this *PPP Risk Allocation Tool 2019 Edition*, the guidance has been expanded to include new projects in the social and telecommunications sectors, with the result being that the guidance tool now contains 19 sample risk allocation matrices. In addition, the original 12 risk allocation matrices have been updated, building on the 2016 work, to reflect developments in global leading practices and feedback received since 2016. The 19 sample risk allocation matrices in this 2019 edition of the guidance tool are set out below, with the new project types marked with an asterisk.

Transport Sector

1. Road
2. Airport
3. Light Rail
4. Heavy Rail
5. Port

Energy Sector

6. Photovoltaic Solar Plant
7. Hydro Power
8. Power Transmission
9. Natural Gas Distribution

Communications Sector

10. Submarine Cable*

Water and Waste Sector

11. Water Desalination
12. Water Distribution
13. Waste to Energy Plant*

Social Infrastructure Sector

14. School*
15. Hospital*
16. Social Housing *
17. Prison*
18. Government Offices *

Other

19. Industrial Park*

PPP Project Preparation and Delivery

PPP risk allocation and contract drafting should be considered in the broader context of PPP project preparation and delivery. A typical process of preparing for and delivering a PPP project involves the identification of infrastructure priorities, feasibility analysis, deciding to deliver the project using a PPP approach, project structuring, procurement, construction, operations and finally handback.

This guidance tool does not purport to act as a complete guide to PPP project preparation and delivery; instead it focuses on one area of the process - namely the structuring of the project in terms of risk allocation - which is complicated, and can lead to negative outcomes if it is not properly handled. However, risk allocation is only one of the critical elements of the process. Good risk allocation in a PPP contract will not fix a project that is economically unviable or not well prepared. Similarly, it won't make a project socially acceptable or ensure its effective management through construction and operations. For completeness, this section provides a brief contextual background to typical preparation and delivery processes and provides links to additional guidance on leading practices in other areas of PPP project preparation and delivery.

Feasibility and Decision to use a PPP Approach

Before procuring any project, the Contracting Authority should carry out a feasibility study for the project, looking at all relevant issues including land requirements and title, access and security, site condition, demand, necessary approvals and economic, social and environmental impacts. A project needs to go through these feasibility processes irrespective of which procurement option is being chosen to deliver the project.

The use of a PPP approach is then simply one of the procurement options available to a Contracting Authority that is seeking to provide new infrastructure services. The Contracting Authority should choose the procurement method that provides the best value for money, and a PPP approach will not be the right choice in all cases. Most of the other methods available to governments typically also involve some level of private sector involvement, whether through traditional procurement of the design and construction of an asset, the outsourcing of operation of an asset or service, or through a joint venture arrangement, a privatisation transaction or the establishment of regulated business.

This guidance tool specifically addresses risk allocation in a PPP contract, assuming that the Contracting Authority has carried out a thorough analysis in relation to how best to procure its infrastructure and has concluded that a PPP procurement is the right method for the project in question. In coming to this conclusion, the Contracting Authority may have its own government procurement guidance to follow and can also draw on the GI Hub's *Governmental Processes Facilitating Infrastructure Project Preparation Report*[1] and other guidance material, as described below.

Project Structuring

Project structuring is the process of configuring the legal obligations of the public and private parties in the proposed project, and these obligations will be expressed in the draft contract often found in the request for proposals package sent to prospective bidders. Project structuring should take place after a

1 Available at https://www.gihub.org/project-preparation/.

government has decided to use a PPP approach, and before the procurement process begins.

A key aspect of project structuring is the allocation of risks as between the Contracting Authority and the Private Partner, but this allocation can only be done after all the project risks have been identified and analysed. This process of identification and analysis is described below in the next section of this introduction, titled "Detailed Risk Identification and Analysis". Once that identification and analysis has taken place, this guidance tool can then be used to consider the most appropriate allocation arrangements for each particular risk detailed.

Once an appropriate allocation of risks between a Contracting Authority and a Private Partner has been decided upon, the next step in the project structuring process is to appropriately document the proposed risk allocation in an agreement or contract to ensure that each party can effectively enforce their rights. As noted above, the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*[2] provides drafting guidance for specific provisions that are typically included in PPP contractual arrangements, and provides detailed analysis on the rationale underlying the contractual drafting options.

The European PPP Excellence Centre's Termination and Force Majeure Provisions in PPP Contracts[3] and State Guarantees in PPPs[4] guidance documents provide additional important guidance on the structuring of PPP projects.

Procurement

Both this guidance tool and the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition* are also relevant to the procurement stage of a PPP project, where bidders may have an opportunity to suggest changes to the PPP contract (and the underlying risk allocation detailed in the PPP contract). Accordingly, the procurement process will serve to determine the final risk allocation and contractual rights and obligations of the parties throughout the lifespan of the PPP contract.

It is important to set the right minimum requirements and criteria when designing the tender process for the award of a PPP project. Choosing the right tender process and setting the right standards and criteria will define the quality of the competition. For example, if the Contracting Authority is concerned to ensure that the PPP project brings wider benefits to the local economy (such as using local businesses and employees and developing local skills and expertise), it may want to impose specific requirements.

Sharing reports from the feasibility stage with bidders can help to reduce bid costs and, consequently, the price bidders propose for the PPP project. To the extent any information from the feasibility stage is given to the Private Partner to rely upon (in terms of accuracy and sufficiency), the risk that such information is not accurate or sufficient will be borne by the Contracting Authority (as flagged in the relevant risk categories of the matrices in this guidance tool).

The choice of the right Private Partner is also of great importance and the Contracting Authority should ensure that it chooses the right partner. The relationship between the Contracting Authority and the Private Partner is key in a long-term PPP contract. In order to achieve this, the Contracting Authority will typically specify the technical and financial capabilities required of the key parties in each bid (i.e. the Private Partner and its proposed key subcontractors and investors) and evaluate their respective strengths as part of the procurement process. In some jurisdictions, the Private Partner may be required to provide certain additional performance security.

The World Bank's *Procuring Infrastructure Public-Private Partnerships Report 2018*[5] provides additional data and guidance on the procurement stage of a PPP project.

Construction, Operation and Handback

Because of their long-term and complex nature, PPP contracts cannot specifically provide for the entire range of events that might arise during their lifetime. As a result, PPP contracts typically have flexibility built in to enable changing circumstances to be dealt with as far as possible within an agreed contractual framework. All stakeholders in a PPP Project will need assurances that situations which are beyond their immediate control and which affect contractual performance will be dealt with in a way that allows them to arrive at a mutually acceptable solution. For this reason, both parties will typically want to place contractual restrictions on changes to the identity of the parties (and these contractual restrictions are addressed in the risk allocation matrices under the risk heading 'Counterparty risk').

2 Available at https://consultations.worldbank.org/consultation/guidance-ppp-contractual-provisions.

3 Available at https://www.eib.org/attachments/epec/epec_terminaison_and_force_majeure_en.pdf

4 https://www.eib.org/attachments/epec/epec_state_guarantees_in_ppps_en.pdf

5 https://ppp.worldbank.org/public-private-partnership/library/procuring-infrastructure-ppps-2018.

The GI Hub's *PPP Contract Management Tool*[6], which provides guidance for governments through the construction, operations and handback phases of PPP projects, highlights the importance of choosing the right Private Partner. It provides data and detailed case studies to guide governments in managing the day-to-day management of PPP contracts and situations where particular risks have materialised.

Additional Guidance Material

Several other reference documents are available to provide governments with guidance for the various stages in the development of a PPP project, including guidance materials produced by other multilateral development banks, other development finance institutions, the OECD, the European PPP Expertise Centre, the United Nations Economic Commission for Europe (UNECE), the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and other entities. Many of these resources can be found on the GI Hub's *Infrastructure Knowledge Exchange*[7] and/or the World Bank's *PPP Knowledge Lab*[8].

Detailed Risk Identification and Analysis

As highlighted above, care must be exercised in adapting guidance to the specific characteristics of any given project. PPP project risks vary between projects and the individual characteristics of each project make it inherently problematic to suggest a 'one size fits all' risk matrix. The risk categories contained in the matrices in this guidance tool set out the key risks that are generally applicable to the sub-sector in question. There will, however, inevitably be more detailed risk identification required in individual projects, as well as additional risks to take into account in building a risk matrix which is specific to the project concerned.

From the Contracting Authority's perspective, it should make timely appointments of technical, legal and financial and insurance advisors experienced in PPPs and market practices in the relevant project sector. It is also important to involve internal and external stakeholders (including through public consultation) on a timely basis, so that all relevant risks can be identified. As identified in the GI Hub's *PPP Contract Management Tool*, it is beneficial to involve government officials who will be eventually managing the PPP contract during construction and operations. This will allow their experiences to be considered in the identification and analysis of risks during those phases. For example, the Contracting Authority will likely be responsible for signing off construction works, which may be complex and involve multiple assets. A lack of a full understanding of what is involved in the sign-off process can create risks of delay, so appropriate time needs to be provided for this in the PPP contract.

A typical risk analysis process will estimate the likelihood and potential impact of the eventuation of the identified risks. In this way, the Contracting Authority can make informed decisions on whether it is more efficient to retain a given risk or to transfer it to the Private Partner. It will also allow the Contracting Authority to fully consider its payment obligations, potential compensation liabilities and its contingent liabilities. There are several methods for considering the potential implications of risks eventuating, including qualitative and quantitative methods.

The risk matrices contained within this reference tool are not a "full" project risk matrices or risk registers as the Contracting Authority will need to consider not only the distinct risks, but also the probability of occurrence of individual (or concurrent occurrence of) risks, their impact, their valuation, their likelihood of occurring, etc.

This guidance tool does not go into detail on risk analysis other than to note its importance in informing the ultimate risk allocation structure used in a PPP contract.

For a summary of guidance on risk identification and the qualitative and quantitative methods for considering risks, see Section 3.3.1 (Identifying Risks) of the *Public-Private Partnership Reference Guide 3.0* that was developed by the World Bank and others[9].

Market Conditions

Risk allocation is influenced by various factors, including the maturity of markets, the experience of the participants and the level of competition between bidders. As a government delivers more PPP projects successfully, the risk perceived by private sector participants will reduce, making projects more attractive to investors, thereby creating a more competitive environment. In addition, because

6 https://managingppp.gihub.org/

7 https://www.gihub.org/infrastructure-knowledge-exchange/

8 https://pppknowledgelab.org/

9 Available at https://ppp.worldbank.org/public-private-partnership/library/ppp-reference-guide-3-0.

perceived risks change, the government may be in a position where it can begin to transfer more risk to the Private Partners as it develops a 'track record'.

A stable political, economic and legal regime and environment is desirable when seeking to successfully procure PPP projects. While certain associated risks can be managed under the PPP contract, ultimately the risk of investing in and lending to a PPP Project where these conditions do not exist may be too high for some private sector participants, particularly when compared with alternative investment or lending opportunities. Jurisdictions without a clear legal framework and solid institutional basis are perceived as likely to be more susceptible to inefficient and corrupt procurement which not only stalls the completion of infrastructure projects but also lowers the quality of infrastructure.

Depending on the Contracting Authority's credit rating and the level of government involvement, government guarantees or co-contracting may be sought by the private sector parties (e.g. if the relevant Contracting Authority is not a sovereign entity). The involvement of export credit agencies and multilateral and development finance institutions can also give investors greater confidence in bidding for and contracting a PPP in certain jurisdictions and act as a form of risk mitigant. This is due not only to their ability to offer more favourable financing terms or products such as political risk insurance in respect of commercial loans and equity contributions, but also because of the relationship dynamics at government level. Similarly, the existence of bilateral investment treaties between governments may play a part in the decision of a prospective private sector participant to invest in a particular jurisdiction. These elements are additional factors in the negotiation of a well-balanced PPP contract in such jurisdictions, but are not a substitute for appropriate contractual risk allocation in the PPP contract itself.

In addition, the level of development of a country's local capital markets, construction industry, government and private sector capacity, land rights or local courts will all have an impact on what makes for robust risk allocation in that country.

For these reasons, even within the same sector, the individual characteristics of each project make it inherently difficult to suggest a 'one size fits all' risk matrix. To begin to address market differences, the matrices contain market comparison summaries for Procuring Authorities to use as a starting point, but always recognising that there will be additional project-specific risks and issues to consider.

Accounting Treatment Distinctions

A factor that has affected government's interest in using PPP approaches to deliver infrastructure has been the availability of advantageous accounting treatments, in particular the perceived ability to treat such investments as 'off balance sheet'. However, this has attracted increasing scrutiny from accounting bodies around the globe due to concerns that governments may use PPPs to bypass spending controls (by taking public investment out of the budget and representing debt off the balance sheet), although they are still bearing substantial risk and incurring significant contingent liabilities.

This has resulted in bodies such as Eurostat, the International Monetary Fund and national accounting boards (e.g. in Australia) embarking on measures focusing on the overall risk/reward balance under PPP contracts for the purposes of determining whether they should be classified as on or off government balance sheets. For example, Eurostat in the EU currently requires EU governments to follow certain accounting rules for the debt and deficit treatment of PPP Projects (European System of National and Regional Accounts 2010 or ESA 2010). These focus on how construction risk, availability risk and demand risk are allocated between the Contracting Authority and the Private Partner to determine the accounting treatment that must be applied. Under these rules (which themselves have given rise to some debate), for a PPP to be recorded off government balance sheet, the majority of the risks and rewards under the PPP contract have to be borne by the Private Partner. A 'user pays' PPP contract will be off the government's balance sheet if government control over the Private Partner is deemed minimal and the risk and reward distribution is not distorted by other provisions, such as clauses on government financing, the existence of government guarantees, termination and the allocation of project assets at the end of the contract. "Government pay" PPPs may not be off balance sheet depending on the specific risk allocation between the parties.

This assessment of the overall risk/reward balance can play a role in deciding on an appropriate allocation of risks between the parties to a PPP contract where a government is looking for a specific accounting treatment. However, it is generally not considered good practice for accounting treatment to be a factor that should drive approaches to risk allocation in PPP contracts.

Additional guidance in respect of the management of the fiscal costs and risks associated with PPP projects is provided in the World Bank's *Public-Private Partnerships Fiscal Risk Assessment Model (PFRAM)* and Eurostat and EIB/EPEC's *Guide to the Statistical Treatment of PPPs*[10].

Legal System Distinctions

As noted above, the underlying legal system in each country may have an impact on risk allocation arrangements, and it will very likely have an impact on how contractual provisions are drafted. Two of the major legal systems globally are the civil law and common law systems. In addition, a number of PPP transactions are now being undertaken in countries with Islamic legal systems.

In civil law countries, PPP contracts are generally governed by administrative law which, besides giving jurisdiction to specific administrative courts, includes a number of fundamental principles which protect the public interest and which the parties cannot always alter by contract. These principles may include, for instance, the right of the Contracting Authority to unilaterally cancel or amend the contract in the public interest (with the Private Partner being entitled to compensation), or the right of the Private Partner to obtain compensation if there is an unexpected and exceptional increase in the costs of performing the contract due to unforeseen economic circumstances. Such codified provisions and underlying principles may be implied into civil law contracts without being expressly drafted into the PPP contract. As a result, less importance is generally placed on the PPP contract expressly setting out all the terms governing the parties' relationship and allocation of risks, partly because gaps or ambiguities can be remedied or resolved by operation of law. A civil law contract is, consequently, often less detailed than an equivalent common law contract.

Some civil law jurisdictions enjoy extensive freedom to contract, whereas in others it may not be possible to derogate from certain principles or to completely waive certain rights, so the parties will need to take this into account in their risk allocation negotiations. Generally, there is an increasing preference in civil law jurisdictions to expressly set out the legal position in PPP contracts so that they are clear on their face and are not relying on implied terms from underlying law. This is partly because this approach will be more familiar to parties from common law jurisdictions, but also because relying on underlying law may create more interpretation risk and it is in the interest of all parties to minimise the risk of ambiguity, particularly investors in a project financed structure, who require detailed security arrangements in exchange for providing their financial support.

In countries with a common law system, parties typically enjoy extensive freedom of contract and few provisions are implied into a contract by law. Judicial decisions set precedents which will be followed in the determination of contractual disputes and therefore influence contractual drafting. A consequence of this freedom is that the terms of any contractual arrangements should be expressly set out in the relevant contract. In a PPP context, all arrangements governing the relationship and allocation of risks between the parties therefore need to be expressly set out in the PPP contract itself.

In some countries with increasingly active PPP programmes, Islamic law (*shariah*) provides the substance of the legal system. These jurisdictions can be organised as common law or (more often) civil law systems. In these countries, no legal instrument—whether legislation, regulation, court ruling or private or public contract—may contravene Islamic principles. This means contracts that provide for forbidden interest (*riba*) or undue uncertainty/speculation (*gharar*) will not be enforceable in these countries. As a result, contractual structures—such as cost-plus financing (*murabaha*) or procurement-leasing (*istisna-ijara*)—have been adopted that, while compliant with the shariah, achieve the same commercial outcomes as their conventional counterparts.

An overarching consideration in relation to freedom to negotiate under all legal systems is whether the applicable procurement processes and rules limit the ability of the parties to negotiate and amend the terms of a PPP contract issued as part of a tender process, and whether any changes might give rise to procurement challenges or allegations of corruption. The Contracting Authority should take this into account when formulating the terms of the PPP contract, to ensure it retains the flexibility it is likely to require over such a long term and avoid tendering contractual arrangements which do not meet the test of bankability and which are not robust over the lifespan of the project.

10 https://library.pppknowledgelab.org/documents/2893?ref_site=kl&keys=PFRAM&restrict_pages=1&site_source%5B%5D=Knowledge%20Lab and https://ec.europa.eu/eurostat/web/government-finance-statistics/methodology/guidance-on-accounting-rules

APPENDIX A:

Glossary

Availability-based projects	Projects which entitle a Private Partner to receive regular payments from a public sector client to the extent that the project asset is available for use in accordance with contractually agreed service levels.
Agreed damages	A specified monetary amount paid for a specific contractual breach that aims to compensate the injured party for the loss it suffers for such breach. Such amounts are agreed up front and in many common law jurisdictions must be a genuine pre-estimate of loss to withstand challenges that such regimes are unenforceable. Depending on the underlying legal system and jurisdiction, such agreed damages may be referred to as liquidated damages or, frequently in civil law jurisdictions, penalties.
Cap and collar arrangement	An agreement not to go above (cap) or below (collar) certain amounts in relation to a particular requirement (e.g. subsidy levels in the case of a cap and collar subsidy arrangement). There are also variations of cap and collar arrangements, for example, if toll revenue for a road exceeds a given cap, the excess revenue will be shared between the parties.
Compensation events	Compensation events are typically events which (i) result in a delay to specified dates in the construction period (such as the operation commencement date) or adversely affect performance of the service in the operating period and/or result in cost increases beyond those in the financial model and (ii) which are at the Contracting Authority's risk as it is better placed than the Private Partner to bear and/or manage the risk. The compensation event regime enables the Private Partner to be given contractual relief through a corresponding extension of time (to the construction period or to the operating period) and/or through cost compensation, without having to resort to termination rights or other remedies. Cost compensation may be in the form of (subject to the applicable payment mechanism): an increase in the availability payment; a permitted increase in the user payments (subject to law and social and political ramifications); a reduction in fees paid by the Private Partner; or a lump sum payment by the Contracting Authority). The principle is to compensate the Private Partner so that it is put back into the position it would have been in had the compensation event not occurred. As this principle applies to a number of contractual risks for which the Contracting Authority is responsible (including certain changes in law and Contracting Authority failures), PPP contracts in mature markets often address the consequences of such events under the same compensation event provisions to ensure consistency. Other contracts may treat the consequences of some of these events separately, or as is the case in some emerging markets, under a provision addressing a broader range of material adverse government action (which, unlike the typical compensation event regime, may also lead to a Private Partner termination right). Contracts in some jurisdictions (e.g. civil law jurisdictions) may achieve a similar result by relying on underlying law. Categorisation will vary according to the particular project circumstances and jurisdiction and the experience and stability of the market.
Compulsory acquisition	The process whereby the Contracting Authority does not give the local land owners a choice to sell their land, but rather uses its legislative powers to compel them to sell for a predetermined price. Also known as eminent domain or more broadly as expropriation (though expropriation by definition may not involve compensation).
Construction phase	The period from when the Private Partner takes control of the project site (typically by reference to the date of signing or effective date (if conditional) of the contract or the commencement of construction by reference to certain works) until the operation commencement date.
Contracting Authority	The government or other public sector entity (either acting in its own capacity or acting on behalf of the state) which contracts with the Private Partner under the PPP contract.
Developed market (mature/more developed/politically stable)	A jurisdiction or sector that has experienced successful financial close and operation of PPP projects, typically with a stable economy and fair and predictable legislative system. A jurisdiction which is politically and legally stable may not be a developed market in PPP terms, and/or may only be a developed market in certain sectors or contexts, but an emerging market in others.

Emerging market (less mature/developed/ politically stable)	A jurisdiction or sector in which few PPP projects have been commenced, sometimes with a legal structure that can lead to a degree of unpredictability. A jurisdiction which is less politically and legally stable may not be an emerging market in PPP terms, and a jurisdiction may only be an emerging market in certain sectors or contexts, but a developed market in others.
Equator Principles	A risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects. It is primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making. These can be found at: http://www.equator-principles.com/
Equity	Monies used to finance a deal that are sourced from sponsors/shareholders (for example, raised through the issuing of shares in the Private Partner or its holding company), rather than though external debt (for example, from lenders).
Equity return	The amount of a company's net income return, typically as a percentage of the shareholders' equity.
Expropriation	Where the government takes privately owned property and declares it for public use. (See also Compulsory acquisition).
Finance documents	The key finance documentation for a project, which typically includes a loan facility agreement between the Private Partner and one or more lenders, an intercreditor agreement between the lenders, equity investors and Private Partner, direct agreement(s) with key subcontractors and security documents to secure the financing (e.g. by taking security over the asset in question or the rights in relation to the project as a whole, subject to local law and practice).
Force majeure	An event (or combination of events) typically outside the control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law – jurisdictions, the definition may require the event to be unforeseeable or not reasonably avoidable. In PPP contracts, market practice is usually to define what qualifies as a force majeure event and its consequences, and the approach will depend on the relevant jurisdiction. In common law jurisdictions, the parties are typically free to agree whatever definition they choose. This is also the case in some civil law jurisdictions, although it may not be possible to derogate from the underlying law in others.
Government support	Where the government in the jurisdiction in which the project is based actively uses its powers to support the project and enable it to be financially viable/acceptable to lenders (e.g. by providing guarantees of the Contracting Authority's (payment) obligations or minimum revenue support if the Private Partner is bearing demand risk and/or implementing other fiscal measures designed to stabilise any jurisdictional uncertainties that make the project not bankable (e.g. foreign currency protections and tax breaks).
Grace period	The period after an obligation is due for performance during which such obligation may still be performed without declaring an event of default and/or termination.
Hardship doctrines	Hardship doctrines are typically civil law principles which provide the Private Partner with relief where unexpected circumstances make performance more onerous without being impossible. For example, administrative courts in France will enforce the doctrine of imprévision which allows a party to claim compensation through an increase in contract price where the contract circumstances have changed due to events which were unforeseeable, beyond the parties' control and have a fundamental impact on the economic balance of the contract. The circumstances are expected to be temporary and the contract may provide that imprévision can be invoked in accordance with case law or set out the financial threshold deemed to trigger the right to claim compensation (the Contracting Authority may also terminate the contract if the price increase is too significant or the situation is likely to last indefinitely).

Hedging	Hedging instruments are used to limit exposure to a price or unit of value that fluctuates. These typically cover interest rate, foreign currency exchange rates or commodity prices and/or inflation.
Hedge break costs	The costs associated with terminating any hedging arrangements prior to their natural expiry payable by one party to the other party (these may be either positive or negative for the Private Partner).
Key performance indicators (KPIs)	These measure performance of the project and are typically referenced to the output and performance specifications which the Private Partner is incentivised to perform. If the Private Partner falls short of the key performance indicators then, typically, payment mechanisms will apply, such as deductions made from the Private Partner's contractual payment entitlement or a penalty payable by the Private Partner. In the case of persistent or material circumstances a right of termination for the Contracting Authority may also arise.
Lenders/finance parties	The parties – typically international banks but also local banks and development finance institutions/multi-lateral agencies – which provide financing to the Private Partner for a project, taking an interest by way of security – often in the asset in question or the project as a whole (including by taking security over the shares in the Private Partner), subject to local law and practice.
Longstop date	A date which is tied to a prescribed time period after a scheduled date by which certain obligations must have been fulfilled. If the obligation is not performed by the longstop date, a right of termination will typically arise.
Operation commencement date	The date on which the operation of the project commences. This is, typically, once the construction phase of the project is successfully completed (usually determined by some form of independent certification and/or testing regime) and relevant commissioning has taken place successfully; the scheduled operation commencement date represents a target date, with failures to achieve that date having commercial consequences depending on the cause (see Works completions delays under Construction risk in the risk matrices).
Output specification	The Contracting Authority typically sets out a broad output driven technical specification in the tender documents and the contract, which requires the Private Partner to design and build the project in a way which satisfies the key performance indicators and ensures compliance with applicable legal requirements, good industry practice standards and, where applicable, minimum quality standards.
Performance specification	This sets out the levels (including quality) of performance at which the project must be operated throughout the life of the contract in fulfilling the output specification and typically includes key performance indicators.
PPP contract	The agreement between the Contracting Authority and the Private Partner outlining the scope and terms on which the project will be undertaken.
Private Partner	The entity from the private or commercial sector that contracts with the Contracting Authority to undertake the project. In a project finance context, the Private Partner will typically be established as a special purpose vehicle that is incorporated specifically and only for the purposes of undertaking the project and owned by the sponsors.
Public-private partnership	A long-term contract between a Contracting Authority, and a Private Partner for the development and/or management of a public asset or service, where the Private Partner bears significant risk and management responsibility throughout the life of the contract, and where remuneration is significantly linked to performance and/or the demand or use of the asset or service. It covers both greenfield and brownfield projects. This definition includes projects where demand risk is passed entirely on to the Private Partner (also known as 'user-pay' projects or concessions), and projects that are based on availability payments by government irrespective of demand (availability-based projects). It also includes, for example, power purchase agreements where a government entity is the purchaser of the power.

Relief Events	Relief events are typically events which adversely affect performance by the Private Partner of its obligations at any time (by causing delays or increased costs beyond those anticipated in the financial model), in respect of which it bears the financial risk in terms of increased costs and reduced revenue but for which it is given relief from termination for the relevant failure. This can include events outside the Private Partner's control, if it is in a better position than the Contracting Authority to mitigate and manage their consequences (e.g. through insurance and/or risk management). Relief events in mature markets typically include failures by utility providers, industrial action, power or fuel shortages, accidental loss or damage to the project and events such as fire, storms and floods, to the extent these are not categorised as other types of event, such as force majeure or compensation events. Contracts in some (e.g. civil) jurisdictions may achieve a similar result by relying on, or reflecting, underlying law. Categorisation will vary according to the particular project circumstances and jurisdiction and the experience and stability of the market (and, for example, risks which are relief events in mature markets may be treated as force majeure risk in less developed markets).
Senior debt	This is borrowing (typically from lenders) by the Private Partner to finance the project, repayment of which generally takes priority over any 'junior' debt or equity (and particularly in certain circumstances, such as the insolvency of the Private Partner).
Set-off	If one of the contracting parties owes monies to another contracting party, a right of set-off allows it to take account of amounts owed to it by the other party in calculating the amount it must pay.
Sponsor	This is an entity which is typically an initial developer of the project and an ultimate shareholder in the Private Partner. Sponsors typically include a member of each of the major project parties' corporate groups, such as the construction sub-contractor and operating sub-contractor and may also include pure financial investors or funds. Sponsors will limit their liability through the Private Partner but may need to give limited support or guarantees in respect of the Private Partner or the relevant sub-contractor.
Stabilisation	Contractual clauses that entrench certain legal provisions (such as the current tax regime) against any future changes in law, enabling foreign investors to protect themselves from such changes and a certain degree of political risk.
Tariff	The price set for the project output as between the Contracting Authority and the Private Partner, or as payable by third party users (for example, electricity in the context of a project in the energy sector), often fixed by reference to either a predetermined rate or agreed formula.

APPENDIX B:

Road PPP Risk Allocation Matrix

PPP RISK ALLOCATION MATRIX: ROAD

PURPOSE OF MATRIX	**This appendix contains a matrix of risks typically found in a road PPP transaction, together with guidance on how those risks are typically allocated between the government Contracting Authority and the Private Partner, the rationale for such risk allocation, mitigation measures and possible government support arrangements. It aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks in a PPP contract.**
CAUTIONARY NOTE	**This matrix contains an indicative – but not exhaustive – list of the main risks typically to be considered in roads PPP projects and their typical allocation between the Contracting Authority and the Private Partner. It may be used as a starting point for understanding the risk allocation issues commonly arising in roads projects and for developing an individual risk matrix for the project in question. A project's individual circumstances and its jurisdiction will influence the appropriate contractual risk allocation and there may be additional risks that need to be considered.** *See Detailed Risk Identification and Analysis in the introduction*.

TYPE OF PROJECT AND SCOPE CONSIDERATIONS	This matrix addresses the common risks for the design, build, finance, (operation), maintenance and transfer to the Contracting Authority (at the end of the PPP contract) of a new PPP road. Scope may include emergency accident and preventative responsibilities, roadside assistance (e.g. towing, fire extinction); traffic management obligations; obligations to interface with future changes in tolling technologies (such as real time tolling) and other future extensions or new interconnected roads; and obligations to adopt environmental measures. Tolling, if applicable, may form part of the project scope or be separately tendered or be retained by the Contracting Authority. Measures to address congestion may also be included – such as implementation of high occupancy lanes in peak periods with, where applicable, corresponding tolls.
ASSUMPTIONS	The Private Partner finances the development of the new road and only starts to receive payment from the Contracting Authority (and/or where applicable, users) once the road is in operation. The Contracting Authority identifies the right of way. The road (and all related project assets) are handed back to the Contracting Authority on early termination or natural expiry of the contract, together with all consents and licences (including intellectual property licences) necessary to continue operating the road, in accordance with the contractual handback requirements.
MARKET APPROACHES	In addition to new build PPP projects, PPP projects involving rehabilitation and extension of existing roads are common and many projects involve a combination of all these elements. As well as PPP structures such as availability or demand risk-based projects/concessions, there are other non-PPP contractual structures and procurement models that Contracting Authorities can use to deliver road infrastructure with private sector involvement. These include more traditional procurement of just the construction (or rehabilitation) of a road, or procurement of standalone maintenance contracts. The risks addressed in this matrix and much of the risk allocation guidance will be relevant to different contractual structures, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending).
PROJECT REVENUES, INCLUDING PAYMENT MECHANISMS	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 in the operating period, or by an upfront subsidy towards capital expenditure (i.e. construction costs), typically payable on construction completion. The availability payment structure is more common for a road PPP contract. Demand risk projects tend to typically involve government support with the result that transfer of demand risk is in practice diluted. *See Performance/price risk under Operating risk and Demand risk.*
KEY RISKS	**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 tunnelling and bridges. *See Cost overruns and Works completion delays under Construction risk.*
OTHER CONSIDERATIONS	**Staged operation commencement:** Although a single operation commencement regime is more common, the Contracting Authority may wish to implement a multi-staged operation commencement process enabling the Private Partner to begin to receive payment once significant components of the project are substantially completed. This can help increase cash flow during the overall construction process, reduce the Private Partner's financing costs and incentivize the phasing of construction works in order to ensure critical components are completed on time. On

	the other hand, staged completion dates may also increase the complexity of the construction programme, limit the Private Partner's ability to mitigate construction delays and/or have agreed damages attached to them, which can increase the risk to the Private Partner. This is likely only to be suitable where distinct sections of the road can become operational in phases and where commencement of operation will not distract from ongoing construction requirements.
PRIVATE SECTOR RISK MITIGATION	**Allocation of risks to sub-contractors:** *See Risk Allocation in PPP contracts in the introduction* and *Cost overruns and Works completion delays under Construction risk*. As regards construction, the Private Partner will often enter into a lump sum construction contract with a construction sub-contractor to pass down its obligations under the PPP contract and to manage the risk of cost overruns and delays (subject to certain relief to which the sub-contractor will be entitled under the sub-contract). The Private Partner will bear the risk of liability caps agreed under the sub-contract being reached or warranty periods under the sub-contract being shorter than the Private Partner's defect rectification obligations towards the Contracting Authority. The Private Partner will similarly typically enter into an agreed price operating sub-contract with an operating sub-contractor to pass down its operating phase obligations to the extent practicable. **Insurance:** *See Risk Allocation in PPP contracts in the introduction*. **Effective implementation of social and environmental management plan:** *See Environmental risk and Social risk*. **Additional equity and other funding support:** *See Market Conditions in the introduction*.
PUBLIC SECTOR RISK MITIGATION	**Carrying out detailed feasibility and ground surveys:** See *PPP Project Preparation and Delivery in the introduction*. In addition, studies for roads project should include identification and suitability of corridor, additional land needs, interface with existing and future road and other transport networks (and corresponding impact on the project), traffic forecasts (especially in a toll road project) and social and environmental impact of both the construction and operation of the road. Detailed ground surveys should also be carried out where practicable. Where such information is provided to bidders to rely on in pricing their bids, Contracting Authorities may elect to guarantee accuracy but not necessarily completeness or interpretation – this will depend on project-specific factors including the experience of the bidders and the ability to obtain other relevant information.
	Running an efficient and fair procurement process: *See PPP Project Preparation and Delivery in the introduction.* Enacting enabling legislation and complying with domestic procurement laws in relation to the project are primarily the Contracting Authority's risk and responsibility. As the Private Partner will be affected by the consequences of breach of such legislation, it will carry out due diligence itself on these matters. Interference with the tender process and other issues attributable to the Private Partner will remain a Private Partner risk.
	Timely consultation on social and environmental impact: It is key for the Contracting Authority to consider the effect of the project on people, wildlife and habitat and to implement effective management of stakeholder interests and public perception before and (in conjunction with the Private Partner) during the project. *See Environmental risk and Social risk.*
	Having competent advisers: *See Detailed Risk Identification and Analysis in the introduction*.
	Timely involvement of internal stakeholders and contract management team: *See Detailed Risk Identification and Analysis in the introduction*.
	Careful assessment and quantification of risk: *See Detailed Risk Identification and Analysis in the introduction.*
	Taking performance security: [The Contracting Authority may seek certain security direct from the Private Partner and its sub-contractors, or their parent companies, in respect of certain contractual (or tender) obligations. This may be in the form of bid bonds during the tender stage and, following the tender stage, completion bonds, performance bonds and guarantees. As an alternative, cash reserving mechanisms could be used during the life of the contract. Although the Contracting Authority may be able to call on this security in certain circumstances (such as performance failures by the Private Partner), the security will have a cost attached. This will feed through to the contract price and may affect value for money, particularly since the security may never be called.]
PUBLIC SECTOR SUPPORT MEASURES	The Contracting Authority may provide certain financial support to the project, in terms of subsidies or guarantees, although the consequences of such commitments and the potential liabilities for the public sector should be carefully considered, including how such support may dilute the risk/reward distribution under the PPP contract and affect value for money. Where the Contracting Authority's own credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in projects where the Contracting Authority is not part of central government or it is a local authority. To mitigate this Contracting Authority counterparty risk, a sovereign or central government (e.g. finance ministry) guarantee (or equivalent support) may be needed, though the full implication for the public sector should be carefully assessed, including the potential impact on the government's contingent liabilities and fiscal sustainability. *See Demand risk, Project Revenues, Including Payment Mechanisms above and Strength of Contracting Authority payment covenant under Early termination risk*.

KEY TO MATRIX

Risk category rows		Broadly, the first row of a particular risk category summarises the risk and its main allocation. The subsequent rows detail specific issues relevant to that risk and its allocation.
Risk allocation symbols	●	Indicates how the main risk described in the relevant row is typically allocated.
	[●]	Indicates how the risk (or part of the risk) may be allocated differently in the particular additional circumstances described.
Defined terms		Certain terms used in the matrix are defined in the Glossary. For example, the terms compensation event and relief event are used throughout this matrix with respect to how a PPP contract addresses the eventuation of certain risks. For a detailed explanation of those contractual mechanisms, refer to the definition of compensation event and relief event in the Glossary.

SUMMARY MATRIX[1]

RISK CATEGORY	DESCRIPTION	BASIC RISK ALLOCATION		
		Public	Shared	Private
LAND AVAILABILITY, ACCESS AND SITE RISK	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.	●		
SOCIAL RISK	The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.	●		
ENVIRONMENTAL RISK	The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.		●	●
DESIGN RISK	The risk that the project design is not suitable for the purpose required; approval of design; and changes.			●
CONSTRUCTION RISK	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.			●
VARIATIONS RISK	The risk of changes requested by either party to the service which affect construction or operation.		●	
OPERATING RISK	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.			●
DEMAND RISK	The risk of traffic levels being different to forecast levels; the consequences for revenue and costs; and government support measures.	[●]	[●]	[●]
FINANCIAL MARKETS RISK	The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●	
STRATEGIC / PARTNERING RISK	The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.		●	●
DISRUPTIVE TECHNOLOGY RISK	The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	
FORCE MAJEURE RISK	The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.		●	
MAGA RISK	The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.	●		
CHANGE IN LAW RISK	The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.	●		
EARLY TERMINATION RISK	The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.		●	
CONDITION AT HANDBACK RISK	The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.			●

[1] Cautionary note: The summary matrix identifies typical risk allocation on an aggregated basis. For each risk allocation, however, there are generally exceptions. For the full discussion on typical risk allocation arrangements, please see the detailed guidance provided in the matrix below.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
LAND AVAILABILITY, ACCESS AND SITE RISK *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.*	**Provision of required land – general**	●	[●]		The Contracting Authority typically bears the risk of selecting the corridor and acquiring the required land interests for the project, whether through compulsory acquisition/expropriation 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 "clean" 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 compulsory acquisition/expropriation phase or with stakeholder involvement procedures. *See also Access to the site and associated infrastructure under Land availability, access and site risk.* 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. If the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through compulsory acquisition/expropriation), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases). *See also Social risk.*	In certain markets, land rights (in particular reliable utilities records, and land charges and third party rights to (access) land) 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, this will increase the risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risks as the Private Partner will not be able to bear them. The rights of private landowners against compulsory acquisition/expropriation might be stronger in developed markets, so the Contracting Authority may need to allow more time to acquire the land.
	Timing of provision of required land	●			**Acquisition pre-signature:** The Contracting Authority should complete the process of land acquisition before the contract is awarded so that all issues and risks are known and managed. All relevant processes will need to be carried out in a timely manner. The timeframe will depend on the issues affecting the site and the applicable processes. The risk that all necessary processes have been satisfied will be the Contracting Authority's risk.	
		●			**Acquisition post-signature:** If the Contracting Authority is not able to provide the land by contract award, it will bear the risk of providing it in accordance with a contractually agreed programme. Failure to obtain the land by a certain date may entitle the Private Partner to terminate the contract *(see also MAGA risk)*. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process.	
	Provision of permanent additional land	●			**Identification pre-signature:** If a permanent need for additional land is identified and agreed by the parties before contract signature then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing the additional land, unless the need for additional land is specific to a bidder (for example, due to a different design).	
				●	**Identification post-signature:** If a permanent need for additional land is only identified after contract signature then this will be a Private Partner risk as the need should have been identified and factored in to the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance with acquisition where the land is essential, with costs being borne by the Private Partner.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Provision of temporary additional land	●		[●]	**Identification pre-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified in the procurement phase and are common to all bidders, then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing such land, unless the need for such land is specific to a bidder (for example, due to its construction methods and equipment) – in which case the risk should be allocated to that bidder and the cost factored into its bid price. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
				●	**Identification post-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified, they should be a Private Partner risk as such need should have been identified and factored into the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
	Heritage / indigenous land rights	●		[●]	Land rights issues involving indigenous groups will be the responsibility of the Contracting Authority. The Private Partner will bear the risk of complying with legislation and contractual obligations imposed on it in this regard. The Private Partner's obligations with regard to indigenous rights is well legislated for in some markets. In the absence of legislation, indigenous land rights issues and community engagement can be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project (e.g. compatible with the Equator Principles). This will be particularly relevant if international financing options are desirable. *See also Social risk.*	This issue is coming under increasing focus from multilateral agencies and other finance parties, as well as civil society and human rights organisations. For example, the World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. Many finance parties (including commercial finance parties) adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). Examples of specific legislation are native title legislation in Australia and the equivalent First Nations law in Canada. These include a requirement to seek consent from the indigenous parties affected and to enter into indigenous land use agreements.
	Resettlement				*See Resettlement under Social risk.*	
	Suitability of land		●		**General:** The risk that the land is not suitable is typically shared as the Contracting Authority may be able to secure the availability of the corridor, but the suitability of the corridor may be dependent on the Private Partner's design and construction plan. *See also Design risk.*	
		●		[●]	**Underground:** Risk with regard to stability and suitability of the underground sits with the Contracting Authority if no or unreliable data is available and the risk cannot be transferred (or transferring the risk does not represent value for money). To the extent reliable data is available in the tender phase and can be relied upon by the Private Partner, the risk sits with the Private Partner. *See also Site condition under Land availability, access and site risk.*	
	Key planning consents	●			**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents. Obtaining planning consent can be a key challenge and risk due to the length of the corridor. *See also Provision of required land under Land availability, access and site risk and*	In some jurisdictions, it may not be possible to obtain the requisite planning consents until such time as the Private Partner has been identified and/or detailed design is known.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Environmental risk.	
		●		[●]	**Post-signature:** If consents for key permits are not obtained before contract signature and the Contracting Authority wants to sign the contract, it will typically bear the risk of the consents being delayed or not obtained (subject to the Private Partner complying with any reasonable requirements) – this may be treated as a compensation event. Failure by the Contracting Authority to obtain the consents by a certain date is likely to entitle the Private Partner to terminate the contract. Permit risk may be complicated further if there are different levels of authorities involved, and interaction between levels of design and authorisations may impact the timeline. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process. *See also MAGA risk, Design risk and Environmental risk.*	
	Subsequent planning approvals	[●]		●	Obtaining subsequent detailed planning consent and other approvals will be a Private Partner risk. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also Environmental risk and MAGA risk.*	
	Access to the site and associated infrastructure	●			**Construction phase:** In principle the Contracting Authority will be responsible for ensuring the Private Partner can access the site during construction (including for example closing adjacent roads to enable construction to take place over them). Either (i) it will pay the costs of providing access itself, or (ii) the Private Partner will pay such costs and be reimbursed through the contract price (or permitted toll) to the extent it has priced such costs into its bid. This will depend on the nature of the access required. Failure to provide access may be treated as a compensation event. *See also MAGA risk.* The parties will need to agree the extent to which the Private Partner may bear some responsibility for the impact on access roads of heavy loads.	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.
		●			**Operation phase:** The Contracting Authority should bear the risk of ensuring that users can access the new road via the existing road network. In a toll road where the Private Partner payment is based on traffic volume this will be a key Contracting Authority risk. Where the Private Partner instead receives an availability payment, there may still be issues which the Contracting Authority needs to address (e.g. third party revenue for roadside facilities, purpose of the road, commitments to other developments reliant on access to the road) and for which it will bear the associated risk. This may be treated as a compensation or MAGA event. *See also MAGA risk.*	
	Site security	●		●	**Construction phase/operation phase:** Risk allocation with respect to site security will depend on the political climate, opposition to the project, nature of the risk and the stage of the project. Parties should aim to have a complete understanding of the risks involved in physically securing the site and those that will affect the construction and operation of the road. Ordinarily the Private Partner will be responsible for day to day site security. However, the Contracting Authority may need to use statutory means to properly secure the site for the Private Partner (such as police involvement or eviction) and in some circumstances may be required to provide additional site security / assistance during operations to manage this risk. Failure may be treated as a compensation or MAGA event. *See also Force majeure risk, MAGA risk, Social risk and Vandalism under Construction risk and Operating risk.*	For example, where there is public opposition to the road, there may be protestor action, or there may be issues safeguarding the equipment and installation.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Utilities and installations	[●]		●	**Costs or delays caused by relocation of /access to utilities:** To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of any costs or delays caused by statutory undertakers and utility providers in carrying out diversions or connections. Costs and delays caused by re-location of existing utilities or access to utilities for the purposes of the project which are due to the Private Partner's design or construction plan are usually allocated to the Private Partner. For connections to existing infrastructure, *see also Project management and interface with other works/facilities under Construction risk.* The Contracting Authority will bear risk if no reliable information is available. It will also bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Lack of data on existing utilities location can make it difficult for the Private Partner to assess (and price) the cost and time needed for relocation which can impact on the construction timetable and ultimately on meeting the operation commencement date. If the Private Partner bears this risk, the Contracting Authority may need to share the risk by capping the Private Partner's liability or by having a cost sharing mechanism.	In some markets or challenging locations, there may be little data on location of utilities (water, sewage, oil, gas, optical fibre etc) and the Private Partner may be unable to accept all or part of this risk.
		[●]	●		**Costs or delays caused by utility provider:** Costs and delays caused by a utility provider could arise in both phases and the risk will be allocated according to the relevant circumstances and market and ownership of the utility. The risk could be shared or allocated to the Contracting Authority.	In markets where the utility provider is a private entity, this risk is likely to be treated as a relief event (and the utility company will bear the risk) – this is common in mature markets. In less mature markets, particularly where the utility provider is a state-owned entity, the risk is likely to be allocated to the Contracting Authority as a compensation or MAGA event.
	Site condition	[●]		●	**Surveyed:** The Contracting Authority usually undertakes detailed geotechnical and ground/soil surveys during the feasibility stage (if not already publicly available) and discloses such information as part of the bidding process. Sharing the surveys will save bidders' costs (all which would otherwise feed through to the Contacting Authority in the contract price). To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of such conditions causing cost and delay. The Contracting Authority will bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation of the data. Where projects involve large elements of tunnelling, geotechnical risks will be more carefully assessed by the Private Partner. *See also Construction risk.*	In a mature market, the Contracting Authority normally hands over the site to the Private Partner in an "as-is" condition on the basis of the surveys provided. The Private Partner can rely on the surveys but otherwise bears the risk. In some markets, the bidders carry out the surveys during the tender process – this may be the best solution in some circumstances, but may also limit competition unless bidders are compensated for these costs.
		●	[●]		**Unsurveyed:** Where it is not possible to fully survey site condition prior to award (e.g. in high density urban areas), the risk for unsurveyable land will be allocated to the Contracting Authority (e.g. as a compensation event). The risk may be shared by the Private Partner (e.g. as a relief event) in some circumstances, for example where the risks were within the knowledge of the Private Partner when it priced its bid or an experienced contractor would have considered their existence as being possible. The impact on the project and the cost of remediation works for certain existing site conditions can be significant so the ultimate risk allocation will depend on the project specifics.	In some markets there may be less historic data available to the parties to assess risk. It may however be easier to perform comprehensive surveys in a less urban area.
		●	[●]		**Cultural / Archaeological finds:** Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk. One approach is to share the risk such that the Private Partner bears the risk in respect of designated areas (such as a low risk area) and the Contracting Authority bears the risk outside such areas (such as a high risk area). Another approach is for the Private Partner to be obliged to coordinate work, but for the Contracting Authority to appoint specialised contractors and to	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of finds is often treated as a relief event.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					bear cost/delay and interface risk.	
		●	[●]		**Unexploded bombs, land mines and other munitions:** Discovery of munitions can cause delays and costs as they will need to be defused and removed. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of munitions risk is often treated as a relief event. In some countries, the risk of unexploded land mines can be high and specific surveying and cost provisions may need to be agreed.
		●		[●]	**Pre-existing environmental pollution:** Pre-existing pollution is typically the Contracting Authority's risk except to the extent it was known to and priced by the Private Partner. Remediation works for certain existing environmental conditions can be expensive so the ultimate risk allocation will depend on the project specifics and the surveys provided to the Private Partner. *See also Environmental risk and Change in law risk.*	
	Existing asset condition	[●]		●	Where there are existing assets proposed to be used in the project (for example, bridges), where practical they should be fully surveyed (and potentially warranted) by the Contracting Authority. To the extent reliable data relating to the condition of existing assets is shared by the Contracting Authority during the tender process and can be relied upon during implementation, the Private Partner can price the risk of using them, including the interface with other aspects of the project and latent defect risks. The Private Partner will then bear the corresponding risk. The Contracting Authority will bear risk to the extent such data proves inaccurate or insufficient, and to the extent of any warranties it provides. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation. If latent defects are discovered in assets which are due to be replaced at some point in the life of the contract, the Contracting Authority may be able to mitigate its risk to some extent by having a contractual mechanism which brings forward the replacement date. *See also Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
SOCIAL RISK *The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.*	**Community and businesses**	●			Ultimately, the policy relating to the social impact of the provision of infrastructure is for the government. The Contracting Authority will bear this risk except to the extent the Private Partner is responsible for implementing any social management measures. The social impact of a road on communities and businesses may be a key issue and must be carefully assessed and managed by the parties. During the feasibility stage, the Contracting Authority should have considered the impact on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries – both in terms of the construction and operation of the road. It may need to carry out social impact studies and aim to minimise any negative impact of the project. Consultation may reduce the risk of opposition if outcomes are incorporated in the strategy and tender requirements. The approach, compensation schemes and what is acceptable should be addressed in the bid requirements and the contract. Investors and lenders may expect to see a plan addressing social impact, including the execution of any necessary contractual arrangements. The Contracting Authority may choose to adopt internationally recognised social and environmental standards and practices for the project to manage social risk, especially if international financing options are desirable. All the way through construction and operations, active stakeholder engagement by the Contracting Authority will be critical to avoid litigation, achieve key milestones on time and ensure it is delivering infrastructure that serves its public purpose. Both the Private Partner and the Contracting Authority should develop sound environmental and social risk management plans before construction begins. Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation (*see*	This issue is coming under increasing focus from multilateral agencies, development finance institutions and other international finance parties, as well as civil society and human rights organisations. Finance parties (including commercial finance parties) will look very closely at how these risks are managed at both private and public sector level. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). The World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. In civil law jurisdictions the obligation upon the Contracting Authority to act "in the general interest" and to justify and document decisions may strengthen the stakeholder process. This is because the level of transparency and justification required should ensure that stakeholder views are properly

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
				[●]	*also Resettlement under Social risk*) and continued efforts to manage the social and political impact of the project on and around the site (possibly including a compensation regime for affected businesses adjacent to the road). The Private Partner will bear the risk of non-compliance with any contractual social risk obligations as well as social risk obligations set out in the underlying legal system, although even where social risk obligations are passed onto the Private Partner, the consequences of such risks occurring may come back to the Contracting Authority. For this reason, the Contracting Authority should critically analyse just what social risk obligations should be passed onto the Private Partner and what should be retained. Where there is public opposition, there may be protestor action in both construction and operating phases, and/or issues safeguarding the site equipment and installation. *See also Site security and Access to the site under Land availability, access and site risk, and Vandalism under Construction risk and Operating risk.* For a detailed analysis on how governments can better address aspects related to social inclusion in the delivery of infrastructure, see the GI Hub's practical guidance on *Inclusive Infrastructure and Social Equity*.	taken into account and the risk of arbitrary decisions (and consequent challenges) reduced.
	Resettlement	●		[●]	Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation. This may include the removal of formal and/or informal housing or businesses and resettlement of communities in another location, potentially also with compensation. The Private Partner is responsible for implementing any social risk management measures contractually agreed – these should be clearly specified by the Contracting Authority in the procurement phase to enable the Private Partner to price the cost and associated risks.	Resettlement of whole communities by the Contracting Authority is more likely in less developed markets where informal housing and businesses may be more prevalent. The affected parties may not have the means (or the transport) to relocate themselves, even if paid compensation, and whole communities may need to be moved together. In developed markets, affected parties may be more able to rely on rights under compulsory acquisition/expropriation laws and compensation received.
	Heritage / indigenous people	●		[●]	As with land use rights involving indigenous groups, any other social impact risks involving such groups will usually be the responsibility of the Contracting Authority but the Private Partner will bear the risk of complying with relevant legislation and contractual obligations. In the absence of legislation, indigenous rights issues and community engagement may be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project, particularly if international financing options are desirable. *See also Heritage/indigenous land rights under Land availability, access and site risk.*	The Private Partner's obligations with regards to indigenous rights is well legislated for in some markets and in other markets there may be more reliance on internationally recognised standards. *See also Heritage/indigenous land rights under Land availability, access and site risk.*
	Industrial action	●	●	●	The Private Partner assumes the risk of labour disputes and strike action adversely affecting the project except to the extent such action falls into the category of political risk – the Contracting Authority may bear the risk (if a MAGA event) or share the risk (as a force majeure or relief event) for strikes and other widespread events of labour unrest. For example, nationwide and sector strikes are usually Contracting Authority risks, but strikes at the Private Partner's facilities will be a Private Partner risk. *See also Force majeure risk and MAGA risk.*	In less politically stable jurisdictions the Contracting Authority may have to accept more risk for strikes than in some jurisdictions. In markets where the risk of strikes is low, the Private Partner may be comfortable accepting this risk as a relief event.
ENVIRONMENTAL RISK	**Pre-existing conditions**	●		[●]	*See Site condition and Existing asset condition under Land availability, access and site risk*.	Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.	**Obtaining environmental consents**	[●]		●	**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents In many major projects, the environmental authorisations are a key component of the project and may take significant time to be prepared and approved. In some cases, these authorisations are initiated (such as preparing the environmental impact assessment) and prepared by the Contracting Authority ahead of the procurement process. At a specified point in time, the Private Partner will take over the risks related to obtaining detailed environmental licences or permits related to the project.	sound environmental and social risk management plans before construction begins. The risk of delay in obtaining approvals may be greater in some jurisdictions, particularly where different levels of government are involved. Delays in obtaining environmental permits have caused significant construction delays in some sectors (for example, in some projects in South America) and the timeframe required should not be underestimated. If adequate relief is not given to the Private Partner, this may deter the private sector from participating in new projects in the same sector or jurisdiction. International finance parties, multilateral agencies and development finance institutions are particularly sensitive about environmental and social risks. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (which are described in the Equator Principles). Finance parties will look very closely at how these risks are managed at both private and public sector level and this scrutiny is helpful to mitigate the risks posed by these issues. *See also Communities and businesses under Social risk.*
		[●]		●	**Post-signature:** Except as specifically identified otherwise, the Private Partner typically bears the risk of obtaining all environmental licences, detailed permits and environmental authorisations required for the project after contract signature. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event or MAGA event. *See also MAGA risk.* In some countries, there may be different levels of governmental approval required. Local authorities may interpret certain requirements in their own way after the contract price has been submitted and impose unexpected conditions on the Private Partner. This could adversely affect the project's financial model. The parties should ensure that the contract sets out clearly how any such interpretation or unexpected requirement is addressed to avoid disputes as to which party bears the consequences. *See also Key Planning Consents under Land availability, access and site risk, Change in law risk and Compliance with environmental consents and laws under Environmental risk.*	
	Compliance with environmental consents and laws			●	The Private Partner bears the risk of complying with all environmental licences, detailed permits and environmental authorisations required for the project as well as applicable environmental laws. The environmental impact of a road on habitat, communities and businesses (e.g. in terms of pollution and noise) can be a key risk and must be carefully assessed and managed by the parties. The parties should ensure that change in law provisions adequately address changes in (mandatory) environmental standards and laws to avoid disputes as to which party bears the consequences of any requirements imposed after contract signature. *See also Change in law risk.* In the absence of legislation, environmental obligations can be managed by the Contracting Authority through the adoption of internationally recognised standards and practices for the project, particularly if international financing options are desirable. *See also Communities and businesses under Social risk.*	
	Environmental conditions caused by the project			●	The Private Partner bears the risk of environmental events caused by the project to the extent due to its failure to comply with applicable licences, laws and contractual obligations. This includes conditions affecting both the project itself and third parties. *See also Compliance with environmental consents and laws under Environmental risk.* The Contracting Authority may want to satisfy itself as to the overall robustness and suitability of environmental plans proposed by the Private Partner, to ensure that such plans will be adequate to appropriately manage the risks of the project, but the Contracting Authority should not take on any risk in doing so.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	External environmental events		●		**Outside both parties' responsibility:** The risk of environmental events external to the project occurring which adversely affect the project (or, as a result, third parties) should be treated according to the nature and cause. They may be a form of shared risk, such as a relief event or force majeure event (e.g. if an accidental chemical escape from a lorry or nearby factory forces the road closure for a period).	
		●			**Within Contracting Authority's responsibility:** If environmental events are within the responsibility of the Contracting Authority or government they may be treated as a compensation event or MAGA event (e.g. where the government has failed to enforce environmental laws in respect of polluting vehicles and the pollution damages the road or leads to legal action against the project by third parties). *See also MAGA risk and Climate change event under Environmental risk.*	
	Climate change event	[●]	●		Market practice is developing with greater focus on events caused by climate change and the Contracting Authority should consider the risk and impact of climate risk events on the infrastructure (both one-off external weather events and more gradual effects, such as rising sea levels or temperatures). It may be appropriate to treat certain events as force majeure events if they occur beyond certain thresholds (e.g. temperatures outside certain ranges). Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common. An alternative may be to consider a separate contractual mechanism to address these types of risks over the long term life of the contract. As with other variations required by the Contracting Authority, any changes to the project scope to mitigate climate change effects are likely to need to be funded by the Contracting Authority where the Private Partner cannot foresee such developments and has no means of passing on the cost (and no other agreement as to cost sharing is in place). As it is likely to be more costly to retrofit measures, it is essential that the Contracting Authority consider this risk during the feasibility phase, and that both parties continue to consider this issue further during the tender process. *See also Force majeure risk and Operational risk.*	If clear requirements are not included, this may lead to different bidders taking this risk into account in different ways. To avoid speculation and disputes, post-contract award, these issues should be clearly set out in the tender documents and negotiated throughout the tender process.
DESIGN RISK *The risk that the project design is not suitable for the purpose required; approval of design; and changes.*	**Suitability of design**	[●]		●	Generally the Contracting Authority should aim to transfer design risk to the Private Partner but the extent to which this is possible will depend on how involved the Contracting Authority wants or needs to be in specifying design requirements in the tender documentation. Alternative approaches are described below. **Output specification:** Where possible, the Contracting Authority usually aims to set a broad output driven specification in the tender documents, requiring the Private Partner to design and build the project in a way which satisfies the performance specifications and ensures compliance with applicable legal requirements, good industry practice standards and, where applicable, minimum quality standards. This allows for private sector innovation and efficiency gains in the design. With this approach, the Private Partner will have principal responsibility for adequacy of the design of the system and its compliance with the output / performance specification. A design review process during the contract will allow for increased dialogue and cooperation between the Contracting Authority and the Private Partner, but care should be taken to ensure that the mutual review process does not reduce or limit the Private Partner's overall liability. In limiting how prescriptive it is in the performance specification, the Contracting Authority may wish to request a degree of cooperation and feedback during the bidding phase to ensure that the bidding consortia's expectations in terms of an appropriate risk allocation for design responsibility are taken into account when finalizing the performance specification. If the Contracting Authority provides bidders with a basic design, bidders will typically be responsible for any errors, if they assume this basic design in developing their detailed design. An alternative is to provide (more) detailed design, but to contractually oblige the bidders to comment on and subsequently accept the (amended) design. The Contracting Authority should bear the risk of technical information provided by it proving	In more developed PPP markets, the Contracting Authority typically drafts a broad output specification, unless permit or other regulatory requirements oblige it to provide more detailed and descriptive specifications. Projects in some less established PPP markets may be particularly dependent on availability of reliable resources necessary for construction and operation, which has implications for the Private Partner's ability to meet the reliability requirements in the performance specification and take full design risk. The quality of the information provided by the Contracting Authority and the Private Partner's limited ability to verify such data can hinder the Private Partner's ability to unconditionally take full design risk in some markets. Attempts to transfer the risk in such circumstances may also lead the Private Partner to price in expensive risk premiums that do not represent value for money for the Contracting Authority.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					inaccurate to the extent the Private Partner was allowed to rely on it for design purposes (e.g. inaccurate traffic forecasts or site condition or existing asset surveys). *See also Changes to design under Design risk.*	
		●			**Prescriptive specification:** A prescriptive specification can, where essential, ensure the Contracting Authority receives bids on a particular (and similar) basis. However, the disadvantage of this approach is that it will restrict private sector innovation and efficiency gains in the design and may not result in best value for money. The Contracting Authority may also retain some design risk in certain aspects of the system or related works, if it is more prescriptive in the performance specification. For example, if the performance specification is too prescriptive (e.g. the required route corridor constrains the efficiency of the design), the Private Partner's ability to warrant the fitness for purpose of its design solution may be impacted and the Contracting Authority will to that extent share in the design risk. The prescriptiveness of the performance specification is likely to be dependent on the depth of the feasibility study. Some jurisdictions allow only limited room for individual design, since all key aspects and many details are already fixed in the official planning approval decision. If the Private Partner wants to deviate from these requirements it must conduct formal amendment procedures, which in practice have such process and risk impact that bidders are not willing to take the risk that comes with initiating such amendment procedures. *See also Changes to design under Design risk.*	
		[●]			**Existing infrastructure:** If the project is being integrated into existing infrastructure, the Private Partner's ability to warrant the fitness for purpose of its design solution must be considered. It may not be able to warrant defects in the existing infrastructure which may impact the project's performance and the Contracting Authority may have to bear this risk. *See also Existing asset condition under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
	Approval of designs	[●]		●	The Private Partner will bear the risk of obtaining design approvals as it will have principal responsibility for preparing the detailed design and obtaining relevant approvals from the appropriate state or other body. However, if the Private Partner has complied with all relevant conditions and time frames, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also MAGA risk.* Where specific solutions or consultants are imposed by the Contracting Authority (e.g. architectural or technical), some risk may remain with the Contracting Authority.	
	Changes to design	●		●	The risk of changes to design after contract signature is allocated according to the reason for the change. If the original design is deficient, this will be a Private Partner risk, subject to the aspects which are the Contracting Authority's risk (as outlined in *Approval of designs and Suitability of design under Design risk*). If changes are required by the Contracting Authority, this would as a rule be a Contracting Authority risk (with the consequent time and cost implications borne by the Contracting Authority on the same principles as for compensation events). *See also Variations risk.* Contractual amendment procedures can in practice have such process and risk impact that the Private Partner may not be willing to take the risk that comes with initiating such amendment procedures. Requesting design changes or alternative or more detailed design development during the procurement stage will delay the procurement timetable and cause bidders to incur additional costs. The lack of certainty and potential cost may deter bidders and, depending on the change in requirements, may result in the procurement process needing to be re-run to comply with procurement laws or risk later challenge.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
CONSTRUCTION RISK *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.*	**Cost overruns**	[●]	[●]	●	Cost overruns (i.e. costs exceeding the construction costs assumed in the project's financial model) can have a variety of causes, such as mistakes in construction cost estimates, increased cost of materials, actions of the Contracting Authority or government, as well as delays in – or mitigating potential delays in – the construction programme. Completion of the construction phase on budget can be a particularly key risk depending on the terrain and the design involved. The Private Partner typically assumes the risk of cost overruns to the extent these are not caused by force majeure, compensation events (such as in relation to unsurveyed site or existing asset conditions) or MAGA events, and are not addressed through other bespoke provisions (e.g. Change in law or provisions specifically addressing exchange rate risk during construction – *see also Change in law risk and Exchange rate fluctuation risk under Financial markets risk)* or hardship doctrines *(see Glossary definition)* in underlying law. The Private Partner will mitigate these risks by passing them through as far as possible to its sub-contractors (for example, the construction sub-contractor). The Private Partner's financial model will typically include contingency pricing for cost overruns (as will the sub-contractor's assumptions). *See also Force majeure risk and MAGA risk.*	In certain markets, risk is considered manageable by the Private Partner through robust pass through of obligations to credible and experienced sub-contractors and by allowing appropriate timetable and budget contingency. The Private Partner can mitigate the risk of sub-contractor non-performance by obtaining appropriate security from the sub-contractors (for example, parent company guarantees and/or performance bonds). The Contracting Authority may sometimes seek additional security itself to ensure such costs can be met - see Taking performance security under Public Sector Risk Mitigation.. Enforcement of construction budgets may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Where projects involve large elements of tunnelling, this element of construction risk will be more carefully assessed by the Private Partner. In some projects this may lead to tunnelling components being separately procured on a non-PPP basis.
	Works completion delays	[●]	[●]	●	Delays in delivering the infrastructure by the relevant works completion date can have a variety of causes, such as unavailability of construction materials, delays in shipping and mistakes in programme scheduling, as well as weather events, civil unrest or industrial action and actions of the Contracting Authority or government. Completion of the construction phase on schedule is typically a key risk due to the consequences of any delays, and particularly where complex terrain and design are involved. The Private Partner typically assumes the risk of delays to the extent they are not caused by relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions. *See also Force majeure risk and MAGA risk.* In most projects, the relevant date is the scheduled operation commencement date and to achieve that the works will need to be evidenced as complete. Some projects may instead (or in addition) require separate works completion deadlines to be met. This may be the case in jurisdictions where specific acceptance processes are required by law for construction works under public contracts and/or for insurance purposes. The consequences for the Private Partner of delays to the relevant works completion date are loss of expected revenue due to arise on the relevant date and ongoing construction and financing costs. In extreme cases, there is also a risk of potential termination for failing to meet the "longstop date" (a final later date by which the Private Partner must complete the project works/commence operation to avoid the Contracting Authority being entitled to terminate). The Private Partner will pass through these risks as far as possible to its sub-contractors (and may require the sub-contractors to pay it agreed damages to compensate for the delay to and loss of its overall project income and act as an incentive for timely completion). The Contracting Authority may also consider imposing agreed delay damages on the Private Partner to compensate it for delay to the start of the operating phase. However, imposing such agreed damages will typically result in the Private Partner building additional contingency time and cost into the project's construction plan and the Private Partner should already be sufficiently incentivised to meet the relevant works completion date on time so that its revenue streams can commence. Some jurisdictions require certain criteria to be met in contractual provisions imposing delay damages if they are to be legally enforceable. Broadly speaking, if the damages exceed the Contracting Authority's	Enforcement of construction deadlines may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Where projects involve large elements of tunnelling, this element of construction risk will be more carefully assessed by the Private Partner. In some projects this may lead to tunnelling components being separately procured on a non-PPP basis. Some road projects in less mature markets have faced significant construction issues and the Contracting Authority will need to be prepared to enforce its rights to manage the consequences of a failure by the Private Partner to meet the construction milestones. In less mature markets, the management of completion risk is typically addressed by having either: (i) a scheduled completion date (with attached agreed damages for delay) followed by a fixed period for operation; or (ii) a scheduled construction period forming part of the overall contract term which is itself fixed, subject to extensions for certain events such as force majeure. With the latter scenario, the Contracting Authority may attempt to additionally impose agreed delay damages on the Private Partner. The difference between the two structures is that the former preserves the project's revenue generating operation phase and the Contracting Authority relies on the agreed delay damages to incentivise timely completion of the works and operation commencement. In the latter case, the incentive to complete the works and meet the scheduled operation commencement

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					likely real losses they may be seen instead as a disproportionate penalty and the provisions may be unenforceable.	date is that any delay at the Private Partner's risk will reduce the revenue-generating operating phase.
	Project management and interface with other works/facilities	[●]		●	**Project management:** The Private Partner is best placed to integrate complex works, bridge works, tunnelling and, if within scope, tolling equipment design and installation. Typically, the Private Partner assumes project management risk. **Interface with other works/facilities:** Interdependence with other projects may also affect contract obligations and risk allocation. If some or all of the project is dependent either on the Contracting Authority carrying out particular works or making available an existing facility, or on related infrastructure work being completed by a third party (for example, separate new connecting road, port or airport facilities being ready), that interface risk will be the Contracting Authority's risk. If the operation commencement date will be delayed due to such works not being carried out on time or the Contracting Authority otherwise failing to meet its obligations, this will be a compensation event or MAGA event. For example, the project may be relying on the Contracting Authority procuring the construction of an electricity sub-station to connect up certain highway lighting (*see also Utilities and installations under Land availability, access and site risk)* or on the Contracting Authority closing an existing road so that a bridge to be built as part of the project can be constructed over it *(see also Access to the site and associated infrastructure under Land availability, access and site risk)*. *See also Suitability of design under Design risk, Maintenance standards under Operating risk, Demand risk and MAGA risk.*	In some markets the Private Partner may be allocated the risk of third party work being properly and timely completed, particularly if the Private Partner has the opportunity to enter into interface arrangements with the third party. These interface agreements will result in the interface risk being shared between the Private Partner and the third party.
	Quality assurance and other construction regulatory standards		●		Meeting relevant quality standards will be a Private Partner risk, but where standards or codes are revised after the bid submission date this risk allocation will depend on whether the changes are mandatory and whether the Private Partner has priced the risk of such changes into its bid. The Contracting Authority may consider increasing the contract price to account for increased costs of compliance or the Private Partner may be excused from compliance with the new standard if it is not mandatory. This may be dealt with through the change in law provisions. *See also Change in law risk.*	
	Health and safety compliance			●	Responsibility for health and safety compliance on the construction site is typically a Private Partner responsibility. The Private Partner typically bears the risk of complying with health and safety laws/requirements and indemnifies the Contracting Authority in respect of any breach of such requirements. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority or other government entity and/or the affected party. Some projects require an annual safety review which enables the parties to assess relevant performance and safety management. Otherwise, the engagement of an experienced contractor with a strong safety record is also a mitigant.	In some jurisdictions with developed construction legislation, the Private Partner's responsibilities in the construction phase will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability			●	Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to the construction works. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP (*see also Unavailability*	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					of insurance under Financial markets risk). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third party claims against it over this threshold.	of intervention by emergency services.
	Defects and defective materials			●	The Private Partner should be required to design and construct the project in accordance with good industry practice, and bears the risk and responsibility for completing the project free of defects. Defects are typically categorised as (i) visible and (ii) latent/hidden defects and are treated differently under the contract. The risk of visible defects is sometimes covered by an interim acceptance at completion of the works (and may result in a one off payment of agreed damages). As latent defects may not be noticeable for some years, the Private Partner is typically liable for such defects for a number of years following completion and the Contracting Authority may request a performance bond from the Private Partner to support this obligation (which the Private Partner will require from the relevant construction sub-contractor). The Contracting Authority may retain latent defects risk in existing structures. *See also Existing asset condition under Land availability, access and site risk and Maintenance standards under Operating risk.*	
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the road and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will often be a Private Partner risk, sometimes with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials, site access and security during construction, etc. *See also Site Security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where the political climate opposes the road (and/or the tolling of roads).
VARIATIONS RISK *The risk of changes requested by either party to the service which affect construction or operation.*		● 	 [●]	 ●	**Contracting Authority change:** The Contracting Authority typically bears the risk and cost of service changes implemented following its request. The contract will specify the extent to which it is entitled to require changes and the reasonable grounds on which the Private Partner may refuse. The Contracting Authority will also bear the risk of ensuring it can meet its cost liabilities. **Private Partner change:** The Private Partner will bear the risk and cost of service changes implemented following its request, unless the parties have agreed a sharing mechanic as part of their discussions of the change. A sharing mechanic may be appropriate where the Contracting Authority wants to incentivise the Private Partner to introduce innovative or environmentally-friendly solutions. If the Contracting Authority is liable for costs, it should mitigate its risk by requiring a transparent costing review process, which it can due diligence. This is likely to be particularly a concern during the construction phase. As with any potential liabilities under the PPP contract, the Contracting Authority will want to consider how best it can fund such payments (e.g. through financing the variation direct itself, requiring the Private Partners to procure committed but undrawn funding at financial close or to establish a reserve to fund future variations, each of which will come at a cost and may affect value for money, or requiring the Private Partner to procure financing at the time of implementation of the variation). Where financing is procured by the Private Partner, whether at financial close or at the time of implementation, the Private Partner's revenues will need to be adjusted to fund repayment of the	Some jurisdictions have detailed change protocol templates to follow for variations to ensure that costing is fair and transparent. Due to the impact changes can have on construction or operation (e.g. in terms of timing, cost and delivery), there may be restrictions placed on the ability to request changes of certain types or in certain phases. The Contracting Authority's ability to request and meet any changes costs will also be a concern, particularly where it has a weak credit.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					financing. The risk and cost associated with changes arising due to other provisions will be addressed according to those provisions. *See also Changes to design under Design risk, Climate change event under Environmental risk, Disruptive technology risk and Change in law risk.*	
OPERATING RISK *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.*	**Increased operating costs and affected performance**	[●]	[●]	●	Increased costs and delays in the operating phase can have a variety of causes, ranging from mistakes in maintenance cost estimates to extreme weather events. Aside from adjustments for inflation, the Private Partner broadly assumes the risk of events which inhibit performance and/or give rise to cost increases beyond modelled costs, to the extent these are not relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions or hardship doctrines *(see Glossary definition)* in underlying law. *See also Force majeure risk and MAGA risk.*	
	Performance/ price risk			●	The Private Partner bears the risk of meeting the performance specification under the contract (i.e. by ensuring that the works and the operational performance are of the necessary quality and level). In an availability-based payment structure the Private Partner's payment may be subject to abatement if availability criteria and performance-based standards are not met. For example, availability criteria may be linked to the number of lanes open and operational in particular periods and performance standards may be linked to traffic flow key performance indicators or accident response measures. Where certain availability criteria or performance indicators cannot be met due to actions by the Contracting Authority (or other government entities) or unforeseen circumstances, the Private Partner may be entitled to relief (e.g. if caused by a relief, force majeure, MAGA or compensation event). For example, lane availability and traffic management performance may be affected by police or emergency services actions and the contract should be clear how such action affects the Private Partner. *See also Force majeure risk and MAGA risk.* The Contracting Authority is responsible for enforcing the performance regime and for ensuring that the performance specifications are attainable and properly tailored to what the Private Partner can deliver based on relevant market data and policy objectives. The appropriateness of the metrics can be assessed by reference to standards of similar services provided by the Contracting Authority (or other government body), value for money, the nature of the project and the relevant markets. In a toll-based payment structure, poor performance by the Private Partner may adversely affect demand and consequently project revenues. The Private Partner may be entitled to compensation to the extent this is the fault of the Contracting Authority. *See also Demand risk.*	In mature markets, the Contracting Authority should have access to various data sources to develop realistic and attainable performance specifications and models. For other markets, particularly in the case of market first projects, the preparation of attainable standards by the Contracting Authority is complicated by the lack of relevant market data. The Contracting Authority should set standards which are achievable in the relevant market, taking into account, for example, applicable driving and vehicle maintenance standards. These may vary across different markets. In less mature markets, the Private Partner may require the Contracting Authority to reduce the performance requirements during the settling in period and possibly readjust the performance metrics once the performance of the road has stabilized. This can mitigate the risk of long-term performance failure.
	Operational resources or input risk		●	●	The Private Partner bears the principal risk and responsibility of ensuring an uninterrupted supply of resources for the project (such as utilities, maintenance equipment and materials, and specialist vehicles) and to manage the costs of those resources. It will need to consider this when structuring its supply arrangements. This is especially relevant for roads projects where the Private Partner's obligations also include catering for special, but regular weather conditions, such as winter road clearance, or monsoon flooding or, where in scope, recovery/towing equipment. In some markets, there may be specific instances where the risk needs to be shared (e.g. in relation to availability of energy supply or reliance on local source materials) where resources may be affected by labour disputes, embargos or other political risks. These may be treated as relief, force majeure, compensation or MAGA events. *See also Force majeure risk and MAGA risk.*	Certain markets are generally more susceptible to market volatility and major cost variations. Mature markets generally do not experience market volatility to the extent of less mature markets, and resource availability is less of a concern. However, energy costs may still vary significantly over the course of a project.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the road and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Health and safety compliance	[●]		●	The risk allocation for health and safety will, in part, depend upon operating responsibility for the asset. The Private Partner will typically bear this risk in respect of its operational responsibility, as well as in respect of maintenance/repair works and other health and safety aspects related to the services provided by the Private Partner during this phase. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority and/or a third party. To the extent that the Contracting Authority has operational control of the asset, the Contracting Authority would typically retain "day to day" operational health and safety responsibility.	In some jurisdictions with developed construction and working practices legislation, certain of the Private Partner's responsibilities will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations, for example, in relation to maintenance work being carried out in the operating phase. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability	[●]		●	The risk allocation for these liabilities will depend upon operating responsibility for the asset. Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to any building issues/defects and on-going maintenance/repair services and any other services/responsibilities of the Private Partner. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third party claims against it over this threshold. *See also Liability for death, personal injury, property damage and third party liability under Construction risk.*	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Maintenance standards			●	The Private Partner will bear the principal risk of meeting the appropriate standards regarding maintenance as set out in the performance specification, so that the system remains robust and is handed back in the expected condition on early termination or expiry of the agreement *(see also Condition at handback risk)*. This includes day-to-day routine maintenance as well as lifecycle maintenance and replacement of particular assets. Failure to maintain the assets in accordance with the performance specification will lead to payment deductions and, where significant, potentially breach. In practice, estimating life cycle works may be challenging. It requires experience and, to the extent available, the Contracting Authority may be able to provide data on life cycle cost. As the standard for PPP is often set at a much higher level than for existing (non-PPP) projects, such data is likely to require a multiplier. Life cycle funding/reserving mechanisms may mitigate life cycle risk but are also difficult to design adequately and Contracting Authorities should bear in mind that these can have an impact on risk allocation/value for money. The involvement of the Private Partner in the operation, maintenance and rehabilitation of the project, and the linking to payment entitlement, can provide several benefits. It should incentivize greater care and diligence by the Private Partner in both the construction and operating phase, and increase the useful	In mature markets, the Private Partner generally assumes the overall risk of periodic and preventative maintenance, emergency maintenance work, work stemming from design or construction errors, rehabilitation work, and in certain instances, work stemming from implementing technological or structural changes. *See also Disruptive technology risk.* Some projects in less mature markets have been procured on a design-build basis with a view to then passing over the assets to an operations concessionaire. In this case the Contracting Authority will need to ensure that it has sufficient warranties of the project components to allow the operator to manage the ongoing maintenance risk.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					life of the infrastructure. The Contracting Authority may establish a facilities management committee to oversee the Private Partner's performance of the maintenance and rehabilitation services, along with a formal mechanism to discuss and resolve performance related issues. Generally speaking, the Contracting Authority should avoid undue interference with the Private Partner's provision of maintenance and rehabilitation services so as not to dilute the risk transfer benefits.	
				●	**Demand-risk projects:** Where the Private Partner is taking on demand risk, it takes the primary risk that the road will be maintained to a sufficient level of quality and reliability to ensure that it can continue to attract business. However where the road constitutes an essential public service or is an effective monopoly operation over that route, it would be sensible for the Contracting Authority to include appropriate key performance indicators to monitor the service levels and take effective enforcement action (e.g. through penalties or reduced toll revenue entitlements). *See also Existing assets in the project and Existing (or other) assets interfacing with the project below and Higher demand than anticipated under Demand risk.*	
		●	[●]		**Traffic higher than forecast:** If traffic is much heavier than forecast and beyond the specification required by the Contracting Authority, it may need to agree a mechanism to pay compensation in respect of increased maintenance costs (noting that increased traffic will also typically increase revenue in a demand risk project). *See also Demand risk.*	
		[●] ●		●	**Existing assets in the project:** As regards existing roads and structures, such as bridges, the maintenance risk should be allocated to the Private Partner to the extent the condition of the existing assets is known and future maintenance work can be assessed properly by an experienced contractor. In some cases, particularly a toll road where the Private Partner bears demand risk, the Contracting Authority may need to retain the maintenance or latent defect risk of some existing assets (and fit for purpose standards may need to be appropriately adjusted). **Existing (or other) assets interfacing with the project:** Similarly, on a toll road project where the Private Partner bears demand risk, the Contracting Authority will bear risk if it is required to guarantee and proactively manage the maintenance of existing (or other) roads that integrate with the project as these will be key to providing access to the new toll road. *See also Access to the site and associated infrastructure under Land availability, access and site risk.* **Enforcement of regulatory regime:** Road maintenance obligations are closely linked to change of law risk and the regulatory framework. Maintenance costs, for example, will be affected by weight/charge limits for trucks, as well as other heavy impact aspects (use of winter chains, illegal waste disposal, etc.). If these restrictions are not complied with by road users or enforced, the maintenance costs will be higher. Changes to the regulatory framework or lack of enforcement should be a Contracting Authority responsibility (and may be treated as a compensation or MAGA event or change in law). *See also MAGA risk and Change in law risk.*	
	Interface				*See Access to the site and associated infrastructure under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk, Maintenance standards under Operating risk and Demand risk.*	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will usually be a shared risk, for example with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials and	Vandalism may be more of a risk where the political climate opposes the road (and/or the tolling of roads).

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					restrict access to certain areas etc. For example, the Private Partner may elect to use materials which can be more easily cleaned of graffiti, or have a security guard in place at certain tolling installations. Once the road is in operation, it is likely to be unreasonable for the Private Partner to be able to secure the entire site from vandalism. *See also Site security under Land availability, access and site risk and Social risk.*	
DEMAND RISK *The risk of traffic levels being different to forecast levels; the consequences for revenue and costs; and government support measures.*	**General principles**				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. 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 over 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.* 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. Where the Private Partner is relying on demand revenues for the project to be financially viable, this will be a key risk.	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 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. 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 removes additional potential revenue streams from the Private Partner.
	Considerations				**Appropriateness of asset for transfer of demand risk (tolling):** The nature and quality of the asset is an important factor in the ability to transfer demand risk to the Private Partner. The potential for demand risk transfer will depend on a variety of factors, including the impact of other adjacent or connecting projects (such as port, airport, industry, etc.) likely to affect demand and pricing. Similarly, whole networks may present less traffic risk than individual roads and be more viable for demand risk being borne by the Private Partner (although they may involve more political risk in getting the deal done). Contracting Authorities should also consider the broader network of toll roads and particularly the aggregate cost of toll roads that drivers may incur in a single journey or in a standard work week, as the cost may be considered by users to be prohibitive either in absolute terms or relative to the convenience of using these roads. **Toll-free period:** Contracting Authorities should consider the value of a toll free period at the beginning of the operations period, for example, to encourage the use of the project by drivers so that they can	In Australia, longer toll roads connecting city centres to suburbs seem to have performed well compared with shorter city-based/tunnel toll roads. Toll-free periods have been tried in Australia, for example, and traffic figures proved to be significantly higher than in the tolled period. However, there is little evidence that the toll free period has led to any lasting change in driver behaviour - after the tolling period, traffic numbers fell dramatically, in many cases to approximately the long term

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		●			experience the time-saving or other convenience of using the toll road without being discouraged by the toll. **Toll / tariff fixing:** generally speaking the Private Partner will not be free to set toll levels beyond certain levels and will be bound by relevant regulatory and/or contractual restrictions. If the Contracting Authority or other government entity is required to take action to set tolls, a failure to do so in a reasonable manner should be treated as a compensation event or MAGA event if it has an adverse financial effect on the Private Partner. This could include failing to increase tolls or increasing tolls to a level which adversely affects user demand.	demand levels for the toll road.
	Higher demand than anticipated		[●]	●	The Private Partner in principle bears the upside of demand fluctuations where demand risk is allocated to it. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control than the Private Partner's. Higher demand should increase revenues, but in practice there are some issues to consider. First, the increased traffic is likely also to impact costs as greater maintenance spend than anticipated will be required to keep the road in good condition and maintain user levels. The output specification in the contract will have anticipated a certain level of traffic and if the road is bearing more traffic then there may be some significant lifecycle issues to consider which may outweigh the additional revenue which the Private Partner is receiving. A failure to address upgraded maintenance needs could result in the road becoming unusable before the expiry of its term. Second, if actual demand is higher than forecast, there may be public perception issues if the Private Partner is thought to be making a higher profit than originally anticipated (even if in reality it is facing higher maintenance costs as described above). If the toll road faced public opposition originally then this perception is likely to be exacerbated. This could cause problems for the Private Partner if users start to boycott the road or launch protests, as well as be politically uncomfortable for the Contracting Authority. In order to manage these issues, the parties may want to ensure the contract addresses such possibilities. For example, there may need to be a mechanic to update the output specification so that maintenance is adequately funded if revenue/use is above a certain level. Equally, there may need to be a mechanism for sharing the profit above a certain level (having taken into account increased costs), either through payment to the Contracting Authority or by reduction in user tolls. This might be particularly appropriate where the Contracting Authority has provided some form of subsidy or revenue support or if the reason for the higher demand is due to a Contracting Authority action which was not anticipated at the time of bidding.	Public perception issues have been a feature of some road projects in South Korea.
	Lower demand than anticipated	[●]	[●]	●	Although the Private Partner in principle bears the downside of demand fluctuations where demand risk is allocated to it, in practice the situation is likely to be qualified. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control. **Private Partner risk:** The Contracting Authority should be mindful that the competitive bidding process may encourage bidders to be aggressive with their traffic and revenue forecasting. Over-optimistic forecasting can create financial problems for the Private Partner, and may lead to project failure. The Contracting Authority can mitigate the risk by commissioning its own demand analysis to assist it in evaluating bids and their underlying forecasts. Other Private Partner risks include where it sets a toll which is too high (to the extent it is permitted to set the toll) or fails to maintain the road and such actions adversely affects traffic. **Contracting Authority risk:** Some factors affecting demand are not within the Private Partner's control and the risk of such factors may instead lie more appropriately with the Contracting Authority. For example, in most cases, demand risk is unlikely to be accepted by the Private Partner in the absence of a regime that protects the Private Partner from "material adverse changes" which would impact user and revenue levels and which are outside its control. Such changes (and any materiality threshold) should be	Some earlier projects placed demand risk on the Private Partner but in many mature markets (Europe and Australia) traffic forecasts fell short of expectation and there were some Private Partner insolvencies.

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					clearly defined and might include the construction of new competing roads or other transport options, changes to surrounding traffic and road conditions, or demographic/macroeconomic changes. The Private Partner may also seek to impose obligations on the Contracting Authority to implement works to link to connecting infrastructure or put in place traffic support measures (such as road closures) designed to make the toll road more attractive to drivers, or to not undertake activities that might derogate from the profitability of the road. Whilst the Private Partner may feel justified in requiring these measures in support of its estimated traffic forecasts, some of these steps may prove politically unpopular and will need to be carefully considered by the Contracting Authority. The parameters of such protection will need to be carefully negotiated to ensure the Contracting Authority and other relevant government bodies retain sufficient flexibility to implement other necessary urban development over the term of the project. Failure by the Contracting Authority to comply with any contractual obligations or measures would typically be treated as a compensation event or MAGA event. *See also Maintenance standards under Operating risk and MAGA risk.*	
	Government support measures		[●]		Projects where the Private Partner accepts demand risk are often underpinned by some form of government support in order for them to bankable. The effect of these measures is that the Contracting Authority shares demand risk. **Subsidies:** Support may be in the form of an upfront subsidy towards capital expenditure (i.e. construction costs) where toll revenue is forecast to be insufficient for the Private Partner to meet its debt service and other financial needs. **Minimum traffic/revenue guarantees:** An alternative to upfront subsidies is for the Contracting Authority to guarantee a minimum level of revenue for the Private Partner. The contract will provide that if traffic/revenue falls below a specific level, the Contracting Authority will pay the Private Partner an amount to ensure it receives a minimum revenue. The threshold for the guarantee should be set at a level which incentivizes the Private Partner and other stakeholders (e.g. other public sector entities) to increase user demand and the contract should still require appropriate levels of maintenance. This is to ensure that the Private Partner is not incentivised to rely solely on the guarantee and to discourage users and reduce maintenance costs. **Other support:** The Contracting Authority may also share demand risk by setting upper and lower revenue limits within which the Private Partner bears full demand risk and outside of which the Contracting Authority bears or shares the risk.	This type of support may be seen across all markets. Substantial upfront public subsidy has been seen in France, for example, and minimum revenue guarantees are often a feature of toll road projects in less developed markets (such as in Africa). Avoiding Private Partner reliance on minimum traffic/revenue guarantees is a specific perceived challenge in many projects. These guarantees can also create challenges and excess liabilities for the government where the level of the guarantee is so high that demand risk is essentially retained by the government. Many projects, most notably in South America, transfer demand risk but have cap and collar revenue arrangements. This results in a hybrid position where demand risk is fully transferred to the Private Partner within a certain revenue range, but outside of this the Contracting Authority retains full demand risk.
FINANCIAL MARKETS RISK *The risk of inflation; exchange*	**Inflation**	[●]		●	**Construction phase:** The risk of construction costs increasing due to inflation is typically borne by the Private Partner who will generally price in this risk in markets where such risk can be projected and quantified. Where this is not possible the Contracting Authority is likely to be asked to bear some risk.	The fluctuation of inflationary costs is a greater risk in less mature markets than it is in other markets and the Private Partner's expectation will be that this risk is borne and

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rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●			**Operation phase:** Inflation risk in the operating phase is typically borne by the project user (on demand-risk projects) or the Contracting Authority (on availability-based projects). The Private Partner will look to be kept neutral in respect of both international and local inflationary costs through an appropriate inflation uplift or toll adjustment regime. There is always a time lag in how quickly the indexation price increase is available to the Private Partner. On availability-based projects, this is achieved by the availability payment typically including both a fixed component (where debt has been hedged) and a variable component which includes an escalation factor that accounts for rises in costs. On demand risk projects, the ability to increase tolls may often be restricted (as toll-raising is likely to be a sensitive political issue). The Contracting Authority may need to provide a subsidy to the Private Partner if users cannot bear the cost increase.	managed by the Contracting Authority during the contract term. The variable component of the availability payment is typically defined by the consumer price index in mature markets. In other markets, the selected indexation method will need to reflect variable financing costs and variable inputs such as staff and materials. It will be more crucial in less mature markets to find appropriate indicators which mirror the project needs rather than a general consumer price index.
	Exchange rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority may expect the Private Partner to bear the risk of an exchange rate fluctuation for a specific time period (e.g. 90 days) between submission of bid and financial close. Where there is a prolonged period between bid submission and financial close, the Contracting Authority may need to bear the risk. Where exchange rates are volatile or long term currency swap markets are illiquid, the Private Partner may have limited ability to accept the risk of exchange rate fluctuation and will seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as USD.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of a change in exchange rate. Exchange rate risk can be substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets.
		[●]	[●]	●	**Rate changes during project:** Allocation of exchange rate fluctuation risk over the life of a project will depend on the relevant project jurisdiction and the nature of the project costs. In most PPPs, the Private Partner will bid and be paid (whether by the Contracting Authority or through user tolls) in the domestic currency of that country. It may, however, incur costs in a foreign currency and such costs are translated into the bid price in the domestic currency on the basis of a particular exchange rate. In some PPPs, the Private Partner (and its lenders) may seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as USD. **Construction phase:** Exchange rate risk can arise where some or all of the construction costs are denominated in a currency different to the domestic currency. For example, where construction of the asset requires equipment that is manufactured overseas, adverse exchange rate movement may result in such equipment becoming more expensive than anticipated when converting domestic currency. This may use up the contingency the Private Partner has provided for in its financial arrangements (and priced into its bid) and/or require the Private Partner to take on additional borrowing in the construction phase to finance these costs. **Operating phase:** As with construction costs, a similar risk may arise if the Private Partner incurs operating costs in a currency different to the currency of the PPP contract payments. In addition, exchange rate risk can arise if the debt used to finance construction is denominated in a currency different to the domestic currency of the price paid under the PPP contract. Adverse exchange rate movements during the operating phase where the debt is being repaid will result in debt repayment in the foreign currency requiring a larger proportion of the Private Partner's revenue. This may result in the Private Partner having insufficient funds to service its debt and/or may eat into its projected equity return. **Mitigation:** The Private Partner typically looks to mitigate exchange risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the costs the Private Partner incurs are effectively fixed instead of fluctuating, and protects it against adverse rate movements.	Exchange rate risks are more substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets). In more mature markets, the risk of currency fluctuations is typically not substantial enough to require the Contracting Authority to provide support and exchange rates risks are addressed solely through the Private Partner's own hedging arrangements. Where the exchange rates are more volatile, access to long term hedging may be either unavailable or too expensive. The likelihood of debt being dominated in a foreign currency is more likely in markets where financing by multilateral or international banks may be required (e.g. in less mature markets where there is limited depth in the local debt capital markets). *See also Strength of Contracting Authority payment covenant under Early Termination risk.* Some cost risk can be managed on demand risk projects by

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					The cost of such hedging will be part of the contract price bid. Devaluation of a local currency beyond a certain threshold may also trigger a non-default termination, or a "cap and collar" subsidy arrangement from the Contracting Authority.	passing the risk through to the user by way of toll adjustments, but the ability to do this may be limited.
	Interest rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority normally expects the Private Partner to bear the risk of a change in the reference interest rate between submission of bid and financial close for a specific time period (e.g. 90 days). Any rate changes after this time period will be a Contracting Authority risk.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of an adverse change in interest rate.
				●	**Rate changes during project:** The Private Partner will typically bear the risk of interest rate fluctuations over the life of the project but this will depend on the specific project and its jurisdiction. The Private Partner will seek to mitigate this risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the interest rate the Private Partner is required to pay is effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid.	In mature markets, the risk of interest rate fluctuations is not substantial enough to require the Contracting Authority to provide support and is typically addressed solely through the Private Partner's own hedging arrangements. In other (less stable) markets this may not be possible due to interest rate volatility or lack of long term hedging availability and in some circumstances it may be more appropriate for the Contracting Authority to retain interest rate risk if it can bear the risk more efficiently than the private sector.
	Unavailability of insurance		●		The responsibility for placing required insurances and the cost of doing so is typically borne by the Private Partner. However, PPP contracts typically also include provisions to address the risk of insurance becoming unavailable or only available at a cost which exceeds a level at which the Private Partner is able to price in reasonable contingency. This only applies if the uninsurability is due to factors unrelated to the Private Partner. Where neither party can better control the risk of insurance coverage becoming unavailable or more expensive, this is typically a shared risk. How this is addressed will depend on the specific project and jurisdiction. For the purposes of PPP projects, insurance is generally deemed unavailable to the extent (a) it is no longer available in the international insurance market from reputable insurers of good standing or (b) the premiums are prohibitively high (not just more expensive) such that contractors in the project jurisdiction are commonly not insuring such risk in the international market. As part of the feasibility study the Contracting Authority should consider what insurances are necessary and available at a reasonable premium and whether insurance might become unavailable (or too expensive) for the project given the location and other relevant factors. This is essential for assessing risk allocation for relevant events (e.g. force majeure risk allocation) and for the Private Partner to price its risks.	The standard approach as regards unavailability is common in mature markets. In some less mature markets, if insurance becomes unavailable, the Private Partner is typically relieved of its obligation to take out the required insurance but, unlike the mature market position, the Contracting Authority does not become insurer of last resort and the Private Partner bears the risk of the uninsured risk occurring. If the uninsured risk is fundamental to the project (e.g. physical damage cover for major project components) and the parties are unable to agree on suitable arrangements, then the Private Partner may need an exit route (e.g. the ability to terminate the project on the same terms as if the unavailability of the insurance were an event of force majeure). In negotiating an insurer of last resort position, the Private Partner and, in particular, its lenders, will carefully assess the Contracting Authority's credit and its ability to meet liabilities if an uninsurable event occurs. This is a reason why this position may be more likely in economically stable markets. In less stable markets the parties may negotiate more over whether a particular insurance should be an obligation in the first place and how the risk (and its occurrence) might be managed (e.g. through the force majeure provisions).
			●		**More costly premium:** Where the cost of the required insurance increases significantly (without becoming prohibitive), the risk is typically shared by the parties by either having an agreed cost escalation mechanism up to a ceiling or a percentage sharing arrangement. This allows the Contracting Authority to quantify the contingency that has been priced for this risk.	
			●		**Unavailability:** A standard approach in mature markets to manage unavailability of insurance is that where required insurances become unavailable, the contract typically requires the parties to try to agree a solution to manage the uninsurable risk and the Private Partner is relieved from breach of its obligation to take out the required insurance to the extent the unavailability is not due to its actions. If a solution is	

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					not agreed, the Contracting Authority is typically given the option to either terminate the project or to proceed with the project as "insurer of last resort" (i.e. to effectively self-insure and/or put in place its own insurance cover and pay out in the event the risk eventuates). If the Contracting Authority chooses to assume responsibility for the uninsurable risk, it may require the Private Partner to regularly approach the insurance market to try to obtain the relevant insurance and the contract price should be adjusted to reflect that the Private Partner is no longer paying the corresponding insurance premium.	In less mature markets, wider reference criteria may be needed in defining unavailability (e.g. to address a situation where the pool of benchmark contractors is insufficient to draw a meaningful comparison). Projects in some locations may find it more difficult to get insurance for certain events under commercially viable conditions. In this case the parties will need to find a solution to unavailability at the start of the contract.
			●		**Occurrence of uninsurable event:** With the mature market standard approach, if an uninsurable event occurs, the Contracting Authority may (a) terminate the contract (typically on a force majeure basis plus corresponding third party liability payments) or (b) pay the Private Partner the equivalent of insurance proceeds and continue the project. The approach to termination compensation reflects the general acceptance that uninsurability is neither party's fault and should be a shared risk.	
		[●]		[●]	**Unavailability due to fault:** Risk allocation will be affected by the reason for unavailability. As highlighted above, the provisions should only apply to the extent the Private Partner is not responsible for the insurance unavailability. Equally, if the unavailability is caused by the Contracting Authority's actions, the Private Partner may want to negotiate a right to terminate if a fundamental risk becomes uninsurable.	
	Refinancing			●	There are two key risks associated with refinancing (the changing or replacing of the existing terms on which the Private Partner's debt obligations have been incurred): (i) the risk that a project will be unable to raise the required capital to refinance a project at a given point in time; and (ii) the risk that a refinancing of debt will create additional project risks (e.g in terms of potential increased liabilities for the Contracting Authority and increased financial instability of the Private Partner). The risk of failing to raise required capital will arise in projects where the Private Partner (a) needs to seek a rescue refinancing to reschedule its borrowings if it is struggling financially, or (b) needs to replace short term (mini perm) financing which may have been the only financing option available to (or desirable for) the project initially. This is typically a Private Partner risk. Mitigation measures can include, in the case of mini perm financing, raising debt capital that has a repayment schedule that is matched to the PPP contract and project revenues available over the period of the PPP contract or by structuring the debt in several tranches of different tenors so that refinancing risks are smaller but arise more frequently. Refinancings may also occur where the Private Partner wants to take advantage of better financing terms available in the market (e.g. where the market recovers after a global financial crisis or after construction completion when the project is perceived to be less risky by funders).	Refinancing risks will ultimately depend on the depth and liquidity of the relevant capital markets. In more developed capital markets, the risk of failing to raise required capital is unlikely to be a significant risk as long-term finance is available from the outset. Mini perm financing is more common in countries where the capital markets are less developed and there is a lack of a market for long term debt instruments. However, banks globally already face greater regulatory pressure which affects the loan tenor they can offer, and it is likely they will face increasing restrictions even in developed markets which may lead to shorter initial debt tenors and increased refinancing needs.
			●		The risk of a refinancing creating additional project risks will be a risk for both the Private Partner and the Contracting Authority. The Contracting Authority needs to ensure that a refinancing does not adversely affect it (e.g. by increasing the level of its potential liability for termination compensation above what would have been the case under the original financing documents/financial model or increasing the risk of such liability falling due if the financial stability of the Private Partner is affected). To mitigate this risk, the contract should specify that the Contracting Authority's consent is required in specified carefully drafted circumstances. Where the result of a refinancing is that the Private Partner's debt costs are reduced, resulting in greater profit and in turn a higher equity return (typically known as "refinancing gain"), it may be appropriate for the gain to be shared between the parties (e.g. to the extent it increases the original forecast equity return in the financial model). The Contracting Authority may expect to share a percentage of the refinancing gain (e.g. 50%) and this is particularly important given the use of public funds (or user tolls) to pay for the PPP project. To ensure it does not miss out on an anticipated share of any refinancing gain, the Contracting Authority should ensure that all relevant definitions are carefully drafted. The way the	It has become increasingly acknowledged in mature PPP markets that it would not be fair for the Private Partner to enjoy the entire benefit of a refinancing gain where it is not entirely responsible for the availability of improved financing terms (e.g. where the market recovers after a global financial crisis). In emerging markets, particularly for demand risk projects,

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					Contracting Authority receives its share of the gain will depend on the nature of the refinancing and discussions at the time. Options include: (a) a lump sum upon the refinancing to the extent the Private Partner receives such amounts at the time of the refinancing; (b) a lump sum or periodic sums at the time of receipt of the relevant payments, or the receipt of the projected benefit (in the case of a "user pays" toll model); (c) a reduced availability payment (in the case of the "government pays" model); (d) reduced user tolls (in the case of a toll road project); or (e) by a combination of the above (in accordance with the applicable payment model). For a more detailed analysis of typical refinancing provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	there may be limited scope for the Contracting Authority to negotiate refinancing gain sharing if such gain is a key incentive for potential bidders. Refinancing provisions may not be included. This is more likely in untested "riskier" markets where the prospect of refinancing gain is a key driver to bidders' participation (as has been the case, for example, in the Philippines). As with more mature markets, the potential for sharing refinancing gain should increase as the PPP market becomes more established and perceived risks decrease.
STRATEGIC/ PARTNERING RISK *The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.*	**Private Partner failure/insolvency**			●	The Private Partner essentially bears the risk of failing to have the requisite technical or financial capability to deliver the project in accordance with the contract. However, as the consequences of such failures can lead to interruption in service and inconvenience to the Contracting Authority and users, as well as potential termination liabilities for the Contracting Authority, the Contracting Authority must carry out a thorough evaluation of each bidder to ensure that it selects the right partner to deliver the project, with whom it can develop the necessary long term partnership and meet any aspirations it may have as regards community engagement and local employment and skills development. *See also Risk Allocation in PPP contracts in the introduction.*	
	Sub-Contractor failure/insolvency			●	The Private Partner is responsible for its sub-contractors and bears any associated risks, unless the Contracting Authority imposes mandatory sub-contractors, in which case it may need to bear, or share, certain sub-contractor-related risks. However, the sub-contractors should form part of the Contracting Authority's evaluation of each bid for the reasons highlighted in relation to the Private Partner.	
	Change in Private Partner ownership			●	Complying with any contractual restrictions on change in ownership will be a Private Partner risk. The Contracting Authority wants to ensure that the Private Partner to whom the project is awarded remains involved and that any restrictions on, for example, foreign ownership of critical infrastructure are not circumvented. As the project is awarded on the basis of the Private Partner's technical expertise and financial resources, it will also want to ensure key parties such as parent company sponsors (and sub-contractors) remain involved. The Contracting Authority will typically prohibit any change in the Private Partner's shareholding for a period (e.g. by a lock-in for the construction period or until a couple of years into the operating phase) and thereafter may impose a regime restricting change in control without consent or where pre-agreed criteria cannot be met. The Contracting Authority's desire for certainty of involvement of key participants will need to be balanced with the private sector's requirements for flexibility in future business plans. This is particularly in respect of the equity investor markets and the added benefits of allowing capital to be 'recycled' for future projects.	In less mature markets, there is typically more restriction on the Private Partner's ability to restructure or change ownership. Overly restrictive provisions may deter investment, so this needs to be assessed in terms of the benefits to the Contracting Authority of both ensuring sufficient competition in the bid phase, and enabling parties to recycle their investment into other projects in the jurisdiction. Once the project is operational, for example, it may be reasonable for financial investors seeking regular returns to invest in place of certain of the initial (e.g. construction party) sponsors.
	Permitted Contracting Authority step-in			●	The risk associated with Contracting Authority step-in depends on the grounds for stepping in and whether due to the Private Partner's fault or not. Step-in circumstances include emergencies involving the emergency services, intervention to protect against social and environmental risks and fulfilling a legal duty to provide essential services of continuity of service. The scope and terms of the Contracting Authority step in is a key bankability point due to the potential impact on the parties' liability. **Private Partner fault:** If step in is due to Private Partner fault or an event it is responsible for, the Private Partner essentially bears the risk of costs incurred by the Contracting Authority (and itself). In some jurisdictions this liability may be capped. The Private Partner is usually given relief from performance of its affected obligations and may receive some payment in respect of its obligations.	In some jurisdictions (e.g. France), step-in is only contemplated in a breach situation and the Private Partner typically bears all cost up to a certain percentage (e.g. 15%) of project costs. A termination right may arise if the situation subsists for a certain period (e.g. 6 – 12 months). In some jurisdictions, the Private Partner may receive full payment as if it was performing the service in full or partial payment to reflect the affected obligations. In each case this will be subject to deductions and could result in zero

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		●			**No Private Partner fault:** In this situation, the Contracting Authority bears the risk and will be responsible for its own costs. The Private Partner will be given relief from performance of its affected obligations and be entitled to extensions of time and relief on the basis of a compensation event (except to the extent the cause falls under another provision (such as force majeure) in which case that provision will apply). It will be entitled to full payment subject to certain deductions and may also require a cost indemnity from the Contracting Authority. In each case, risk should be allocated in respect of later issues around interface between solutions implemented during step in and the Private Partner's planned delivery solution, as well as any other risks that are allocated to the Private Partner. For a more detailed analysis of typical Contracting Authority step-in provisions and sample drafting, see the World Bank’s *Guidance on PPP Contractual Provisions 2019 Edition*.	payment. In some jurisdictions (e.g. in some EU countries and Australia), the Contracting Authority may not accept any liability when stepping in due to a Private Partner breach or event which is the responsibility of the Private Partner, except in the case of gross negligence in an emergency step in, fraud or bad faith. The scope and terms of step-in will be particularly relevant for Private Partners in jurisdictions which are less predictable or have underdeveloped or less stable legal or regulatory frameworks as the Private Partner will be concerned to limit the Contracting Authority's potential effect on the delivery of the PPP project. It may only want to agree to such rights in projects in sectors and jurisdictions where the Contracting Authority is committed to ensuring continuous delivery of the essential public service and has demonstrable experience in such delivery
	Change in Contracting Authority ownership/status	●			The Contracting Authority should bear the risk of any change to its ownership/status which adversely affects the project, for example, where its financial covenant and credit are adversely impacted. The Private Partner will typically have a right to terminate if certain criteria are not met and be entitled to compensation.	In stable markets, this risk may not be specifically addressed in the contract if satisfactory statutory or constitutional protections are available to the Private Partner. In less stable and untested markets, more specific provisions may be required, particularly where the Contracting Authority is not a central government entity.
	Disputes		●		**Private Partner/Contracting Authority disputes:** The risk of disputes is a shared risk and the consequences will depend on the outcome of the dispute. To minimise the risk of uncertain and costly outcomes, the contract should expressly include a clear governing law (typically the domestic law of the Contracting Authority’s jurisdiction) and choice of dispute resolution forum (courts or arbitration). Efficient and fair dispute resolution processes should be included which provide for an escalated procedure where matters cannot be resolved between the parties’ senior management, resolution of technical disputes by an independent expert, and recourse to the chosen forum. If the contract does not contain appropriate procedures this is likely to deter potential bidders and their lenders as efficient dispute resolution is a key bankability issue. A failure by the Contracting Authority to follow contractually agreed processes may also have an adverse effect on private sector interest in other PPP projects in that jurisdiction. There may be investment treaties applicable to the PPP arrangements with foreign parties, but these are no substitute for proper dispute resolution provisions in the contract itself. The Contracting Authority may be expected to waive any privileges and sovereign immunities which it enjoys before local and foreign courts (such as immunity from any suits by the Private Partner). Transparency and public access to information about disputes may be an important factor in choice of forum. In some jurisdictions the legal process is public which contrasts with arbitration which is generally a confidential and private process. Where additional agreements govern the relationship between the parties themselves, consolidation of related disputes and the joinder of related parties may be appropriate. To reduce the risk of concurrent processes, the agreements should include similar dispute resolution clauses agreeing to this. The Private Partner should be obliged to continue with performance of the contract while the dispute is resolved and, if so, will bear the risk of failing to do so.	Contracting Authorities will typically select domestic law and local courts as the forum for disputes. This is for a variety of reasons including familiarity and compatibility with any concession/PPP legislation. It also minimizes the risk that local users and other stakeholders will bring claims in a different court. In jurisdictions with a less established and experienced legal system, the Private Partner is likely to want an established dispute resolution forum (such as a recognised arbitration centre for the particular region), rather than to rely on local courts. There may be circumstances where this option needs to be considered by the Contracting Authority as a necessary compromise in order to ensure the project is bankable. For the same reason, there may be certain cases where the Contracting Authority will consider having a foreign law as the governing law of the contract. Choice of forum may be restricted in some jurisdictions due to local law requirements (e.g. prohibiting referral of disputes to a foreign court or international arbitration, or being subject to a "foreign" law). This is particularly common in certain civil law countries where solely specific administrative courts are able to judge public authority decisions and/or contracts. Additionally, there may be local law limitations (under constitutional arrangements, public

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					For a more detailed analysis of typical governing law and dispute resolution provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	policy or otherwise) on contractually agreeing to waive sovereign immunity. There may also be reputational and political issues if a Contracting Authority is seen to exempt public sector projects from the jurisdiction of domestic courts.
				●	**Sub-contractor disputes:** The Private Partner is responsible for disputes with its sub-contractors. The Contracting Authority should avoid the risk of getting involved in expensive and time-consuming peripheral disputes with other parties. However, it may want to consider allowing certain disputes it has with the Private Partner to be joined with disputes on the same matter between the Private Partner and its sub-contractor where the forum for resolving the dispute is appropriate. Any assessment of the need for joinder provisions is likely to be fact-dependent.	
DISRUPTIVE TECHNOLOGY RISK *The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.*		●	●	●	Responsibility for disruptive technology risk depends on the project circumstances. The Private Partner's obligation is to meet the output specification. If it fails to do so due to obsolescence of equipment or materials it is likely to suffer payment deductions and, above a particular threshold, may be at risk of termination. In this case it bears the risk of potentially having to replace relevant technological solutions (e.g. if the solution it has chosen is no longer supported). However, if it is performing above that threshold, the Contracting Authority cannot require it to replace technology simply because more efficient technological solutions are available unless there is an agreed contractual mechanism for doing so. To address this, the Contracting Authority may consider imposing contractual obligations on the Private Partner to adopt and/or integrate with new technologies or to allow for other foreseeable developments, such as a projected uptake in electric vehicles or driverless cars. In the case of electric vehicles, for example, the Contracting Authority may want to ensure the output specification takes into account both current and projected need for electricity charging points at relevant locations along the corridor and requires the Private Partner to build in capacity to its design to enable the future development/addition of charging points and connections to local electricity grids. The Contracting Authority should also assess the capacity of local grids to cope with projected increased demand. It may be appropriate additionally to agree a specific cost sharing mechanic under which the Contracting Authority can request technological upgrades with appropriate cost sharing according to the reason for the request (e.g. if the replacement solution will improve health and safety or have social/environmental benefits). The same considerations apply if the Private Partner wants to make a technological change which is not strictly necessary and it may be appropriate for the Contracting Authority to consider incentivising the Private Partner to propose changes which will be of public or environmental benefit. The Private Partner will seek to mitigate its potential exposure through clear contractual cost and improvement parameters, beyond which any changes will be treated as a Contracting Authority variation of the PPP contract and entitle the Private Partner to relief in accordance with the contractual variation mechanic. *See also Variations risk.* It is important to take into account that some disruptive technologies may have both upside and downside effects on a project, as well as efficiency or social and environmental benefits. It may therefore be appropriate to consider mitigating mechanisms in any contractual solution. For example, increased use of driverless cars or ride-share services may have social and environmental benefits but may reduce toll revenues and result in less throughput and revenues at roadside services. In many jurisdictions changes can be made only in accordance with pre-agreed contractual mechanisms, to avoid third party challenges on the basis that the amendments are so substantial that the existing contract should be retendered.	Disruptive technology risk is becoming under increasing focus in all markets. This is particularly the case in relation to technological changes relating to environmental protection and this area may require its own treatment in the contract (e.g. through specific treatment under the contractual variations mechanism and/or through other specific contractual obligations).

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
FORCE MAJEURE RISK *The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.*	**Force majeure events**		●		Force majeure is typically treated as a shared risk where neither party is better placed than the other to manage the risk or its consequences. **Scope:** Force majeure is an event (or combination of events) outside the reasonable control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law jurisdictions – the definition may require the event to be unforeseeable or not reasonably avoidable. Many jurisdictions have a concept of force majeure under general law and, particularly in civil law jurisdictions, this can limit the freedom of the parties to derogate from the scope of the legal concept and agree something different in the contract. However, most PPP contracts include specific force majeure provisions, whether they are civil law or common law governed, as this provides contractual certainty. The contract should be clear to what extent underlying law applies. **Approach:** Depending on the jurisdiction, the definition of force majeure may be an open-ended catch-all definition, an exhaustive list of specific events, or a combination of both. The open-ended catch-all definition is often seen in civil law-governed contracts and may also be more appropriate in markets which are less developed or stable and where there is little precedent or certainty. A non–exhaustive list of events may also be included. Qualifying events may be “natural force majeure” events (such as natural disasters and severe weather events, and possibly climate change events) and certain “political force majeure” events (such as strikes, war, government action etc). The exhaustive limited list approach is more common in developed and stable markets where the Private Partner has more certainty as regards the risk of events occurring and how it can manage them. It may be comfortable that events which might be force majeure in a less mature market (e.g. some types of industrial action) may instead be treated as relief events in a developed and predictable market. Under this approach, force majeure events are typically (but not necessarily exclusively) events which are uninsurable. Typical events include (i) war, armed conflict, terrorism or acts of foreign enemies; (ii) nuclear or radioactive contamination; (iii) chemical or biological contamination; and (iv) discovery of any species-at-risk, fossils, or historic or archaeological artefacts. As market practice develops, certain climate change events might also be included. *See also Site Condition under Land availability, access and site risk and Climate Change event under Environmental risk.* For a more detailed analysis of typical force majeure provisions and sample drafting, see the World Bank’s *Guidance on PPP Contractual Provisions 2019 Edition*. **Risk qualification:** The Contracting Authority should consider whether it can limit its risk by carefully defining the events which qualify as force majeure, and/or qualifying or excluding them as appropriate. For example, in some projects earthquakes may only qualify as force majeure if they are above a specified seismic intensity. Alternatively, an event may only qualify if it has subsisted for a particular length of time. In some projects, risk is allocated to the Private Partner and/or shared for the first few months, and subsequently becomes a shared risk or Contracting Authority risk (with entitlement to terminate if the force majeure event continues for more than a defined time period (e.g. 6 – 12 months)). Using an open-ended definition of force majeure widens the risk shared by the Contracting Authority, but may be appropriate in some markets. The availability of insurance for certain events will be one of the main criteria in determining the extent to whichan event should qualify as force majeure and/or how the consequences should be addressed. Certain risks may be more likely to constitute a force majeure event if they occur in one phase than another (e.g. events in the construction phase affecting materials supply).	The scope of force majeure will depend on the particular project and jurisdiction. In France, for example, the affected party is relieved from its obligations if force majeure prevents performance and French jurisprudence has defined the characteristics of a force majeure event as (i) beyond the control of the parties, (ii) unforeseeable and (iii) impossible to overcome. In less mature markets, the list of specific events is likely to be wider than in more mature markets and include natural risk events, which typically can be insured (e.g. fire / flooding / storm etc), and force majeure events which typically cannot be insured (e.g. strikes / protest, terror threats / hoaxes, emergency services action etc). The extent to which the risk will be shared or allocated to one of the parties will depend on its nature and on the particular jurisdiction.
		●			**Contracting Authority political risk:** In some markets, certain political risk events may need to be allocated in full to the Contracting Authority because the Private Partner cannot reasonably be expected to bear any of the risk and/or because the Private Partner may price in such a high contingency in respect	In certain markets, it may be necessary to differentiate how similar types of risk events are treated, depending on where they occur. For example, in more politically volatile

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					of the risk that it makes the contract unaffordable. Where the Contracting Authority bears the full risk of these risks, this may be addressed under the force majeure provisions but with "political force majeure" receiving different treatment to the shared risk force majeure events. Alternatively, these political risks may be treated in a separate provision under the heading of "material adverse government action" or similar (which may also include other forms of event for which the Contracting Authority is deemed solely responsible). *See also MAGA risk.*	jurisdictions, war events might be wholly a Contracting Authority risk where they occur within the country, but a shared risk otherwise. *See also MAGA risk.*
	Force majeure consequences		●		The basic principle of force majeure is that the risk is shared and each party bears its own losses. However, there may be circumstances where it is appropriate for the Contracting Authority to provide relief to the Private Partner, provided the Private Partner has made reasonable efforts to mitigate the force majeure effects and to the extent it was not responsible for the event. In addition to granting the Private Partner relief from breach of its affected obligations, certain time or cost relief may be granted (sometimes where a particular threshold of costs or time delay has been reached). This will depend on the phase in which the event occurs and should be considered at the time, together with the impact of the event on the Contracting Authority and the options available to it. Termination following prolonged force majeure (e.g. 6 – 12 months) may also be available. If the Private Partner has the ability to terminate the PPP contract on the basis of a prolonged force majeure event, the Contracting Authority may want to include an option to require the PPP contract to continue, provided that the Private Partner is adequately compensated. This approach is more likely to be encountered in a more established PPP market. **Construction phase:** The consequences for the Private Partner of a force majeure event in the construction phase are that it may be unable to meet all or part of its contractual obligations, in particular key dates (such as the operation commencement date); may suffer delayed and/or lost revenue; and may incur additional financing and other costs (e.g. in relation to mitigating the event), both during and after the force majeure event. As well as relief from breach of the affected obligations, the Contracting Authority may decide to grant certain cost relief (either while the force majeure event subsists or through the operating phase if the contract continues) on the basis that the Private Partner has limited means to absorb additional costs and it may be in both parties' interests to avoid the Private Partner going insolvent. For example, it may elect to make a compensation payment at the time or, if the contract continues, grant extensions of time and/or an extended operating period so that the Private Partner has the opportunity to recoup lost revenue and costs. Alternatively, availability payments could be increased or, in a toll road project (subject to law and social and political ramifications), an increase in road tolls permitted. **Operating phase:** The consequences for the Private Partner of a force majeure event in the operating phase are that it may be unable to meet all or part of its contractual obligations (including failing to deliver the service); may suffer delayed or lost revenue; may incur additional financing and other costs; and may possibly be unable to service its debt repayment obligations. Again, in addition to relief from breach of its affected obligations, the Private Partner may be granted grant certain cost relief on the same principles as described in the construction phase. In an availability payment model, it may also grant payment deductions relief or relaxed performance standards and in a demand-based model some element of fare subsidy. **Insurance:** Project insurance (physical damage and loss of revenue coverage) will be a key mitigant in respect of physical damage, to the extent it is available, and an important consideration in respect of compensation and how to continue the project. For example, if the road is destroyed prior to handover as a result of force majeure, the Private Partner will typically be obliged to re-build it at its own cost, to the extent the risk is insurable. Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common.	The approach to cost and deductions relief varies across jurisdictions. In developed markets (particularly some civil law jurisdictions) Contracting Authorities may be more willing to make compensation payments during a force majeure event. In some jurisdictions, the contract will expressly identify only specific force majeure risks for which the Contracting Authority will grant financial relief (e.g. raw materials price volatility). It may not be as common in less mature markets for cost compensation to be paid during force majeure unless caused by an event deemed to be a political risk for which the Contracting Authority is wholly responsible (e.g. a MAGA event). *See also MAGA risk.* Force majeure relief should be distinguished from relief available under any hardship doctrines *(see Glossary definition)* existing under the underlying law of the project jurisdiction.

RISK CATEGORY AND DESCRIPTION		**RISK ALLOCATION**			**RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)**	**MARKET COMPARISON SUMMARY**
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
MATERIAL ADVERSE GOVERNMENT ACTION RISK (MAGA) *The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.*		●			In projects where a MAGA provision is appropriate, the Contracting Authority bears the risk of specific "political" actions having a material adverse effect on the Private Partner's ability to perform its contractual obligations, or on its rights or financial status. The Contracting Authority is responsible for costs and delays and is typically at risk of termination for prolonged MAGA events. Although not all jurisdictions use the term "MAGA", many have equivalent provisions under different terminology. MAGA events typically include: deliberate acts of state such as outright nationalisation or expropriation in relation to the PPP project; a moratorium on international payments and foreign exchange restrictions; certain governmental acts (such as not granting essential approvals where the Private Partner is not at fault or, in a toll road project, building a competing road adjacent to the project road); and politically-inspired events such as national strikes. Change in law is also a form of MAGA. Although some of these events may not seem as obviously within the Contracting Authority's control itself as others (e.g. if they relate to other arms of government), market practice is that they are accepted by the Contracting Authority. This is because passing them to the Private Partner may result in it being unable to enter into the contract or pricing in such contingency that the contract is unaffordable. The list of events will depend on the individual project circumstances and the position agreed on force majeure events, and the Contracting Authority can limit its risk by qualifying relevant events by reference to a clearly defined materiality threshold. The process and consequences of MAGA are broadly similar to force majeure as regards the parties trying to find a solution and how the Private Partner may be compensated. The key difference is that the underlying principle behind MAGA relief is to put the Private Partner back into the position it would have been in had the MAGA event not occurred. The parties may terminate for prolonged MAGA, with compensation payable on a similar basis to Contracting Authority default termination. The Contracting Authority may be able to reduce its liability in some cases if it can negotiate different treatment for MAGA events which are not as clearly within its own control and influence. For a more detailed analysis of typical MAGA provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. *See also MAGA/Change in law termination under Early Termination risk.*	MAGA type clauses are more likely in less predictable and stable markets where the Private Partner (and its lenders) may require a clear regime to address specific government-related actions for which the Contracting Authority is responsible. This may be because of an actual or perceived likelihood of certain MAGA events occurring (e.g. war or civil unrest), or a lack of track record of PPP contracts being run successfully free from political interference over long periods of time and across political cycles. In mature politically stable markets, the Private Partner (and its lenders) are often comfortable that the type of MAGA risks likely to arise are limited. Instead of being detailed in a specific Contracting Authority risk clause, they can be addressed through the shared risk force majeure provisions and compensation event type provisions (and the general right to terminate for Contracting Authority default in limited circumstances). Investors and lenders may be able to obtain political risk insurance in respect of some of these types of risks. This is more common in politically young or unstable markets. Some jurisdictions are more politically volatile internally than others and certain political risks will be treated differently. For example, war events may be treated as MAGA if they occur within the country, and shared risk force majeure if outside it.
CHANGE IN LAW RISK *The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.*	**Compliance with applicable law**			●	Compliance with applicable law and mandatory regulation is each party's risk. The Private Partner is typically subject to an express contractual obligation and will be in breach if it does not comply with applicable law, subject to change in law relief. The contract must be clear what laws and other mandatory regulations and industry codes the Private Partner is obliged to comply with. This is essential not only so the Private Partner can price its compliance, but also in order to determine what constitutes a change in law so that change in law risk can be allocated effectively.	
		●		[●]	Compliance by third parties is likely to be a Contracting Authority risk where it has failed to enforce compliance and there is an adverse effect on the project (e.g. where load limits exceed permitted levels and increased maintenance costs are incurred). *See also Maintenance Standards under Operating risk.*	
		●				

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Change in law (and taxation)	●	[●]		The Contracting Authority primarily bears the risk of unexpected changes in law which were not in the public domain before a specified cut-off date in the bid phase and which cause the Private Partner's performance of its contractual obligations to be wholly or partly impossible, delayed or more expensive than anticipated (or impact its investors). This is because the Private Partner has contracted to provide the specific road project at a specified price based on a known legal environment and typically has limited means of offsetting adverse consequences of unexpected law changes. As change in law may also benefit the Private Partner, change in law clauses are often reciprocal, to ensure the Contracting Authority benefits from the "positive" financial consequences of a legislative change. The Contracting Authority's risk can be mitigated by ensuring that the contract clearly defines what constitutes a change, the relevant cut-off date and what constitutes being in the public domain. This will vary according to the nature of the project and jurisdiction concerned. There are various approaches to risk allocation as briefly summarised below and the degree of risk sharing will depend on the type of change and the approach suitable to the maturity and stability of the relevant legal market. Any risk that is transferred to the Private Partner is likely to be reflected by contingency pricing in its bid which may result in the Contracting Authority paying for something that never happens. The Contracting Authority should be mindful of how it will fund changes in law which are at its risk should they arise. For a more detailed analysis of typical change in law provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Change in law risk may be treated as a MAGA event if the treatment agreed for this form of political risk is the same as for other MAGA events. Generally speaking, where a detailed approach to risk allocation is involved and where the consequences do not lead to termination, change in law is best dealt with separately – this is more typical is established markets. *See also MAGA risk.* In defining a change it may be appropriate for the definition to include any modification in the interpretation or application of any applicable law. This is particularly likely in common law jurisdictions. As highlighted by the different approaches, in mature legally stable markets the Private Partner will likely have less protection than in jurisdictions where changes in law are less predictable and/or more likely due to underdeveloped or less stable legal or regulatory frameworks. Approach (a) is often seen in developing markets with less established legal environments as it may be the only way that private finance can be raised and should also enable the Private Partner to offer a more competitive price. Approach (b) has also been seen in more developed markets and some emerging markets. Approach (c) is seen in more experienced PPP markets. While it will involve some contingency pricing, this approach is considered generally more beneficial to the Contracting Authority, but may not be bankable in every jurisdiction and should be contemplated on a case-by-case basis. Even in markets using this approach there will be instances where this risk allocation is not fully achievable due to the nature of the PPP project and the extent to which the applicable legal and regulatory regime is settled. Past models (including in the UK) used to require the Private Partner to assume, and price for, a specified level of general change in law capex risk during the operational period, before compensation would be paid. The UK Government ultimately decided that this allocation did not represent value for money and reversed this position. Some countries which adopted the UK model had already taken this approach. Although a Contracting Authority may bear all change in law risk at the start of a PPP program, once a track record and/or legal environment is established in its jurisdiction which gives the private sector greater confidence in the stability and predictability of the regime, Contracting Authorities procuring new PPP projects may be able to
		●			**Approach (a) Contracting Authority risk:** The basic approach is that the Contracting Authority bears all the risk of change in law and provides full relief to the Private Partner.	
		●	●		**Approach (b) Limited risk sharing:** A more nuanced approach is for the Private Partner to accept a certain annual monetary threshold up to which it accepts any unexpected change in law risk and above that threshold the Contracting Authority bears the risk/cost. This enables the Private Partner to price the risk it bears.	
			●		**Approach (c) Advanced risk sharing:** With this approach the Private Partner is kept whole in respect of unexpected changes in law which are: (i) discriminatory (e.g. to the project or the Private Partner); or (ii) specific (e.g. to the roads sector or to investors in roads businesses); or (iii) require capital expenditure after construction completion (i.e. in the operating period). (Applicable law may protect the Private Partner from unexpected changes in the construction period if the relevant legal regime provides that changes in law affecting capital expenditure during construction do not apply retrospectively.) With this more detailed approach the Private Partner bears (some of) the general business risk that applies to all businesses (including operational expenditure or taxation affecting the market equally) and can absorb this in part through the indexation provisions typically contained in the pricing mechanism (or possibly through increased tolls in a toll road project).	
			●		**Bespoke mechanisms:** It may be appropriate to have bespoke mechanisms for certain changes in law, such as those relating to climate change and environmental protection – market practice is still developing in this regard. *See also Climate change event under Environmental risk.*	
		●			**Consequences:** The Private Partner should always be entitled to relief from breach of contract where a mandatory change in law occurs which conflicts with an existing obligation or would make compliance illegal (and/or impossible). The contract typically contains a mechanism by which the Contracting Authority is deemed to request a corresponding contractual variation of the relevant obligation. The nature of the cost relief given to the Private Partner will be as described for a compensation event.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Alternatively, the Private Partner may be entitled to a right to terminate (typically on a Contracting Authority default basis). In a toll road project, costs could be passed on to the users of the facility, but the Contracting Authority is likely to want to place contractual constraints on any price increases for public policy (and customer protection) reasons. Increasing the toll could also undermine users' desire for the service and result in lower PPP project revenues than forecast for the Private Partner.	explore some risk transfer to the Private Partner. A termination right as a consequence of change in law is not considered necessary in all jurisdictions. In civil law jurisdictions it is common for the Private Partner to have a specific right to terminate the contract where performance of the PPP contract would entail a breach of law that cannot be remedied by a Contracting Authority variation. This is not usually seen in common law jurisdictions with established legal frameworks as the Private Partner and its lenders are able to take a view that it is highly unlikely that a change in law would result in such drastic consequences without means of holding the government accountable. In civil law jurisdictions, Private Partners may sometimes rely on underlying legal principles such as hardship doctrines *(see Glossary definition)* for relief. However, widespread market practice across civil and common law jurisdictions has shown that the private sector is unwilling to enter into PPP contracts on such a basis as both lenders and sponsors require express contractual certainty in relation to the potentially significant impact of changes in law.
		●			**Stabilization provisions:** Some projects may also provide for a stabilization clause that entrenches certain legal positions (such as the current tax regime) against any future changes in law. This may require a level of parliamentary ratification of the project contract.The stabilization method is generally not favoured by governments or non-governmental organisations (e.g. because the concept of Private Partner immunity from changes in environmental protection laws is unsatisfactory) and the Contracting Authority should instead seek contractual mechanisms to address such matters.	
EARLY TERMINATION RISK *The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.*	**Contractual termination provisions**		●		The allocation of risk for early termination depends on the termination grounds and these also determine the financial consequences of termination. The key risks relating to the contract being terminated early are that the Private Partner is deprived of its expected revenue stream to repay the debt it incurred developing the project and the project asset or service ceases to be delivered for the Contracting Authority. The complexity and variety of termination circumstances result in parties in all jurisdictions almost always seeking to include clear contractual mechanisms in the PPP contract which set out comprehensively what circumstances may give rise to termination, who may terminate and what the consequences of termination will be for the Contracting Authority and the Private Partner, as well as for lenders or other key third parties. Without such certainty, bidders and potential lenders may be deterred from bidding. The Contracting Authority should not be "unjustly enriched" by receiving an asset for which it has not paid the expected contractual price. This is an underlying legal principle in most jurisdictions and should be taken into account in the drafting of applicable termination compensation provisions. The Contracting Authority, besides making a payment, will need to consider the other risks associated with termination, such as the reputational risks, continuity of service delivery, completion of the works or maintaining the asset itself, or re-tendering the project (or a mix). For a more detailed analysis of typical early termination and termination payment provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	The increasingly market standard approach in all jurisdictions is to include contractual termination provisions in the PPP contract. However, in some civil and common law jurisdictions there may be underlying laws addressing certain termination rights and their consequences which apply without the PPP contract having to include termination provisions. While relying on underlying law rather than express contractual provisions is an approach less likely to be seen in common law jurisdictions, there can be certain exceptions as described, for example, under *Contracting Authority default termination and Voluntary termination by Contracting Authority under Early termination risk.* Furthermore, if the transaction is financed in a shariah-compliant manner (such as through an ijara (lease) structure) consideration must be given to how ownership will be transferred following the termination. This is typically achieved through a Purchase Undertaking or Sale Undertaking of the underlying assets. In less developed PPP markets, it may not be easy to re-tender a project if there is no pool of alternative contractors to take on the project.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Contracting Authority default termination	●			**Termination right:** The Contracting Authority bears the risk of termination for breaches which have a material adverse effect on the Private Partner or the project (e.g. expropriation in relation to the PPP project and failure to pay). The test is typically that the default event has made it impossible for the Private Partner to perform the contract or rendered the continued relationship untenable and any materiality threshold should be clearly defined. *See also MAGA risk.* To mitigate the risk of termination, the Contracting Authority should ensure that grace periods are built in (e.g. for non-payment) so that it has the opportunity to rectify the default and reduce the risk of a termination right arising purely from, for example, administrative error. **Compensation:** Although the exact approach depends on the relevant jurisdiction, the underlying principle is that the Private Partner should be fully compensated by the Contracting Authority as if the PPP contract had run its full course. The Private Partner would typically receive an amount in respect of senior debt (including where applicable hedge break costs), junior debt, equity investment and a level of equity return which from the Contracting Authority's perspective should where possible reflect the actual performance level of the Private Partner. Redundancy and sub-contractor break costs will also be included. The Contracting Authority should mitigate the amount it pays out by setting off deductions available to the Private Partner in respect of, for example, insurance proceeds, bank accounts, hedge break entitlements and surplus maintenance funds.	There are some common law jurisdictions (e.g. Australia) where the Private Partner is expected to rely on its common law rights to terminate for Contracting Authority default instead of having an express contractual right. This may be because termination for Contracting Authority default is such a fundamental step with enormous business and other ramifications for the Private Partner that the focus is instead on the enforceability of the contractual payment and time/cost compensation provisions applicable to breaches by the Contracting Authority. Similarly, in civil law jurisdictions the PPP Contract may be silent, and the Private Partner may need to apply to an administrative court to request contract termination (as was the case in earlier PPP contracts in France). Relying on underlying law is likely to deter bidders in markets where there is insufficient legal precedent and certainty.
	MAGA / Change in law termination	●			**Termination right:** Some PPP contracts may contain specific MAGA provisions which entitle the parties to terminate the PPP contract if there is a protracted MAGA event. The type of political risk events addressed by a MAGA provision may include the type of Contracting Authority defaults outlined under *Contracting Authority default termination* and also change in law where there is no solution agreed to continue the contract. This could mean that a PPP contract (i) only has a MAGA provision, (ii) only has a Contracting Authority default provision, or (iii) has a combination of the two and/or separate provisions addressing specific political risk matters such as changes in law. *See also MAGA risk and Change in law risk.* **Compensation:** The same principles will apply as outlined for Contracting Authority default termination but some jurisdictions may only allow the Contracting Authority to terminate for protracted MAGA-style events by implementing a voluntary termination. The Contracting Authority may be able to negotiate a reduced termination payment in respect of "no fault" MAGA events. *See also MAGA risk and Voluntary termination by Contracting Authority under Early termination risk.*	Markets which are politically and legally stable are less likely to have separate MAGA termination provisions as the Private Partner and its lenders will be comfortable relying on a Contracting Authority default termination provision, combined with a shared risk force majeure provision and other contractual provisions (e.g. compensation events) which provide time and/or money relief to the Private Partner in relevant circumstances of Contracting Authority responsibility.
	Voluntary Termination by Contracting Authority (Also commonly referred to as termination for convenience, public policy or interest. termination at will or unilateral termination.)	●			**Termination right:** In return for having the right to terminate for convenience, the Contracting Authority bears the risk of this event. It should have fully considered and prepared for termination before deciding to exercise its right to terminate. The notice period should be the minimum sufficient for both parties to make appropriate arrangements in respect of the handback of the project and to facilitate compliance with handback obligations. **Compensation:** The Private Partner's prime concern will be to ensure it is fully compensated for such early termination and able to comply with its handback obligations. The termination payment will be based on the same principles as for Contracting Authority default.	In some jurisdictions (more typically civil law) the Contracting Authority may be entitled to terminate the PPP contract on the grounds of public interest even without an express contractual right. This inalienable right is rarely invoked but the private sector (Private Partner, sub-contractors and lenders) will still require the PPP contract to cater for this low probability but high risk event as comprehensively as possible. The Contracting Authority may be required to substantiate the validity of the public interest ground (for instance, termination may not be permitted purely on financial grounds). In some jurisdictions (e.g. France) it is not possible to contractually waive the right to unilaterally terminate in the public interest, but it is possible for parties to agree in advance the procedure and consequences of such

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						termination. In practice, these are usually identical to voluntary termination, or even a Contracting Authority default scenario. This is because the Private Partner is not responsible for, nor capable of mitigating, a public policy-driven decision to terminate unilaterally.
	Force Majeure and Uninsurability termination		●		**Termination right:** The risk of a force majeure termination arising is shared by the parties. Typically it will arise after 6-12 months of prolonged force majeure where the parties are unable to agree a solution to continue with the project. **Compensation:** The Contracting Authority pays termination compensation to the Private Partner reflecting the principle that force majeure events are neither party's fault and the financial consequences should be shared. This is not "full" compensation as this would result in the Contracting Authority bearing all the financial pain. Typically outstanding senior debt (including where applicable hedge break costs), initial equity, redundancy payments and sub-contractor break costs will be paid, less any applicable deductions as on Contracting Authority default termination). The Private Partner will lose all its forecast equity return (i.e. its anticipated profit) but the payment will be sufficient to repay all of its outstanding senior debt which will help address bankability concerns as to whether the debt will be kept whole in this termination scenario. The equity element will serve as a buffer for lenders if the termination payment does not cover 100% of the outstanding debt.	In some (typically less developed) markets, the Contracting Authority may succeed in negotiating paying no termination compensation in respect of certain natural risks which are insurable (and would reasonably be expected to be insured against as good operating practice), or a reduced amount reflecting insurance payments received (or receivable) by the Private Partner. This to some extent reflects the practice in more developed markets where these types of events may instead be classified as relief events which entitle the Private Partner to time relief only (but no ultimate right of termination). This will of course depend on the risk assessment by the Private Partner and its lenders. In less mature markets it is not uncommon for the senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted.
	Private Partner default termination			●	**Termination right:** The Private Partner bears the risk of termination by the Contracting Authority for serious failures by the Private Partner connected to delivering the PPP project. Termination events may be performance-related or relate more specifically to the financial status and corporate activity of the Private Partner. In order to mitigate the risk of termination, the contract should clearly define the default events and they should have reasonable in-built tolerance levels so that an appropriate threshold of poor performance has to be reached before termination rights arise. The opportunity to rectify should be given where feasible. The Contracting Authority can mitigate the risk of a termination payment arising as it has control over serving the termination notice that triggers it. It also has the ability to mitigate against the risk of Private Partner default even before the PPP contract is signed, by careful selection of the winning bidder. *See also PPP Project Preparation and Delivery in the introduction.* **Compensation:** The Private Partner will typically be entitled to a compensation amount equal to a pre-set percentage (around 80 – 100%) of the scheduled outstanding debt, minus applicable deductions, and no equity compensation. The aim of a lender "hair cut" of less than 100% debt is to incentivise lenders to conduct proper due diligence and exercise their monitoring and step-in rights to ensure the Private Partner delivers the project satisfactorily so that it avoids termination and can repay the whole of the lenders' outstanding debt. Alternatively, a market value retendering of the contract may take place (or be deemed to take place) and the compensation paid to the Private Partner will be the price tendered (or deemed tendered), less applicable deductions. A third alternative is for the Private Partner to receive a payment based on book value.	In some civil law jurisdictions, insolvency laws may have an impact on the right to terminate the PPP in the event of insolvency of the Private Partner (or its shareholders). A debt-based compensation method is the most common approach in emerging markets and availability-based PPP projects in jurisdictions such as France and is also seen in Germany. The market value retendering approach is more likely in a mature PPP market where there are likely to be a number of potentially interested purchasers in the relevant sector. Lenders to PPP projects in certain jurisdictions or in relation to certain assets may be reluctant to rely on a market-based valuation method for fear of undervaluation or underpayment. This is particularly likely to be the case in emerging markets where there is a limited PPP track record and a limited market. Some European jurisdictions have followed a book value approach but this may not accurately reflect sums owed and is not as common. In less mature markets it is not uncommon for a high percentage or the full senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted. The higher percentage haircut is seen in markets where the risks in respect of project failure and of the ability to rescue it are considered low (e.g. from a technical or resourcing perspective, or because the market is known), and the overall security package available to Lenders is otherwise

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						sufficient to cover their debt. Lenders in such markets (e.g. in some projects in the US) may alternatively accept no compensation for the same reason but this is not common practice. If available in the relevant jurisdiction, lenders will seek a direct/tri-partite agreement with the Contracting Authority. The purpose of this is to give lenders step-in rights if the Contracting Authority serves a default termination notice or if the Private Partner is in default under the loan documentation. The lenders would typically be given a grace period to gather information, manage the Private Partner and seek a resolution to rescue the project and the right to ultimately novate the project documents to a suitable substitute private partner.
	Strength of Contracting Authority payment covenant	●		[●]	The Contracting Authority bears the risk of making the relevant termination payment on time and in the amount required. To mitigate the risk of failure, it will need to assess whether it will be able to pay a lump sum if such a large payment is not budgeted for or does not have backing from its government treasury department. Payment over time may be preferable and the Contracting Authority should in any event try to negotiate a reasonable grace period long enough to raise the necessary funds. The Private Partner and its lenders will typically want to close off their exposure to a terminated PPP project and avoid Contracting Authority credit risk as soon as possible. It is likely that they will favour a lump sum payment, particularly on Contracting Authority default termination where the most likely cause of termination is failure to pay. In some cases, the Contracting Authority may be asked to provide credit support of its payment obligations. Lenders may be reluctant to release security interests held over the PPP project assets until compensation payments have been made in full. This may make the transfer of relevant assets back to the Contracting Authority difficult. In certain circumstances, the Contracting Authority may be able to negotiate an interim solution at the time of the termination, such as an arrangement whereby it has a right to access the PPP project assets during the period from the termination date until all termination compensation is paid, so long as the Contracting Authority complies with the payment terms with respect to such compensation. This approach is unlikely to be agreed at contract signature and certain issues will need to be clearly addressed (such as liability for damage to the asset while in the Contracting Authority's use).	In jurisdictions where the Contracting Authority's credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in less stable regimes or emerging markets or in projects where the Contracting Authority is not part of central government. Support may be available via multilateral or export credit agencies or central government or sovereign guarantees. Lenders and investors may seek political risk insurance to cover the risk of the Contracting Authority or any government guarantor defaulting on its payment obligation. A key concern for lenders in some jurisdictions relates to the requirement for parliamentary approval of appropriations in respect of contingent liabilities under project contracts. In the Philippines, for example, the government requires a two-year grace period for the payment of termination compensation as this is the maximum period of time for the parliamentary appropriation process. In less mature markets, issues of convertibility of currency and restrictions on repatriation of funds are also bankability issues upon termination. Release of security interests may not be a relevant concern in some jurisdictions, such as France, where lenders would not typically take security over the project assets as this would only give them limited rights. They would more usually take security over the Private Partner itself.
CONDITION AT HANDBACK RISK *The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not*				●	The Private Partner bears the risk of the project assets and land being handed back to the Contracting Authority in accordance with the contract and meeting the required handback conditions. This is linked to maintenance of the assets during the contract and may be complex given the need to define relevant asset standards. The circumstances around handback will vary from one PPP contract to another and will depend on matters including: the Contracting Authority's intentions with regard to post PPP usage, the nature of the asset (e.g. roads are usable for much longer than the initial PPP project duration), the stage at which the PPP contract comes to an end (whether termination occurs during construction or operation)	In civil law jurisdictions, assets built on publicly owned land and/or used for a public service will often be subject to particular restrictions. For example, mandatory handback at termination may be embedded in underpinning administrative law principles or legislation and there may be mandatory access or rights of use for third parties. In some countries (such as France), ownership will sit with the

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
in the contractually required condition at the time of handback to the Contracting Authority.					and any requirements under underlying laws in the relevant jurisdiction. To mitigate the risk of unexpected consequences, the contract should set out the requirements and process, including the Private Partner's obligations to facilitate an effective handover, hand over relevant licences and documentation and cooperate with the Contracting Authority so that the asset can continue the service. To mitigate the risk of the assets not being returned in the expected condition, the contract should include a mechanism for surveying conditions in advance of expiry and requiring relevant remediation. Typically the contract will provide for a retention fund to be established to fund remediation a certain period in advance of contract expiry, or for the Private Partner to provide some form of financial bond. Any funds remaining in existing lifecycle funds should be used/shared appropriately. For a more detailed analysis of typical handback provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.*	Contracting Authority throughout the duration of the contract, with assets built on such land automatically becoming Contracting Authority property as soon as they are built and handed back for free at natural expiry. The PPP contract will set out the specific accompanying detail about asset condition and cooperation obligations, taking into account the underlying mandatory law provisions. Typically, in a common law jurisdiction, the Private Partner will have been leased the PPP project land by the Contracting Authority (and may have been permitted to sub-lease it to the relevant sub-contractors). The headlease to the Private Partner is usually coterminous with the PPP contract, so the land will revert to the Contracting Authority at the same time as the PPP project asset. In civil law jurisdictions, the PPP project land may have been made available through an administrative contract such as a "land concession" or other precarious right of use and is land within the public domain.

APPENDIX C:

Airport PPP Risk Allocation Matrix

PPP RISK ALLOCATION MATRIX: AIRPORT

PURPOSE OF MATRIX	**This appendix contains a matrix of risks typically found in an airport PPP transaction, together with guidance on how those risks are typically allocated between the government Contracting Authority and the Private Partner, the rationale for such risk allocation, mitigation measures and possible government support arrangements. It aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks in a PPP contract.**
CAUTIONARY NOTE	**This matrix contains an indicative – but not exhaustive – list of the main risks typically to be considered in airports PPP projects and their typical allocation between the Contracting Authority and the Private Partner. It may be used as a starting point for understanding the risk allocation issues commonly arising in airports projects and for developing an individual risk matrix for the project in question. A project's individual circumstances and its jurisdiction will influence the appropriate contractual risk allocation and there may be additional risks that need to be considered.** *See Detailed Risk Identification and Analysis in the introduction*.

TYPE OF PROJECT AND SCOPE CONSIDERATIONS	This matrix addresses the common risks for the design, build, finance, operation, maintenance and transfer to the Contracting Authority (at the end of the PPP contract) of a new greenfield airport PPP project. Scope may include the whole of the airport or the construction / refurbishment of a component of the airport, such as a terminal. Operations may include landside and airside services. Scope typically excludes services which the Contracting Authority believes are appropriate to retain or which cannot by law be delegated (these may include security and police, customs and border control, fire services, passport and air traffic control). Where single airport lacks the revenue to be commercially viable, the Contracting Authority may group higher performing airports with lower performing airports to address the commercial viability challenges.
ASSUMPTIONS	The Contracting Authority has identified the site and there is no existing airport on the site. If there is an existing airport, a number of elements of the risk allocation will change, such as potentially who makes payments and how these payments are adjusted for risk. Customs, passport and air traffic control remain public sector obligations. The Private Partner is granted a concession to develop and operate the airport and generate third party revenues and may pay a variable concession fee to the Contracting Authority based on project revenues. The matrix also considers where the Contracting Authority and the Private Partner enter into an availability payment model under a PPP contract. The Private Partner finances the development of the new airport and only starts to receive payment from users (and/or where applicable, the Contracting Authority) once the airport is in operation. Airline tariffs and other charges may be set under the contract (or through a national airport regulatory regime).
MARKET APPROACHES	Airport procurement models depend on the relevant market and the project circumstances. While the concession model is common, the availability model is also seen, for example, in some developing markets where a revenue risk approach may not be viable at least initially to establish the airport infrastructure. As well as PPP concession and availability structures, there are other contractual structures which the Contracting Authority can use to deliver airport infrastructure with private sector involvement. These include procuring certain construction and/or operational elements, or under a privatisation model. In addition to new build PPP projects, rehabilitation and extension of existing airport structures are common and governments are increasingly considering airport privatisation as markets develop. The risks addressed in this matrix and much of the risk allocation guidance will be relevant to different contractual structures, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending and how the pricing mechanism works).
PROJECT REVENUES, INCLUDING PAYMENT MECHANISMS	Project revenues are generated either through user payments to the Private Partner from a variety of sources, including airlines that use the airport terminals, car parking fees and retail tenants given retail licences within the terminals, availability payments under a government pays model, or a combination of both. User revenues may be supported by minimum revenue guarantees from the Contracting Authority for some or all of the revenue streams, particularly where project revenues are unlikely to be sufficient to cover the project costs. Where project revenues exceed project costs over a certain threshold, there may be a variable concession fee paid by the Private Partner to the Contracting Authority, depending on the level of project revenues. This is a common approach in many jurisdictions but is dependent on the project circumstances.
KEY RISKS	**Demand risk in respect of each revenue stream:** If the PPP project is run more as a concession (i.e. third parties provide the revenues), and actual use of the airport by airlines and passengers is lower than forecast, then the Project's revenues will be reduced, risking inability to repay financiers, fund operating costs and provide a return to the Private Partner. Ultimately this could result in the project failing and the Contracting Authority either assuming the project or finding a third party. Demand in an airport will be dependent on several factors that are within the government's control (such as regulation of competing airports and airlines) and the Private Partner will expect certain protections. *See Demand risk.* **Force majeure risk, particularly terrorism risk:** Airport projects are particularly sensitive to extreme weather conditions which can delay or cancel flights. Airports are also a more likely

	target for terrorist action. Both can have an effect on revenues and require substantial rectification costs. *See Force majeure risk and MAGA risk.* **Environmental risk, particularly onsite contamination and noise and air pollution:** Due to the nature of the airport operations there is a higher risk of pollution, particularly from underground fuel storage tanks. The large radius of airport flight paths leads to a noise and air pollution footprint that is much larger than the airport's physical footprint and requires particular consideration to be given to land acquisition and local communities (including, for example, opposition groups). *See Environmental risk and Social risk*.
OTHER CONSIDERATIONS	Airports consist of multiple components, some of which will be retained by the Contracting Authority, particularly immigration and typically air traffic control services (and services which by law cannot be delegated). It is most common for the private sector to be engaged to construct, operate and maintain the airport terminals and manage the retail tenancy opportunities within the terminals. This can create unique interface issues. It is important that, prior to the commencement of operations, airports are subject to a robust commissioning process, commonly referred to as operational readiness and airport transition (or "**ORAT**") process. This can help ensure that the different components of the airport operate as a cohesive whole in accordance with the Contracting Authority's expectations. It is also important that the Private Partner has sufficient expertise in managing airports.
PRIVATE SECTOR RISK MITIGATION	**Allocation of risks to sub-contractors:** *See Risk Allocation in PPP contracts in the introduction* and *Cost overruns and Works completion delays under Construction risk*. As regards construction, the Private Partner will often enter into a lump sum construction contract with a construction sub-contractor to pass down its obligations under the PPP contract and to manage the risk of cost overruns and delays (subject to certain relief to which the sub-contractor will be entitled under the sub-contract). The Private Partner will bear the risk of liability caps agreed under the sub-contract being reached or warranty periods under the sub-contract being shorter than the Private Partner's defect rectification obligations towards the Contracting Authority. The Private Partner may enter into an agreed price operating sub-contract with an operating sub-contractor to pass down its operating phase obligations to the extent practicable. Alternatively the Private Partner may retain operational responsibility and enter into a technical services contract with an experienced airport operator (who is usually a shareholder of the Private Partner) pursuant to which staff will be seconded and other required information and experience will be provided to the Private Partner. **Demand risk**: Accurate forecasting is essential to mitigate demand risk. Securing airlines as long term anchor customers and suitable retail tenants can also protect against demand down turns. Depending on the level of risk, some projects may also require guarantees that competing airports will not be built within a certain radius. **Insurance:** *See Risk Allocation in PPP contracts in the introduction*. **Effective implementation of social and environmental management plan:** *See Environmental risk and Social risk*. **Additional equity and other funding support:** *See Market Conditions in the introduction*.
PUBLIC SECTOR RISK MITIGATION	**Carrying out detailed feasibility and ground surveys:** *See PPP Project Preparation and Delivery in the introduction*. Detailed ground surveys should also be carried out where practicable. Where such information is provided to bidders to rely on in pricing their bids, Contracting Authorities may elect to guarantee accuracy but not necessarily completeness or interpretation – this will depend on project-specific factors including the experience of the bidders and the ability to obtain other relevant information.
	Running an efficient and fair procurement process: *See PPP Project Preparation and Delivery in the introduction.* Enacting enabling legislation and complying with domestic procurement laws in relation to the project are primarily the Contracting Authority's risk and responsibility. As the Private Partner will be affected by the consequences of breach of such legislation, it will carry out due diligence itself on these matters. Interference with the tender process and other issues attributable to the Private Partner will remain a Private Partner risk.
	Timely consultation on social and environmental impact: It is key for the Contracting Authority to consider the effect of the project on people, wildlife and habitat and to implement effective management of stakeholder interests and public perception before and (in conjunction with the Private Partner) during the project. *See Environmental risk and Social risk.*
	Having competent advisers: *See Detailed Risk Identification and Analysis in the introduction*.
	Timely involvement of internal stakeholders and contract management team: *See Detailed Risk Identification and Analysis in the introduction*.
	Careful assessment and quantification of risk: *See Detailed Risk Identification and Analysis in the introduction.*
	Taking performance security: The Contracting Authority may seek certain security direct from the Private Partner and its sub-contractors, or their parent companies, in respect of certain contractual (or tender) obligations. This may be in the form of bid bonds during the tender stage and, following the tender stage, completion bonds, performance bonds and guarantees. As an alternative, cash reserving mechanisms could be used during the life of the contract. Although the Contracting Authority may be able to call on this security in certain circumstances (such as performance failures by the Private Partner), the security will have a cost attached. This will feed through to the pricing and may affect value for money, particularly since the security may never be called.
PUBLIC SECTOR SUPPORT MEASURES	The Contracting Authority may provide certain financial support to the project, in terms of subsidies or guarantees, although the consequences of such commitments and the potential liabilities for the public sector should be carefully considered, including how such support may dilute the risk/reward distribution under the PPP contract and affect value for money. Where the Contracting Authority's own credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in projects where the Contracting Authority is not part of central government or it is a local authority. To mitigate this Contracting Authority counterparty risk, a sovereign or central government (e.g. finance ministry) guarantee (or equivalent support) may be needed, though the full implication for the public sector should be carefully assessed, including the potential impact on the government's contingent liabilities and fiscal sustainability. The government may also own the national airline and commit to the airline providing a minimum quantity of flights. *See Demand risk, Project Revenues, Including Payment Mechanisms above and Strength of Contracting Authority payment covenant under Early termination risk*.

KEY TO MATRIX

Risk category rows		Broadly, the first row of a particular risk category summarises the risk and its main allocation. The subsequent rows detail specific issues relevant to that risk and its allocation.
Risk allocation symbols	●	Indicates how the main risk described in the relevant row is typically allocated.
	[●]	Indicates how the risk (or part of the risk) may be allocated differently in the particular additional circumstances described.
Defined terms		Certain terms used in the matrix are defined in the Glossary. For example, the terms compensation event and relief event are used throughout this matrix with respect to how a PPP contract addresses the eventuation of certain risks. For a detailed explanation of those contractual mechanisms, refer to the definition of compensation event and relief event in the Glossary.

SUMMARY MATRIX[1]

RISK CATEGORY	DESCRIPTION	BASIC RISK ALLOCATION		
		Public	**Shared**	**Private**
LAND AVAILABILITY, ACCESS AND SITE RISK	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.	●		
SOCIAL RISK	The risk associated with the project impact on adjacent properties and people; resettlement; indigenous land rights; and industrial action.	●	●	
ENVIRONMENTAL RISK	The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.		●	●
DESIGN RISK	The risk that the project design is not suitable for the purpose required; approval of design; and changes.			●
CONSTRUCTION RISK	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.			●
VARIATIONS RISK	The risk of changes requested by either party to the service which affect construction or operation.		●	
OPERATING RISK	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.			●
DEMAND RISK	The risk of usage levels being different to forecast levels; the consequences for revenue and costs; and government support measures.	[●]	[●]	[●]
FINANCIAL MARKETS RISK	The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●	
STRATEGIC / PARTNERING RISK	The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.		●	
DISRUPTIVE TECHNOLOGY RISK	The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	
FORCE MAJEURE RISK	The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.		●	
MAGA RISK	The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.	●		
CHANGE IN LAW RISK	The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.	●		
EARLY TERMINATION RISK	The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.		●	
CONDITION AT HANDBACK RISK	The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.			●

[1] Cautionary note: The summary matrix identifies typical risk allocation on an aggregated basis. For each risk allocation, however, there are generally exceptions. For the full discussion on typical risk allocation arrangements, please see the detailed guidance provided in the matrix below.

RISK CATEGORY AND DESCRIPTION		**RISK ALLOCATION**			**RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)**	**MARKET COMPARISON SUMMARY**
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
LAND AVAILABILITY, ACCESS AND SITE RISK *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.*	**Provision of required land – general**	●	[●]		The Contracting Authority typically bears the risk of selecting the site and acquiring the required land interests for the project, whether through compulsory acquisition/expropriation 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 "clean" accessible site, with no restrictive land title issues. 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 airport. 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 If the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through compulsory acquisition/expropriation), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases). *See also Social risk.*	In certain markets, land rights (in particular reliable utilities records, and land charges and third party rights to (access) land) 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, this will increase the risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risk as the Private Partner will not be able to bear them. The rights of private landowners against compulsory acquisition/expropriation might be stronger in some markets, so the Contracting Authority may need to allow more time to acquire the land. The Contracting Authority should also consider the impact that the project will have on neighbouring properties and trades and may need to retain this risk of unavoidable interference. In rare cases some markets have taken a different approach which allocates all land acquisition and permitting risk to the Private Partner. This approach should only be taken if Private Partners already possess the land or if the precise location of the airport is not important, which will not usually be the case. Typically the ability of the Contracting Authority to exercise rights of eminent domain / compulsory acquisition will mean these risks are better allocated to the Contracting Authority.
	Timing of provision of required land	●			The Contracting Authority should complete the process of land acquisition before the contract is awarded so that all issues and risks are known and managed. All relevant processes will need to be carried out in a timely manner. The timeframe will depend on the issues affecting the site and the applicable processes. The risk that all necessary processes have been satisfied will be the Contracting Authority's risk.	
	Provision of permanent additional land	●			**Identification pre-signature:** If a permanent need for additional land is identified and agreed by the parties before contract signature then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing the additional land, unless the need for additional land is specific to a bidder (for example, due to a different design).	
				●	**Identification post-signature:** If a permanent need for additional land is only identified after contract signature then this will be a Private Partner risk as the need should have been identified and factored in to the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance with acquisition where the land is essential, with costs being borne by the Private Partner.	
	Provision of temporary additional land	●		[●]	**Identification pre-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified in the procurement phase and are common to all bidders, then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing such land, unless the need for such land is specific to a bidder (for example, due to its construction methods and equipment) – in which case the risk should be allocated to that bidder and the cost factored into its bid price. The Contracting Authority may find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
				●	**Identification post-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified, they should be a Private Partner risk as such need should have been identified and factored into the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Heritage / indigenous land rights	●		[●]	Land rights issues involving indigenous groups will be the responsibility of the Contracting Authority. The Private Partner will bear the risk of complying with legislation and contractual obligations imposed on it in this regard. The Private Partner's obligations with regard to indigenous rights is well legislated for in some markets. In the absence of legislation, indigenous land rights issues and community engagement can be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project (e.g. compatible with the Equator Principles). This will be particularly relevant if international financing options are desirable. *See also Social risk*.	This issue is coming under increasing focus from multilateral agencies and other finance parties, as well as civil society and human rights organisations. For example, the World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. Many finance parties (including commercial finance parties) adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). Examples of specific legislation are native title legislation in Australia and the equivalent First Nations law in Canada. These include a requirement to seek consent from the indigenous parties affected and to enter into indigenous land use agreements.
	Resettlement				*See Resettlement under Social risk.*	
	Suitability of land			●	**General:** The risk that the land is not suitable is typically allocated to the Private Partner, who should be required to design an airport that is compatible with the project site provided or propose a solution if additional land is required. *See also Design risk.*	
		●		[●]	**Underground:** Risk with regard to stability and suitability of the underground sits with the Contracting Authority if no or unreliable data is available and the risk cannot be transferred (or transferring the risk does not represent value for money). To the extent reliable data is available in the tender phase and can be relied upon by the Private Partner, the risk sits with the Private Partner. *See also Site condition under Land availability, access and site risk.*	
	Key planning consents	●			**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents. In particular this includes where the Contracting Authority is also the body responsible for issuing any of the key permits.	In some jurisdictions, it may not be possible to obtain the requisite planning consents until such time as the Private Partner has been identified and/or detailed design is known. It is not uncommon for the Private Partner to be primarily responsible for procuring key planning consents, particularly in markets where there are clear procedures and time frames for procuring consents. In such circumstances some risk will continue to be assumed by the Contracting Authority where, despite complying with the relevant procedure, the issue of the permit is delayed or withheld or the permit has unusual conditions attached to it. Such circumstances will entitle the Private Partner to time and money as a compensation event.
		●		[●]	**Post-signature:** If consents for key permits are not obtained before contract signature and the Contracting Authority wants to sign the contract, it will typically bear the risk of the consents being delayed or not obtained (subject to the Private Partner complying with any reasonable requirements to assist the Contracting Authority in securing the key permits) – this may be treated as a compensation event. Failure by the Contracting Authority to obtain the consents by a certain date is likely to entitle the Private Partner to terminate the contract. Permit risk may be complicated further if there are different levels of authorities involved, and interaction between levels of design and authorisations may impact the timeline. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process. *See also MAGA risk, Design risk and Environmental risk.*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Subsequent planning approvals	[●]		●	Obtaining subsequent detailed planning consent and other approvals will be a Private Partner risk. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also Environmental risk and MAGA risk.*	
	Access to the site and associated infrastructure	●			**Construction phase:** In principle the Contracting Authority will be responsible for ensuring the Private Partner can access the site during construction. Either (i) it will pay the costs of providing access itself, or (ii) the Private Partner will pay such costs and be reimbursed through the contract price to the extent it has priced such costs into its bid. This will depend on the nature of the access required. Failure to provide access may be treated as a compensation event. *See also MAGA risk.*	Where the project consists of the operation of an airport terminal or another component of an airport, rather than the entire airport, then if the terminal can only be accessed through other parts of the airport the Contracting Authority will usually be responsible for providing rights of way and assume risk of the availability of such rights of way.
		[●]		●	**Operation phase:** The Private Partner will typically be responsible for ensuring it can access the airport once it is operational. Also, airports are subject to substantial vehicular traffic and the Private Partner should be responsible for ensuring that traffic is free flowing and delays avoided. If the Contracting Authority will remain responsible for any routes into the airport (or the component of the airport that is being provided by the Private Partner) then interface risk will need to be addressed and typically allocated on a shared basis.	
	Site security	[●]		●	**Construction phase/operation phase:** Risk allocation with respect to site security will depend on the political climate, opposition to the project, nature of the risk and the stage of the project. Parties should aim to have a complete understanding of the risks involved in physically securing the site and those that will affect the construction and operation of the airport. Ordinarily the Private Partner will be responsible for day to day site security. However, the Contracting Authority may need to use statutory means to properly secure the site for the Private Partner (such as police involvement or eviction) and in some circumstances may be required to provide additional site security / assistance during operations to manage this risk. Failure may be treated as a compensation or MAGA event. *See also Force majeure risk, MAGA risk, Social risk and Vandalism under Construction risk and Operating risk.*	For example, where there is public opposition to the airport, there may be protestor action, or there may be issues safeguarding the equipment and installation.
	Utilities and installations	[●]		●	**Costs or delays caused by relocation of /access to utilities:** To the extent reliable data is available or obtainable and shared during the tender process, the Private Partner can bear and price the corresponding risk of any costs or delays caused by statutory undertakers and utility providers in carrying out diversions or connections. Costs and delays caused by re-location of existing utilities or access to utilities for the purposes of the project which are due to the Private Partner's design or construction plan are usually allocated to the Private Partner. For connections to existing infrastructure, *see also Project management and interface with other works/facilities under Construction risk.* The Contracting Authority will bear risk if no reliable information is available or obtainable. It may also bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate, unless the Private Partner is provided with an opportunity to verify such information. Lack of data on existing utilities location can make it difficult for the Private Partner to assess (and price) the cost and time needed for relocation which can impact on the construction timetable and ultimately on meeting the operation commencement date. If the Private Partner bears this risk, the Contracting Authority may need to share the risk by capping the Private Partner's liability or by having a cost sharing mechanism.	In some markets or challenging locations, there may be little data on location of utilities (water, sewage, oil, gas, optical fibre etc) and the Private Partner may be unable to accept all or part of this risk. In markets where the utility provider is a private entity, this risk is likely to be treated as a relief event (and the utility company will bear the risk) – this is common in mature

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]	●		**Costs or delays caused by utility provider:** Costs and delays caused by a utility provider could arise in both phases and the risk will be allocated according to the relevant circumstances and market and ownership of the utility. The risk could be shared or allocated to the Contracting Authority.	markets. In less mature markets, particularly where the utility provider is a state-owned entity, the risk is likely to be allocated to the Contracting Authority as a compensation or MAGA event.
	Site condition	[●]		●	**Surveyed:** The Contracting Authority usually undertakes detailed geotechnical and ground/soil surveys during the feasibility stage (if not already publicly available) and discloses such information as part of the bidding process. Sharing the surveys will save bidders' costs (all which would otherwise feed through to the Contacting Authority in the contract price). To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of such conditions causing cost and delay. The Contracting Authority will bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation of the data.	In a mature market, the Contracting Authority normally hands over the site to the Private Partner in an "as-is" condition on the basis of the surveys provided. The Private Partner can rely on the surveys but otherwise bears the risk. In some markets, the bidders carry out the surveys during the tender process – this may be the best solution in some circumstances, but may also limit competition unless bidders are compensated for these costs. A successful bidder will include the cost in its contract price whilst unsuccessful bidders may seek to recover by inflating its contract price for subsequent projects.
		●	[●]		**Unsurveyed:** Where it is not possible to fully survey site condition prior to award (e.g. in high density urban areas), the risk for unsurveyable land will be allocated to the Contracting Authority (e.g. as a compensation event). The risk may be shared by the Private Partner (e.g. as a relief event) in some circumstances, for example where the risks were within the knowledge of the Private Partner when it priced its bid or an experienced contractor would have considered their existence as being possible. The impact on the project and the cost of remediation works for certain existing site conditions can be significant so the ultimate risk allocation will depend on the project specifics.	In some markets there may be less historic data available to the parties to assess risk. It may however be easier to perform comprehensive surveys in a less urban area.
		●	[●]		**Cultural / Archaeological finds:** Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk. One approach is to share the risk such that the Private Partner bears the risk in respect of designated areas (such as a low risk area) and the Contracting Authority bears the risk outside such areas (such as a high risk area). Another approach is for the Private Partner to be obliged to coordinate work, but for the Contracting Authority to appoint specialised contractors and to bear cost/delay and interface risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of finds is often treated as a relief event.
		●	[●]		**Unexploded bombs, land mines and other munitions:** Discovery of munitions can cause delays and costs as they will need to be defused and removed. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of munitions risk is often treated as a relief event. In some countries, the risk of unexploded land mines can be high and specific surveying and cost provisions may need to be agreed.
		●		[●]	**Pre-existing environmental pollution:** Pre-existing pollution is typically the Contracting Authority's risk except to the extent it was known to and priced by the Private Partner. Remediation works for certain existing environmental conditions can be expensive so the ultimate risk allocation will depend on the project specifics and the surveys provided to the Private Partner. *See also Environmental risk and Change in law risk.*	If the project is an expansion or refurbishment of an existing airport then existing site conditions, and particularly contamination, will be a particular focus for bidders. Projects in some markets seek to limit the exposure of the Contracting Authority by providing a site validation period before or at the start of the construction phase. Contamination found during this period is the Contracting Authority's responsibility whilst anything found after this

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						period is the responsibility of the Private Partner.
	Existing asset condition	[●]		●	Where there are existing assets proposed to be used in the project (for example, an existing terminal), they should be fully surveyed (and potentially warranted) by the Contracting Authority. To the extent reliable data relating to the condition of existing assets is shared by the Contracting Authority during the tender process and can be relied upon during implementation, the Private Partner can price the risk of using them, including the interface with other aspects of the project and latent defect risks. The Private Partner will then bear the corresponding risk. The Contracting Authority will bear risk to the extent such data proves inaccurate or insufficient, and to the extent of any warranties it provides. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation. If latent defects are discovered in assets which are due to be replaced at some point in the life of the contract, the Contracting Authority may be able to mitigate its risk to some extent by having a contractual mechanism which brings forward the replacement date. *See also Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	If the project is an expansion or refurbishment of an existing project then in some markets the Contracting Authority only warrants that the existing assets are structurally sound, with the Private Partner taking all other risks relating to the condition of the existing assets. Projects in some markets seek to limit the exposure of the Contracting Authority by providing an asset validation period before or at the start of the construction phase. Issues found during this period are the Contracting Authority's responsibility whilst anything found after this period is the responsibility of the Private Partner.
SOCIAL RISK *The risk associated with the project impact on adjacent properties and affected people; (including public protest and unrest); resettlement; indigenous land rights; and industrial action.*	**Community and businesses**	●		[●]	Ultimately, the policy relating to the social impact of the provision of infrastructure is for the government. The Contracting Authority will bear this risk except to the extent the Private Partner is responsible for implementing any social management measures. In the context of an airport, consideration should be given to the impact of the potentially widespread noise and air pollution as well as the more traditional social impacts of the project. *See also Environmental risk.* During the feasibility stage, the Contracting Authority should have considered the impact on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries – both in terms of the construction and operation of the airport. It may need to carry out social impact studies and aim to minimise any negative impact of the project. Consultation may reduce the risk of opposition if outcomes are incorporated in the strategy and tender requirements. The approach, compensation schemes and what is acceptable should be addressed in the bid requirements and the contract. Investors and lenders may expect to see a plan addressing social impact, including the execution of any necessary contractual arrangements. The Contracting Authority may choose to adopt internationally recognised social and environmental standards and practices for the project to manage social risk, especially if international financing options are desirable. All the way through construction and operations, active stakeholder engagement by the Contracting Authority will be critical to avoid litigation, achieve key milestones on time and ensure it is delivering infrastructure that serves its public purpose. Both the Private Partner and the Contracting Authority should develop sound environmental and social risk management plans before construction begins. Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation (*see also Resettlement under Social risk*) and continued efforts to manage the social and political impact of the project on and around the site (possibly including a compensation regime for affected businesses adjacent to the airport). The Private Partner will bear the risk of non-compliance with any contractual social risk obligations as well as social risk obligations set out in the underlying legal system, although even where social risk obligations are passed onto the Private Partner, the consequences of such risks occurring may come back to the Contracting Authority. For this reason, the Contracting Authority should critically analyse just what social risk obligations should be passed onto the Private Partner and what should be retained. Where there is public opposition, there may be protestor action in both construction and operating phases, and/or issues safeguarding the site equipment and installation. *See also Site security and Access to the site under Land availability, access and site risk, and Vandalism under Construction risk and*	This issue is coming under increasing focus from multilateral agencies, development finance institutions and other international finance parties, as well as civil society and human rights organisations. Finance parties (including commercial finance parties) will look very closely at how these risks are managed at both private and public sector level. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). The World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. In civil law jurisdictions the obligation upon the Contracting Authority to act "in the general interest" and to justify and document decisions may strengthen the stakeholder process. This is because the level of transparency and justification required should ensure that stakeholder views are properly taken into account and the risk of arbitrary decisions (and consequent challenges) reduced.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Operating risk. For a detailed analysis on how governments can better address aspects related to social inclusion in the delivery of infrastructure, see the GI Hub's practical guidance on *Inclusive Infrastructure and Social Equity*.	
	Resettlement	●		[●]	Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation. This may include the removal of formal and/or informal housing or businesses and resettlement of communities in another location, potentially also with compensation. The Private Partner is responsible for implementing any social risk management measures contractually agreed – these should be clearly specified by the Contracting Authority in the procurement phase to enable the Private Partner to price the cost and associated risks.	Resettlement of whole communities by the Contracting Authority is more likely in less developed markets where informal housing and businesses may be more prevalent. The affected parties may not have the means (or the transport) to relocate themselves, even if paid compensation, and whole communities may need to be moved together. In developed markets, affected parties may be more able to rely on rights under compulsory acquisition/expropriation laws and compensation received.
	Heritage / indigenous people	●		[●]	As with land use rights involving indigenous groups, any other social impact risks involving such groups will usually be the responsibility of the Contracting Authority but the Private Partner will bear the risk of complying with relevant legislation and contractual obligations. In the absence of legislation, indigenous rights issues and community engagement may be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project, particularly if international financing options are desirable. *See also Heritage/indigenous land rights under Land availability, access and site risk.*	The Private Partner's obligations with regards to indigenous rights is well legislated for in some markets and in other markets there may be more reliance on internationally recognised standards. *See also Heritage/indigenous land rights under Land availability, access and site risk.*
	Industrial action	●	●	●	The Private Partner assumes the risk of labour disputes and strike action adversely affecting the project except to the extent such action falls into the category of political risk. In this case, the Contracting Authority may bear the risk (if a MAGA event, such as a strike by the government-run national air traffic control service) or share the risk (as a force majeure or relief event) for strikes and other widespread events of labour unrest. For example, nationwide and sector strikes are usually Contracting Authority risks, but strikes at the Private Partner's facilities will be a Private Partner risk. *See also Force majeure risk and MAGA risk.*	In less politically stable jurisdictions the Contracting Authority may have to accept more risk for strikes than in some jurisdictions. In markets where the risk of strikes is low, the Private Partner may be comfortable accepting this risk as a relief event. In developed markets, industrial action by workers at the airport who are to transfer to the Private Partner can be an issue if their conditions are not as good or they perceive that they may be disadvantaged in the future. Also customs workers and air traffic controllers often remain public sector employees and can be prone to taking industrial action that can cause the Private Partner to fail to meet performance targets at the airport or suffer loss of revenue.
ENVIRONMENTAL RISK *The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.*	**Pre-existing conditions**	●		[●]	*See Site condition and Existing asset condition under Land availability, access and site risk*.	Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop sound environmental and social risk management plans before construction begins. The risk of delay in obtaining approvals may be greater in some jurisdictions, particularly where different levels of government are involved. Delays in obtaining environmental permits have caused significant construction delays in some sectors (for example, in some projects in South America) and the timeframe required should not be underestimated. If adequate relief is not given to the Private Partner, this may
	Obtaining environmental consents	[●]		●	**Pre-signature**: In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents In many major projects, the environmental authorisations are a key component of the project and may take significant time to be prepared and approved. In some cases, these authorisations are initiated (such as preparing the environmental impact assessment) and prepared by the Contracting Authority ahead of the procurement process. At a specified point in time, the Private Partner will take over the risks related to obtaining detailed environmental licences or permits related to the project.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]		●	**Post-signature**: Except as specifically identified otherwise, the Private Partner typically bears the risk of obtaining all environmental licences, detailed permits and environmental authorisations required for the project after contract signature. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event or MAGA event. See also *MAGA risk*. In some countries, there may be different levels of governmental approval required. Local authorities may interpret certain requirements in their own way after the contract price has been submitted and impose unexpected conditions on the Private Partner. This could adversely affect the project's financial model. The parties should ensure that the contract sets out clearly how any such interpretation or unexpected requirement is addressed to avoid disputes as to which party bears the consequences. See also Key Planning Consents under Land availability, access and site risk, *Change in law risk and Compliance with environmental consents and laws under Environmental risk*.	deter the private sector from participating in new projects in the same sector or jurisdiction. International finance parties, multilateral agencies and development finance institutions are particularly sensitive about environmental and social risks. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (which are described in the Equator Principles). Finance parties will look very closely at how these risks are managed at both private and public sector level and this scrutiny is helpful to mitigate the risks posed by these issues. For example, some institutions will have their own requirements for environmental and social plans, in particular in relation to noise pollution, and will require that there are provisions in relevant agreements that will lead to remediation or mitigation. *See also Communities and businesses under Social risk.*
	Compliance with environmental consents and laws			●	The Private Partner bears the risk of complying with all environmental licences, detailed permits and environmental authorisations required for the project as well as applicable environmental laws. The parties should ensure that change in law provisions adequately address changes in (mandatory) environmental standards and laws to avoid disputes as to which party bears the consequences of any requirements imposed after contract signature. *See also Change in law risk.* In the absence of legislation, environmental obligations can be managed by the Contracting Authority through the adoption of internationally recognised standards and practices for the project, particularly if international financing options are desirable. *See also Communities and businesses under Social risk.*	
	Environmental conditions caused by the project			●	The Private Partner bears the risk of environmental events caused by the project to the extent due to its failure to comply with applicable licences, laws and contractual obligations. This includes conditions affecting both the project itself and third parties. The Contracting Authority may want to satisfy itself as to the overall robustness and suitability of environmental plans proposed by the Private Partner, to ensure that such plans will be adequate to appropriately manage the risks of the project, but the Contracting Authority should not take on any risk in doing so. Airports are major pieces of general infrastructure with particular problems of noise and air pollution affecting local communities, both in the locality of the airport and the take-off and landing corridors. There are also environmental risks associated with fuel spillages arising out of the transport and storage of fuel and fuelling of aircraft on site.	
	External environmental events		●		**Outside both parties' responsibility:** The risk of environmental events external to the project occurring which adversely affect the project (or, as a result, third parties) should be treated according to the nature and cause. They may be a form of shared risk, such as a relief event or force majeure event (e.g. if an accidental chemical escape from an adjacent property forces an airport closure for a period).	
		●			**Within Contracting Authority's responsibility:** If environmental events are within the responsibility of the Contracting Authority or government they may be treated as a compensation event or MAGA event (e.g. where the government has failed to enforce environmental laws in respect of polluting aircraft and the pollution damages the airport or leads to legal action against the project by third parties). *See also MAGA risk and Climate change event under Environmental risk.*	
	Climate change event	[●]	●		Market practice is developing with greater focus on events caused by climate change and the Contracting Authority should consider the risk and impact of climate risk events on the infrastructure (both one-off external weather events and more gradual effects, such as rising sea levels or temperatures). It may be	If clear requirements are not included, this may lead to different bidders taking this risk into account in different ways. To avoid speculation and disputes, post-contract

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					appropriate to treat certain events as force majeure events if they occur beyond certain thresholds (e.g. temperatures outside certain ranges). Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common. An alternative may be to consider a separate contractual mechanism to address these types of risks over the long term life of the contract. As with other variations required by the Contracting Authority, any changes to the project scope to mitigate climate change effects are likely to need to be funded by the Contracting Authority where the Private Partner cannot foresee such developments and has no means of passing on the cost (and no other agreement as to cost sharing is in place). As it is likely to be more costly to retrofit measures, it is essential that the Contracting Authority consider this risk during the feasibility phase, and that both parties continue to consider this issue further during the tender process. *See also Force majeure risk and Operational risk.*	award, these issues should be clearly set out in the tender documents and negotiated throughout the tender process.
DESIGN RISK *The risk that the project design is not suitable for the purpose required; approval of design; and changes.*	**Suitability of design**	[●]		●	Generally the Contracting Authority should aim to transfer design risk to the Private Partner but the extent to which this is possible will depend on how involved the Contracting Authority wants or needs to be in specifying design requirements in the tender documentation. Alternative approaches are described below. **Output specification:** Where possible, the Contracting Authority usually aims to set a broad output driven specification in the tender documents, requiring the Private Partner to design and build the project in a way which satisfies the performance specifications and ensures compliance with applicable legal requirements, good industry practice standards and, where applicable, minimum quality standards. This allows for private sector innovation and efficiency gains in the design. With this approach, the Private Partner will have principal responsibility for adequacy of the design of the project and its compliance with the output / performance specification. A design review process during the contract will allow for increased dialogue and cooperation between the Contracting Authority and the Private Partner, but care should be taken to ensure that the mutual review process does not reduce or limit the Private Partner's overall liability. In limiting how prescriptive it is in the performance specification, the Contracting Authority may wish to request a degree of cooperation and feedback during the bidding phase to ensure that the bidding consortia's expectations in terms of an appropriate risk allocation for design responsibility are taken into account when finalizing the performance specification. If the Contracting Authority provides bidders with a basic design, bidders will typically be responsible for any errors, if they assume this basic design in developing their detailed design. An alternative is to provide (more) detailed design, but to contractually oblige the bidders to comment on and subsequently accept full responsibility for the amended design. The Contracting Authority should bear the risk of technical information provided by it proving inaccurate to the extent the Private Partner was allowed to rely on it for design purposes (e.g. inaccurate traffic forecasts or site condition or existing asset surveys). The Private Partner should be allowed to rely on the technical information unless it will be given the opportunity to verify. The cost of such verification should be balanced against the benefits of the Private Partner providing an absolute design wrap. *See also Changes to design under Design risk.*	In more developed PPP markets, the Contracting Authority typically drafts a broad output specification, unless permit or other regulatory requirements oblige it to provide more detailed and descriptive specifications. Projects in some less established PPP markets may be particularly dependent on availability of reliable resources necessary for construction and operation, which has implications for the Private Partner's ability to meet the reliability requirements in the performance specification and take full design risk. The quality of the information provided by the Contracting Authority and the Private Partner's limited ability to verify such data can hinder the Private Partner's ability to unconditionally take full design risk in some markets. Attempts to transfer the risk in such circumstances may also lead the Private Partner to price in expensive risk premiums that do not represent value for money for the Contracting Authority. Frequently an airport is either a national or local matter of pride and importance meaning both the aesthetics and day one functionality of the airport are extremely important. The Contracting Authority may hire a leading firm of architects to design the airport and to provide the outline specification. In these circumstances the Private Partner will be required to adopt the outline design and to provide detailed design that fits in with this, whilst still ensuring that the airport will comply with the output specifications set by the Contracting Authority. Alternatively increased weighting will be given by the Contracting Authority to the aesthetic appeal of the

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		●			**Prescriptive specification:** A prescriptive specification can, where essential, ensure the Contracting Authority receives bids on a particular (and similar) basis. However, the disadvantage of this approach is that it will restrict private sector innovation and efficiency gains in the design and may not result in best value for money. The Contracting Authority may also retain some design risk in certain aspects of the system or related works, if it is more prescriptive in the performance specification. For example, if the performance specification is too prescriptive (e.g. the terminal design constrains the efficiency of the design or the throughput of passengers), the Private Partner's ability to warrant the fitness for purpose of its design solution may be impacted and the Contracting Authority will to that extent share in the design risk. The prescriptiveness of the performance specification is likely to be dependent on the depth of the feasibility study. Some jurisdictions allow only limited room for individual design, since all key aspects and many details are already fixed in the official planning approval decision. If the Private Partner wants to deviate from these requirements it must conduct formal amendment procedures, which in practice have such process and risk impact that bidders are not willing to take the risk that comes with initiating such amendment procedures. *See also Changes to design under Design risk.*	design when assessing bids in order to encourage greater innovation by bidders. In some less developed markets there have been projects where the Private Partner is required to spend additional amounts on aesthetic improvements if directed to do so by the Contracting Authority. This is a less efficient means of achieving optimal design and can lead to unnecessarily inflated contract prices.
		[●]			**Existing infrastructure:** If the project is being integrated into existing infrastructure, the Private Partner's ability to warrant the fitness for purpose of its design solution must be considered. It may not be able to warrant defects in the existing infrastructure which may impact the project's performance and the Contracting Authority may have to bear this risk. *See also Existing asset condition under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
	Approval of designs	[●]		●	The Private Partner will bear the risk of obtaining design approvals as it will have principal responsibility for preparing the detailed design and obtaining relevant approvals from the appropriate state or other body. However, if the Private Partner has complied with all relevant conditions and time frames, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also MAGA risk.* Where specific solutions or consultants are imposed by the Contracting Authority (e.g. architectural or technical), some risk may remain with the Contracting Authority.	Markets differ in how they approach the criteria that design must meet in order for approval to be given. More developed markets specify objective criteria and provide for specific processes and time periods for approval of designs. Less developed markets provide the Contracting Authority with more discretion in approving the design, which can lead to uncertainty for bidders.
	Changes to design	●		●	The risk of changes to design after contract signature is allocated according to the reason for the change. If the original design is deficient or the Private Partner wishes to realize efficiencies, this will be a Private Partner risk, subject to the aspects which are the Contracting Authority's risk (as outlined in *Approval of designs and Suitability of design under Design risk*). If changes are required by the Contracting Authority, this would as a rule be a Contracting Authority risk (with the consequent time and cost implications borne by the Contracting Authority on the same principles as for compensation events). *See also Variations risk.* Contractual amendment procedures can in practice have such process and risk impact that the Private Partner may not be willing to take the risk that comes with initiating such amendment procedures. Requesting design changes or alternative or more detailed design development during the procurement stage will delay the procurement timetable and cause bidders to incur additional costs. The lack of certainty and potential cost may deter bidders and, depending on the change in requirements, may result in the procurement process needing to be re-run to comply with procurement laws or risk later challenge.	
CONSTRUCTION RISK *The risk of construction costs*	**Cost overruns**	[●]	[●]	●	Cost overruns (i.e. costs exceeding the construction costs assumed in the project's financial model) can have a variety of causes, such as mistakes in construction cost estimates, increased cost of materials,	In certain markets, risk is considered manageable by the Private Partner through robust pass through of obligations to

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exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.					actions of the Contracting Authority or government, as well as delays in – or mitigating potential delays in – the construction programme.. The Private Partner typically assumes the risk of cost overruns to the extent these are not caused by force majeure, compensation events (such as in relation to unsurveyed site or existing asset conditions) or MAGA events, and are not addressed through other bespoke provisions (e.g. Change in law or provisions specifically addressing exchange rate risk during construction – *see also Change in law risk and Exchange rate fluctuation risk under Financial markets risk)* or hardship doctrines *(see Glossary definition)* in underlying law. The Private Partner will mitigate these risks by passing them through as far as possible to its sub-contractors (for example, the construction sub-contractor). The Private Partner's financial model will typically include contingency pricing for cost overruns (as will the sub-contractor's assumptions). *See also Force majeure risk and MAGA risk.*	credible and experienced sub-contractors and by allowing appropriate timetable and budget contingency. The Private Partner can mitigate the risk of sub-contractor non-performance by obtaining appropriate security from the sub-contractors (for example, parent company guarantees and/or performance bonds). The Contracting Authority may sometimes seek additional security itself to ensure such costs can be met - see Taking performance security under Public Sector Risk Mitigation. Enforcement of construction budgets may be easier in markets where the Private Partner will typically have more experience and reliable access to resources.
	Works completion delays	[●]	[●]	●	Delays in delivering the infrastructure by the relevant works completion date can have a variety of causes, such as unavailability of construction materials, delays in shipping and mistakes in programme scheduling, as well as weather events, civil unrest or industrial action and actions of the Contracting Authority or government. The Private Partner typically assumes the risk of delays to the extent they are not caused by relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions. *See also Force majeure risk and MAGA risk.* Airport projects require complex commissioning and testing regimes given the intricacies involved in ensuring that the check-in, customs, baggage handling and the wider system will meet the necessary reliability and punctuality and throughput requirements of the output specifications. In most projects, the relevant date is the scheduled operation commencement date and to achieve that the works will need to be evidenced as complete. Some projects may instead (or in addition) require separate works completion deadlines to be met. This may be the case in jurisdictions where specific acceptance processes are required by law for construction works under public contracts and/or for insurance purposes. The consequences for the Private Partner of delays to the relevant works completion date are loss of expected revenue due to arise on the relevant date and ongoing construction and financing costs. In extreme cases, there is also a risk of potential termination for failing to meet the "longstop date" (a final later date by which the Private Partner must complete the project works/commence operation to avoid the Contracting Authority being entitled to terminate). The Private Partner will pass through these risks as far as possible to its sub-contractors (and may require the sub-contractors to pay it agreed damages to compensate for the delay to and loss of its overall project income and act as an incentive for timely completion). The Contracting Authority may also consider imposing agreed delay damages on the Private Partner to compensate it for delay to the start of the operating phase. In an airport context this may be reduced revenues or contractual damages that the Contracting Authority will incur and pass on to the Private Partner due to the airport opening later than expected or the cost of continuing the operation of an existing airport where the new airport is a replacement project. However, imposing such agreed damages will typically result in the Private Partner building additional contingency time and cost into the project's construction plan and the Private Partner should already be sufficiently incentivised to meet the relevant works completion date on time so that its revenue streams can commence. Some jurisdictions require certain criteria to be met in contractual provisions imposing delay damages if they are to be legally enforceable. Broadly speaking, if the damages exceed the Contracting Authority's likely real losses they may be seen instead as a disproportionate penalty and the provisions may be	Enforcement of construction deadlines may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. The management of completion risk is typically addressed by having either: (i) a scheduled completion date (with attached agreed damages for delay) followed by a fixed period for operation; or (ii) a scheduled construction period forming part of the overall contract term which is itself fixed, subject to extensions for certain events such as force majeure. With the latter scenario, the Contracting Authority may attempt to additionally impose agreed delay damages on the Private Partner. The difference between the two structures is that the former preserves the project's revenue generating operation phase and the Contracting Authority relies on the agreed delay damages to incentivise timely completion of the works and operation commencement. In the latter case, the incentive to complete the works and meet the scheduled operation commencement date is that any delay at the Private Partner's risk will reduce the revenue-generating operating phase.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					unenforceable.	
	Project management and interface with other works/facilities	[●]		●	**Project Management:** The Private Partner is best placed to integrate complex works within the project and typically assumes project management risk. In an airport context this may include ensuring that the project is compatible with other components of the project (such as other terminals or access roads). **Interface with other works/facilities:** Interdependence with other projects (such as access roads and air trains that transport passengers between terminals or electricity and transmission facilities) may also affect contract obligations and risk allocation. If some or all of the project is dependent either on the Contracting Authority carrying out particular works or making available an existing facility, or on related infrastructure work being completed by a third party, that interface risk will be the Contracting Authority's risk. For example, transport to and from the new airport is usually extremely important; if the government is providing new road or rail links to the airport, the Private Partner will need these to be provided on time for the opening (or by a specific time thereafter if a build-up of traffic at the airport is envisaged that will necessitate such link(s) being provided at a later date). In addition, a large airport upgrade may require a significant upgrade to power infrastructure and transmission infrastructure off the site. If the operation commencement date will be delayed due to such works not being carried out on time or the Contracting Authority otherwise failing to meet its obligations, this will be a compensation event or MAGA event. *See also Utilities and installations and Access to the site under Land availability, access and site risk, Suitability of design under Design risk, Maintenance standards under Operating risk, Demand risk and MAGA risk*	In some markets the Private Partner may be allocated the risk of third party work being properly and timely completed, particularly if the Private Partner has the opportunity to enter into interface arrangements with the third party. These interface agreements will result in the interface risk being shared between the Private Partner and the third party.
	Quality assurance and other construction regulatory standards		●		Meeting relevant quality standards will be a Private Partner risk, but where standards or codes are revised after the bid submission date this risk allocation will depend on whether the changes are mandatory and whether the Private Partner has priced the risk of such changes into its bid. The Contracting Authority may consider increasing the contract price (where applicable) to account for increased costs of compliance or the Private Partner may be excused from compliance with the new standard if it is not mandatory. This may be dealt with through the change in law provisions. *See also Change in law risk.*	
	Health and safety compliance			●	Responsibility for health and safety compliance on the construction site is typically a Private Partner responsibility. The Private Partner typically bears the risk of complying with health and safety laws/requirements and indemnifies the Contracting Authority in respect of any breach of such requirements. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority or other government entity and/or the affected party. Some projects require an annual safety review which enables the parties to assess relevant performance and safety management. Otherwise, the engagement of an experienced contractor with a strong safety record is also a mitigant.	In some jurisdictions with developed construction legislation, the Private Partner's responsibilities in the construction phase will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party			●	Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to the construction works. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	liability				result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third-party claims against it over this threshold.	Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Defects and defective materials			●	The Private Partner should be required to design and construct the project in accordance with good industry practice, and bears the risk and responsibility for completing the project free of defects. Defects are typically categorised as (i) visible and (ii) latent/hidden defects and are treated differently under the contract. The risk of visible defects is sometimes covered by an interim acceptance at completion of the works (and may result in a one off payment of agreed damages). As latent defects may not be noticeable for some years, the Private Partner is typically liable for such defects for a number of years after completion and the Contracting Authority may request a performance bond from the Private Partner to support this obligation (which the Private Partner will require from the relevant construction sub-contractor). The Contracting Authority may retain latent defects risk in existing structures. *See also Existing asset condition under Land availability, access and site risk and Maintenance standards under Operating risk.*	
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant intellectual property licences for the construction and operation of the airport and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will often be a Private Partner risk, sometimes with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials, site access and security during construction, etc. *See also Site Security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where the political climate opposes the airport.
VARIATIONS RISK *The risk of changes requested by either party to the service which affect construction or operation.*	**General**	●	[●]	●	**Contracting Authority change:** The Contracting Authority typically bears the risk and cost of service changes implemented following its request. The contract will specify the extent to which it is entitled to require changes and the reasonable grounds on which the Private Partner may refuse. The Contracting Authority will also bear the risk of ensuring it can meet its cost liabilities. **Private Partner change:** The Private Partner will bear the risk and cost of service changes implemented following its request, unless the parties have agreed a sharing mechanic as part of their discussions of the change. A sharing mechanic may be appropriate where the Contracting Authority wants to incentivise the Private Partner to introduce innovative or environmentally-friendly solutions. If the Contracting Authority is liable for costs, it should mitigate its risk by requiring a transparent costing review process, which it can due diligence. This is likely to be particularly a concern during the construction phase. As with any potential liabilities under the PPP contract, the Contracting Authority will want to consider how best it can fund such payments (e.g. through financing the variation direct	Some jurisdictions have detailed change protocol templates to follow for variations to ensure that costing is fair and transparent. Due to the impact changes can have on construction or operation (e.g. in terms of timing, cost and delivery), there may be restrictions placed on the ability to request changes of certain types or in certain phases. The Contracting Authority's ability to request and meet any changes costs will also be a concern, particularly where it has a weak credit.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					itself, requiring the Private Partners to procure committed but undrawn funding at financial close or to establish a reserve to fund future variations, each of which will come at a cost and may affect value for money, or requiring the Private Partner to procure financing at the time of implementation of the variation. Where financing is procured by the Private Partner, whether at financial close or at the time of implementation, the Private Partner's revenues will need to be adjusted to fund repayment of the financing. The risk and cost associated with changes arising due to other provisions will be addressed according to those provisions. *See also Changes to design under Design risk, Climate change event under Environmental risk, Disruptive technology risk and Change in law risk.*	
	Augmentation	●		●	Often the Contracting Authority wishes to provide for expansion of the airport in order to provide for an increase in passengers and/or aircraft movements. This may involve an expansion of existing terminal(s), a new terminal or an additional runway. The Contracting Authority may require that the Private Partner is obliged to carry out the expansion. The Private Partner will only agree to carry out the expansion if it can be justified and the Private Partner will not lose money or be unable to service its existing debt (if the airport has been project financed) plus any additional debt to be taken on to finance the expansion. The onus falls upon the Contracting Authority to draft attainable standards based on relevant market data and policy objectives. Performance based on passenger waiting times and throughput and quality of service can be measured against pre-determined schedules or standards. The trigger for airport expansion should be forward looking and based on upward trends in passenger numbers over a number of years. The trigger should not just be one year (or a couple of years) if this is potentially unsustainable. The expansion will need to lead to a demonstrable increase in airport revenues that will be capable of paying operating costs, allowing debt service and a margin as a return on investment for the Private Partner and lenders.	
OPERATING RISK *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.*	**Increased operating costs and affected performance**	[●]	[●]	●	Increased costs and delays in the operating phase can have a variety of causes, ranging from mistakes in maintenance cost estimates to extreme weather events. Aside from adjustments for inflation, the Private Partner broadly assumes the risk of events which inhibit performance and/or give rise to cost increases beyond modelled costs, to the extent these are not relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions or hardship doctrines *(see Glossary definition)* in underlying law. *See also Force majeure risk and MAGA risk.*	
	Performance/ price risk			●	In a user fee-based payment concession structure, underperformance by the Private Partner may result in it incurring fee deductions or may adversely affect demand. The Private Partner may be entitled to compensation to the extent this is the fault of the Contracting Authority. *See also Demand risk.* The Private Partner bears the risk of meeting the output specification under the contract (i.e. by ensuring that the relevant service is available and operational performance of the necessary quality and level (typically measured against key performance indicators)). Failure to meet the availability criteria and performance-based standards will typically result in the Private Partner having payments abated or penalties applied by the Contracting Authority. Where certain availability criteria or performance indicators cannot be met due to actions by the Contracting Authority (or other government entities) or unforeseen circumstances, the Private Partner may be entitled to relief (e.g. if caused by a relief, force majeure, MAGA or compensation event). For example, the required performance standards for an airport will often include those relating to the experience and availability at check in, in customs/immigration and security. If these functions are not fully under the control of the Private Partner and its failure to meet the relevant standard may be due to lack of performance by a public sector retained service (such as insufficient officers at immigration gates or security resulting in punctuality and throughput targets not being met), then the Private Partner may require relief from any penalties. These types of failures can also cause flight cancellations, not just at	In mature markets, the Contracting Authority should have access to various data sources to develop realistic and attainable performance specifications and models. For other markets, particularly in the case of market first projects, the preparation of attainable standards by the Contracting Authority is complicated by the lack of relevant market data. The Contracting Authority should set standards which are achievable in the relevant market, taking into account, for example, applicable aircraft maintenance standards. These may vary across different markets. In less mature markets, the Private Partner may require the Contracting Authority to reduce the performance requirements during the settling in period and possibly readjust the performance metrics once the performance of the airport has stabilized. This can mitigate the risk of long-term performance failure.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					the affected airport but also at other airports in other countries. In some cases, if this causes cost or loss of revenue to the Private Partner, it may be a compensation event. *See also Force majeure risk and MAGA risk.* The Contracting Authority is responsible for enforcing the performance regime and for ensuring that the performance specifications are attainable and properly tailored to what the Private Partner can deliver based on relevant market data and policy objectives. The appropriateness of the metrics can be assessed by reference to standards of similar services provided by the Contracting Authority (or other government body), value for money, the nature of the project and the relevant markets.	
	Operational resources or input risk		●	●	The Private Partner bears the principal risk and responsibility of ensuring an uninterrupted supply of resources for the project (such as utilities, maintenance equipment and materials, and specialist vehicles) and to manage the costs of those resources. It will need to consider this when structuring its supply arrangements. The management of costs is particularly important where the Private Partner is paying a periodic variable concession fee to the Contracting Authority based on gross, rather than net, revenue. Therefore any increase in costs will not decrease the amount payable to the Contracting Authority (possibly with some limited exceptions such as increases in tax or the pass through costs of utilities to airport users such as police, customs, air traffic control, etc.) but will reduce the amount available to pay the other costs of operations, service debt and provide a return to the equity investors. The Contracting Authority will be allowed to monitor the supply of required resources, and may allow for the Private Partner to substitute resources if necessary. Some of the cost risk can be managed on demand-risk projects, such as airports, by passing the risk through to the user by way of increases in airport duties or other charges to airlines or users. However, the ability to do this may be limited as airport projects tend to be demand elastic (i.e. costs to airlines go up so they reduce flights to the airport and the revenue goes down).In some markets, there may be specific instances where the risk needs to be shared (e.g. in relation to availability of energy supply or reliance on local source materials) where resources may be affected by labour disputes, embargos or other political risks. These may be treated as relief, force majeure, compensation or MAGA events. *See also Force majeure risk and MAGA risk.*	Certain markets are generally more susceptible to market volatility and major cost variations. Mature markets generally do not experience market volatility to the extent of less mature markets, and resource availability is less of a concern. However, energy costs may still vary significantly over the course of a project.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the airport and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Health and safety compliance	[●]		●	The risk allocation for health and safety will, in part, depend upon operating responsibility for the asset. The Private Partner will typically bear this risk in respect of its operational responsibility, as well as in respect of maintenance/repair works and other health and safety aspects related to the services provided by the Private Partner during this phase. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority and/or a third party. To the extent that the Contracting Authority has operational control of the asset, the Contracting Authority would typically retain "day to day" operational health and safety responsibility.	In some jurisdictions with developed construction and working practices legislation, certain of the Private Partner's responsibilities will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations, for example, in relation to maintenance work being carried out in the operating phase. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury,	[●]		●	The risk allocation for these liabilities will depend upon operating responsibility for the asset. Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	property damage and third party liability				the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to any building issues/defects and on-going maintenance/repair services and any other services/responsibilities of the Private Partner. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third party claims against it over this threshold. *See also Liability for death, personal injury, property damage and third party liability under Construction risk.*	In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Maintenance standards			●	The Private Partner will bear the principal risk of meeting the appropriate standards regarding maintenance as set out in the performance specification, so that the system remains robust, attracts passengers and airlines and is handed back in the expected condition on early termination or expiry of the agreement *(see also Condition at handback risk)*. This includes day-to-day routine maintenance as well as lifecycle maintenance and replacement of particular assets. Where the system constitutes an essential public service or effective monopoly operation over that route, it would be sensible for the Contracting Authority to include appropriate key performance indicators to monitor the service levels and take effective enforcement action (e.g. through penalties). Failure to maintain the assets in accordance with the performance specification will lead to payment penalties and, where significant, potentially breach. In practice, estimating life cycle works may be challenging. It requires experience and, to the extent available, the Contracting Authority may be able to provide data on life cycle cost. As the standard for PPP is often set at a much higher level than for existing (non-PPP) projects, such data is likely to require a multiplier. Life cycle funding/reserving mechanisms may mitigate life cycle risk but are also difficult to design adequately and Contracting Authorities should bear in mind that these can have an impact on risk allocation/value for money. The involvement of the Private Partner in the operation, maintenance and rehabilitation of the project, and the linking to payment mechanisms, can provide several benefits. It should incentivize greater care and diligence by the Private Partner in both the construction and operating phase, and increase the useful life of the infrastructure. The Contracting Authority may establish a facilities management committee to oversee the Private Partner's performance of the maintenance and rehabilitation services, along with a formal mechanism to discuss and resolve performance related issues. Generally speaking, the Contracting Authority should avoid undue interference with the Private Partner's provision of maintenance and rehabilitation services so as not to dilute the risk transfer benefits. In certain specific cases, the Private Partner for the airport is different from the Private Partner for the runways. In this case, the maintenance risk is allocated to each Private Partner according to the specific scope of the relevant contract.	In mature markets, the Private Partner generally assumes the overall risk of periodic and preventative maintenance, emergency maintenance work, work stemming from design or construction errors, rehabilitation work, and in certain instances, work stemming from implementing technological or structural changes. *See also Disruptive technology risk.* Some projects in less mature markets have been procured on a design-build basis with a view to then passing over the assets to an operations concessionaire. In this case the Contracting Authority will need to ensure that it has sufficient warranties of the project components to allow the operator to manage the ongoing maintenance risk.
		[●]		●	**Existing assets in the project:** If the project is not entirely new build and involves some existing structures, the maintenance risk should be allocated to the Private Partner to the extent the condition of the existing assets is known and future maintenance work can be assessed properly by an experienced contractor. In some cases, particularly where the Private Partner bears demand risk, the Contracting Authority may need to retain the maintenance or latent defect risk of some existing assets (and fit for purpose standards may need to be appropriately adjusted).	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]			**Existing (or other) assets interfacing with the project:** Similarly, the Contracting Authority will bear risk if it is required to guarantee and proactively manage the maintenance of existing (or other) assets that integrate with and are key to the performance of the project. *See also Access to the site and associated infrastructure under Land availability, access and site risk.*	
	Interface	[●]	[●]	●	**Services/third party interface:** Although the Private Partner is typically best placed to manage many of the operating phase interface risks that could adversely affect the project, there may be certain interface risks which need to be shared with or borne by the Contracting Authority. These include, for example, where the Contracting Authority/government retains certain core services (e.g. customs and border control or baggage handling) which affect throughput of passengers or flight schedules. Similarly, there may be interface risks to be shared where there are third parties providing services to the Contracting Authority (such as maintenance of the runways or provision of transport links to the airport) which similarly affect throughput or flight schedules. **Existing asset interface:** *See also Maintenance standards under Operating risk.* *See also Access to the site and associated infrastructure under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk and Demand risk.*	Where core services are retained by the Contracting Authority, in some projects the Private Partner may be required to provide suitable space for the relevant staff at the airport either for free or at cost.
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will usually be a shared risk, for example with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials and restrict access to certain areas etc. *See also Site security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where the political climate opposes the airport.
DEMAND RISK *The risk of traffic levels being different to forecast levels; the consequences for revenue and costs; and government support measures.*	**General principles**		[●]	●	The default position for airport projects in developed markets is for the Private Partner to retain demand and traffic risk (the risk of flight and passenger numbers and total revenue receipts being higher or lower than forecast and total revenue subsequently being higher or lower than expected) The Contracting Authority 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 therefore revenues (for example, due to tariff limitations and/or currency volatility) or forecast revenues are insufficient to cover the cost of constructing, financing and operating the project in question, as well as meeting the likely project contingencies, then it would be appropriate for the Contracting Authority to provide minimum revenue guarantees. Where demand risk is to be allocated to the Private Partner, bidders will 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. Bidders forecasts should also be reviewed to ensure they have not been overly optimistic in order for the bidder to provide a more attractive and viable financial proposal. Although the general position is that the Private Partner takes demand risk there is usually an exception to this for so-called "shock events". These are events or circumstances that may not occur within the country in which the airport is situated but which cause a significant fall in traffic within a certain period but which would not qualify as force majeure. For example, 9/11 would be a shock event as it had a significant effect for several years on air travel worldwide but the global financial crisis may not have been treated as a shock event. The effect of a shock event is to reduce significantly the revenues of the airport to such an extent that it is either not capable of paying its operating costs, servicing debt and meeting its banking ratios and paying the concession fee or it is forecast that it will not be able to do so.	In developed markets, the Private Partner should have access to various data sources to develop realistic and attainable traffic and revenue forecasts (in the absence of shock events), such that the Private Partner is well placed to manage demand and traffic. Transferring demand risk is more 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. This may involve some level of government revenue support underpinning the risk transfer (such as a minimum revenue guarantee). In some markets, the lack of any competing airports and guarantees that competing airports will not be built unless demand exceeds certain thresholds may give the private sector greater confidence to accept demand risk without a minimum revenue guarantee. 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.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					In this situation, all or an amount of the variable concession fee may be deferred until things have stabilised and the full concession fee can once again be paid in full together with payment of deferred amounts.	
	Higher demand than anticipated		[●]	●	The Private Partner in principle bears the upside of demand fluctuations where demand risk is allocated to it. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control than the Private Partner's. Higher demand should increase revenues, but in practice there are some issues to consider. First, the increased traffic may result in augmentations being required sooner than expected. This may alter the risk profile for the Private Partner if it is required to undertake large capital projects sooner and more frequently during the project than it expected. *See also Augmentation under Construction risk.* Second, if actual demand is higher than forecast, there may be public perception issues if the Private Partner is thought to be making a higher profit than originally anticipated (even if in reality it is facing higher maintenance costs as described above). If the airport faced public opposition originally then this perception is likely to be exacerbated. This could cause problems for the Private Partner if users start to boycott the airport or launch protests, as well as be politically uncomfortable for the Contracting Authority. In order to manage these issues, the parties may want to ensure the contract addresses such possibilities. For example, the augmentation regime should be configured to ensure the Private Partner is properly reimbursed for the expansion works and able to manage the associated risks. Equally, there may need to be a mechanism for sharing the profit above a certain level (having taken into account increased costs), typically through payment to the Contracting Authority. This might be particularly appropriate where the Contracting Authority has provided some form of subsidy or revenue support or if the reason for the higher demand is due to a Contracting Authority action which was not anticipated at the time of bidding.	Some markets have variable concession/operating periods, where the contract will terminate once the Private Partner has generated sufficient revenues to repay its debt and provide a return for equity investors. Such an arrangement may mean that the Contracting Authority receives an asset back much earlier than expected.
	Lower demand than anticipated	[●]	[●]	●	Although the Private Partner in principle bears the downside of demand fluctuations where demand risk is allocated to it, in practice the situation is likely to be qualified. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control. **Private Partner risk:** The Contracting Authority should be mindful that the competitive bidding process may encourage bidders to be aggressive with their traffic and revenue forecasting. Over-optimistic forecasting can create financial problems for the Private Partner, and may lead to project failure. The Contracting Authority can mitigate the risk by commissioning its own demand analysis to assist it in evaluating bids and their underlying forecasts. **Contracting Authority risk:** Some factors affecting demand are not within the Private Partner's control and the risk of such factors may instead lie more appropriately with the Contracting Authority. For example, in most cases, demand risk is unlikely to be accepted by the Private Partner in the absence of a regime that protects the Private Partner from "material adverse changes" which would impact user and revenue levels and which are outside its control. Such changes (and any materiality threshold) should be clearly defined and might include the construction of a new competing airport or other transport option (or failure by the Contracting Authority/government to deliver a key airport access road). Whilst the Private Partner may feel justified in requiring these measures in support of its estimated traffic forecasts, some of these steps may prove politically unpopular and will need to be carefully considered by the Contracting Authority. The parameters of such protection will need to be carefully negotiated to ensure the Contracting Authority and other relevant government bodies retain sufficient flexibility to implement other necessary urban development over the timeframe of the restrictions. Failure by the Contracting Authority to comply with any contractual obligations or measures would typically be treated as a compensation event or MAGA event. *See also Maintenance standards under*	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Operating risk and MAGA risk.	
	Government support measures		[●]		Projects where the Private Partner accepts demand risk are often underpinned by some form of government support in order for them to bankable. The effect of these measures is that the Contracting Authority shares demand risk. **Subsidies:** Support may be in the form of an upfront subsidy towards capital expenditure (i.e. construction costs) where user fee revenue is forecast to be insufficient for the Private Partner to meet its debt service and other financial needs. This type of support may be seen across all markets. **Minimum revenue guarantees:** An alternative to upfront subsidies is for the Contracting Authority to guarantee a minimum level of revenue for the Private Partner. The contract will provide that if revenue falls below a specific level, the Contracting Authority will pay the Private Partner an amount to ensure it receives a minimum revenue. The threshold for the guarantee should be set at a level which incentivizes the Private Partner and other stakeholders (e.g. other public sector entities) to increase user demand and the contract should still require appropriate levels of maintenance. This is to ensure that the Private Partner is not incentivised to rely solely on the guarantee and to discourage users and reduce maintenance costs. If this is structured as a “cap and collar” arrangement then the Contracting Authority may also benefit from economic upsides above the Private Partner’s base case. **Other support:** The Contracting Authority may also share demand risk by setting upper and lower revenue limits within which the Private Partner bears full demand risk and outside of which the Contracting Authority bears or shares the risk.	Several projects, transfer demand risk but have cap and collar revenue arrangements. This results in a hybrid position where demand risk is fully transferred to the Private Partner within a certain revenue range, but outside of this the Contracting Authority retains full demand risk.
FINANCIAL MARKETS RISK *The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.*	**Inflation**	[●]		●	**Construction phase:** The risk of construction costs increasing due to inflation is typically borne by the Private Partner who will generally price in this risk in markets where such risk can be projected and quantified. Where this is not possible the Contracting Authority is likely to be asked to bear some risk.	The fluctuation of inflationary costs is a greater risk in less mature markets than it is in other markets and the Private Partner’s expectation will be that this risk is borne and managed by the Contracting Authority during the contract term. In some markets, this risk has been addressed through closed priced construction contracts with the inflationary risk allocated to the Private Partner or the construction sub-contractor. The variable component of the availability payment is typically defined by the consumer price index in mature markets. In other markets, the selected indexation method will need to reflect variable financing costs and variable inputs such as staff and materials. It will be more crucial in less mature markets to find appropriate indicators which mirror the project needs rather than a general consumer price index.
		●			**Operation phase:** Inflation risk in the operating phase is typically borne by the project user (or by the Contracting Authority in availability-based projects). The Private Partner will look to be kept neutral in respect of both international and local inflationary costs through an appropriate inflation uplift. There is always a time lag in how quickly the indexation price increase is available to the Private Partner. Airports need the ability to increase the charges to airport users or to increase prices, but this ability may often be restricted as raising airport charges is likely to be a sensitive political issue and may well have an impact on usage and therefore revenue. The Contracting Authority may need to provide a subsidy to the Private Partner if users cannot bear the cost increase. The Contracting Authority may provide flexibility to increase charges to airport users (possibly up to limits) or allow additional increase in high inflation scenarios.	
	Exchange rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority may expect the Private Partner to bear the risk of an exchange rate fluctuation for a specific time period (e.g. 90 days) between submission of bid and financial close. Where there is a prolonged period between bid submission and financial close, the Contracting Authority may need to bear the risk. Where exchange rates are volatile or long term currency swap markets are illiquid, the Private Partner may have limited ability to accept the risk of exchange rate fluctuation and will seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of a change in exchange rate. Exchange rate risk can be substantial in markets where exchange rates are more volatile or long term debt or swap

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					foreign currency, such as USD.	markets are more illiquid (such as in countries with less developed capital markets.
		[●]	[●]	●	**Rate changes during project:** Allocation of exchange rate fluctuation risk over the life of an airport project will depend on the relevant project jurisdiction and the nature of the project costs and revenues. In airport PPP concession models, the Private Partner's revenues will often be a mix of the domestic currency of the project jurisdiction and foreign currency. The level of foreign currency revenues will depend on the services in question and whether it is commercially determined and permissible under local law for relevant fees (such as airline fees and ground handling charges) to be levied in foreign currency. In an availability-based model, the Private Partner is more likely to be paid by the Contracting Authority in domestic currency, subject to alternative agreement. The Private Partner may incur costs in a foreign currency and such costs may be translated into its bid price in the domestic currency on the basis of a particular exchange rate. In some projects, the Private Partner (and its lenders) may seek to transfer exchange rate risk to the host country by requiring that some or all the project revenue (or price) is linked to a foreign currency, such as USD. **Construction phase:** Exchange rate risk can arise where some or all of the construction costs are denominated in a currency different to the domestic currency. For example, where construction of the asset requires equipment that is manufactured overseas, adverse exchange rate movement may result in such equipment becoming more expensive than anticipated when converting domestic currency. This may use up the contingency the Private Partner has provided for in its financial arrangements (and priced into its bid) and/or require the Private Partner to take on additional borrowing in the construction phase to finance these costs. **Operating phase:** As with construction costs, a similar risk may arise if the Private Partner incurs operating costs (or has to pay concession fees) in a currency different to the currency of the various revenue streams received, such as airline charges and retail, duty free and food and beverage. For example, exchange rate risk can arise if the debt used to finance construction is denominated in a currency different to the currency of the price paid under the PPP contract. Adverse exchange rate movements during the operating phase where the debt is being repaid will result in debt repayment requiring a larger proportion of the Private Partner's revenue. This may result in the Private Partner having insufficient funds to service its debt and/or may eat into its projected equity return. **Mitigation:** The Private Partner typically looks to mitigate exchange risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the costs the Private Partner incurs are effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be factored into the contract price bid. The ability to earn revenues in non-local currency should also be assessed as it is a potential mitigant to exchange rate shifts. Airport projects typically provide greater opportunity for revenue generation in hard currencies than some other sectors due to the number and nature of different revenue streams available (both aeronautical and otherwise). Devaluation of a local currency beyond a certain threshold may also trigger a non-default termination, or a "cap and collar" subsidy arrangement from the Contracting Authority.	Exchange rate risks are more substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets). In more mature markets, the risk of currency fluctuations is typically not substantial enough to require the Contracting Authority to provide support and exchange rates risks are addressed solely through the Private Partner's own hedging arrangements. Where the exchange rates are more volatile, access to long term hedging may be either unavailable or too expensive. The likelihood of debt being dominated in a foreign currency is more likely in markets where financing by multilateral or international banks may be required (e.g. in less mature markets where there is limited depth in the local debt capital markets). *See also Strength of Contracting Authority payment covenant under Early Termination risk.* In emerging markets, as landside revenue will be collected in local currency (and possibly airport charges too in some cases), the Contracting Authority may need to retain the risk of devaluation of the local currency to the extent that such devaluation impacts on the economic viability of the project (due to the need to pay for foreign currency imports and service foreign currency debt). Some cost risk can be managed on demand risk projects by passing the risk through to the user by way of price adjustments (e.g. to airline fees), but the ability to do this may be limited

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	Interest rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority normally expects the Private Partner to bear the risk of a change in the reference interest rate between submission of bid and financial close for a specific time period (e.g. 90 days). Any rate changes after this time period will be a Contracting Authority risk.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of an adverse change in interest rate.
				●	**Rate changes during project:** The Private Partner will typically bear the risk of interest rate fluctuations over the life of the project but this will depend on the specific project and its jurisdiction. The Private Partner will seek to mitigate this risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the interest rate the Private Partner is required to pay is effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid.	In mature markets, the risk of interest rate fluctuations is not substantial enough to require the Contracting Authority to provide support and is typically addressed solely through the Private Partner's own hedging arrangements. In other (less stable) markets this may not be possible due to interest rate volatility or lack of long term hedging availability and in some circumstances it may be more appropriate for the Contracting Authority to retain interest rate risk if it can bear the risk more efficiently than the private sector.
	Unavailability of insurance .		●		The responsibility for placing required insurances and the cost of doing so is typically borne by the Private Partner. However, PPP contracts typically also include provisions to address the risk of insurance becoming unavailable or available at a cost which exceeds a level at which the Private Partner is able to price in reasonable contingency. Where neither party can better control the risk of insurance coverage becoming unavailable or more expensive, this is typically a shared risk. How this is addressed will depend on the specific project and jurisdiction. For the purposes of PPP projects, insurance is generally deemed unavailable to the extent (a) it is no longer available in the international insurance market from reputable insurers of good standing or (b) the premiums are prohibitively high (not just more expensive) such that contractors in the project jurisdiction are commonly not insuring such risk in the international market. As part of the feasibility study the Contracting Authority should consider what insurances are necessary and available at a reasonable premium and whether insurance might become unavailable (or too expensive) for the project given the location and other relevant factors. This is essential for assessing risk allocation for relevant events (e.g. force majeure risk allocation) and for the Private Partner to price its risks.	The standard approach as regards unavailability is common in mature markets. In some less mature markets, if insurance becomes unavailable, the Private Partner is typically relieved of its obligation to take out the required insurance but, unlike the mature market position, the Contracting Authority does not become insurer of last resort and the Private Partner bears the risk of the uninsured risk occurring. If the uninsured risk is fundamental to the project (e.g. physical damage cover for major project components) and the parties are unable to agree on suitable arrangements, then the Private Partner may need an exit route (e.g. the ability to terminate the project on the same terms as if the unavailability of the insurance were an event of force majeure). In negotiating an insurer of last resort position, the Private Partner and, in particular, its lenders, will carefully assess the Contracting Authority's credit and its ability to meet liabilities if an uninsurable event occurs. This is a reason why this position may be more likely in economically stable markets. In less stable markets the parties may negotiate more over whether a particular insurance should be an obligation in the first place and how the risk (and its occurrence) might be managed (e.g. through the force majeure provisions). In less mature markets, wider reference criteria may be
			●		**More costly premium:** Where the cost of the required insurance increases significantly (without becoming prohibitive), the risk is typically shared by the parties by either having an agreed cost escalation mechanism up to a ceiling or a percentage sharing arrangement. This allows the Contracting Authority to quantify the contingency that has been priced for this risk.	
			●		**Unavailability:** A standard approach in mature markets to manage unavailability of insurance is that where required insurances become unavailable, the contract typically requires the parties to try to agree a solution to manage the uninsurable risk and the Private Partner is relieved from breach of its obligation to take out the required insurance to the extent the unavailability is not due to its actions. If a solution is not agreed, the Contracting Authority is typically given the option to either terminate the project or to	

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					proceed with the project as "insurer of last resort" (i.e. to effectively self-insure and/or put in place its own insurance cover and pay out in the event the risk eventuates). If the Contracting Authority chooses to assume responsibility for the uninsurable risk, it may require the Private Partner to regularly approach the insurance market to try to obtain the relevant insurance and the contract price should be adjusted to reflect that the Private Partner is no longer paying the corresponding insurance premium. The Contracting Authority may need to consider whether it stands behind unavailability of insurance, in particular where this has been caused by certain events, such as an act or threat of terrorism.	needed in defining unavailability (e.g. to address a situation where the pool of benchmark contractors is insufficient to draw a meaningful comparison). Projects in some locations may find it more difficult to get insurance for certain events under commercially viable conditions. In this case the parties will need to find a solution to unavailability at the start of the contract.
			●		**Occurrence of uninsurable event:** With the mature market standard approach, if an uninsurable event occurs, the Contracting Authority may (a) terminate the contract (typically on a force majeure basis plus corresponding third party liability payments) or (b) pay the Private Partner the equivalent of insurance proceeds and continue the project. The approach to termination compensation reflects the general acceptance that uninsurability is neither party's fault and should be a shared risk.	
		[●]		[●]	**Unavailability due to fault:** Risk allocation will be affected by the reason for unavailability. As highlighted above, the provisions should only apply to the extent the Private Partner is not responsible for the insurance unavailability. Equally, if the unavailability is caused by the Contracting Authority's actions, the Private Partner may want to negotiate a right to terminate if a fundamental risk becomes uninsurable.	
	Refinancing		●	●	There are two key risks associated with refinancing (the changing or replacing of the existing terms on which the Private Partner's debt obligations have been incurred): (i) the risk that a project will be unable to raise the required capital to refinance a project at a given point in time; and (ii) the risk that a refinancing of debt will create additional project risks (e.g in terms of potential increased liabilities for the Contracting Authority and increased financial instability of the Private Partner). The risk of failing to raise required capital will arise in projects where the Private Partner (a) needs to seek a rescue refinancing to reschedule its borrowings if it is struggling financially, or (b) needs to replace short term (mini perm) financing which may have been the only financing option available to (or desirable for) the project initially. This is typically a Private Partner risk. Mitigation measures can include, in the case of mini perm financing, raising debt capital that has a repayment schedule that is matched to the PPP contract and project revenues available over the period of the PPP contract or by structuring the debt in several tranches of different tenors so that refinancing risks are smaller but arise more frequently. Refinancings may also occur where the Private Partner wants to take advantage of better financing terms available in the market (e.g. where the market recovers after a global financial crisis or after construction completion when the project is perceived to be less risky by funders). The risk of a refinancing creating additional project risks will be a risk for both the Private Partner and the Contracting Authority. The Contracting Authority needs to ensure that a refinancing does not adversely affect it (e.g. by increasing the level of its potential liability for termination compensation above what would have been the case under the original financing documents/financial model or increasing the risk of such liability falling due if the financial stability of the Private Partner is affected). To mitigate this risk, the contract should specify that the Contracting Authority's consent is required in specified carefully drafted circumstances. Where the result of a refinancing is that the Private Partner's debt costs are reduced, resulting in greater profit and in turn a higher equity return (typically known as "refinancing gain"), it may be appropriate for the gain to be shared between the parties (e.g. to the extent it increases the original forecast equity return in the financial model). The Contracting Authority may expect to share a percentage of the refinancing gain (e.g. 50%) and this is particularly important given the use of public funds to pay for the	Refinancing risks will ultimately depend on the depth and liquidity of the relevant capital markets. In more developed capital markets, the risk of failing to raise required capital is unlikely to be a significant risk as long-term finance is available from the outset. Mini perm financing is more common in countries where the capital markets are less developed and there is a lack of a market for long term debt instruments. However, banks globally already face greater regulatory pressure which affects the loan tenor they can offer, and it is likely they will face increasing restrictions even in developed markets which may lead to shorter initial debt tenors and increased refinancing needs. It has become increasingly acknowledged in mature PPP markets that it would not be fair for the Private Partner to enjoy the entire benefit of a refinancing gain where it is not entirely responsible for the availability of improved financing terms (e.g. where the market recovers after a global financial crisis). In emerging markets, particularly for demand risk projects, there may be limited scope for the Contracting Authority to

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					PPP project. To ensure it does not miss out on an anticipated share of any refinancing gain, the Contracting Authority should ensure that all relevant definitions are carefully drafted. The way the Contracting Authority receives its share of the gain will depend on the nature of the refinancing and discussions at the time. Options include: (a) a lump sum upon the refinancing to the extent the Private Partner receives such amounts at the time of the refinancing; (b) a lump sum or periodic sums at the time of receipt of the relevant payments, or the receipt of the projected benefit; or (c) by a combination of the above. For a more detailed analysis of typical refinancing provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	negotiate refinancing gain sharing if such gain is a key incentive for potential bidders. Refinancing provisions may not be included. This is more likely in untested "riskier" markets where the prospect of refinancing gain is a key driver to bidders' participation (as has been the case, for example, in the Philippines). As with more mature markets, the potential for sharing refinancing gain should increase as the PPP market becomes more established and perceived risks decrease.
STRATEGIC/ PARTNERING RISK *The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.*	**Private Partner failure/insolvency**			●	The Private Partner essentially bears the risk of failing to have the requisite technical or financial capability to deliver the project in accordance with the contract. However, as the consequences of such failures can lead to interruption in service and inconvenience to the Contracting Authority and users, as well as potential termination liabilities for the Contracting Authority, the Contracting Authority must carry out a thorough evaluation of each bidder to ensure that it selects the right partner to deliver the project, with whom it can develop the necessary long term partnership and meet any aspirations it may have as regards community engagement and local employment and skills development. *See also Risk Allocation in PPP contracts in the introduction.*	
	Sub-Contractor failure/insolvency			●	The Private Partner is responsible for its sub-contractors and bears any associated risks, unless the Contracting Authority imposes mandatory sub-contractors, in which case it may need to bear, or share, certain sub-contractor-related risks. However, the sub-contractors should form part of the Contracting Authority's evaluation of each bid for the reasons highlighted in relation to the Private Partner.	
	Change in Private Partner ownership			●	Complying with any contractual restrictions on change in ownership will be a Private Partner risk. The Contracting Authority wants to ensure that the Private Partner to whom the project is awarded remains involved and that any restrictions on, for example, foreign ownership of critical infrastructure are not circumvented. As the project is awarded on the basis of the Private Partner's technical expertise and financial resources, it will also want to ensure key parties such as parent company sponsors (and sub-contractors) remain involved. The Contracting Authority will typically prohibit any change in the Private Partner's shareholding for a period (e.g. by a lock-in for the construction period or until a couple of years into the operating phase) and thereafter may impose a regime restricting change in control without consent or where pre-agreed criteria cannot be met. The Contracting Authority's desire for certainty of involvement of key participants will need to be balanced with the private sector's requirements for flexibility in future business plans. This is particularly in respect of the equity investor markets and the added benefits of allowing capital to be 'recycled' for future projects.	In less mature markets, there is typically more restriction on the Private Partner's ability to restructure or change ownership. Overly restrictive provisions may deter investment, so this needs to be assessed in terms of the benefits to the Contracting Authority of both ensuring sufficient competition in the bid phase, and enabling parties to recycle their investment into other projects in the jurisdiction. Once the project is operational, for example, it may be reasonable for financial investors seeking regular returns to invest in place of certain of the initial (e.g. construction party) sponsors.
	Permitted Contracting Authority step-in			●	The risk associated with Contracting Authority step-in depends on the grounds for stepping in and whether due to the Private Partner's fault or not. Step-in circumstances include emergencies involving the emergency services, intervention to protect against social and environmental risks and fulfilling a legal duty to provide essential services of continuity of service. The scope and terms of the Contracting Authority step in is a key bankability point due to the potential impact on the parties' liability. **Private Partner fault:** If step in is due to Private Partner fault or an event it is responsible for, the Private Partner essentially bears the risk of costs incurred by the Contracting Authority (and itself). In some jurisdictions this liability may be capped. The Private Partner is usually given relief from performance of its affected obligations and may receive some payment in respect of its obligations.	In some jurisdictions, step-in is only contemplated in a breach situation and the Private Partner typically bears all cost up to a certain percentage (e.g. 15%) of project costs. A termination right may arise if the situation subsists for a certain period (e.g. 6 – 12 months). In some jurisdictions, the Private Partner may receive full payment as if it was performing the service in full or partial payment to reflect the affected obligations. In each case this will be subject to deductions and could result in zero payment. In some jurisdictions (e.g. in some EU countries and

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		●			**No Private Partner fault:** In this situation, the Contracting Authority bears the risk and will be responsible for its own costs. The Private Partner will be given relief from performance of its affected obligations and be entitled to extensions of time and relief on the basis of a compensation event (except to the extent the cause falls under another provision (such as force majeure) in which case that provision will apply). It will be entitled to full payment subject to certain deductions and may also require a cost indemnity from the Contracting Authority. In each case, risk should be allocated in respect of later issues around interface between solutions implemented during step in and the Private Partner's planned delivery solution, as well as any other risks that are allocated to the Private Partner. For a more detailed analysis of typical Contracting Authority step-in provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Australia), the Contracting Authority may not accept any liability when stepping in due to a Private Partner breach or event which is the responsibility of the Private Partner, except in the case of gross negligence in an emergency step in, fraud or bad faith. The scope and terms of step-in will be particularly relevant for Private Partners in jurisdictions which are less predictable or have underdeveloped or less stable legal or regulatory frameworks as the Private Partner will be concerned to limit the Contracting Authority's potential effect on the delivery of the PPP project. It may only want to agree to such rights in projects in sectors and jurisdictions where the Contracting Authority is committed to ensuring continuous delivery of the essential public service and has demonstrable experience in such delivery
	Change in Contracting Authority ownership/status	●			The Contracting Authority should bear the risk of any change to its ownership/status which adversely affects the project, for example, where its financial covenant and credit are adversely impacted. The Private Partner will typically have a right to terminate if certain criteria are not met and be entitled to compensation.	In stable markets, this risk may not be specifically addressed in the contract if satisfactory statutory or constitutional protections are available to the Private Partner. In less stable and untested markets, more specific provisions may be required, particularly where the Contracting Authority is not a central government entity.
	Disputes		●		**Private Partner/Contracting Authority disputes:** The risk of disputes is a shared risk and the consequences will depend on the outcome of the dispute. To minimise the risk of uncertain and costly outcomes, the contract should expressly include a clear governing law (typically the domestic law of the Contracting Authority's jurisdiction) and choice of dispute resolution forum (courts or arbitration). Efficient and fair dispute resolution processes should be included which provide for an escalated procedure where matters cannot be resolved between the parties' senior management, resolution of technical disputes by an independent expert, and recourse to the chosen forum. If the contract does not contain appropriate procedures this is likely to deter potential bidders and their lenders as efficient dispute resolution is a key bankability issue. A failure by the Contracting Authority to follow contractually agreed processes may also have an adverse effect on private sector interest in other PPP projects in that jurisdiction. There may be investment treaties applicable to the PPP arrangements with foreign parties, but these are no substitute for proper dispute resolution provisions in the contract itself. The Contracting Authority may be expected to waive any privileges and sovereign immunities which it enjoys before local and foreign courts (such as immunity from any suits by the Private Partner). Transparency and public access to information about disputes may be an important factor in choice of forum. In some jurisdictions the legal process is public which contrasts with arbitration which is generally a confidential and private process. Where additional agreements govern the relationship between the parties themselves, consolidation of related disputes and the joinder of related parties may be appropriate. To reduce the risk of concurrent processes, the agreements should include similar dispute resolution clauses agreeing to this. The Private Partner should be obliged to continue with performance of the contract while the dispute is resolved and, if so, will bear the risk of failing to do so. For a more detailed analysis of typical governing law and dispute resolution provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Contracting Authorities will typically select domestic law and local courts as the forum for disputes. This is for a variety of reasons including familiarity and compatibility with any concession/PPP legislation. It also minimizes the risk that local users and other stakeholders will bring claims in a different court. In jurisdictions with a less established and experienced legal system, the Private Partner is likely to want an established dispute resolution forum (such as a recognised arbitration centre for the particular region), rather than to rely on local courts. There may be circumstances where this option needs to be considered by the Contracting Authority as a necessary compromise in order to ensure the project is bankable. For the same reason, there may be certain cases where the Contracting Authority will consider having a foreign law as the governing law of the contract. Choice of forum may be restricted in some jurisdictions due to local law requirements (e.g. prohibiting referral of disputes to a foreign court or international arbitration, or being subject to a "foreign" law). This is particularly common in certain civil law countries where solely specific administrative courts are able to judge public authority decisions and/or contracts. Additionally, there may be local law limitations (under constitutional arrangements, public policy or otherwise) on contractually agreeing to waive sovereign immunity. There may also be reputational and

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						political issues if a Contracting Authority is seen to exempt public sector projects from the jurisdiction of domestic courts.
				●	**Sub-contractor disputes:** The Private Partner is responsible for disputes with its sub-contractors. The Contracting Authority should avoid the risk of getting involved in expensive and time-consuming peripheral disputes with other parties. However, it may want to consider allowing certain disputes it has with the Private Partner to be joined with disputes on the same matter between the Private Partner and its sub-contractor where the forum for resolving the dispute is appropriate. Any assessment of the need for joinder provisions is likely to be fact-dependent.	
DISRUPTIVE TECHNOLOGY RISK *The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.*		●	●	●	Responsibility for disruptive technology risk depends on the project circumstances. The Private Partner's obligation is to meet the output specification. If it fails to do so due to obsolescence of equipment or materials it is likely to suffer payment deductions and, above a particular threshold, may be at risk of termination. In this case it bears the risk of potentially having to replace relevant technological solutions (e.g. if the solution it has chosen is no longer supported). However, if it is performing above that threshold, the Contracting Authority cannot require it to replace technology simply because more efficient technological solutions are available unless there is an agreed contractual mechanism for doing so. To address this, the Contracting Authority may consider imposing obligations on the Private Partner to adopt and/or integrate with new technologies or to allow for other foreseeable developments, such as the potential introduction of electric aircraft. For example, the Contracting Authority may want to ensure the output specification takes into account both current and projected need for electricity charging points and requires the Private Partner to build in capacity to its design to enable the future development/addition of charging points and connections to local electricity grids. Similarly, an increased uptake of electric cars may require greater provision of electricity charging points for cars parking at the airport. In such cases, the Contracting Authority should also assess the capacity of local grids to cope with projected increased demand. It may be appropriate additionally to agree a specific cost sharing mechanic under which the Contracting Authority can request technological upgrades with appropriate cost sharing according to the reason for the request (e.g. if the replacement solution will improve health and safety or have social/environmental benefits). The same considerations apply if the Private Partner wants to make a technological change which is not strictly necessary and it may be appropriate for the Contracting Authority to consider incentivising the Private Partner to propose changes which will be of public or environmental benefit. The Private Partner will seek to mitigate its potential exposure through clear contractual cost and improvement parameters, beyond which any changes will be treated as a Contracting Authority variation of the PPP contract and entitle the Private Partner to relief in accordance with the contractual variation mechanic. *See also Variations risk.* It is important to take into account that some disruptive technologies may have both upside and downside effects on a project, as well as efficiency or social and environmental benefits. It may therefore be appropriate to consider mitigating mechanisms in any contractual solution. For example, digital technologies will allow for quicker, more efficient check in, baggage drops and security screening. However, this will reduce the time it is necessary to spend at the airport itself which may reduce the "dwell time" at airports and lead to less revenue for the airport derived from duty free and food and beverage sales. Similarly, ride share services and driverless cars could mean that it will be possible to travel to the airport and, rather than paying very high airport parking charges, the car could be sent home or used for another journey. Car parking revenue, which is a good source of revenue for airports, either directly or through fees charging to parking tenants, would be greatly reduced. Drop-off fees to	Disruptive technology risk is becoming under increasing focus in all markets. This is particularly the case in relation to technological changes relating to environmental protection and this area may require its own treatment in the contract (e.g. through specific treatment under the contractual variations mechanism and/or through other specific contractual obligations).

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					compensate for reduced parking revenue could be introduced to mitigate this. On a broader spectrum, the increased usability and availability of digital communications such as virtual meetings and personal video conferencing may lead to less business travel and so lower aircraft movements and passengers at non-tourist airports. Coupled with businesses' desire to reduce their carbon footprint and wishing to save money this could lead to lower revenues for the Private Partner and may be a factor which the parties need to consider in assessing the long term viability of the project.	
FORCE MAJEURE RISK *The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.*	**Force majeure events**		●		Force majeure is typically treated as a shared risk where neither party is better placed than the other to manage the risk or its consequences. **Scope:** Force majeure is an event (or combination of events) outside the reasonable control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law jurisdictions – the definition may require the event to be unforeseeable or not reasonably avoidable. Many jurisdictions have a concept of force majeure under general law and, particularly in civil law jurisdictions, this can limit the freedom of the parties to derogate from the scope of the legal concept and agree something different in the contract. However, most PPP contracts include specific force majeure provisions, whether they are civil law or common law governed, as this provides contractual certainty. The contract should be clear to what extent underlying law applies. **Approach:** Depending on the jurisdiction, the definition of force majeure may be an open-ended catch-all definition, an exhaustive list of specific events, or a combination of both. The open-ended catch-all definition is often seen in civil law-governed contracts and may also be more appropriate in markets which are less developed or stable and where there is little precedent or certainty. A non–exhaustive list of events may also be included. Qualifying events may be "natural force majeure" events (such as natural disasters and severe weather events, and possibly climate change events) and certain "political force majeure" events (such as strikes, war, government action etc). The exhaustive limited list approach is more common in developed and stable markets where the Private Partner has more certainty as regards the risk of events occurring and how it can manage them. It may be comfortable that events which might be force majeure in a less mature market (e.g. some types of industrial action) may instead be treated as relief events in a developed and predictable market. Under this approach, force majeure events are typically (but not necessarily exclusively) events which are uninsurable. Typical events include (i) war, armed conflict, terrorism or acts of foreign enemies; (ii) nuclear or radioactive contamination; (iii) chemical or biological contamination; and (iv) discovery of any species-at-risk, fossils, or historic or archaeological artefacts. As market practice develops, certain climate change events might also be included. *See also Site Condition under Land availability, access and site risk and Climate Change event under Environmental risk.* For a more detailed analysis of typical force majeure provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. **Risk qualification:** The Contracting Authority should consider whether it can limit its risk by carefully defining the events which qualify as force majeure, and/or qualifying or excluding them as appropriate. For example, in some projects earthquakes may only qualify as force majeure if they are above a specified seismic intensity. Alternatively, an event may only qualify if it has subsisted for a particular length of time. In some projects, risk is allocated to the Private Partner and/or shared for the first few months, and subsequently becomes a shared risk or Contracting Authority risk (with entitlement to terminate if the force majeure event continues for more than a defined time period (e.g. 6 – 12 months)). Using an open-ended definition of force majeure widens the risk shared by the Contracting Authority,	The scope of force majeure will depend on the particular project and jurisdiction. In France, for example, the affected party is relieved from its obligations if force majeure prevents performance and French jurisprudence has defined the characteristics of a force majeure event as (i) beyond the control of the parties, (ii) unforeseeable and (iii) impossible to overcome. In less mature markets, the list of specific events is likely to be wider than in more mature markets and include natural risk events, which typically can be insured (e.g. fire / flooding / storm etc), and force majeure events which typically cannot be insured (e.g. strikes / protest, terror threats / hoaxes, emergency services action etc). The extent to which the risk will be shared or allocated to one of the parties will depend on its nature and on the particular jurisdiction.

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					but may be appropriate in some markets. The availability of insurance for certain events will be one of the main criteria in determining whether an event should qualify as force majeure and/or how the consequences should be addressed. Certain risks may be more likely to constitute a force majeure event if they occur in one phase than another (e.g. events in the construction phase affecting materials supply).	
		●			**Contracting Authority political risk:** In some markets, certain political risk events may need to be allocated in full to the Contracting Authority because the Private Partner cannot reasonably be expected to bear any of the risk and/or because the Private Partner may price in such a high contingency in respect of the risk that it makes the contract unaffordable. Where the Contracting Authority bears the full risk of these risks, this may be addressed under the force majeure provisions but with "political force majeure" receiving different treatment to the shared risk force majeure events. Alternatively, these political risks may be treated in a separate provision under the heading of "material adverse government action" or similar (which may also include other forms of event for which the Contracting Authority is deemed solely responsible). *See also MAGA risk.*	In certain markets, it may be necessary to differentiate how similar types of risk events are treated, depending on where they occur. For example, in more politically volatile jurisdictions, war events might be wholly a Contracting Authority risk where they occur within the country, but a shared risk otherwise. *See also MAGA risk.*
	Force majeure consequences		●		The basic principle of force majeure is that the risk is shared and each party bears its own losses. However, there may be circumstances where it is appropriate for the Contracting Authority to provide relief to the Private Partner, provided the Private Partner has made reasonable efforts to mitigate the force majeure effects and to the extent it was not responsible for the event. In addition to granting the Private Partner relief from breach of its affected obligations, certain time or cost relief may be granted (sometimes where a particular threshold of costs or time delay has been reached). This will depend on the phase in which the event occurs and should be considered at the time, together with the impact of the event on the Contracting Authority and the options available to it. Termination following prolonged force majeure (e.g. 6 – 12 months) may also be available. If the Private Partner has the ability to terminate the PPP contract on the basis of a prolonged force majeure event, the Contracting Authority may want to include an option to require the PPP contract to continue, provided that the Private Partner is adequately compensated. This approach is more likely to be encountered in a more established PPP market. **Construction phase:** The consequences for the Private Partner of a force majeure event in the construction phase are that it may be unable to meet all or part of its contractual obligations, in particular key dates (such as the operation commencement date); may suffer delayed and/or lost revenue; and may incur additional financing and other costs (e.g. in relation to mitigating the event), both during and after the force majeure event. As well as relief from breach of the affected obligations, the Contracting Authority may decide to grant certain cost relief (either while the force majeure event subsists or through the operating phase if the contract continues) on the basis that the Private Partner has limited means to absorb additional costs and it may be in both parties' interests to avoid the Private Partner going insolvent. For example, it may elect to make a compensation payment at the time or, if the contract continues, grant extensions of time and/or an extended operating period so that the Private Partner has the opportunity to recoup lost revenue and costs. **Operating phase:** The consequences for the Private Partner of a force majeure event in the operating phase are that it may be unable to meet all or part of its contractual obligations (including failing to deliver the service); may suffer delayed or lost revenue; may incur additional financing and other costs; and may possibly be unable to service its debt repayment obligations. Again, in addition to relief from breach of its affected obligations, the Private Partner may be granted grant certain cost relief on the same principles as described in the construction phase. In an availability payment model, it may also grant payment deductions relief or relaxed performance standards and in a demand-based model some element of payment subsidy. For an airport, a significant force majeure event could have a major impact on	The approach to cost and deductions relief varies across jurisdictions. In developed markets (particularly some civil law jurisdictions) Contracting Authorities may be more willing to make compensation payments during a force majeure event. In some jurisdictions, the contract will expressly identify only specific force majeure risks for which the Contracting Authority will grant financial relief (e.g. raw materials price volatility). It may not be as common in less mature markets for cost compensation to be paid during force majeure unless caused by an event deemed to be a political risk for which the Contracting Authority is wholly responsible (e.g. a MAGA event). *See also MAGA risk.* Force majeure relief should be distinguished from relief available under any hardship doctrines *(see Glossary definition)* existing under the underlying law of the project jurisdiction. Increased security costs as a result of terrorist events (even in different countries) may also need to be addressed given heightened security concerns.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					revenues if uninsured. **Insurance:** Project insurance (physical damage and loss of revenue coverage) will be a key mitigant in respect of physical damage, to the extent it is available, and an important consideration in respect of compensation and how to continue the project. Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common.	
MATERIAL ADVERSE GOVERNMENT ACTION RISK (MAGA) *The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.*		●			In projects where a MAGA provision is appropriate, the Contracting Authority bears the risk of specific "political" actions having a material adverse effect on the Private Partner's ability to perform its contractual obligations, or on its rights or financial status. The Contracting Authority is responsible for costs and delays and is typically at risk of termination for prolonged MAGA events. Although not all jurisdictions use the term "MAGA", many have equivalent provisions under different terminology. MAGA events typically include: deliberate acts of state such as outright nationalisation or expropriation of the PPP contract; a moratorium on international payments and foreign exchange restrictions; certain governmental acts (such as not granting essential approvals where the Private Partner is not at fault); and politically-inspired events such as national strikes. Change in law is also a form of MAGA. Although some of these events may not seem as obviously within the Contracting Authority's control itself as others (e.g. if they relate to other arms of government), market practice is that they are accepted by the Contracting Authority. This is because passing them to the Private Partner may result in it being unable to enter into the contract or pricing in such contingency that the contract is unaffordable. The list of events will depend on the individual project circumstances and the position agreed on force majeure events, and the Contracting Authority can limit its risk by qualifying relevant events by reference to a clearly defined materiality threshold. The process and consequences of MAGA are broadly similar to force majeure as regards the parties trying to find a solution and how the Private Partner may be compensated. The key difference is that the underlying principle behind MAGA relief is to put the Private Partner back into the position it would have been in had the MAGA event not occurred. The parties may terminate for prolonged MAGA, with compensation payable on a similar basis to Contracting Authority default termination. The Contracting Authority may be able to reduce its liability in some cases if it can negotiate different treatment for MAGA events which are not as clearly within its own control and influence. For a more detailed analysis of typical MAGA provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition. See also MAGA/Change in law termination under Early Termination risk.*	MAGA type clauses are more likely in less predictable and stable markets where the Private Partner (and its lenders) may require a clear regime to address specific government-related actions for which the Contracting Authority is responsible. This may be because of an actual or perceived likelihood of certain MAGA events occurring (e.g. war or civil unrest), or a lack of track record of PPP contracts being run successfully free from political interference over long periods of time and across political cycles. In mature politically stable markets, the Private Partner (and its lenders) are often comfortable that the type of MAGA risks likely to arise are limited. Instead of being detailed in a specific Contracting Authority risk clause, they can be addressed through the shared risk force majeure provisions and compensation event type provisions (and the general right to terminate for Contracting Authority default in limited circumstances). Investors and lenders may be able to obtain political risk insurance in respect of some of these types of risks. This is more common in politically young or unstable markets. Some jurisdictions are more politically volatile internally than others and certain political risks will be treated differently. For example, war events may be treated as MAGA if they occur within the country, and shared risk force majeure if outside it.
CHANGE IN LAW RISK *The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.*	**Compliance with applicable law**	 ● ●		● [●]	Compliance with applicable law and mandatory regulation is each party's risk. The Private Partner is typically subject to an express contractual obligation and will be in breach if it does not comply with applicable law, subject to change in law relief. The contract must be clear what laws and other mandatory regulations and industry codes the Private Partner is obliged to comply with. This is essential not only so the Private Partner can price its compliance, but also in order to determine what constitutes a change in law so that change in law risk can be allocated effectively. Compliance by third parties is likely to be a Contracting Authority risk where it has failed to enforce compliance and there is an adverse effect on the project (e.g. where load limits exceed permitted levels and increased maintenance costs are incurred). *See also Maintenance Standards under Operating risk.*	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Change in law (and taxation)	●	[●]		The Contracting Authority primarily bears the risk of unexpected changes in law which were not in the public domain before a specified cut-off date in the bid phase and which cause the Private Partner's performance of its contractual obligations to be wholly or partly impossible, delayed or more expensive than anticipated (or impact its investors). This is because the Private Partner has contracted to provide the specific airport project at a specified price based on a known legal environment and typically has limited means of offsetting adverse consequences of unexpected law changes except to the extent it can pass such increased costs on to airport users. As change in law may also benefit the Private Partner, change in law clauses are often reciprocal, to ensure the Contracting Authority benefits from the "positive" financial consequences of a legislative change. The Contracting Authority's risk can be mitigated by ensuring that the contract clearly defines what constitutes a change, the relevant cut-off date and what constitutes being in the public domain. This will vary according to the nature of the project and jurisdiction concerned. There are various approaches to risk allocation as briefly summarised below and the degree of risk sharing will depend on the type of change and the approach suitable to the maturity and stability of the relevant legal market. Any risk that is transferred to the Private Partner is likely to be reflected by contingency pricing in its bid which may result in the Contracting Authority paying for something that never happens. The Contracting Authority should be mindful of how it will fund changes in law which are at its risk should they arise. For a more detailed analysis of typical change in law provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Change in law risk may be treated as a MAGA event if the treatment agreed for this form of political risk is the same as for other MAGA events. Generally speaking, where a detailed approach to risk allocation is involved and where the consequences do not lead to termination, change in law is best dealt with separately – this is more typical is established markets. *See also MAGA risk.* In defining a change it may be appropriate for the definition to include any modification in the interpretation or application of any applicable law. This is particularly likely in common law jurisdictions. As highlighted by the different approaches, in mature legally stable markets the Private Partner will likely have less protection than in jurisdictions where changes in law are less predictable and/or more likely due to underdeveloped or less stable legal or regulatory frameworks. Approach (a) is often seen in developing markets with less established legal environments as it may be the only way that private finance can be raised and should also enable the Private Partner to offer a more competitive price. Approach (b) has also been seen in more developed markets and some emerging markets. Approach (c) is seen in more experienced PPP markets. While it will involve some contingency pricing, this approach is considered generally more beneficial to the Contracting Authority, but may not be bankable in every jurisdiction and should be contemplated on a case-by-case basis. Even in markets using this approach there will be instances where this risk allocation is not fully achievable due to the nature of the PPP project and the extent to which the applicable legal and regulatory regime is settled. Past models (including in the UK) used to require the Private Partner to assume, and price for, a specified level of general change in law capex risk during the operational period, before compensation would be paid. The UK Government ultimately decided that this allocation did not represent value for money and reversed this position. Some countries which adopted the UK model had already taken this approach. Although a Contracting Authority may bear all change in law risk at the start of a PPP program, once a track record and/or legal environment is established in its jurisdiction which gives the private sector greater confidence in the stability and predictability of the regime, Contracting Authorities procuring new PPP projects may be able to explore some risk transfer to the Private Partner.
		●			**Approach (a) Contracting Authority risk:** The basic approach is that the Contracting Authority bears all the risk of change in law and provides full relief to the Private Partner.	
		●	●		**Approach (b) Limited risk sharing:** A more nuanced approach is for the Private Partner to accept a certain annual monetary threshold up to which it accepts any unexpected change in law risk and above that threshold the Contracting Authority bears the risk/cost. This enables the Private Partner to price the risk it bears.	
			●		**Approach (c) Advanced risk sharing:** With this approach the Private Partner is kept whole in respect of unexpected changes in law which are: (i) discriminatory (e.g. to the project or the Private Partner); or (ii) specific (e.g. to the air transport sector or to investors in airports businesses); or (iii) require capital expenditure after construction completion (i.e. in the operating period). (Applicable law may protect the Private Partner from unexpected changes in the construction period if the relevant legal regime provides that changes in law affecting capital expenditure during construction do not apply retrospectively.) With this more detailed approach the Private Partner bears (some of) the general business risk that applies to all businesses (including operational expenditure or taxation affecting the market equally) and can absorb this in part through the indexation provisions typically contained in the pricing mechanism.	
					Taxation: Where the payment structure of an airport project is a concession fee payable to the Contracting Authority based on gross, rather than net, revenues, an increase in taxation will increase the costs of the Private Partner without providing any relief in relation to the amount of the concession fee payable. This will reduce the amount available to the Private Partner to pay operating costs and debt service. If there are restrictions on increases in airport charges then the Private Partner may not be able to pass the cost of the increase in the taxation on to the airport users, as would be the case with other businesses that were not operating in a similar price regulated environment. Even if there are no price controls, the Private Partner cannot just increase charges to airlines without	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					meeting resistance, either because they cannot pass on the extra charges to their customers or because they will reduce their usage of the airport. For these reasons, Private Partners have often sought and received protection from tax increases above thresholds by reduction in concession fee rates. This has generally not been the case with increases in taxes and duties on duty free goods or food and beverage sales.	A termination right as a consequence of change in law is not considered necessary in all jurisdictions. In civil law jurisdictions it is common for the Private Partner to have a specific right to terminate the contract where performance of the PPP contract would entail a breach of law that cannot be remedied by a Contracting Authority variation. This is not usually seen in common law jurisdictions with established legal frameworks as the Private Partner and its lenders are able to take a view that it is highly unlikely that a change in law would result in such drastic consequences without means of holding the government accountable. In civil law jurisdictions, Private Partners may sometimes rely on underlying legal principles such as hardship doctrines *(see Glossary definition)* for relief. However, widespread market practice across civil and common law jurisdictions has shown that the private sector is unwilling to enter into PPP contracts on such a basis as both lenders and sponsors require express contractual certainty in relation to the potentially significant impact of changes in law.
			●		**Bespoke mechanisms:** It may be appropriate to have bespoke mechanisms for certain changes in law, such as those relating to climate change and environmental protection – market practice is still developing in this regard. *See also Climate change event under Environmental risk.*	
		●			**Consequences:** The Private Partner should always be entitled to relief from breach of contract where a mandatory change in law occurs which conflicts with an existing obligation or would make compliance illegal (and/or impossible). The contract typically contains a mechanism by which the Contracting Authority is deemed to request a corresponding contractual variation of the relevant obligation. The nature of the cost relief given to the Private Partner will be as described for a compensation event. Alternatively, the Private Partner may be entitled to a right to terminate (typically on a Contracting Authority default basis).	
		●			**Stabilization provisions:** Some projects may also provide for a stabilization clause that entrenches certain legal positions (such as the current tax regime) against any future changes in law. This may require a level of parliamentary ratification of the project contract.The stabilization method is generally not favoured by governments or non-governmental organisations (e.g. because the concept of Private Partner immunity from changes in environmental protection laws is unsatisfactory) and the Contracting Authority should instead seek contractual mechanisms to address such matters.	
EARLY TERMINATION RISK *The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.*	**Contractual termination provisions**		●		The allocation of risk for early termination depends on the termination grounds and these also determine the financial consequences of termination. The key risks relating to the contract being terminated early are that the Private Partner is deprived of its expected revenue stream to repay the debt it incurred developing the project and the project asset or service ceases to be delivered for the Contracting Authority. The complexity and variety of termination circumstances result in parties in all jurisdictions almost always seeking to include clear contractual mechanisms in the PPP contract which set out comprehensively what circumstances may give rise to termination, who may terminate and what the consequences of termination will be for the Contracting Authority and the Private Partner, as well as for lenders or other key third parties. Without such certainty, bidders and potential lenders may be deterred from bidding. The Contracting Authority should not be "unjustly enriched" by receiving an asset for which it has not paid the expected contractual price. This is an underlying legal principle in most jurisdictions and should be taken into account in the drafting of applicable termination compensation provisions. The Contracting Authority, besides making a payment, will need to consider the other risks associated with termination, such as the reputational risks, continuity of service delivery, completion of the works or maintaining the asset itself, or re-tendering the project (or a mix). For a more detailed analysis of typical early termination and termination payment provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	The increasingly market standard approach in all jurisdictions is to include contractual termination provisions in the PPP contract. However, in some civil and common law jurisdictions there may be underlying laws addressing certain termination rights and their consequences which apply without the PPP contract having to include termination provisions. While relying on underlying law rather than express contractual provisions is an approach less likely to be seen in common law jurisdictions, there can be certain exceptions as described, for example, under *Contracting Authority default termination and Voluntary termination by Contracting Authority*. Furthermore, if the transaction is financed in a shariah-compliant manner (such as through an ijara (lease) structure) consideration must be given to how ownership will be transferred following the termination. This is typically achieved through a Purchase Undertaking or Sale Undertaking of the underlying assets. In less developed PPP markets, it may not be easy to re-tender a project if there is no pool of alternative contractors to take on the project.

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	Contracting Authority default termination	●			**Termination right:** The Contracting Authority bears the risk of termination for breaches which have a material adverse effect on the Private Partner or the project (e.g. expropriation in relation to the PPP project and failure to pay). The test is typically that the default event has made it impossible for the Private Partner to perform the contract or rendered the continued relationship untenable and any materiality threshold should be clearly defined. *See also MAGA risk.* To mitigate the risk of termination, the Contracting Authority should ensure that grace periods are built in (e.g. for non-payment) so that it has the opportunity to rectify the default and reduce the risk of a termination right arising purely from, for example, administrative error. **Compensation:** Although the exact approach depends on the relevant jurisdiction, the underlying principle is that the Private Partner should be fully compensated by the Contracting Authority as if the PPP contract had run its full course. The Private Partner would typically receive an amount in respect of senior debt (including where applicable hedge break costs), junior debt, equity investment and a level of equity return which from the Contracting Authority's perspective should where possible reflect the actual performance level of the Private Partner. Redundancy and sub-contractor break costs will also be included. The Contracting Authority should mitigate the amount it pays out by setting off deductions available to the Private Partner in respect of, for example, insurance proceeds, bank accounts, hedge break entitlements and surplus maintenance funds.	There are some common law jurisdictions (e.g. Australia) where the Private Partner is expected to rely on its common law rights to terminate for Contracting Authority default instead of having an express contractual right. This may be because termination for Contracting Authority default is such a fundamental step with enormous business and other ramifications for the Private Partner that the focus is instead on the enforceability of the contractual payment and time/cost compensation provisions applicable to breaches by the Contracting Authority. Similarly, in civil law jurisdictions the PPP Contract may be silent, and the Private Partner may need to apply to an administrative court to request contract termination (as was the case in earlier PPP contracts in France). Relying on underlying law is likely to deter bidders in markets where there is insufficient legal precedent and certainty.
	MAGA / Change in law termination	●			**Termination right:** Some PPP contracts may contain specific MAGA provisions which entitle the parties to terminate the PPP contract if there is a protracted MAGA event. The type of political risk events addressed by a MAGA provision may include the type of Contracting Authority defaults outlined under *Contracting Authority default termination* and also change in law where there is no solution agreed to continue the contract. This could mean that a PPP contract (i) only has a MAGA provision, (ii) only has a Contracting Authority default provision, or (iii) has a combination of the two and/or separate provisions addressing specific political risk matters such as changes in law. *See also MAGA risk and Change in law risk.* **Compensation:** The same principles will apply as outlined for Contracting Authority default termination but some jurisdictions may only allow the Contracting Authority to terminate for protracted MAGA-style events by implementing a voluntary termination. The Contracting Authority may be able to negotiate a reduced termination payment in respect of "no fault" MAGA events. *See also MAGA risk and Voluntary termination by Contracting Authority under Early termination risk.*	Markets which are politically and legally stable are less likely to have separate MAGA termination provisions as the Private Partner and its lenders will be comfortable relying on a Contracting Authority default termination provision, combined with a shared risk force majeure provision and other contractual provisions (e.g. compensation events) which provide time and/or money relief to the Private Partner in relevant circumstances of Contracting Authority responsibility.
	Voluntary Termination by Contracting Authority (Also commonly referred to as termination for convenience, public policy or interest. termination at will or unilateral termination.)	●			**Termination right:** In return for having the right to terminate for convenience, the Contracting Authority bears the risk of this event. It should have fully considered and prepared for termination before deciding to exercise its right to terminate. The notice period should be the minimum sufficient for both parties to make appropriate arrangements in respect of the handback of the project and to facilitate compliance with handback obligations. **Compensation:** The Private Partner's prime concern will be to ensure it is fully compensated for such early termination and able to comply with its handback obligations. The termination payment will be based on the same principles as for Contracting Authority default.	In some jurisdictions (more typically civil law) the Contracting Authority may be entitled to terminate the PPP contract on the grounds of public interest even without an express contractual right. This inalienable right is rarely invoked but the private sector (Private Partner, sub-contractors and lenders) will still require the PPP contract to cater for this low probability but high risk event as comprehensively as possible. The Contracting Authority may be required to substantiate the validity of the public interest ground (for instance, termination may not be permitted purely on financial grounds). In some jurisdictions (e.g. France) it is not possible to contractually waive the right to unilaterally terminate in the public interest, but it is possible for parties to agree in advance the procedure and consequences of such

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						termination. In practice, these are usually identical to voluntary termination, or even a Contracting Authority default scenario. This is because the Private Partner is not responsible for, nor capable of mitigating, a public policy-driven decision to terminate unilaterally.
	Force Majeure and Uninsurability termination		●		**Termination right:** The risk of a force majeure termination arising is shared by the parties. Typically it will arise after 6-12 months of prolonged force majeure where the parties are unable to agree a solution to continue with the project. **Compensation:** The Contracting Authority pays termination compensation to the Private Partner reflecting the principle that force majeure events are neither party's fault and the financial consequences should be shared. This is not "full" compensation as this would result in the Contracting Authority bearing all the financial pain. Typically outstanding senior debt (including where applicable hedge break costs), initial equity, redundancy payments and sub-contractor break costs will be paid, less any applicable deductions as on Contracting Authority default termination). The Private Partner will lose all its forecast equity return (i.e. its anticipated profit) but the payment will be sufficient to repay all of its outstanding senior debt which will help address bankability concerns as to whether the debt will be kept whole in this termination scenario. The equity element will serve as a buffer for lenders if the termination payment does not cover 100% of the outstanding debt.	In some (typically less developed) markets, the Contracting Authority may succeed in negotiating paying no termination compensation in respect of certain natural risks which are insurable (and would reasonably be expected to be insured against as good operating practice), or a reduced amount reflecting insurance payments received (or receivable) by the Private Partner. This to some extent reflects the practice in more developed markets where these type of events may instead be classified as relief events which entitle the Private Partner to time relief only (but no ultimate right of termination). This will of course depend on the risk assessment by the Private Partner and its lenders. In less mature markets it is not uncommon for the senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted.
	Private Partner default termination			●	**Termination right:** The Private Partner bears the risk of termination by the Contracting Authority for serious failures by the Private Partner connected to delivering the PPP project. Termination events may be performance-related or relate more specifically to the financial status and corporate activity of the Private Partner. In order to mitigate the risk of termination, the contract should clearly define the default events and they should have reasonable in-built tolerance levels so that an appropriate threshold of poor performance has to be reached before termination rights arise. The opportunity to rectify should be given where feasible. The Contracting Authority can mitigate the risk of a termination payment arising as it has control over serving the termination notice that triggers it. It also has the ability to mitigate against the risk of Private Partner default even before the PPP contract is signed, by careful selection of the winning bidder. *See also PPP Project Preparation and Delivery in the introduction.* **Compensation:** The Private Partner will typically be entitled to a compensation amount equal to a pre-set percentage (around 80 – 100%) of the scheduled outstanding debt, minus applicable deductions, and no equity compensation. The aim of a lender "hair cut" of less than 100% debt is to incentivise lenders to conduct proper due diligence and exercise their monitoring and step-in rights to ensure the Private Partner delivers the project satisfactorily so that it avoids termination and can repay the whole of the lenders' outstanding debt. Alternatively, a market value retendering of the contract may take place (or be deemed to take place) and the compensation paid to the Private Partner will be the price tendered (or deemed tendered), less applicable deductions. A third alternative is for the Private Partner to receive a payment based on book value.	In some civil law jurisdictions, insolvency laws may have an impact on the right to terminate the PPP in the event of insolvency of the Private Partner (or its shareholders). A debt-based compensation method is the most common approach in emerging markets and availability-based PPP projects in jurisdictions such as France and is also seen in Germany. The market value retendering approach is more likely in a mature PPP market where there are likely to be a number of potentially interested purchasers in the relevant sector. Lenders to PPP projects in certain jurisdictions or in relation to certain assets may be reluctant to rely on a market-based valuation method for fear of undervaluation or underpayment. This is particularly likely to be the case in emerging markets where there is a limited PPP track record and a limited market. Some European jurisdictions have followed a book value approach but this may not accurately reflect sums owed and is not as common. In less mature markets it is not uncommon for a high percentage or the full senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted. The higher percentage haircut is seen in markets where the risks in respect of project failure and of the ability to rescue it are considered low (e.g. from a technical or resourcing perspective, or because the market is known), and the overall security package available to Lenders is otherwise

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						sufficient to cover their debt. Lenders in such markets (e.g. in some projects in the US) may alternatively accept no compensation for the same reason but this is not common practice. If available in the relevant jurisdiction, lenders will seek a direct/tri-partite agreement with the Contracting Authority. The purpose of this is to give lenders step-in rights if the Contracting Authority serves a default termination notice or if the Private Partner is in default under the loan documentation. The lenders would typically be given a grace period to gather information, manage the Private Partner and seek a resolution to rescue the project and the right to ultimately novate the project documents to a suitable substitute private partner.
	Strength of Contracting Authority payment covenant	●		[●]	The Contracting Authority bears the risk of making the relevant termination payment on time and in the amount required. To mitigate the risk of failure, it will need to assess whether it will be able to pay a lump sum if such a large payment is not budgeted for or does not have backing from its government treasury department. Payment over time may be preferable and the Contracting Authority should in any event try to negotiate a reasonable grace period long enough to raise the necessary funds. The Private Partner and its lenders will typically want to close off their exposure to a terminated PPP project and avoid Contracting Authority credit risk as soon as possible. It is likely that they will favour a lump sum payment, particularly on Contracting Authority default termination where the most likely cause of termination is failure to pay. In some cases, the Contracting Authority may be asked to provide credit support of its payment obligations. Lenders may be reluctant to release security interests held over the PPP project assets until compensation payments have been made in full. This may make the transfer of relevant assets back to the Contracting Authority difficult. In certain circumstances, the Contracting Authority may be able to negotiate an interim solution at the time of the termination, such as an arrangement whereby it has a right to access the PPP project assets during the period from the termination date until all termination compensation is paid, so long as the Contracting Authority complies with the payment terms with respect to such compensation. This approach is unlikely to be agreed at contract signature and certain issues will need to be clearly addressed (such as liability for damage to the asset while in the Contracting Authority's use).	In jurisdictions where the Contracting Authority's credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in less stable regimes or emerging markets or in projects where the Contracting Authority is not part of central government. Support may be available via multilateral or export credit agencies or central government or sovereign guarantees. Lenders and investors may seek political risk insurance to cover the risk of the Contracting Authority or any government guarantor defaulting on its payment obligation. A key concern for lenders in some jurisdictions relates to the requirement for parliamentary approval of appropriations in respect of contingent liabilities under project contracts. In the Philippines, for example, the government requires a two-year grace period for the payment of termination compensation as this is the maximum period of time for the parliamentary appropriation process. In less mature markets, issues of convertibility of currency and restrictions on repatriation of funds are also bankability issues upon termination. Release of security interests may not be a relevant concern in some jurisdictions, such as France, where lenders would not typically take security over the project assets as this would only give them limited rights. They would more usually take security over the Private Partner itself.
CONDITION AT HANDBACK RISK *The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not*				●	The Private Partner bears the risk of the project assets and land being handed back to the Contracting Authority in accordance with the contract and meeting the required handback conditions. This is linked to maintenance of the assets during the contract and may be complex given the need to define relevant asset standards. The circumstances around handback will vary from one PPP contract to another and will depend on matters including: the Contracting Authority's intentions with regard to post PPP usage, the nature of the asset (e.g. airports are usable for much longer than the initial PPP project duration), the stage at which the PPP contract comes to an end, whether termination occurs during construction or	In civil law jurisdictions, assets built on publicly owned land and/or used for a public service will often be subject to particular restrictions. For example, mandatory handback at termination may be embedded in underpinning administrative law principles or legislation and there may be mandatory access or rights of use for third parties. In some countries (such as France), ownership will sit with the

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in the contractually required condition at the time of handback to the Contracting Authority.					operation and any requirements under underlying laws in the relevant jurisdiction. To mitigate the risk of unexpected consequences, the contract should set out the requirements and process, including the Private Partner's obligations to facilitate an effective handover, hand over relevant licences and documentation and cooperate with the Contracting Authority so that the asset can continue the service. To mitigate the risk of the assets not being returned in the expected condition, the contract should include a mechanism for surveying conditions in advance of expiry and requiring relevant remediation. Typically the contract will provide for a retention fund to be established to fund remediation a certain period in advance of contract expiry, or for the Private Partner to provide some form of financial bond. Any funds remaining in existing lifecycle funds should be used/shared appropriately. For a more detailed analysis of typical handback provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.*	Contracting Authority throughout the duration of the contract, with assets built on such land automatically becoming Contracting Authority property as soon as they are built and handed back for free at natural expiry. The PPP contract will set out the specific accompanying detail about asset condition and cooperation obligations, taking into account the underlying mandatory law provisions. Typically, in a common law jurisdiction, the Private Partner will have been leased the PPP project land by the Contracting Authority (and may have been permitted to sub-lease it to the relevant sub-contractors). The headlease to the Private Partner is usually coterminous with the PPP contract, so the land will revert to the Contracting Authority at the same time as the PPP project asset. In civil law jurisdictions, the PPP project land may have been made available through an administrative contract such as a "land concession" or other precarious right of use and is land within the public domain.

APPENDIX D:

Light Rail PPP Risk Allocation Matrix

PPP RISK ALLOCATION MATRIX: LIGHT RAIL

PURPOSE OF MATRIX	**This appendix contains a matrix of risks typically found in a light rail PPP transaction, together with guidance on how those risks are typically allocated between the government Contracting Authority and the Private Partner, the rationale for such risk allocation, mitigation measures and possible government support arrangements. It aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks in a PPP contract.**
CAUTIONARY NOTE	**This matrix contains an indicative – but not exhaustive – list of the main risks typically to be considered in light rail PPP projects and their typical allocation between the Contracting Authority and the Private Partner. It may be used as a starting point for understanding the risk allocation issues commonly arising in light rail projects and for developing an individual risk matrix for the project in question. A project's individual circumstances and its jurisdiction will influence the appropriate contractual risk allocation and there may be additional risks that need to be considered.** *See Detailed Risk Identification and Analysis in the Introduction*.

TYPE OF PROJECT AND SCOPE CONSIDERATIONS	This matrix addresses the common risks for the design, build, finance, operation, maintenance and transfer (at the end of the PPP contract) of a new PPP light rail project (excluding the provision of the rolling stock). Project scope may include associated infrastructure, such as tunnelling, interconnection with other transit nodes, and station and stop construction. Rolling stock may form part of the project scope, depending on the individual project. In Europe, for example, the rolling stock provision is likely to be the responsibility of a separate rolling stock operator (whether the public sector or a private concessionaire or partner). In other jurisdictions (e.g. Australia), rolling stock supply may be part of the light rail PPP.
ASSUMPTIONS	The Private Partner finances the development of the new light rail project and only starts to receive payment from the Contracting Authority (and/or where applicable, users) once the light rail project is in operation. The Contracting Authority identifies the right of way and sites on which the project will be built. Rolling stock is excluded from the project. The light rail network (and all related project assets) are handed back to the Contracting Authority on early termination or natural expiry of the contract, together with all consents and licences (including intellectual property licences) necessary to continue operating the network, in accordance with the contractual handback requirements.
MARKET APPROACHES	The availability payment structure is more common for a light rail PPP contract. Demand risk projects tend to typically involve government support with the result that transfer of demand risk is in practice diluted. As well as PPP structures, there are other non-PPP contractual structures and procurement models that Contracting Authorities can use to deliver light rail infrastructure with private sector involvement, including more traditional procurement of standalone construction and other service contracts. PPP structures in light rail are more common than in heavy rail. The risks addressed in this matrix and much of the risk allocation guidance will be relevant to different contractual structures and procurement models, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending and how the pricing mechanism works).
PROJECT REVENUES, INCLUDING PAYMENT MECHANISMS	In the rail sector, new infrastructure requires considerable capital expenditure and will not typically be capable of generating the required revenue through users to be viable without some form of government subsidy, such as upfront subsidy towards capital expenditure (i.e. construction costs) typically payable on construction completion or completion of certain construction milestones, and/or a minimum revenue/usage guarantee in the operating period. Project revenues in a light rail project are typically generated either through availability payments by the Contracting Authority or a combination of availability payments and user ticket sales (which will involve an element of demand risk being borne by the Private Partner based on passenger or train numbers. Deductions or penalties are typically applied to availability payments where the Private Partner has not met contractual availability and performance standard criteria. Some projects also include a shadow fare mechanic paid by the Contracting Authority to the Private Partner based on actual passenger numbers. Opportunities for additional third party revenue streams through station retail, advertising hoardings and other facilities (to the extent these are permitted) should also be assessed and addressed under the contract.*See Performance/price risk under Operating risk and Demand risk.*
KEY RISKS	**Land acquisition and site risk:** This risk will sit with the Contracting Authority, given that it can have recourse to compulsory purchase/expropriation powers. Site risk will be borne by the Private Partner to the extent satisfactory and accurate surveys can be undertaken. In addition, the obtaining of planning consent (on an outline basis) will remain with the Contracting Authority, but the more detailed consent risk may sit with the Private Partner. *See Land acquisition, access and site risk.* . **Availability risk:** The risk of the light rail network being available for use will be borne by the Private Partner, although there may be shared elements in relation to for example third party damage to the network. *See Operating Risk.* **Demand/revenue risk, if user payment:** Demand risk on a user pays project will be borne in some part by the Private Partner on the basis of the Private Partner's demand projections, although (as described above) typically the Contracting Authority may need to provide minimum revenue or usage guarantees. There may also be compensatory mechanisms if higher usage than forecast gives rise to increased maintenance costs. *See Demand risk.*

	Construction risk: The Private Partner primarily takes the risk of construction cost and time overruns, although this risk may be shared (in the case of delays/costs caused by force majeure) or borne by the Contracting Authority, where due to Contracting Authority action or compensation events. *See Construction Risk.* **Environmental/social risk:** The Private Partner will bear the risk of obtaining and complying with environmental consents, but there will be an element of shared risk in relation to changes in approach from permitting authorities and external environmental events. As regards social risk, the Contracting Authority will bear the risk of the impact of its transport policies on the local community and businesses, but the Private Partner will bear the risk of failing to implement contractually agreed social management measures and there will be shared elements in relation to, for example, industrial action. *See Environmental risk and Social risk.* **Completion/operation commencement risk (particularly in difficult terrain and where design involves tunnelling and bridges):** The risk of successfully completing a light rail project will primarily sit with Private Partner. This is a key risk for the Private Partner, given the complex nature of the commissioning/completion processes, especially in difficult terrain and where tunnelling and bridges are part of the design. *See Works completion risk under Construction risk.* **Maintenance standards:** Compliance with maintenance standards for both the network and rolling stock is a key risk for the Private Partner. *See Maintenance standards under Operating risk.*
OTHER CONSIDERATIONS	**Staged operation commencement:** Although a single operation commencement regime is more common, the Contracting Authority may wish to implement a multi-staged operation commencement process enabling the Private Partner to begin to receive payment once significant components of the project are substantially completed. This can help increase cash flow during the overall construction process, reduce the Private Partner's financing costs and incentivize the phasing of construction works in order to ensure critical components are completed on time. On the other hand, staged completion dates may also increase the complexity of the construction programme, limit the Private Partner's ability to mitigate construction delays and/or have agreed damages attached to them, which can increase the risk to the Private Partner. This is likely only to be suitable where distinct sections of the light rail network can become operational in phases and where commencement of operation will not distract from ongoing construction requirements.
PRIVATE SECTOR RISK MITIGATION	**Allocation of risks to sub-contractors:** *See Risk Allocation in PPP contracts in the Introduction* and *Cost overruns and Works completion delays under Construction risk*. As regards construction, the Private Partner will often enter into a lump sum construction contract with a construction sub-contractor to pass down its obligations under the PPP contract and to manage the risk of cost overruns and delays (subject to certain relief to which the sub-contractor will be entitled under the sub-contract). The Private Partner will bear the risk of liability caps agreed under the sub-contract being reached or warranty periods under the sub-contract being shorter than the Private Partner's defect rectification obligations towards the Contracting Authority. The Private Partner will similarly typically enter into an agreed price operating sub-contract with an operating sub-contractor to pass down its operating phase obligations to the extent practicable. **Insurance:** *See Risk Allocation in PPP contracts in the Introduction*. **Effective implementation of social and environmental management plan:** *See Environmental risk and Social risk*. **Additional equity and other funding support:** *See Market Conditions in the Introduction*.
PUBLIC SECTOR RISK MITIGATION	**Carrying out detailed feasibility and ground surveys:** *See PPP Project Preparation and Delivery in the Introduction*. In addition, studies for light rail projects should include identification and suitability of corridor, additional land needs, interface with existing and future transport networks e.g. bus, heavy rail etc (and corresponding impact on the project), traffic forecasts (especially in a light rail project with demand risk) and social and environmental impact of both the construction and operation of the light rail network. Detailed ground surveys should also be carried out where practicable. Where such information is provided to bidders to rely on in pricing their bids, Contracting Authorities may elect to guarantee accuracy but not necessarily completeness or interpretation – this will depend on project-specific factors including the experience of the bidders and the ability to obtain other relevant information.
	Running an efficient and fair procurement process: *See PPP Project Preparation and Delivery in the Introduction.* Enacting enabling legislation and complying with domestic procurement laws in relation to the project are primarily the Contracting Authority's risk and responsibility. As the Private Partner will be affected by the consequences of breach of such legislation, it will carry out due diligence itself on these matters. Interference with the tender process and other issues attributable to the Private Partner will remain a Private Partner risk.
	Timely consultation on social and environmental impact: It is key for the Contracting Authority to consider the effect of the project on people, wildlife and habitat and to implement effective management of stakeholder interests and public perception before and (in conjunction with the Private Partner) during the project. *See Environmental risk and Social risk.*
	Having competent advisers: *See Detailed Risk Identification and Analysis in the Introduction*.
	Timely involvement of internal stakeholders and contract management team: *See Detailed Risk Identification and Analysis in the Introduction*.
	Careful assessment and quantification of risk: *See Detailed Risk Identification and Analysis in the Introduction.*
	Taking performance security: The Contracting Authority may seek certain security direct from the Private Partner and its sub-contractors, or their parent companies, in respect of certain contractual (or tender) obligations. This may be in the form of bid bonds during the tender stage and, following the tender stage, completion bonds, performance bonds and guarantees. As an alternative, cash reserving mechanisms could be used during the life of the contract. Although the Contracting Authority may be able to call on this security in certain circumstances (such as performance failures by the Private Partner), the security will have a cost attached. This will feed through to pricing and may affect value for money, particularly since the security may never be called.
PUBLIC SECTOR SUPPORT MEASURES	The Contracting Authority may provide certain financial support to the project, in terms of subsidies or guarantees, although the consequences of such commitments and the potential liabilities for the public sector should be carefully considered, including how such support may dilute the risk/reward distribution under the PPP contract and affect value for money. Where the Contracting Authority's own credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in projects where the Contracting Authority is not part of central government or it is a local authority. To mitigate this Contracting Authority counterparty risk, a sovereign or central government (e.g. finance ministry) guarantee (or equivalent support), or a risk mitigation guarantee provided by a development bank may be needed, though the full implication for the public sector should be carefully

	assessed, including the potential impact on the government's contingent liabilities and fiscal sustainability. *See Demand risk, Project Revenues, Including Payment Mechanisms above and Strength of Contracting Authority payment covenant under Early termination risk.*

KEY TO MATRIX

Risk category rows		Broadly, the first row of a particular risk category summarises the risk and its main allocation. The subsequent rows detail specific issues relevant to that risk and its allocation.
Risk allocation symbols	●	Indicates how the main risk described in the relevant row is typically allocated.
	[●]	Indicates how the risk (or part of the risk) may be allocated differently in the particular additional circumstances described.
Defined terms		Certain terms used in the matrix are defined in the Glossary. For example, the terms compensation event and relief event are used throughout this matrix with respect to how a PPP contract addresses the eventuation of certain risks. For a detailed explanation of those contractual mechanisms, refer to the definition of compensation event and relief event in the Glossary.

SUMMARY MATRIX[1]

RISK CATEGORY	DESCRIPTION	BASIC RISK ALLOCATION		
		Public	**Shared**	**Private**
LAND AVAILABILITY, ACCESS AND SITE RISK	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.	●		
SOCIAL RISK	The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.	●	●	
ENVIRONMENTAL RISK	The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.		●	●
DESIGN RISK	The risk that the project design is not suitable for the purpose required; approval of design; and changes.			●
CONSTRUCTION RISK	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.			●
VARIATIONS RISK	The risk of changes requested by either party to the service which affect construction or operation.		●	
OPERATING RISK	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.			●
DEMAND RISK	The risk of user levels being different to forecast levels; the consequences for revenue and costs; and government support measures.	[●]	[●]	[●]
FINANCIAL MARKETS RISK	The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●	
STRATEGIC / PARTNERING RISK	The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.		●	●
DISRUPTIVE TECHNOLOGY RISK	The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	
FORCE MAJEURE RISK	The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.		●	
MAGA RISK	The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.	●		
CHANGE IN LAW RISK	The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.	●		
EARLY TERMINATION RISK	The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.		●	
CONDITION AT HANDBACK RISK	The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.			●

[1] Cautionary note: The summary matrix identifies typical risk allocation on an aggregated basis. For each risk allocation, however, there are generally exceptions. For the full discussion on typical risk allocation arrangements, please see the detailed guidance provided in the matrix below.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
LAND AVAILABILITY, ACCESS AND SITE RISK *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.*	**Provision of required land – general**	●	[●]		The Contracting Authority typically bears the risk of selecting the corridor and acquiring the required land interests for the project, whether through compulsory acquisition/expropriation 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 "clean" accessible site, with no restrictive land title issues. This can be a key risk in light rail projects due to the length and nature of the light railway. In some instances the Private Partner may be able/required to assist with payment in the compulsory acquisition/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 light rail network. 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 If the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through compulsory acquisition/expropriation), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases). *See also Social risk.*	In certain markets, land rights (in particular reliable utilities records, and land charges and third party rights to (access) land) 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, this will increase the risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risk as the Private Partner will not be able to bear them. The rights of private landowners against compulsory acquisition/expropriation might be stronger in developed markets, so the Contracting Authority may need to allow more time to acquire the land.
	Timing of provision of required land	●			**Acquisition pre-signature:** The Contracting Authority should complete the process of land acquisition before the contract is awarded so that all issues and risks are known and managed. All relevant processes will need to be carried out in a timely manner. The timeframe will depend on the issues affecting the site and the applicable processes. The risk that all necessary processes have been satisfied will be the Contracting Authority's risk.	
		●			**Acquisition post-signature:** If the Contracting Authority is not able to provide the land by contract award, it will bear the risk of providing it in accordance with a contractually agreed programme. Failure to obtain the land by a certain date may entitle the Private Partner to terminate the contract *(see also MAGA risk)*. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process.	
	Provision of permanent additional land	●			**Identification pre-signature:** If a permanent need for additional land is identified and agreed by the parties before contract signature then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing the additional land, unless the need for additional land is specific to a bidder (for example, due to a different design).	
				●	**Identification post-signature:** If a permanent need for additional land is only identified after contract signature then this will be a Private Partner risk as the need should have been identified and factored in to the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					with acquisition where the land is essential, with costs being borne by the Private Partner.	
	Provision of temporary additional land	●		[●]	**Identification pre-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified in the procurement phase and are common to all bidders, then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing such land, unless the need for such land is specific to a bidder (for example, due to its construction methods and equipment) – in which case the risk should be allocated to that bidder and the cost factored into its bid price. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
				●	**Identification post-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified, they should be a Private Partner risk as such need should have been identified and factored into the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
	Heritage / indigenous land rights	●		[●]	Land rights issues involving indigenous groups will be the responsibility of the Contracting Authority. The Private Partner will bear the risk of complying with legislation and contractual obligations imposed on it in this regard. The Private Partner's obligations with regard to indigenous rights is well legislated for in some markets. In the absence of legislation, indigenous land rights issues and community engagement can be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project (e.g. compatible with the Equator Principles). This will be particularly relevant if international financing options are desirable. *See also Social risk*.	This issue is coming under increasing focus from multilateral agencies and other finance parties, as well as civil society and human rights organisations. For example, the World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. Many finance parties (including commercial finance parties) adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). Examples of specific legislation are native title legislation in Australia and the equivalent First Nations law in Canada. These include a requirement to seek consent from the indigenous parties affected and to enter into indigenous land use agreements.
	Resettlement				*See Resettlement under Social Risk.*	
	Suitability of land		●		**General:** The risk that the land is not suitable is typically shared as the Contracting Authority may be able to secure the availability of the corridor, but the suitability of the corridor may be dependent on the Private Partner's design and construction plan (such as catenary location for overhead power as opposed to, for example, third rail power provision). *See also Design risk.*	
		●		[●]	**Underground:** Risk with regard to stability and suitability of the underground sits with the Contracting Authority if no or unreliable data is available and the risk cannot be transferred (or transferring the risk does not represent value for money). To the extent reliable data is available in the tender phase and can be relied upon by the Private Partner, the risk sits with the Private Partner. *See also Site condition under Land availability, access and site risk.*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Key planning consents	●			**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents.	In some jurisdictions, it may not be possible to obtain the requisite planning consents until such time as the Private Partner has been identified and/or detailed design is known.
		●		[●]	**Post-signature:** If consents for key permits are not obtained before contract signature and the Contracting Authority wants to sign the contract, it will typically bear the risk of the consents being delayed or not obtained (subject to the Private Partner complying with any reasonable requirements) – this may be treated as a compensation event. Failure by the Contracting Authority to obtain the consents by a certain date is likely to entitle the Private Partner to terminate the contract. Permit risk may be complicated further if there are different levels of authorities involved, and interaction between levels of design and authorisations may impact the timeline. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process. *See also MAGA risk. Design risk and Environmental risk.*	
	Subsequent planning approvals	[●]		●	Obtaining subsequent detailed planning consent and other approvals will be a Private Partner risk. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also Environmental risk and MAGA risk.*	
	Access to the site and associated infrastructure	●			**Construction phase:** In principle the Contracting Authority will be responsible for ensuring the Private Partner can access the site during construction (including for example closing adjacent rail tracks or roads to enable construction to take place over them). Either (i) it will pay the costs of providing access itself, or (ii) the Private Partner will pay such costs and be reimbursed through the contract price (or permitted ticket price) to the extent it has priced such costs into its bid. This will depend on the nature of the access required. Failure to provide access may be treated as a compensation event. *See also MAGA risk.* The parties will need to agree the extent to which the Private Partner may bear some responsibility for the impact on access routes of heavy loads.	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.
		●			**Operation phase:** The Contracting Authority should bear the risk of ensuring that users can access the new light rail network via the existing transport network. In a user pays model where the Private Partner payment is based at least in part on user volume this will be a key Contracting Authority risk. This may be treated as a compensation or MAGA event. *See also Demand risk and MAGA risk.*	
	Site security	●		●	**Construction phase/operation phase:** Risk allocation with respect to site security will depend on the political climate, opposition to the project, nature of the risk and the stage of the project. Parties should aim to have a complete understanding of the risks involved in physically securing the site and those that will affect the construction and operation of the light rail network. Ordinarily the Private Partner will be responsible for day to day site security (although this may depend on the nature of the sites). However, the Contracting Authority may need to use statutory means to properly secure the site for the Private Partner (such as police involvement or eviction) and in some circumstances may be required to provide additional site security / assistance during operations to manage this risk. Failure may be treated as a compensation or MAGA event. *See also Force majeure risk, MAGA risk, Social risk and Vandalism under Construction risk and Operating risk.*	For example, where there is public opposition to the light rail network, there may be protestor action, or there may be issues safeguarding the equipment and installation.
	Utilities and installations			●	**Costs or delays caused by relocation of /access to utilities:** To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of any costs or delays caused by statutory undertakers and utility providers in carrying out diversions or connections. Costs and delays caused by re-location of existing utilities or access to utilities for the	In some markets or challenging locations, there may be little data on location of utilities (water, sewage, oil, gas, optical fibre etc) and the Private Partner may be unable to accept all

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]			purposes of the project which are due to the Private Partner's design or construction plan are usually allocated to the Private Partner. For connections to existing infrastructure, *see also Project management and interface with other works/facilities under Construction risk.* The Contracting Authority will bear risk if no reliable information is available. It will also bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Lack of data on existing utilities location can make it difficult for the Private Partner to assess (and price) the cost and time needed for relocation which can impact on the construction timetable and ultimately on meeting the operation commencement date. If the Private Partner bears this risk, the Contracting Authority may need to share the risk by capping the Private Partner's liability or by having a cost sharing mechanism.	or part of this risk.
		[●]	●		**Costs or delays caused by utility provider:** Costs and delays caused by a utility provider could arise in both phases and the risk will be allocated according to the relevant circumstances and market and ownership of the utility. The risk could be shared or allocated to the Contracting Authority.	In markets where the utility provider is a private entity, this risk is likely to be treated as a relief event (and the utility company will bear the risk) – this is common in mature markets. In less mature markets, particularly where the utility provider is a state-owned entity, the risk is likely to be allocated to the Contracting Authority as a compensation or MAGA event.
	Site condition	[●]		●	**Surveyed:** The Contracting Authority usually undertakes detailed geotechnical and ground/soil surveys during the feasibility stage (if not already publicly available) and discloses such information as part of the bidding process. Sharing the surveys will save bidders' costs (all which would otherwise feed through to the Contacting Authority in the contract price). To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of such conditions causing cost and delay. The Contracting Authority will bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation of the data. Where projects involve large elements of tunnelling, geotechnical risks will be more carefully assessed by the Private Partner. *See also Construction risk.*	In a mature market, the Contracting Authority normally hands over the site to the Private Partner in an "as-is" condition on the basis of the surveys provided. The Private Partner can rely on the surveys but otherwise bears the risk. In some markets, the bidders carry out the surveys during the tender process – this may be the best solution in some circumstances, but may also limit competition unless bidders are compensated for these costs.
		●	[●]		**Unsurveyed:** Where it is not possible to fully survey site condition prior to award (e.g. in high density urban areas), the risk for unsurveyable land will be allocated to the Contracting Authority (e.g. as a compensation event). The risk may be shared by the Private Partner (e.g. as a relief event) in some circumstances, for example where the risks were within the knowledge of the Private Partner when it priced its bid or an experienced contractor would have considered their existence as being possible. The impact on the project and the cost of remediation works for certain existing site conditions can be significant so the ultimate risk allocation will depend on the project specifics.	In some markets there may be less historic data available to the parties to assess risk. It may however be easier to perform comprehensive surveys in a less urban area.
		●	[●]		**Cultural / Archaeological finds:** Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk. One approach is to share the risk such that the Private Partner bears the risk in respect of designated areas (such as a low risk area) and the Contracting Authority bears the risk outside such areas (such as a high risk area). Another approach is for the Private Partner to be obliged to coordinate work, but for the Contracting Authority to appoint specialised contractors and to bear cost/delay and interface risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of finds is often treated as a relief event.
		●	[●]		**Unexploded bombs, land mines and other munitions:** Discovery of munitions can cause delays and	In markets where reasonable surveys/assessment can be

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					costs as they will need to be defused and removed. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk.	made and the risk priced, discovery of munitions risk is often treated as a relief event. In some countries, the risk of unexploded land mines can be high and specific surveying and cost provisions may need to be agreed.
		●		[●]	**Pre-existing environmental pollution:** Pre-existing pollution is typically the Contracting Authority's risk except to the extent it was known to and priced by the Private Partner. Remediation works for certain existing environmental conditions can be expensive so the ultimate risk allocation will depend on the project specifics and the surveys provided to the Private Partner. *See also Environmental risk and Change in law risk.*	
	Existing asset condition	[●]		●	Where there are existing assets proposed to be used in the project (for example, an existing rail platform), where practical they should be fully surveyed (and potentially warranted) by the Contracting Authority. To the extent reliable data relating to the condition of existing assets is shared by the Contracting Authority during the tender process and can be relied upon during implementation, the Private Partner can price the risk of using them, including the interface with other aspects of the project and latent defect risks. The Private Partner will then bear the corresponding risk. The Contracting Authority will bear risk to the extent such data proves inaccurate or insufficient, and to the extent of any warranties it provides. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation. If latent defects are discovered in assets which are due to be replaced at some point in the life of the contract, the Contracting Authority may be able to mitigate its risk to some extent by having a contractual mechanism which brings forward the replacement date. *See also Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
SOCIAL RISK *The risk associated with the project impact on adjacent properties and affected people including public protest and unrest); resettlement; indigenous land rights; and industrial action.*	**Community and businesses**	●			Ultimately, the policy relating to the social impact of the provision of infrastructure is for the government. The Contracting Authority will bear this risk except to the extent the Private Partner is responsible for implementing any social management measures. The social impact of a light rail project on communities and businesses may be a key issue and must be carefully assessed and managed by the parties. During the feasibility stage, the Contracting Authority should have considered the impact on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries – both in terms of the construction and operation of the light rail network. It may need to carry out social impact studies and aim to minimise any negative impact of the project. Consultation may reduce the risk of opposition if outcomes are incorporated in the strategy and tender requirements. The approach, compensation schemes and what is acceptable should be addressed in the bid requirements and the contract. Investors and lenders may expect to see a plan addressing social impact, including the execution of any necessary contractual arrangements. The Contracting Authority may choose to adopt internationally recognised social and environmental standards and practices for the project to manage social risk, especially if international financing options are desirable. All the way through construction and operations, active stakeholder engagement by the Contracting Authority will be critical to avoid litigation, achieve key milestones on time and ensure it is delivering infrastructure that serves its public purpose. Both the Private Partner and the Contracting Authority should develop sound environmental and social risk management plans before construction begins. Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation (*see also Resettlement under Social risk*) and continued efforts to manage the social and political impact of the project on and around the site (possibly including a compensation regime for affected businesses	This issue is coming under increasing focus from multilateral agencies, development finance institutions and other international finance parties, as well as civil society and human rights organisations. Finance parties (including commercial finance parties) will look very closely at how these risks are managed at both private and public sector level. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). The World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. In civil law jurisdictions the obligation upon the Contracting Authority to act "in the general interest" and to justify and document decisions may strengthen the stakeholder process. This is because the level of transparency and justification required should ensure that stakeholder views are properly taken into account and the risk of arbitrary decisions (and

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
				[●]	adjacent to the light rail network). The Private Partner will bear the risk of non-compliance with any contractual social risk obligations as well as social risk obligations set out in the underlying legal system, although even where social risk obligations are passed onto the Private Partner, the consequences of such risks occurring may come back to the Contracting Authority. For this reason, the Contracting Authority should critically analyse just what social risk obligations should be passed onto the Private Partner and what should be retained. Where there is public opposition, there may be protestor action in both construction and operating phases, and/or issues safeguarding the site equipment and installation. *See also Site security and Access to the site under Land availability, access and site risk, and Vandalism under Construction risk and Operating risk.* For a detailed analysis on how governments can better address aspects related to social inclusion in the delivery of infrastructure, see the GI Hub's practical guidance on *Inclusive Infrastructure and Social Equity*.	consequent challenges) reduced.
	Resettlement	●		[●]	Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation. This may include the removal of formal and/or informal housing or businesses and resettlement of communities in another location, potentially also with compensation. The Private Partner is responsible for implementing any social risk management measures contractually agreed – these should be clearly specified by the Contracting Authority in the procurement phase to enable the Private Partner to price the cost and associated risks.	Resettlement of whole communities by the Contracting Authority is more likely in less developed markets where informal housing and businesses may be more prevalent. The affected parties may not have the means (or the transport) to relocate themselves, even if paid compensation, and whole communities may need to be moved together. In developed markets, affected parties may be more able to rely on rights under compulsory acquisition/expropriation laws and compensation received.
	Heritage / indigenous people	●		[●]	As with land use rights involving indigenous groups, any other social impact risks involving such groups will usually be the responsibility of the Contracting Authority but the Private Partner will bear the risk of complying with relevant legislation and contractual obligations. In the absence of legislation, indigenous rights issues and community engagement may be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project, particularly if international financing options are desirable. *See also Heritage/indigenous land rights under Land availability, access and site risk.*	The Private Partner's obligations with regards to indigenous rights is well legislated for in some markets and in other markets there may be more reliance on internationally recognised standards. *See also Heritage/indigenous land rights under Land availability, access and site risk.*
	Industrial action	●	●	●	The Private Partner assumes the risk of labour disputes and strike action adversely affecting the project except to the extent such action falls into the category of political risk – the Contracting Authority may bear the risk (if a MAGA event) or share the risk (as a force majeure or relief event) for strikes and other widespread events of labour unrest. For example, nationwide and sector strikes are usually Contracting Authority risks but strikes at the Private Partner's facilities will be a Private Partner risk. *See also Force majeure risk and MAGA risk.*	In less politically stable jurisdictions the Contracting Authority may have to accept more risk for strikes than in some jurisdictions. In markets where the risk of strikes is low, the Private Partner may be comfortable accepting this risk as a relief event.
ENVIRONMENTAL RISK *The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.*	**Pre-existing conditions**	●		[●]	*See Site condition and Existing asset condition under Land availability, access and site risk*.	Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop sound environmental and social risk management plans before construction begins. The risk of delay in obtaining approvals may be greater in some jurisdictions, particularly where different levels of government are involved. Delays in obtaining environmental permits have caused significant construction delays in some sectors (for example, in some projects in South America)
	Obtaining environmental consents	[●]		●	**Pre-signature**: In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents. In many major projects, the environmental authorisations are a key component of the project and may take significant time to be prepared and approved. In some cases, these authorisations are initiated (such as preparing the environmental impact assessment) and prepared by the Contracting Authority ahead of the procurement process. At a specified point in time, the Private Partner will take over the risks related	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					to obtaining detailed environmental licences or permits related to the project.	and the timeframe required should not be underestimated. If adequate relief is not given to the Private Partner, this may deter the private sector from participating in new projects in the same sector or jurisdiction.
		[●]		●	**Post-signature**: Except as specifically identified otherwise, the Private Partner typically bears the risk of obtaining all environmental licences, detailed permits and environmental authorisations required for the project after contract signature. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event or MAGA event. *See also MAGA risk*. In some countries, there may be different levels of governmental approval required. Local authorities may interpret certain requirements in their own way after the contract price has been submitted and impose unexpected conditions on the Private Partner. This could adversely affect the project's financial model. The parties should ensure that the contract sets out clearly how any such interpretation or unexpected requirement is addressed to avoid disputes as to which party bears the consequences. *See also Key Planning Consents under Land availability, access and site risk, Change in law risk and Compliance with environmental consents and laws under Environmental risk*.	International finance parties, multilateral agencies and development finance institutions are particularly sensitive about environmental and social risks. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (which are described in the Equator Principles). Finance parties will look very closely at how these risks are managed at both private and public sector level and this scrutiny is helpful to mitigate the risks posed by these issues. *See also Communities and businesses under Social risk.*
	Compliance with environmental consents and laws			●	The Private Partner bears the risk of complying with all environmental licences, detailed permits and environmental authorisations required for the project as well as applicable environmental laws. The environmental impact of a light rail project on habitat, communities and businesses (e.g. in terms of noise) can be a key risk and must be carefully assessed and managed by the parties. The parties should ensure that change in law provisions adequately address changes in (mandatory) environmental standards and laws to avoid disputes as to which party bears the consequences of any requirements imposed after contract signature. *See also Change in law risk.* In the absence of legislation, environmental obligations can be managed by the Contracting Authority through the adoption of internationally recognised standards and practices for the project, particularly if international financing options are desirable. *See also Communities and businesses under Social risk.*	
	Environmental conditions caused by the project			●	The Private Partner bears the risk of environmental events caused by the project to the extent due to its failure to comply with applicable licences, laws and contractual obligations. This includes conditions affecting both the project itself and third parties. The Contracting Authority may want to satisfy itself as to the overall robustness and suitability of environmental plans proposed by the Private Partner, to ensure that such plans will be adequate to appropriately manage the risks of the project, but the Contracting Authority should not take on any risk in doing so.	
	External environmental events		●		**Outside both parties' responsibility:** The risk of environmental events external to the project occurring which adversely affect the project (or, as a result, third parties) should be treated according to the nature and cause. They may be a form of shared risk, such as a relief event or force majeure event (e.g. if an accidental chemical escape from a nearby factory forces the trackclosure for a period).	
		●			**Within Contracting Authority's responsibility:** If environmental events are within the responsibility of the Contracting Authority or government they may be treated as a compensation event or MAGA event (e.g. where the government has failed more widely to enforce environmental laws and the resulting pollution damages the light rail network or leads to legal action against the project by third parties). *See also MAGA risk and Climate change event under Environmental risk.*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Climate change event	[●]	●		Market practice is developing with greater focus on events caused by climate change and the Contracting Authority should consider the risk and impact of climate risk events on the infrastructure (both one-off external weather events and more gradual effects, such as rising sea levels or temperatures). It may be appropriate to treat certain events as force majeure events if they occur beyond certain thresholds (e.g. temperatures outside certain ranges). Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common. An alternative may be to consider a separate contractual mechanism to address these types of risks over the long term life of the contract. As with other variations required by the Contracting Authority, any changes to the project scope to mitigate climate change effects are likely to need to be funded by the Contracting Authority where the Private Partner cannot foresee such developments and has no means of passing on the cost (and no other agreement as to cost sharing is in place). As it is likely to be more costly to retrofit measures, it is essential that the Contracting Authority consider this risk during the feasibility phase, and that both parties continue to consider this issue further during the tender process. *See also Force majeure risk. and Operational risk*	If clear requirements are not included, this may lead to different bidders taking this risk into account in different ways. To avoid speculation and disputes, post-contract award, these issues should be clearly set out in the tender documents and negotiated throughout the tender process.
DESIGN RISK *The risk that the project design is not suitable for the purpose required; approval of design; and changes.*	**Suitability of design**	[●]		●	Generally the Contracting Authority should aim to transfer design risk to the Private Partner but the extent to which this is possible will depend on how involved the Contracting Authority wants or needs to be in specifying design requirements in the tender documentation. Alternative approaches are described below. **Output specification:** Where possible, the Contracting Authority usually aims to set a broad output driven specification in the tender documents, requiring the Private Partner to design and build the project in a way which satisfies the performance specifications and ensures compliance with applicable legal requirements (e.g. track gauge requirements for compatibility purposes), good industry practice standards and, where applicable, minimum quality standards. This allows for private sector innovation and efficiency gains in the design. With this approach, the Private Partner will have principal responsibility for adequacy of the design of the light rail system and its compliance with the output / performance specification. A design review process during the contract will allow for increased dialogue and cooperation between the Contracting Authority and the Private Partner, but care should be taken to ensure that the mutual review process does not reduce or limit the Private Partner's overall liability. In limiting how prescriptive it is in the performance specification, the Contracting Authority may wish to request a degree of cooperation and feedback during the bidding phase to ensure that the bidding consortia's expectations in terms of an appropriate risk allocation for design responsibility are taken into account when finalizing the performance specification (and to maintain a level playing field amongst bidders for public procurement purposes). If the Contracting Authority provides bidders with a basic design, bidders will typically be responsible for any errors, if they assume this basic design in developing their detailed design. An alternative is to provide (more) detailed design, but to contractually oblige the bidders to comment on and subsequently accept the (amended) design. The Contracting Authority should bear the risk of technical information provided by it proving inaccurate to the extent the Private Partner was allowed to rely on it for design purposes (e.g. inaccurate traffic forecasts or site condition or existing asset surveys). *See also Changes to design under Design risk.*	In more developed PPP markets, the Contracting Authority typically drafts a broad output specification, unless permit or other regulatory requirements oblige it to provide more detailed and descriptive specifications. Projects in some less established PPP markets may be particularly dependent on availability of reliable resources necessary for construction and operation, which has implications for the Private Partner's ability to meet the reliability requirements in the performance specification and take full design risk. The quality of the information provided by the Contracting Authority and the Private Partner's limited ability to verify such data can hinder the Private Partner's ability to unconditionally take full design risk in some markets. Attempts to transfer the risk in such circumstances may also lead the Private Partner to price in expensive risk premiums that do not represent value for money for the Contracting Authority.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		●			**Prescriptive specification:** A prescriptive specification can, where essential, ensure the Contracting Authority receives bids on a particular (and similar) basis. However, the disadvantage of this approach is that it will restrict private sector innovation and efficiency gains in the design and may not result in best value for money. The Contracting Authority may also retain some design risk in certain aspects of the system or related works, if it is more prescriptive in the performance specification. For example, if the performance specification is too prescriptive (e.g. the required route corridor or track gauge constrains the efficiency of the design or the range of compatible rolling stock), the Private Partner's ability to warrant the fitness for purpose of its design solution may be impacted and the Contracting Authority will to that extent share in the design risk. The prescriptiveness of the performance specification is likely to be dependent on the depth of the feasibility study. Where the Contracting Authority has a preferred design solution (for example, for the system to run without overhead power supply), it should include this in the performance specification in a way which still allows for private sector innovation and efficiency gains. Some jurisdictions allow only limited room for individual design, since all key aspects and many details are already fixed in the official planning approval decision. If the Private Partner wants to deviate from these requirements it must conduct formal amendment procedures, which in practice have such process and risk impact that bidders are not willing to take the risk that comes with initiating such amendment procedures. *See also Changes to design under Design risk.*	
		[●]			**Existing infrastructure:** If the project is being integrated into existing infrastructure, the Private Partner's ability to warrant the fitness for purpose of its design solution must be considered. It may not be able to warrant defects in the existing infrastructure which may impact the project's performance and the Contracting Authority may have to bear this risk. *See also Existing asset condition under Land availability, access and site risk, Works completion delays and Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
	Approval of designs	[●]		●	The Private Partner will bear the risk of obtaining design approvals as it will have principal responsibility for preparing the detailed design and obtaining relevant approvals from the appropriate state or other body. However, if the Private Partner has complied with all relevant conditions and time frames, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also MAGA risk.* Where specific solutions or consultants are imposed by the Contracting Authority (e.g. architectural or technical), some risk may remain with the Contracting Authority.	
	Changes to design	●		●	The risk of changes to design after contract signature is allocated according to the reason for the change. If the original design is deficient, this will be a Private Partner risk, subject to the aspects which are the Contracting Authority's risk (as outlined in *Approval of designs and Suitability of design under Design risk*). If changes are required by the Contracting Authority, this would as a rule be a Contracting Authority risk (with the consequent time and cost implications borne by the Contracting Authority on the same principles as for compensation events). *See also Variations risk.* Contractual amendment procedures can in practice have such process and risk impact that the Private Partner may not be willing to take the risk that comes with initiating such amendment procedures. Requesting design changes or alternative or more detailed design development during the procurement stage will delay the procurement timetable and cause bidders to incur additional costs. The lack of certainty and potential cost may deter bidders and, depending on the change in requirements, may result in the procurement process needing to be re-run to comply with procurement laws or risk later challenge.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
CONSTRUCTION RISK *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.*	**Cost overruns**	[●]	[●]	●	Cost overruns (i.e. costs exceeding the construction costs assumed in the project's financial model) can have a variety of causes, such as mistakes in construction cost estimates, increased cost of materials, actions of the Contracting Authority or government, as well as delays in – or mitigating potential delays in – the construction programme. Completion of the construction phase on budget will be a key risk, given the complex nature of the commissioning/completion processes, especially in difficult terrain and where tunnelling and bridges are part of the design. The Private Partner typically assumes the risk of cost overruns to the extent these are not caused by force majeure, compensation events (such as in relation to unsurveyed site or existing asset conditions) or MAGA events, and are not addressed through other bespoke provisions (e.g. Change in law or provisions specifically addressing exchange rate risk during construction – *see also Change in law risk and Exchange rate fluctuation risk under Financial markets risk)* or hardship doctrines *(see Glossary definition)* in underlying law. The Private Partner will mitigate these risks by passing them through as far as possible to its sub-contractors (for example, the construction sub-contractor). The Private Partner's financial model will typically include contingency pricing for cost overruns (as will the sub-contractor's assumptions). *See also Force majeure risk and MAGA risk.*	In certain markets risk is considered manageable by the Private Partner through robust pass through of obligations to credible and experienced sub-contractors and by allowing appropriate timetable and budget contingency. The Private Partner can mitigate the risk of sub-contractor non-performance by obtaining appropriate security from the sub-contractors (for example, parent company guarantees and/or performance bonds). The Contracting Authority may sometimes seek additional security itself to ensure such costs can be met - see Taking performance security under Public Sector Risk Mitigation. Enforcement of construction budgets may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Where projects involve large elements of tunnelling, this element of construction risk will be more carefully assessed by the Private Partner. In some projects this may lead to tunnelling components being separately procured on a non-PPP basis.
	Works completion delays	[●]	[●]	●	Delays in delivering the infrastructure by the relevant works completion date can have a variety of causes, such as unavailability of construction materials, delays in shipping and mistakes in programme scheduling, as well as weather events, civil unrest or industrial action and actions of the Contracting Authority or government. The Private Partner typically assumes the risk of delays to the extent they are not caused by relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions. *See also Force majeure risk and MAGA risk.* Completion of the construction phase on schedule is typically a key risk. Light rail projects require complex commissioning and testing regimes given the intricacies involved in ensuring that the power systems, signalling systems, operations centre and the wider system will meet the necessary reliability and punctuality requirements of the output specifications, especially in difficult terrain and where tunnelling and bridges are part of the design. In most projects, the relevant date is the scheduled operation commencement date and to achieve that the works will need to be evidenced as complete. Some projects may instead (or in addition) require separate works completion deadlines to be met. This may be the case in jurisdictions where specific acceptance processes are required by law for construction works under public contracts and/or for insurance purposes. The consequences for the Private Partner of delays to the relevant works completion date are loss of expected revenue due to arise on the relevant date and ongoing construction and financing costs. In extreme cases, there is also a risk of potential termination for failing to meet the "longstop date" (a final later date by which the Private Partner must complete the project works/commence operation to avoid the Contracting Authority being entitled to terminate). The Private Partner will pass through these risks as far as possible to its sub-contractors (and may require the sub-contractors to pay it agreed damages to compensate for the delay to and loss of its overall project income and act as an incentive for timely completion). The Contracting Authority may also consider imposing agreed delay damages on the Private Partner to compensate it for delay to the start of the operating phase. However, imposing such agreed damages will typically result in the Private Partner building additional contingency time and cost	Enforcement of construction deadlines may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Where projects involve large elements of tunnelling, this element of construction risk will be more carefully assessed by the Private Partner. In some projects this may lead to tunnelling components being separately procured on a non-PPP basis. Some railway projects in less mature markets have faced significant construction issues and the Contracting Authority will need to be prepared to enforce its rights to manage the consequences of a failure by the Private Partner to meet the construction milestones. In less mature markets, the management of completion risk is typically addressed by having either: (i) a scheduled completion date (with attached agreed damages for delay) followed by a fixed period for operation; or (ii) a scheduled construction period forming part of the overall contract term which is itself fixed, subject to extensions for certain events such as force majeure. With the latter scenario, the Contracting Authority may attempt to additionally impose agreed delay damages on the Private Partner. The difference between the two structures is that the former preserves the project's revenue generating operation phase and the Contracting Authority relies on the agreed delay damages to incentivise timely completion of the works and operation commencement. In the latter case, the incentive to complete the works and meet the scheduled operation commencement

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					into the project's construction plan and the Private Partner should already be sufficiently incentivised to meet the relevant works completion date on time so that its revenue streams can commence. Some jurisdictions require certain criteria to be met in contractual provisions imposing delay damages if they are to be legally enforceable. Broadly speaking, if the damages exceed the Contracting Authority's likely real losses they may be seen instead as a disproportionate penalty and the provisions may be unenforceable.	date is that any delay at the Private Partner's risk will reduce the revenue-generating operating phase. Some projects have included a look forward test which applies in the event it becomes evident that commissioning will not be achieved within the set timeframe specified and this can lead to termination of the contract.
	Project management and interface with other works/facilities	[●]		●	**Project management:** The Private Partner is best placed to integrate complex works, bridge works, tunnelling and, if within scope, ticket machine design and installation. Typically, the Private Partner assumes project management risk. **Interface with other works/facilities:** Interdependence with other projects may also affect contract obligations and risk allocation. If some or all of the project is dependent either on the Contracting Authority carrying out particular works or making available an existing facility, or on related infrastructure work being completed by a third party (for example separate new connecting railway, road, port or airport facilities being ready), that interface risk will be the Contracting Authority's risk. If the operation commencement date will be delayed due to such works not being carried out on time or the Contracting Authority otherwise failing to meet its obligations, this will be a compensation event or MAGA event. For example, the project may be relying on the Contracting Authority procuring the construction of an electricity sub-station to provide the necessary power for the light rail network (*see also Utilities and installations under Land availability, access and site risk)* or closing transport infrastructure temporarily to facilitate construction (see also *Access to the site and associated infrastructure under Land availability, access and site risk)*. To the extent possible, the route should be segregated from other traffic (e.g. road traffic or mainline railway traffic) and the Private Partner should be given appropriate relief arising out of any interface issues between existing lines/projects. *See also Utilities and installations and Access to the site and associated infrastructure under Land availability, access and site risk, Suitability of design under Design risk, Maintenance standards under Operating risk, Demand risk and MAGA risk.*	In some markets the Private Partner may be allocated the risk of third party work being properly and timely completed, particularly if the Private Partner has the opportunity to enter into interface arrangements with the third party. These interface agreements will result in the interface risk being shared between the Private Partner and the third party.
	Quality assurance and other construction regulatory standards		●		Meeting relevant quality standards will be a Private Partner risk, but where standards or codes are revised after the bid submission date this risk allocation will depend on whether the changes are mandatory and whether the Private Partner has priced the risk of such changes into its bid. The Contracting Authority may consider increasing the contract price to account for increased costs of compliance or the Private Partner may be excused from compliance with the new standard if it is not mandatory. This may be dealt with through the change in law provisions. *See also Change in law risk.*	
	Health and safety compliance			●	Responsibility for health and safety compliance on the construction site is typically a Private Partner responsibility. The Private Partner typically bears the risk of complying with health and safety laws/requirements and indemnifies the Contracting Authority in respect of any breach of such requirements. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority or other government entity and/or the affected party. Some projects require an annual safety review which enables the parties to assess relevant performance and safety management. Otherwise, the engagement of an experienced contractor with a strong safety record is also a mitigant.	In some jurisdictions with developed construction legislation, the Private Partner's responsibilities in the construction phase will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury,			●	Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	property damage and third party liability				(and its employees and other personnel) or third parties arising due to the construction works. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third-party claims against it over this threshold.	In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Defects and defective materials			●	The Private Partner should be required to design and construct the project in accordance with good industry practice, and bears the risk and responsibility for completing the project free of defects. Defects are typically categorised as (i) visible and (ii) latent/hidden defects and are treated differently under the contract. The risk of visible defects is sometimes covered by an interim acceptance at completion of the works (and may result in a one off payment of agreed damages). As latent defects may not be noticeable for some years, the Private Partner is typically liable for such defects for a number of years following completion and the Contracting Authority may request a performance bond from the Private Partner to support this obligation (which the Private Partner will require from the relevant construction sub-contractor). The Contracting Authority may retain latent defects risk in existing structures. *See also Existing asset condition under Land availability, access and site risk and Maintenance standards under Operating risk.*	
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the light rail network and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will often be a Private Partner risk, sometimes with a threshold/cap above which the Contracting Authority will bear/ share the risk. In addition, if vandalism to areas outside the Private Partner's control causes unavailability, this may be a shared risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials, site access and security during construction, etc. *See also Site Security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where the political climate opposes the light rail network or the light rail infrastructure is particularly visible or vulnerable.
VARIATIONS RISK *The risk of changes requested by either party to the service which affect construction or operation.*		● 	 [●]	 ●	**Contracting Authority change:** The Contracting Authority typically bears the risk and cost of service changes implemented following its request. The contract will specify the extent to which it is entitled to require changes and the reasonable grounds on which the Private Partner may refuse. The Contracting Authority will also bear the risk of ensuring it can meet its cost liabilities. **Private Partner change:** The Private Partner will bear the risk and cost of service changes implemented following its request, unless the parties have agreed a sharing mechanic as part of their discussions of the change. A sharing mechanic may be appropriate where the Contracting Authority wants to incentivise the Private Partner to introduce innovative or environmentally-friendly solutions. If the Contracting Authority is liable for costs, it should mitigate its risk by requiring a transparent	Some jurisdictions have detailed change protocol templates to follow for variations to ensure that costing is fair and transparent. Due to the impact changes can have on construction or operation (e.g. in terms of timing, cost and delivery), there may be restrictions placed on the ability to request changes of certain types or in certain phases. The Contracting Authority's ability to request and meet any changes costs will also be a concern, particularly where it has a weak

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					costing review process, which it can due diligence. This is likely to be particularly a concern during the construction phase. As with any potential liabilities under the PPP contract, the Contracting Authority will want to consider how best it can fund such payments (e.g. through financing the variation direct itself, requiring the Private Partners to procure committed but undrawn funding at financial close or to establish a reserve to fund future variations, each of which will come at a cost and may affect value for money, or requiring the Private Partner to procure financing at the time of implementation of the variation. Where financing is procured by the Private Partner, whether at financial close or at the time of implementation, the Private Partner's revenues will need to be adjusted to fund repayment of the financing. The risk and cost associated with changes arising due to other provisions will be addressed according to those provisions. *See also Changes to design under Design risk, Climate change event under Environmental risk, Disruptive technology risk and Change in law risk.*	credit.
OPERATING RISK *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.*	**Increased operating costs and affected performance**	[●]	[●]	●	Increased costs and delays in the operating phase can have a variety of causes, ranging from mistakes in maintenance cost estimates to extreme weather events. Aside from adjustments for inflation, the Private Partner broadly assumes the risk of events which inhibit performance and/or give rise to cost increases beyond modelled costs, to the extent these are not relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions or hardship doctrines *(see Glossary definition)* in underlying law. *See also Force majeure risk and MAGA risk.*	
	Performance/ price risk			●	The Private Partner bears the risk of meeting the performance specification under the contract (i.e. by ensuring that the works and the operational performance are of the necessary quality and level). In an availability-based payment structure the Private Partner's payment may be subject to abatement if availability criteria and performance-based standards are not met. Availability criteria may be linked to availability of elements of the rail network and stations and performance standards may (for example) relate to cleanliness of station facilities. In a payment structure including an element of demand risk, poor performance by the Private Partner may adversely affect demand and consequently project revenues. *See also Demand risk.* Where certain availability criteria or performance indicators cannot be met or demand is affected due to actions by the Contracting Authority (or other government entities) or unforeseen circumstances, the Private Partner may be entitled to relief (e.g. if caused by a relief, force majeure, MAGA or compensation event). For example, if police or emergency services require suspension of services, the contract should be clear on how such action affects the Private Partner. *See also Force majeure risk and MAGA risk.* The Contracting Authority is responsible for enforcing the performance regime and for ensuring that the performance specifications are attainable and properly tailored to what the Private Partner can deliver based on relevant market data and policy objectives. The appropriateness of the metrics can be assessed by reference to standards of similar services provided by the Contracting Authority (or other government body), value for money, the nature of the project and the relevant markets.	In mature markets, the Contracting Authority should have access to various data sources to develop realistic and attainable performance specifications and models. For other markets, particularly in the case of market first projects, the preparation of attainable standards by the Contracting Authority is complicated by the lack of relevant market data. The Contracting Authority should set standards which are achievable in the relevant market, taking into account, for example, applicable track maintenance standards. These may vary across different markets. In less mature markets, the Private Partner may require the Contracting Authority to reduce the performance requirements during the settling in period and possibly readjust the performance metrics once the performance of the light rail network has stabilized. This can mitigate the risk of long-term performance failure.
	Operational resources or input risk		●	●	The Private Partner bears the principal risk and responsibility of ensuring an uninterrupted supply of resources for the project (such as utilities, maintenance equipment and materials, reliable traction power and specialist vehicles) and to manage the costs of those resources. It will need to consider this when structuring its supply arrangements. This is especially relevant for light rail projects where the Private Partner's obligations also include catering for special, but regular weather conditions, such as winter railway clearance or monsoon flooding.	Certain markets are generally more susceptible to market volatility and major cost variations. Mature markets generally do not experience market volatility to the extent of less mature markets, and resource availability is less of a concern. However, energy costs may still vary significantly over the course of a project.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					In some markets, there may be specific instances where the risk needs to be shared (e.g. in relation to availability of energy supply or reliance on local source materials) where resources may be affected by labour disputes, embargos or other political risks. These may be treated as relief, force majeure, compensation or MAGA events. *See also Force majeure risk and MAGA risk.*	
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the light rail network and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	
	Health and safety compliance	[●]		●	The risk allocation for health and safety will, in part, depend upon operating responsibility for the asset. The Private Partner will typically bear this risk in respect of its operational responsibility, as well as in respect of maintenance/repair works and other health and safety aspects related to the services provided by the Private Partner during this phase. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority and/or a third party. To the extent that the Contracting Authority has operational control of the asset, the Contracting Authority would typically retain "day to day" operational health and safety responsibility.	In some jurisdictions with developed construction and working practices legislation, certain of the Private Partner's responsibilities will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations, for example, in relation to maintenance work being carried out in the operating phase. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability	[●]		●	The risk allocation for these liabilities will depend upon operating responsibility for the asset. Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to any building issues/defects and on-going maintenance/repair services and any other services/responsibilities of the Private Partner. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third party claims against it over this threshold. *See also Liability for death, personal injury, property damage and third party liability under Construction risk.*	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Maintenance standards			●	The Private Partner will bear the principal risk of meeting the appropriate standards regarding maintenance as set out in the performance specification, so that the system remains robust and is handed back in the expected condition on early termination or expiry of the agreement *(see also Condition at handback risk)*. This includes day-to-day routine maintenance as well as lifecycle maintenance and replacement of particular assets. Failure to maintain the assets in accordance with the performance specification will lead to payment deductions and, where significant, potentially breach, so this can be a key risk for the Private Partner. In practice, estimating life cycle works may be challenging. It requires experience and, to the extent available, the Contracting Authority may be able to provide data on life cycle cost. As the standard for PPP is often set at a much higher level than for existing (non-PPP) projects, such data is likely to require a multiplier. Life cycle funding/reserving mechanisms may mitigate life cycle risk but are also difficult	In mature markets, the Private Partner generally assumes the overall risk of periodic and preventative maintenance, emergency maintenance work, work stemming from design or construction errors, rehabilitation work, and in certain instances, work stemming from implementing technological or structural changes. *See also Disruptive technology risk.* Some projects in less mature markets have been procured on a design-build basis with a view to then passing over the assets to an operations concessionaire. In this case the Contracting Authority will need to ensure that it has sufficient warranties of the project components to allow the

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					to design adequately and Contracting Authorities should bear in mind that these can have an impact on risk allocation/value for money. The involvement of the Private Partner in the operation, maintenance and rehabilitation of the project, and the linking to payment entitlement, can provide several benefits. It should incentivize greater care and diligence by the Private Partner in both the construction and operating phase, and increase the useful life of the infrastructure. The Contracting Authority may establish a facilities management committee to oversee the Private Partner's performance of the maintenance and rehabilitation services, along with a formal mechanism to discuss and resolve performance related issues. Generally speaking, the Contracting Authority should avoid undue interference with the Private Partner's provision of maintenance and rehabilitation services so as not to dilute the risk transfer benefits.	operator to manage the ongoing maintenance risk. Some projects have required the Private Partner to build municipal infrastructure around the light rail infrastructure, and to transfer the maintenance of the municipal infrastructure on completion.
				●	**Demand risk projects:** Where the Private Partner is taking on demand risk, it takes the primary risk that the track and assets will be maintained to a sufficient level of quality and reliability to ensure that it can continue to attract business. However where the light rail network constitutes an essential public service or is an effective monopoly operation over that route, it would be sensible for the Contracting Authority to include appropriate key performance indicators to monitor the service levels and take effective enforcement action (e.g. through penalties or reduced ticket revenue entitlements). *See also Existing assets in the project and Existing (or other) assets interfacing with the project below.*	
		●	[●]		**Usage higher than forecast:** If usage is much heavier than forecast and beyond the specification required by the Contracting Authority, it may be necessary to agree a mechanism to pay the Private Partner compensation in respect of increased maintenance costs.	
		[●] ●		●	**Existing assets in the project:** As regards existing railways and structures, such as bridges, the maintenance risk should be allocated to the Private Partner to the extent the condition of the existing assets is known and future maintenance work can be assessed properly by an experienced contractor. In some cases, particularly a light rail network where the Private Partner bears demand risk, the Contracting Authority may need to retain the maintenance or latent defect risk of some existing assets (and fit for purpose standards may need to be appropriately adjusted). **Existing (or other) assets interfacing with the project:** Similarly, on a light rail project where the Private Partner bears demand risk, the Contracting Authority will bear risk if it is required to guarantee and proactively manage the maintenance of an existing light rail network (or other transport mode) that integrates with the project as this will be key to providing access to the new light rail network. *See also Access to the site and associated infrastructure under Land availability, access and site risk.* **Enforcement of regulatory regime:** Changes to the regulatory framework which cause higher maintenance costs/shorter asset life or lack of enforcement should be a Contracting Authority responsibility (and may be treated as a compensation or MAGA event or change in law). *See also MAGA risk and Change in law risk.*	
	Interface				*See Maintenance standards under Operating risk, Project management and interface with other works/facilities under Construction risk, Access to the site and associated infrastructure under Land availability, access and site risk and Demand risk.*	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will usually be a shared risk, for example with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials and	Vandalism may be more of a risk where the political climate opposes the light rail network.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					restrict access to certain areas etc. For example, the Private Partner may elect to use materials which can be more easily cleaned of graffiti, or have a security guard in place at certain ticket machine locations. Once the light rail network is in operation, it is likely to be unreasonable for the Private Partner to be able to secure the entire site from vandalism. *See also Site security under Land availability, access and site risk and Social risk.*	
DEMAND RISK *The risk of traffic levels being different to forecast levels; the consequences for revenue and costs; and government support measures.*	**General principles**				Allocation of demand risk (the risk of usage 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. 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 user forecasting. If there is high uncertainty over usage projections and uncertainty over revenues (for example, due to fare limitations and/or currency volatility), this may be one reason to structure the project on an availability payment basis. 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 having recourse to fare collections. In the rail sector, the infrastructure requires considerable capital expenditure and will not typically be capable of generating the required revenue without some form of government subsidy to be viable. *See also Government support measures under Demand risk.* 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 usage 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 station retail, advertising hoardings and other facilities (to the extent these are permitted) should also be assessed and addressed under the contract. Where the Private Partner is relying on demand revenues for the project to be financially viable, this will be a key risk. It should however be borne in mind that where a light rail project does not include rolling stock procurements (as in many developed markets), the dependencies underpinning demand risk (e.g. minimum service guarantees) mean that it is challenging to achieve any meaningful risk transfer.	It has become more common for light rail projects in all markets to provide for the Contracting Authority to retain at least some of the demand and ticket revenue risk and to pay the Private Partner some availability-based payment (or provide alternative revenue underpinning). This trend has been observed in 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 usage 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. 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 transport 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 usage and revenue forecasts.
	Considerations	●			**Appropriateness of asset for transfer of demand risk:** The nature and quality of the asset is an important factor in the ability to transfer demand risk to the Private Partner. The potential for demand risk transfer will depend on a variety of factors, including the impact of other adjacent or connecting projects (such as interconnecting light rail lines or alternative modes of transport e.g. buses, road systems etc) likely to affect demand and pricing. **Ticket price fixing:** generally speaking the Private Partner will not be free to set ticket prices beyond certain levels and will be bound by relevant regulatory and/or contractual restrictions. If the Contracting Authority or other government entity is required to take action to set ticket prices, a failure to do so in a reasonable manner should be treated as a compensation event or MAGA event if it has an adverse financial effect on the Private Partner. This could include failing to increase ticket prices or increasing ticket prices to a level which adversely affects user demand.	
	Higher demand			●	The Private Partner in principle bears the upside of demand fluctuations where demand risk is allocated	

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Risk	Sub-category	Public	Shared	Private		
	than anticipated		[●]		to it. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control than the Private Partner's. Higher demand should increase revenues, but in practice there are some issues to consider. Increased usage is likely also to impact costs as greater maintenance spend than anticipated will be required to keep the light rail network in good condition and maintain user levels. The output specification in the contract will have anticipated a certain level of usage and if the light rail network is bearing more usage then there may be some significant lifecycle issues to consider which may outweigh the additional revenue which the Private Partner is receiving. A failure to address upgraded maintenance needs could result in the light rail network becoming unusable before the expiry of its term. In order to manage these issues, the parties may want to ensure the contract addresses such possibilities. For example, there may need to be a mechanic to update the output specification so that maintenance is adequately funded if revenue/use is above a certain level. Equally, there may need to be a mechanism for sharing the profit above a certain level (having taken into account increased costs), either through payment to the Contracting Authority or by reduction in user payments through ticket sales. This might be particularly appropriate where the Contracting Authority has provided some form of subsidy or revenue support or if the reason for the higher demand is due to a Contracting Authority action which was not anticipated at the time of bidding.	
	Lower demand than anticipated	[●]	[●]	●	Although the Private Partner in principle bears the downside of demand fluctuations where demand risk is allocated to it, in practice the situation is likely to be qualified. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control. **Private Partner risk:** The Contracting Authority should be mindful that the competitive bidding process may encourage bidders to be aggressive with their usage and revenue forecasting. Over-optimistic forecasting can create financial problems for the Private Partner, and may lead to project failure. The Contracting Authority can mitigate the risk by commissioning its own demand analysis to assist it in evaluating bids and their underlying forecasts. Other Private Partner risks include where it sets a ticket price which is too high (to the extent it is permitted to set the ticket price) or fails to maintain the light rail network and such actions adversely affect user levels. **Contracting Authority risk:** Some factors affecting demand are not within the Private Partner's control and the risk of such factors may instead lie more appropriately with the Contracting Authority. For example, in most cases, demand risk is unlikely to be accepted by the Private Partner in the absence of a regime that protects the Private Partner from "material adverse changes" which would impact user and revenue levels and which are outside its control. Such changes (and any materiality threshold) should be clearly defined and might include the construction of new competing light railways, roads or other transport options, changes to surrounding traffic and network conditions, or demographic/macroeconomic changes. The Private Partner may also seek to impose obligations on the Contracting Authority to implement works to link to connecting infrastructure or put in place traffic support measures (such as road closures) designed to make the light rail network more attractive to users, or to not undertake activities that might derogate from the profitability of the light rail network. Whilst the Private Partner may feel justified in requiring these measures in support of its estimated usage forecasts, some of these steps may prove politically unpopular and will need to be carefully considered by the Contracting Authority. The parameters of such protection will need to be carefully negotiated to ensure the Contracting Authority and other relevant government bodies retain sufficient flexibility to implement other necessary urban development over the term of the project. Failure by the Contracting Authority to comply with any contractual obligations or measures would typically be treated as a compensation event or MAGA event. *See also Maintenance standards under Operating risk and MAGA risk.*	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Government support measures		[●]		Projects where the Private Partner accepts demand risk are often underpinned by some form of government support in order for them to bankable. The effect of these measures is that the Contracting Authority shares demand risk. **Subsidies:** Support may be in the form of an upfront subsidy towards capital expenditure (i.e. construction costs) where ticket revenue is forecast to be insufficient for the Private Partner to meet its debt service and other financial needs (as is typically the case with rail infrastructure). **Minimum revenue/service guarantees:** An alternative to upfront subsidies is for the Contracting Authority to guarantee a minimum level of revenue or a minimum number of services for the Private Partner. The contract will provide that if revenue falls below a specific level, the Contracting Authority will pay the Private Partner an amount to ensure it receives a minimum revenue. The threshold for the guarantee should be set at a level which incentivizes the Private Partner and other stakeholders (e.g. other public sector entities) to increase user demand and the contract should still require appropriate levels of maintenance. This is to ensure that the Private Partner is not incentivised to rely solely on the guarantee and discourage users and reduce maintenance costs. **Other support:** The Contracting Authority may also share demand risk by setting upper and lower revenue limits within which the Private Partner bears full demand risk and outside of which the Contracting Authority bears or shares the risk. The Contracting Authority may also consider support in the form of payment of shadow fares based on actual number of passengers.	This type of support may be seen across all markets in some demand risk sectors. Substantial upfront public subsidy has been seen in France, for example, and minimum revenue guarantees are often a feature of projects in some sectors in less developed markets (such as in Africa). Avoiding Private Partner reliance on minimum revenue/service guarantees is a specific perceived challenge in many projects in some sectors. These guarantees can also create challenges and excess liabilities for the government where the level of the guarantee is so high that demand risk is essentially retained by the government. Many demand risk projects, most notably in South America, transfer demand risk but have cap and collar revenue arrangements. This results in a hybrid position where demand risk is fully transferred to the Private Partner within a certain revenue range, but outside of this the Contracting Authority retains full demand risk.
FINANCIAL MARKETS RISK *The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.*	**Inflation**	[●]		●	**Construction phase:** The risk of construction costs increasing due to inflation is typically borne by the Private Partner who will generally price in this risk in markets where such risk can be projected and quantified. Where this is not possible the Contracting Authority is likely to be asked to bear some risk.	The fluctuation of inflationary costs is a greater risk in less mature markets than it is in other markets and the Private Partner's expectation will be that this risk is borne and managed by the Contracting Authority during the contract term. The variable component of the availability payment is typically defined by the consumer price index in mature markets. In other markets, the selected indexation method will need to reflect variable financing costs and variable inputs such as staff and materials. It will be more crucial in less mature markets to find appropriate indicators which mirror the project needs rather than a general consumer price index.
		●			**Operation phase:** Inflation risk in the operating phase is typically borne by the project user (on demand-risk projects) or the Contracting Authority (on availability-based projects). The Private Partner will look to be kept neutral in respect of both international and local inflationary costs through an appropriate inflation uplift or fare adjustment regime. There is always a time lag in how quickly the indexation price increase is available to the Private Partner. On availability-based projects, this is achieved by the availability payment typically including both a fixed component (where debt has been hedged) and a variable component which includes an escalation factor that accounts for rises in costs. On demand risk projects, the ability to increase fares may often be restricted (as fare increases are likely to be a sensitive political issue). The Contracting Authority may need to provide a subsidy to the Private Partner if users cannot bear the cost increase.	
	Exchange rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority may expect the Private Partner to bear the risk of an exchange rate fluctuation between submission of bid and financial close for a specific time period (e.g. 90 days). Where there is a prolonged period between bid submission and financial close, the Contracting Authority may need to bear the risk. Where exchange rates are volatile or long term currency swap markets are illiquid, the Private Partner may have limited ability to accept the risk of exchange rate fluctuation and will seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as USD.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of a change in exchange rate. Exchange rate risk can be substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						developed capital markets.
		[●]	[●]	●	**Rate changes during project:** Allocation of exchange rate fluctuation risk over the life of a project will depend on the relevant project jurisdiction and the nature of the project costs. In most PPPs, the Private Partner will bid and be paid (whether by the Contracting Authority or through user payments through fare payments) in the domestic currency of that country. It may, however, incur costs in a foreign currency and such costs are translated into the bid price in the domestic currency on the basis of a particular exchange rate. In some PPPs, the Private Partner (and its lenders) may seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as the USD. **Construction phase:** Exchange rate risk can arise where some or all of the construction costs are denominated in a currency different to the domestic currency. For example, where construction of the asset requires equipment that is manufactured overseas, adverse exchange rate movement may result in such equipment becoming more expensive than anticipated when converting domestic currency. This may use up the contingency the Private Partner has provided for in its financial arrangements (and priced into its bid) and/or require the Private Partner to take on additional borrowing in the construction phase to finance these costs. **Operating phase:** As with construction costs, a similar risk may arise if the Private Partner incurs operating costs in a currency different to the currency of the PPP contract payments. For example, exchange rate risk can arise if the debt used to finance construction is denominated in a currency different to the domestic currency of the price paid under the PPP contract. Adverse exchange rate movements during the operating phase where the debt is being repaid will result in debt repayment in the foreign currency requiring a larger proportion of the Private Partner's revenue. This may result in the Private Partner having insufficient funds to service its debt and/or may eat into its projected equity return. **Mitigation:** The Private Partner typically looks to mitigate exchange risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the costs the Private Partner incurs are effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid. Devaluation of a local currency beyond a certain threshold may also trigger a non-default termination, or a "cap and collar" subsidy arrangement from the Contracting Authority.	Exchange rate risks are more substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets). In more mature markets, the risk of currency fluctuations is typically not substantial enough to require the Contracting Authority to provide support and exchange rates risks are addressed solely through the Private Partner's own hedging arrangements. Where the exchange rates are more volatile, access to long term hedging may be either unavailable or too expensive. The likelihood of debt being dominated in a foreign currency is more likely in markets where financing by multilateral or international banks may be required (e.g. in less mature markets where there is limited depth in the local debt capital markets). *See also Strength of Contracting Authority payment covenant under Early Termination risk.* Some cost risk can be managed on demand risk projects by passing the risk through to the user by way of fare adjustments, but the ability to do this may be limited.
	Interest rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority normally expects the Private Partner to bear the risk of a change in the reference interest rate between submission of bid and financial close for a specific time period (e.g. 90 days). Any rate changes after this time period will be a Contracting Authority risk	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of an adverse change in interest rate.
				●	**Rate changes during project:** The Private Partner will typically bear the risk of interest rate fluctuations over the life of the project but this will depend on the specific project and its jurisdiction. The Private Partner will seek to mitigate this risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the interest rate the Private Partner is required to pay is effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid.	In mature markets, the risk of interest rate fluctuations is not substantial enough to require the Contracting Authority to provide support and is typically addressed solely through the Private Partner's own hedging arrangements. In other (less stable) markets this may not be possible due to interest rate volatility or lack of long term hedging availability and in some circumstances it may be more appropriate for the Contracting Authority to retain interest rate risk if it can bear the risk more efficiently than the

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	Sub-category	Public	Shared	Private		
						private sector.
	Unavailability of insurance		●		The responsibility for placing required insurances and the cost of doing so is typically borne by the Private Partner. However, PPP contracts typically also include provisions to address the risk of insurance becoming unavailable or only available at a cost which exceeds a level at which the Private Partner is able to price in reasonable contingency. This only applies if the uninsurability is due to factors unrelated to the Private Partner. Where neither party can better control the risk of insurance coverage becoming unavailable or more expensive, this is typically a shared risk. How this is addressed will depend on the specific project and jurisdiction. For the purposes of PPP projects, insurance is generally deemed unavailable to the extent (a) it is no longer available in the international insurance market from reputable insurers of good standing or (b) the premiums are prohibitively high (not just more expensive) such that contractors in the project jurisdiction are commonly not insuring such risk in the international market. As part of the feasibility study the Contracting Authority should consider what insurances are necessary and available at a reasonable premium and whether insurance might become unavailable (or too expensive) for the project given the location and other relevant factors. This is essential for assessing risk allocation for relevant events (e.g. force majeure risk allocation) and for the Private Partner to price its risks.	The standard approach as regards unavailability is common in mature markets. In some less mature markets, if insurance becomes unavailable, the Private Partner is typically relieved of its obligation to take out the required insurance but, unlike the mature market position, the Contracting Authority does not become insurer of last resort and the Private Partner bears the risk of the uninsured risk occurring. If the uninsured risk is fundamental to the project (e.g. physical damage cover for major project components) and the parties are unable to agree on suitable arrangements, then the Private Partner may need an exit route (e.g. the ability to terminate the project on the same terms as if the unavailability of the insurance were an event of force majeure). In negotiating an insurer of last resort position, the Private Partner and, in particular, its lenders, will carefully assess the Contracting Authority's credit and its ability to meet liabilities if an uninsurable event occurs. This is a reason why this position may be more likely in economically stable markets. In less stable markets the parties may negotiate more over whether a particular insurance should be an obligation in the first place and how the risk (and its occurrence) might be managed (e.g. through the force majeure provisions). In less mature markets, wider reference criteria may be needed in defining unavailability (e.g. to address a situation where the pool of benchmark contractors is insufficient to draw a meaningful comparison). Projects in some locations may find it more difficult to get insurance for certain events under commercially viable conditions. In this case the parties will need to find a solution to unavailability at the start of the contract.
			●		**More costly premium:** Where the cost of the required insurance increases significantly (without becoming prohibitive), the risk is typically shared by the parties by either having an agreed cost escalation mechanism up to a ceiling or a percentage sharing arrangement. This allows the Contracting Authority to quantify the contingency that has been priced for this risk.	
			●		**Unavailability:** A standard approach in mature markets to manage unavailability of insurance is that where required insurances become unavailable, the contract typically requires the parties to try to agree a solution to manage the uninsurable risk and the Private Partner is relieved from breach of its obligation to take out the required insurance to the extent the unavailability is not due to its actions. If a solution is not agreed, the Contracting Authority is typically given the option to either terminate the project or to proceed with the project as "insurer of last resort" (i.e. to effectively self-insure and/or put in place its own insurance cover and pay out in the event the risk eventuates). If the Contracting Authority chooses to assume responsibility for the uninsurable risk, it may require the Private Partner to regularly approach the insurance market to try to obtain the relevant insurance and the contract price should be adjusted to reflect that the Private Partner is no longer paying the corresponding insurance premium.	
			●		**Occurrence of uninsurable event:** With the mature market standard approach, if an uninsurable event occurs, the Contracting Authority may (a) terminate the contract (typically on a force majeure basis plus corresponding third party liability payments) or (b) pay the Private Partner the equivalent of insurance proceeds and continue the project. The approach to termination compensation reflects the general acceptance that uninsurability is neither party's fault and should be a shared risk.	
		[●]		[●]	**Unavailability due to fault:** Risk allocation will be affected by the reason for unavailability. As highlighted above, the provisions should only apply to the extent the Private Partner is not responsible for the insurance unavailability. Equally, if the unavailability is caused by the Contracting Authority's actions, the Private Partner may want to negotiate a right to terminate if a fundamental risk becomes	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					uninsurable.	
	Refinancing		●	●	There are two key risks associated with refinancing (the changing or replacing of the existing terms on which the Private Partner's debt obligations have been incurred): (i) the risk that a project will be unable to raise the required capital to refinance a project at a given point in time; and (ii) the risk that a refinancing of debt will create additional project risks (e.g in terms of potential increased liabilities for the Contracting Authority and increased financial instability of the Private Partner). The risk of failing to raise required capital will arise in projects where the Private Partner (a) needs to seek a rescue refinancing to reschedule its borrowings if it is struggling financially, or (b) needs to replace short term (mini perm) financing which may have been the only financing option available to (or desirable for) the project initially. This is typically a Private Partner risk. Mitigation measures can include, in the case of mini perm financing, raising debt capital that has a repayment schedule that is matched to the PPP contract and project revenues available over the period of the PPP contract or by structuring the debt in several tranches of different tenors so that refinancing risks are smaller but arise more frequently Refinancings may also occur where the Private Partner wants to take advantage of better financing terms available in the market (e.g. where the market recovers after a global financial crisis or after construction completion when the project is perceived to be less risky by funders). The risk of a refinancing creating additional project risks will be a risk for both the Private Partner and the Contracting Authority. The Contracting Authority needs to ensure that a refinancing does not adversely affect it (e.g. by increasing the level of its potential liability for termination compensation above what would have been the case under the original financing documents/financial model or increasing the risk of such liability falling due if the financial stability of the Private Partner is affected). To mitigate this risk, the contract should specify that the Contracting Authority's consent is required in specified carefully drafted circumstances. Where the result of a refinancing is that the Private Partner's debt costs are reduced, resulting in greater profit and in turn a higher equity return (typically known as "refinancing gain"), it may be appropriate for the gain to be shared between the parties (e.g. to the extent it increases the original forecast equity return in the financial model). The Contracting Authority may expect to share a percentage of the refinancing gain (e.g. 50%) and this is particularly important given the use of public funds (or user payments through fares) to pay for the PPP project. To ensure it does not miss out on an anticipated share of any refinancing gain, the Contracting Authority should ensure that all relevant definitions are carefully drafted. The way the Contracting Authority receives its share of the gain will depend on the nature of the refinancing and discussions at the time. Options include: (a) a lump sum upon the refinancing to the extent the Private Partner receives such amounts at the time of the refinancing; (b) a lump sum or periodic sums at the time of receipt of the relevant payments, or the receipt of the projected benefit (in the case of a "user pays" fare model); (c) a reduced availability payment (in the case of the "government pays" model); (d) reduced fare payments (in the case of a user pays model); or (e) by a combination of the above (in accordance with the applicable payment model). For a more detailed analysis of typical refinancing provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Refinancing risks will ultimately depend on the depth and liquidity of the relevant capital markets. In more developed capital markets, the risk of failing to raise required capital is unlikely to be a significant risk as long-term finance is available from the outset. Mini perm financing is more common in countries where the capital markets are less developed and there is a lack of a market for long term debt instruments. However, banks globally already face greater regulatory pressure which affects the loan tenor they can offer, and it is likely they will face increasing restrictions even in developed markets which may lead to shorter initial debt tenors and increased refinancing needs. It has become increasingly acknowledged in mature PPP markets that it would not be fair for the Private Partner to enjoy the entire benefit of a refinancing gain where it is not entirely responsible for the availability of improved financing terms (e.g. where the market recovers after a global financial crisis). In emerging markets, particularly for demand risk projects, there may be limited scope for the Contracting Authority to negotiate refinancing gain sharing if such gain is a key incentive for potential bidders. Refinancing provisions may not be included. This is more likely in untested "riskier" markets where the prospect of refinancing gain is a key driver to bidders' participation (as has been the case, for example, in the Philippines). As with more mature markets, the potential for sharing refinancing gain should increase as the PPP market becomes more established and perceived risks decrease.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
STRATEGIC/ PARTNERING RISK *The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.*	**Private Partner failure/insolvency**			●	The Private Partner essentially bears the risk of failing to have the requisite technical or financial capability to deliver the project in accordance with the contract. However, as the consequences of such failures can lead to interruption in service and inconvenience to the Contracting Authority and users, as well as potential termination liabilities for the Contracting Authority, the Contracting Authority must carry out a thorough evaluation of each bidder to ensure that it selects the right partner to deliver the project, with whom it can develop the necessary long term partnership and meet any aspirations it may have as regards community engagement and local employment and skills development. *See also Risk Allocation in PPP contracts in the Introduction.*	
	Sub-Contractor failure/insolvency			●	The Private Partner is responsible for its sub-contractors and bears any associated risks, unless the Contracting Authority imposes mandatory sub-contractors, in which case it may need to bear, or share, certain sub-contractor-related risks. However, the sub-contractors should form part of the Contracting Authority's evaluation of each bid for the reasons highlighted in relation to the Private Partner.	
	Change in Private Partner ownership			●	Complying with any contractual restrictions on change in ownership will be a Private Partner risk. The Contracting Authority wants to ensure that the Private Partner to whom the project is awarded remains involved and that any restrictions on, for example, foreign ownership of critical infrastructure are not circumvented. As the project is awarded on the basis of the Private Partner's technical expertise and financial resources, it will also want to ensure key parties such as parent company sponsors (and sub-contractors) remain involved. The Contracting Authority will typically prohibit any change in the Private Partner's shareholding for a period (e.g. by a lock-in for the construction period or until a couple of years into the operating phase) and thereafter may impose a regime restricting change in control without consent or where pre-agreed criteria cannot be met. The Contracting Authority's desire for certainty of involvement of key participants will need to be balanced with the private sector's requirements for flexibility in future business plans. This is particularly in respect of the equity investor markets and the added benefits of allowing capital to be 'recycled' for future projects.	In less mature markets, there is typically more restriction on the Private Partner's ability to restructure or change ownership. Overly restrictive provisions may deter investment, so this needs to be assessed in terms of the benefits to the Contracting Authority of both ensuring sufficient competition in the bid phase, and enabling parties to recycle their investment into other projects in the jurisdiction. Once the project is operational, for example, it may be reasonable for financial investors seeking regular returns to invest in place of certain of the initial (e.g. construction party) sponsors.
	Permitted Contracting Authority step-in	●		●	The risk associated with Contracting Authority step-in depends on the grounds for stepping in and whether due to the Private Partner's fault or not. Step-in circumstances include emergencies involving the emergency services, intervention to protect against social and environmental risks and fulfilling a legal duty to provide essential services of continuity of service. The scope and terms of the Contracting Authority step in is a key bankability point due to the potential impact on the parties' liability. **Private Partner fault:** If step in is due to Private Partner fault or an event it is responsible for, the Private Partner essentially bears the risk of costs incurred by the Contracting Authority (and itself). In some jurisdictions this liability may be capped. The Private Partner is usually given relief from performance of its affected obligations and may receive some payment in respect of its obligations. **No Private Partner fault:** In this situation, the Contracting Authority bears the risk and will be responsible for its own costs. The Private Partner will be given relief from performance of its affected obligations and be entitled to extensions of time and relief on the basis of a compensation event (except to the extent the cause falls under another provision (such as force majeure) in which case that provision will apply). It will be entitled to full payment subject to certain deductions and may also require a cost indemnity from the Contracting Authority. In each case, risk should be allocated in respect of later issues around interface between solutions implemented during step in and the Private Partner's planned delivery solution, as well as any other risks that are allocated to the Private Partner.	In some jurisdictions (e.g. France), step-in is only contemplated in a breach situation and the Private Partner typically bears all cost up to a certain percentage (e.g. 15%) of project costs. A termination right may arise if the situation subsists for a certain period (e.g. 6 – 12 months). In some jurisdictions, the Private Partner may receive full payment as if it was performing the service in full or partial payment to reflect the affected obligations. In each case this will be subject to deductions and could result in zero payment. In some jurisdictions (e.g. in some EU countries and Australia), the Contracting Authority may not accept any liability when stepping in due to a Private Partner breach or event which is the responsibility of the Private Partner, except in the case of gross negligence in an emergency step in, fraud or bad faith. The scope and terms of step-in will be particularly relevant for Private Partners in jurisdictions which are less predictable or have underdeveloped or less stable legal or

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					For a more detailed analysis of typical Contracting Authority step-in provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	regulatory frameworks as the Private Partner will be concerned to limit the Contracting Authority's potential effect on the delivery of the PPP project. It may only want to agree to such rights in projects in sectors and jurisdictions where the Contracting Authority is committed to ensuring continuous delivery of the essential public service and has demonstrable experience in such delivery
	Change in Contracting Authority ownership/status	●			The Contracting Authority should bear the risk of any change to its ownership/status which adversely affects the project, for example, where its financial covenant and credit are adversely impacted. The Private Partner will typically have a right to terminate if certain criteria are not met and be entitled to compensation.	In stable markets, this risk may not be specifically addressed in the contract if satisfactory statutory or constitutional protections are available to the Private Partner. In less stable and untested markets, more specific provisions may be required particularly where the Contracting Authority is not a central government entity.
	Disputes		●		**Private Partner/Contracting Authority disputes:** The risk of disputes is a shared risk and the consequences will depend on the outcome of the dispute. To minimise the risk of uncertain and costly outcomes, the contract should expressly include a clear governing law (typically the domestic law of the Contracting Authority's jurisdiction) and choice of dispute resolution forum (courts or arbitration). Efficient and fair dispute resolution processes should be included which provide for an escalated procedure where matters cannot be resolved between the parties' senior management, resolution of technical disputes by an independent expert, and recourse to the chosen forum. If the contract does not contain appropriate procedures this is likely to deter potential bidders and their lenders as efficient dispute resolution is a key bankability issue. A failure by the Contracting Authority to follow contractually agreed processes may also have an adverse effect on private sector interest in other PPP projects in that jurisdiction. There may be investment treaties applicable to the PPP arrangements with foreign parties, but these are no substitute for proper dispute resolution provisions in the contract itself. The Contracting Authority may be expected to waive any privileges and sovereign immunities which it enjoys before local and foreign courts (such as immunity from any suits by the Private Partner). Transparency and public access to information about disputes may be an important factor in choice of forum. In some jurisdictions the legal process is public which contrasts with arbitration which is generally a confidential and private process. Where additional agreements govern the relationship between the parties themselves, consolidation of related disputes and the joinder of related parties may be appropriate. To reduce the risk of concurrent processes, the agreements should include similar dispute resolution clauses agreeing to this. The Private Partner should be obliged to continue with performance of the contract while the dispute is resolved and, if so, will bear the risk of failing to do so. For a more detailed analysis of typical governing law and dispute resolution provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Contracting Authorities will typically select domestic law and local courts as the forum for disputes. This is for a variety of reasons including familiarity and compatibility with any concession/PPP legislation. It also minimizes the risk that local users and other stakeholders will bring claims in a different court. In jurisdictions with a less established and experienced legal system, the Private Partner is likely to want an established dispute resolution forum (such as a recognised arbitration centre for the particular region), rather than to rely on local courts. There may be circumstances where this option needs to be considered by the Contracting Authority as a necessary compromise in order to ensure the project is bankable. For the same reason, there may be certain cases where the Contracting Authority will consider having a foreign law as the governing law of the contract. Choice of forum may be restricted in some jurisdictions due to local law requirements (e.g. prohibiting referral of disputes to a foreign court or international arbitration, or being subject to a "foreign" law). This is particularly common in certain civil law countries where solely specific administrative courts are able to judge public authority decisions and/or contracts. Additionally, there may be local law limitations (under constitutional arrangements, public policy or otherwise) on contractually agreeing to waive sovereign immunity. There may also be reputational and political issues if a Contracting Authority is seen to exempt public sector projects from the jurisdiction of domestic courts.
				●	**Sub-contractor disputes:** The Private Partner is responsible for disputes with its sub-contractors. The Contracting Authority should avoid the risk of getting involved in expensive and time-consuming peripheral disputes with other parties. However, it may want to consider allowing certain disputes it has with the Private Partner to be joined with disputes on the same matter between the Private Partner and its sub-contractor where the forum for resolving the dispute is appropriate. Any assessment of the need for	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					joinder provisions is likely to be fact-dependent.	
DISRUPTIVE TECHNOLOGY RISK *The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.*		●	●	●	Responsibility for disruptive technology risk depends on the project circumstances. The Private Partner's obligation is to meet the output specification. If it fails to do so due to obsolescence of equipment or materials it is likely to suffer payment deductions and, above a particular threshold, may be at risk of termination. In this case it bears the risk of potentially having to replace relevant technological solutions (e.g. if the solution it has chosen is no longer supported). However, if it is performing above that threshold, the Contracting Authority cannot require it to replace technology simply because more efficient technological solutions are available unless there is an agreed contractual mechanism for doing so. To address this, the Contracting Authority may consider imposing obligations on the Private Partner to adopt and/or integrate with new technologies or to allow for other foreseeable developments, such as a new fare collection system and ticketless travel through smartphone technology (e.g. which may require upgraded ticket barriers) or data collection systems for monitoring service performance. An obligation to operate in accordance with best industry practice may also impose some obligation on the Private Partner to take on improvements in technology. It may be appropriate additionally to agree a specific cost sharing mechanic under which the Contracting Authority can request technological upgrades with appropriate cost sharing according to the reason for the request (e.g. if the replacement solution will improve health and safety or have social/environmental benefits). The same considerations apply if the Private Partner wants to make a technological change which is not strictly necessary and it may be appropriate for the Contracting Authority to consider incentivising the Private Partner to propose changes which will be of public or environmental benefit. This is a way to make technological changes which are not necessarily new (i.e. they may reflect technology which existed at the time of the procurement process, but which the Contracting Authority did not specify as a requirement in the design solution – e.g. a change from overhead power to on board energy storage and battery charging at station stops). Similarly, this is a mechanism for incorporating changes which might develop the existing design solution further – such as more efficient or less obtrusive energy storage and battery facilities. The Private Partner will seek to mitigate its potential exposure through clear contractual cost and improvement parameters, beyond which any changes will be treated as a Contracting Authority variation of the PPP contract and entitle the Private Partner to relief in accordance with the contractual variation mechanic. *See also Variations risk.* It is important to take into account that some disruptive technologies may have both upside and downside effects on a project, as well as efficiency or social and environmental benefits. It may therefore be appropriate to consider mitigating mechanisms in any contractual solution. For example, increased use of ticketless travel may mean fewer ticket staff are required, but other staff and systems costs may be incurred instead using the new technological solution. In many jurisdictions changes can be made only in accordance with pre-agreed contractual mechanisms, to avoid third party challenges on the basis that the amendments are so substantial that the existing contract should be retendered.	Disruptive technology risk is becoming under increasing focus in all markets. This is particularly the case in relation to technological changes relating to environmental protection and this area may require its own treatment in the contract (e.g. through specific treatment under the contractual variations mechanism and/or through other specific contractual obligations).
FORCE MAJEURE RISK *The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.*	**Force majeure events**		●		Force majeure is typically treated as a shared risk where neither party is better placed than the other to manage the risk or its consequences. **Scope:** Force majeure is an event (or combination of events) outside the reasonable control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law jurisdictions – the definition may require the event to be unforeseeable or not reasonably avoidable. Many jurisdictions have a concept of force majeure	The scope of force majeure will depend on the particular project and jurisdiction. In France, for example, the affected party is relieved from its obligations if force majeure prevents performance and French jurisprudence has defined the characteristics of a force majeure event as (i) beyond the control of the parties, (ii) unforeseeable and (iii) impossible

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					under general law and, particularly in civil law jurisdictions, this can limit the freedom of the parties to derogate from the scope of the legal concept and agree something different in the contract. However, most PPP contracts include specific force majeure provisions, whether they are civil law or common law governed, as this provides contractual certainty. The contract should be clear to what extent underlying law applies. **Approach:** Depending on the jurisdiction, the definition of force majeure may be an open-ended catch-all definition, an exhaustive list of specific events, or a combination of both. The open-ended catch-all definition is often seen in civil law-governed contracts and may also be more appropriate in markets which are less developed or stable and where there is little precedent or certainty. A non–exhaustive list of events may also be included. Qualifying events may be "natural force majeure" events (such as natural disasters and severe weather events, and possibly climate change events) and certain "political force majeure" events (such as strikes, war, government action etc). The exhaustive limited list approach is more common in developed and stable markets where the Private Partner has more certainty as regards the risk of events occurring and how it can manage them. It may be comfortable that events which might be force majeure in a less mature market (e.g. some types of industrial action) may instead be treated as relief events in a developed and predictable market. Under this approach, force majeure events are typically (but not necessarily exclusively) events which are uninsurable. Typical events include (i) war, armed conflict, terrorism or acts of foreign enemies; (ii) nuclear or radioactive contamination; (iii) chemical or biological contamination; and (iv) discovery of any species-at-risk, fossils, or historic or archaeological artefacts. As market practice develops, certain climate change events might also be included. *See also Site Condition under Land availability, access and site risk and Climate Change event under Environmental risk.* For a more detailed analysis of typical force majeure provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. **Risk qualification:** The Contracting Authority should consider whether it can limit its risk by carefully defining the events which qualify as force majeure, and/or qualifying or excluding them as appropriate. For example, in some projects earthquakes may only qualify as force majeure if they are above a specified seismic intensity. Alternatively, an event may only qualify if it has subsisted for a particular length of time. In some projects, risk is allocated to the Private Partner and/or shared for the first few months, and subsequently becomes a shared risk or Contracting Authority risk (with entitlement to terminate if the force majeure event continues for more than a defined time period (e.g. 6 – 12 months)). Using an open-ended definition of force majeure widens the risk shared by the Contracting Authority, but may be appropriate in some markets. The availability of insurance for certain events will be one of the main criteria in determining whether an event should qualify as force majeure and/or how the consequences should be addressed. Certain risks may be more likely to constitute a force majeure event if they occur in one phase than another (e.g. events in the construction phase affecting materials supply).	to overcome. In less mature markets, the list of specific events is likely to be wider than in more mature markets and include natural risk events, which typically can be insured (e.g. fire / flooding / storm etc), and force majeure events which typically cannot be insured (e.g. strikes / protest, terror threats / hoaxes, emergency services action, suicide / accident, passenger emergency, collision / derailment, emergency services, trespass etc). The extent to which the risk will be shared or allocated to one of the parties will depend on its nature and on the particular jurisdiction.
		●			**Contracting Authority political risk:** In some markets, certain political risk events may need to be allocated in full to the Contracting Authority because the Private Partner cannot reasonably be expected to bear any of the risk and/or because the Private Partner may price in such a high contingency in respect of the risk that it makes the contract unaffordable. Where the Contracting Authority bears the full risk of these risks, this may be addressed under the force majeure provisions but with "political force majeure" receiving different treatment to the shared risk force majeure events. Alternatively, these political risks may be treated in a separate provision under the heading of "material adverse government action" or similar (which may also include other forms of event for which the Contracting Authority is deemed solely responsible). *See also MAGA risk.*	In certain markets, it may be necessary to differentiate how similar types of risk events are treated, depending on where they occur. For example, in more politically volatile jurisdictions, war events might be wholly a Contracting Authority risk where they occur within the country, but a shared risk otherwise. *See also MAGA risk.*

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Force majeure consequences		●		The basic principle of force majeure is that the risk is shared and each party bears its own losses. However, there may be circumstances where it is appropriate for the Contracting Authority to provide relief to the Private Partner, provided the Private Partner has made reasonable efforts to mitigate the force majeure effects and to the extent it was not responsible for the event. In addition to granting the Private Partner relief from breach of its affected obligations, certain time or cost relief may be granted (sometimes where a particular threshold of costs or time delay has been reached). This will depend on the phase in which the event occurs and should be considered at the time, together with the impact of the event on the Contracting Authority and the options available to it. Termination following prolonged force majeure (e.g. 6 – 12 months) may also be available. If the Private Partner has the ability to terminate the PPP contract on the basis of a prolonged force majeure event, the Contracting Authority may want to include an option to require the PPP contract to continue, provided that the Private Partner is adequately compensated. This approach is more likely to be encountered in a more established PPP market. **Construction phase:** The consequences for the Private Partner of a force majeure event in the construction phase are that it may be unable to meet all or part of its contractual obligations, in particular key dates (such as the operation commencement date); may suffer delayed and/or lost revenue; and may incur additional financing and other costs (e.g. in relation to mitigating the event), both during and after the force majeure event. As well as relief from breach of the affected obligations, the Contracting Authority may decide to grant certain cost relief (either while the force majeure event subsists or through the operating phase if the contract continues) on the basis that the Private Partner has limited means to absorb additional costs and it may be in both parties' interests to avoid the Private Partner going insolvent. For example, it may elect to make a compensation payment at the time or, if the contract continues, grant extensions of time and/or an extended operating period so that the Private Partner has the opportunity to recoup lost revenue and costs. Alternatively, availability payments could be increased or, in a user pays model (subject to law and social and political ramifications), an increase in fares permitted. **Operating phase:** The consequences for the Private Partner of a force majeure event in the operating phase are that it may be unable to meet all or part of its contractual obligations (including failing to deliver the service); may suffer delayed or lost revenue; may incur additional financing and other costs; and may possibly be unable to service its debt repayment obligations. Again, in addition to relief from breach of its affected obligations, the Private Partner may be granted grant certain cost relief on the same principles as described in the construction phase. In an availability payment model, it may also grant payment deductions relief or relaxed performance standards and in a demand-based model some element of fare subsidy. **Insurance:** Project insurance (physical damage and loss of revenue coverage) will be a key mitigant in respect of physical damage, to the extent it is available, and an important consideration in respect of compensation and how to continue the project. For example, if the light rail network is destroyed prior to handover as a result of force majeure, the Private Partner will typically be obliged to re-build it at its own cost, to the extent the risk is insurable. Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common.	The approach to cost and deductions relief varies across jurisdictions. In developed markets (particularly some civil law jurisdictions) Contracting Authorities may be more willing to make compensation payments during a force majeure event. In some jurisdictions, the contract will expressly identify only specific force majeure risks for which the Contracting Authority will grant financial relief (e.g. raw materials price volatility). It may not be as common in less mature markets for cost compensation to be paid during force majeure unless caused by an event deemed to be a political risk for which the Contracting Authority is wholly responsible (e.g. a MAGA event). *See also MAGA risk.* Force majeure relief should be distinguished from relief available under any hardship doctrines *(see Glossary definition)* existing under the underlying law of the project jurisdiction.
MATERIAL ADVERSE GOVERNMENT ACTION RISK (MAGA) *The risk of actions within the public sector's responsibility*		●			In projects where a MAGA provision is appropriate, the Contracting Authority bears the risk of specific "political" actions having a material adverse effect on the Private Partner's ability to perform its contractual obligations, or on its rights or financial status. The Contracting Authority is responsible for costs and delays and is typically at risk of termination for prolonged MAGA events. Although not all jurisdictions use the term "MAGA", many have equivalent provisions under different terminology.	MAGA type clauses are more likely in less predictable and stable markets where the Private Partner (and its lenders) may require a clear regime to address specific government-related actions for which the Contracting Authority is responsible. This may be because of an actual or perceived likelihood of certain MAGA events occurring (e.g. war or

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having an adverse effect on the project or the Private Partner.					MAGA events typically include: deliberate acts of state such as outright nationalisation or expropriation of the PPP contract; a moratorium on international payments and foreign exchange restrictions; certain governmental acts (such as not granting essential approvals where the Private Partner is not at fault or, in a light rail project, building/promoting a competing alternative transport network adjacent to the project light rail network); and politically-inspired events such as national strikes. Change in law is also a form of MAGA. Although some of these events may not seem as obviously within the Contracting Authority's control itself as others (e.g. if they relate to other arms of government), market practice is that they are accepted by the Contracting Authority. This is because passing them to the Private Partner may result in it being unable to enter into the contract or pricing in such contingency that the contract is unaffordable. The list of events will depend on the individual project circumstances and the position agreed on force majeure events, and the Contracting Authority can limit its risk by qualifying relevant events by reference to a clearly defined materiality threshold. The process and consequences of MAGA are broadly similar to force majeure as regards the parties trying to find a solution and how the Private Partner may be compensated. The key difference is that the underlying principle behind MAGA relief is to put the Private Partner back into the position it would have been in had the MAGA event not occurred. The parties may terminate for prolonged MAGA, with compensation payable on a similar basis to Contracting Authority default termination. The Contracting Authority may be able to reduce its liability in some cases if it can negotiate different treatment for MAGA events which are not as clearly within its own control and influence. For a more detailed analysis of typical MAGA provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. *See also MAGA/Change in law termination under Early Termination risk.*	civil unrest), or a lack of track record of PPP contracts being run successfully free from political interference over long periods of time and across political cycles. In mature politically stable markets, the Private Partner (and its lenders) are often comfortable that the type of MAGA risks likely to arise are limited. Instead of being detailed in a specific Contracting Authority risk clause, they can be addressed through the shared risk force majeure provisions and compensation event type provisions (and the general right to terminate for Contracting Authority default in limited circumstances). Investors and lenders may be able to obtain political risk insurance in respect of some of these types of risks. This is more common in politically young or unstable markets. Some jurisdictions are more politically volatile internally than others and certain political risks will be treated differently. For example, war events may be treated as MAGA if they occur within the country, and shared risk force majeure if outside it.
CHANGE IN LAW RISK *The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.*	**Compliance with applicable law**	 ● ●		● [●]	Compliance with applicable law and mandatory regulation is each party's risk. The Private Partner is typically subject to an express contractual obligation and will be in breach if it does not comply with applicable law, subject to change in law relief. The contract must be clear what laws and other mandatory regulations and industry codes the Private Partner is obliged to comply with. This is essential not only so the Private Partner can price its compliance, but also in order to determine what constitutes a change in law so that change in law risk can be allocated effectively. Compliance by third parties is likely to be a Contracting Authority risk where it has failed to enforce compliance and there is an adverse effect on the project (e.g. this may be the case where the police fail to take action to prevent or remove trespassers unlawfully on the track, such as during a public demonstration, and full service provision is prevented for a particular period).	
	Change in law (and taxation)	●	[●]		The Contracting Authority primarily bears the risk of unexpected changes in law which were not in the public domain before a specified cut-off date in the bid phase and which cause the Private Partner's performance of its contractual obligations to be wholly or partly impossible, delayed or more expensive than anticipated (or impact its investors). This is because the Private Partner has contracted to provide the specific light rail project at a specified price based on a known legal environment and typically has limited means of offsetting adverse consequences of unexpected law changes. As change in law may also benefit the Private Partner, change in law clauses are often reciprocal, to ensure the Contracting Authority benefits from the "positive" financial consequences of a legislative change. The Contracting Authority's risk can be mitigated by ensuring that the contract clearly defines what constitutes a change, the relevant cut-off date and what constitutes being in the public domain. This will vary according to the nature of the project and jurisdiction concerned.	Change in law risk may be treated as a MAGA event if the treatment agreed for this form of political risk is the same as for other MAGA events. Generally speaking, where a detailed approach to risk allocation is involved and where the consequences do not lead to termination, change in law is best dealt with separately – this is more typical is established markets. *See also MAGA risk.* In defining a change it may be appropriate for the definition to include any modification in the interpretation or application of any applicable law. This is particularly likely in common law jurisdictions.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					There are various approaches to risk allocation as briefly summarised below and the degree of risk sharing will depend on the type of change and the approach suitable to the maturity and stability of the relevant legal market. Any risk that is transferred to the Private Partner is likely to be reflected by contingency pricing in its bid which may result in the Contracting Authority paying for something that never happens. The Contracting Authority should be mindful of how it will fund changes in law which are at its risk should they arise. For a more detailed analysis of typical change in law provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	As highlighted by the different approaches, in mature legally stable markets the Private Partner will likely have less protection than in jurisdictions where changes in law are less predictable and/or more likely due to underdeveloped or less stable legal or regulatory frameworks. Approach (a) is often seen in developing markets with less established legal environments as it may be the only way that private finance can be raised and should also enable the Private Partner to offer a more competitive price. Approach (b) has also been seen in more developed markets and some emerging markets. Approach (c) is seen in more experienced PPP markets. While it will involve some contingency pricing, this approach is considered generally more beneficial to the Contracting Authority, but may not be bankable in every jurisdiction and should be contemplated on a case-by-case basis. Even in markets using this approach there will be instances where this risk allocation is not fully achievable due to the nature of the PPP project and the extent to which the applicable legal and regulatory regime is settled. Projects in the rail sector involve a close interaction with passengers and safety regulation plays a paramount role. A change in health and safety legislation may well be of general effect but may have a disproportionate effect on the rail sector. For this reason some light rail projects have adapted the standard definitions of discriminatory/specific change in law to include any changes in law having such an effect. Past models (including in the UK) used to require the Private Partner to assume, and price for, a specified level of general change in law capex risk during the operational period, before compensation would be paid. The UK Government ultimately decided that this allocation did not represent value for money and reversed this position. Some countries which adopted the UK model had already taken this approach. Although a Contracting Authority may bear all change in law risk at the start of a PPP program, once a track record and/or legal environment is established in its jurisdiction which gives the private sector greater confidence in the stability and predictability of the regime, Contracting Authorities procuring new PPP projects may be able to explore some risk transfer to the Private Partner. A termination right as a consequence of change in law is not considered necessary in all jurisdictions. In civil law jurisdictions it is common for the Private Partner to have a specific right to terminate the contract where performance of the PPP contract would entail a breach of law that cannot be remedied by a Contracting Authority variation. This is not
		●			**Approach (a) Contracting Authority risk:** The basic approach is that the Contracting Authority bears all the risk of change in law and provides full relief to the Private Partner.	
		●	●		**Approach (b) Limited risk sharing:** A more nuanced approach is for the Private Partner to accept a certain annual monetary threshold up to which it accepts any unexpected change in law risk and above that threshold the Contracting Authority bears the risk/cost. This enables the Private Partner to price the risk it bears.	
			●		**Approach (c) Advanced risk sharing:** With this approach the Private Partner is kept whole in respect of unexpected changes in law which are: (i) discriminatory (e.g. to the project or the Private Partner); or (ii) specific (e.g. to the rail sector or to investors in light rail businesses); or (iii) require capital expenditure after construction completion (i.e. in the operating period). (Applicable law may protect the Private Partner from unexpected changes in the construction period if the relevant legal regime provides that changes in law affecting capital expenditure during construction do not apply retrospectively.) With this more detailed approach the Private Partner bears (some of) the general business risk that applies to all businesses (including operational expenditure or taxation affecting the market equally) and can absorb this in part through the indexation provisions typically contained in the pricing mechanism (or possibly through increased fares in a user pays model).	
			●		**Bespoke mechanisms:** It may be appropriate to have bespoke mechanisms for certain changes in law, such as those relating to climate change and environmental protection – market practice is still developing in this regard. *See also Climate change event under Environmental risk.*	
		●			**Consequences:** The Private Partner should always be entitled to relief from breach of contract where a mandatory change in law occurs which conflicts with an existing obligation or would make compliance illegal (and/or impossible). The contract typically contains a mechanism by which the Contracting Authority is deemed to request a corresponding contractual variation of the relevant obligation. The nature of the cost relief given to the Private Partner will be as described for a compensation event. Alternatively, the Private Partner may be entitled to a right to terminate (typically on a Contracting Authority default basis). In a user pays model, costs could be passed on to the users of the network, but there are likely to be regulatory constraints on the ability to increase fares. Increasing the ticket price could also undermine users' desire for the service and result in lower PPP project revenues than forecast for the Private Partner.	
		●			**Stabilization provisions:** Some projects may also provide for a stabilization clause that entrenches certain legal positions (such as the current tax regime) against any future changes in law. This may require a level of parliamentary ratification of the project contract.The stabilization method is generally not favoured by governments or non-governmental organisations (e.g. because the concept of Private Partner immunity from changes in environmental protection laws is unsatisfactory) and the Contracting Authority should instead seek contractual mechanisms to address such matters.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						usually seen in common law jurisdictions with established legal frameworks as the Private Partner and its lenders are able to take a view that it is highly unlikely that a change in law would result in such drastic consequences without means of holding the government accountable. In civil law jurisdictions, Private Partners may sometimes rely on underlying legal principles such as hardship doctrines *(see Glossary definition)* for relief. However, widespread market practice across civil and common law jurisdictions has shown that the private sector is unwilling to enter into PPP contracts on such a basis as both lenders and sponsors require express contractual certainty in relation to the potentially significant impact of changes in law.
EARLY TERMINATION RISK *The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant..*	**Contractual termination provisions**		●		The allocation of risk for early termination depends on the termination grounds and these also determine the financial consequences of termination. The key risks relating to the contract being terminated early are that the Private Partner is deprived of its expected revenue stream to repay the debt it incurred developing the project and the project asset or service ceases to be delivered for the Contracting Authority. The complexity and variety of termination circumstances result in parties in all jurisdictions almost always seeking to include clear contractual mechanisms in the PPP contract which set out comprehensively what circumstances may give rise to termination, who may terminate and what the consequences of termination will be for the Contracting Authority and the Private Partner, as well as for lenders or other key third parties. Without such certainty, bidders and potential lenders may be deterred from bidding. The Contracting Authority should not be "unjustly enriched" by receiving an asset for which it has not paid the expected contractual price. This is an underlying legal principle in most jurisdictions and should be taken into account in the drafting of applicable termination compensation provisions. The Contracting Authority, besides making a payment, will need to consider the other risks associated with termination, such as the reputational risks, continuity of service delivery, completion of the works or maintaining the asset itself, or re-tendering the project (or a mix). For a more detailed analysis of typical early termination and termination payment provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	The increasingly market standard approach in all jurisdictions is to include contractual termination provisions in the PPP contract. However, in some civil and common law jurisdictions there may be underlying laws addressing certain termination rights and their consequences which apply without the PPP contract having to include termination provisions. While relying on underlying law rather than express contractual provisions is an approach less likely to be seen in common law jurisdictions, there can be certain exceptions as described, for example, under *Contracting Authority default termination and Voluntary termination by Contracting Authority*. Furthermore, if the transaction is financed in a shariah-compliant manner (such as through an ijara (lease) structure) consideration must be given to how ownership will be transferred following the termination. This is typically achieved through a Purchase Undertaking or Sale Undertaking of the underlying assets. In less developed PPP markets, it may not be easy to re-tender a project if there is no pool of alternative contractors to take on the project.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Contracting Authority default termination	●			**Termination right:** The Contracting Authority bears the risk of termination for breaches which have a material adverse effect on the Private Partner or the project (e.g. expropriation in relation to the PPP project and failure to pay). The test is typically that the default event has made it impossible for the Private Partner to perform the contract or rendered the continued relationship untenable and any materiality threshold should be clearly defined. *See also MAGA risk*. To mitigate the risk of termination, the Contracting Authority should ensure that grace periods are built in (e.g. for non-payment) so that it has the opportunity to rectify the default and reduce the risk of a termination right arising purely from, for example, administrative error. **Compensation:** Although the exact approach depends on the relevant jurisdiction, the underlying principle is that the Private Partner should be fully compensated by the Contracting Authority as if the PPP contract had run its full course. The Private Partner would typically receive an amount in respect of senior debt (including where applicable hedge break costs), junior debt, equity investment and a level of equity return which from the Contracting Authority's perspective should where possible reflect the actual performance level of the Private Partner. Redundancy and sub-contractor break costs will also be included. The Contracting Authority should mitigate the amount it pays out by setting off deductions available to the Private Partner in respect of, for example, insurance proceeds, bank accounts, hedge break entitlements and surplus maintenance funds.	There are some common law jurisdictions (e.g. Australia) where the Private Partner is expected to rely on its common law rights to terminate for Contracting Authority default instead of having an express contractual right. This may be because termination for Contracting Authority default is such a fundamental step with enormous business and other ramifications for the Private Partner that the focus is instead on the enforceability of the contractual payment and time/cost compensation provisions applicable to breaches by the Contracting Authority. Similarly, in civil law jurisdictions the PPP Contract may be silent, and the Private Partner may need to apply to an administrative court to request contract termination (as was the case in earlier PPP contracts in France). Relying on underlying law is likely to deter bidders in markets where there is insufficient legal precedent and certainty.
	MAGA / Change in law termination	●			**Termination right:** Some PPP contracts may contain specific MAGA provisions which entitle the parties to terminate the PPP contract if there is a protracted MAGA event. The type of political risk events addressed by a MAGA provision may include the type of Contracting Authority defaults outlined under *Contracting Authority default termination* and also change in law where there is no solution agreed to continue the contract. This could mean that a PPP contract (i) only has a MAGA provision, (ii) only has a Contracting Authority default provision, or (iii) has a combination of the two and/or separate provisions addressing specific political risk matters such as changes in law. *See also MAGA risk and Change in law risk.* **Compensation:** The same principles will apply as outlined for Contracting Authority default termination but some jurisdictions may only allow the Contracting Authority to terminate for protracted MAGA-style events by implementing a voluntary termination. The Contracting Authority may be able to negotiate a reduced termination payment in respect of "no fault" MAGA events. *See also MAGA risk and Voluntary termination by Contracting Authority under Early termination risk.*	Markets which are politically and legally stable are less likely to have separate MAGA termination provisions as the Private Partner and its lenders will be comfortable relying on a Contracting Authority default termination provision, combined with a shared risk force majeure provision and other contractual provisions (e.g. compensation events) which provide time and/or money relief to the Private Partner in relevant circumstances of Contracting Authority responsibility.
	Voluntary Termination by Contracting Authority (Also commonly referred to as termination for convenience, public policy or interest. termination at will or unilateral termination.)	●			**Termination right:** In return for having the right to terminate for convenience, the Contracting Authority bears the risk of this event. It should have fully considered and prepared for termination before deciding to exercise its right to terminate. The notice period should be the minimum sufficient for both parties to make appropriate arrangements in respect of the handback of the project and to facilitate compliance with handback obligations. **Compensation:** The Private Partner's prime concern will be to ensure it is fully compensated for such early termination and able to comply with its handback obligations. The termination payment will be based on the same principles as for Contracting Authority default.	In some jurisdictions (more typically civil law) the Contracting Authority may be entitled to terminate the PPP contract on the grounds of public interest even without an express contractual right. This inalienable right is rarely invoked but the private sector (Private Partner, sub-contractors and lenders) will still require the PPP contract to cater for this low probability but high risk event as comprehensively as possible. The Contracting Authority may be required to substantiate the validity of the public interest ground (for instance, termination may not be permitted purely on financial grounds). In some jurisdictions (e.g. France) it is not possible to contractually waive the right to unilaterally terminate in the public interest, but it is possible for parties to agree in advance the procedure and consequences of such

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						termination. In practice, these are usually identical to voluntary termination, or even a Contracting Authority default scenario. This is because the Private Partner is not responsible for, nor capable of mitigating, a public policy-driven decision to terminate unilaterally.
	Force Majeure and Uninsurability termination		●		**Termination right:** The risk of a force majeure termination arising is shared by the parties. Typically it will arise after 6-12 months of prolonged force majeure where the parties are unable to agree a solution to continue with the project. **Compensation:** The Contracting Authority pays termination compensation to the Private Partner reflecting the principle that force majeure events are neither party's fault and the financial consequences should be shared. This is not "full" compensation as this would result in the Contracting Authority bearing all the financial pain. Typically outstanding senior debt (including where applicable hedge break costs), initial equity, redundancy payments and sub-contractor break costs will be paid, less any applicable deductions as on Contracting Authority default termination). The Private Partner will lose all its forecast equity return (i.e. its anticipated profit) but the payment will be sufficient to repay all of its outstanding senior debt which will help address bankability concerns as to whether the debt will be kept whole in this termination scenario. The equity element will serve as a buffer for lenders if the termination payment does not cover 100% of the outstanding debt.	In some (typically less developed) markets, the Contracting Authority may succeed in negotiating paying no termination compensation in respect of certain natural risks which are insurable (and would reasonably be expected to be insured against as good operating practice), or a reduced amount reflecting insurance payments received (or receivable) by the Private Partner. This to some extent reflects the practice in more developed markets where these type of events may instead be classified as relief events which entitle the Private Partner to time relief only (but no ultimate right of termination). This will of course depend on the risk assessment by the Private Partner and its lenders. In less mature markets it is not uncommon for the senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted.
	Private Partner default termination			●	**Termination right:** The Private Partner bears the risk of termination by the Contracting Authority for serious failures by the Private Partner connected to delivering the PPP project. Termination events may be performance-related or relate more specifically to the financial status and corporate activity of the Private Partner. In order to mitigate the risk of termination, the contract should clearly define the default events and they should have reasonable in-built tolerance levels so that an appropriate threshold of poor performance has to be reached before termination rights arise. The opportunity to rectify should be given where feasible. The Contracting Authority can mitigate the risk of a termination payment arising as it has control over serving the termination notice that triggers it. It also has the ability to mitigate against the risk of Private Partner default even before the PPP contract is signed, by careful selection of the winning bidder. *See also PPP Project Preparation and Delivery in the Introduction.* **Compensation:** The Private Partner will typically be entitled to a compensation amount equal to a pre-set percentage (around 80 – 100%) of the scheduled outstanding debt, minus applicable deductions, and no equity compensation. The aim a lender "hair cut" of less than 100% debt is to incentive lenders have an incentive to conduct proper due diligence and exercise their monitoring and step-in rights to ensure the Private Partner delivers the project satisfactorily so that it avoids termination and can repay the whole of the lenders' outstanding debt. Alternatively, a market value retendering of the contract may take place (or be deemed to take place) and the compensation paid to the Private Partner will be the price tendered (or deemed tendered), less applicable deductions. A third alternative is for the Private Partner to receive a payment based on book value.	In some civil law jurisdictions, insolvency laws may have an impact on the right to terminate the PPP in the event of insolvency of the Private Partner (or its shareholders). A debt-based compensation method is the most common approach in emerging markets and availability-based PPP projects in jurisdictions such as France and is also seen in Germany. The market value retendering approach is more likely in a mature PPP market where there are likely to be a number of potentially interested purchasers in the relevant sector. Lenders to PPP projects in certain jurisdictions or in relation to certain assets may be reluctant to rely on a market-based valuation method for fear of undervaluation or underpayment. This is particularly likely to be the case in emerging markets where there is a limited PPP track record and a limited market. Some European jurisdictions have followed a book value approach but this may not accurately reflect sums owed and is not as common. In less mature markets it is not uncommon for a high percentage or the full senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted. The higher percentage haircut is seen in markets where the risks in respect of project failure and of the ability to rescue it are considered low (e.g. from a technical or resourcing perspective, or because the market is known), and the overall security package available to Lenders is otherwise

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						sufficient to cover their debt. Lenders in such markets (e.g. in some projects in the US) may alternatively accept no compensation for the same reason but this is not common practice. If available in the relevant jurisdiction, lenders will seek a direct/tri-partite agreement with the Contracting Authority. The purpose of this is to give lenders step-in rights if the Contracting Authority serves a default termination notice or if the Private Partner is in default under the loan documentation. The lenders would typically be given a grace period to gather information, manage the Private Partner and seek a resolution to rescue the project and the right to ultimately novate the project documents to a suitable substitute private partner.
	Strength of Contracting Authority payment covenant	●		[●]	The Contracting Authority bears the risk of making the relevant termination payment on time and in the amount required. To mitigate the risk of failure, it will need to assess whether it will be able to pay a lump sum if such a large payment is not budgeted for or does not have backing from its government treasury department. Payment over time may be preferable and the Contracting Authority should in any event try to negotiate a reasonable grace period long enough to raise the necessary funds. The Private Partner and its lenders will typically want to close off their exposure to a terminated PPP project and avoid Contracting Authority credit risk as soon as possible. It is likely that they will favour a lump sum payment, particularly on Contracting Authority default termination where the most likely cause of termination is failure to pay. In some cases, the Contracting Authority may be asked to provide credit support of its payment obligations. Lenders may be reluctant to release security interests held over the PPP project assets until compensation payments have been made in full. This may make the transfer of relevant assets back to the Contracting Authority difficult. In certain circumstances, the Contracting Authority may be able to negotiate an interim solution at the time of the termination, such as an arrangement whereby it has a right to access the PPP project assets during the period from the termination date until all termination compensation is paid, so long as the Contracting Authority complies with the payment terms with respect to such compensation. This approach is unlikely to be agreed at contract signature and certain issues will need to be clearly addressed (such as liability for damage to the asset while in the Contracting Authority's use).	In jurisdictions where the Contracting Authority's credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in less stable regimes or emerging markets or in projects where the Contracting Authority is not part of central government. Support may be available via multilateral or export credit agencies or central government or sovereign guarantees. Lenders and investors may seek political risk insurance to cover the risk of the Contracting Authority or any government guarantor defaulting on its payment obligation. A key concern for lenders in some jurisdictions relates to the requirement for parliamentary approval of appropriations in respect of contingent liabilities under project contracts. In the Philippines, for example, the government requires a two-year grace period for the payment of termination compensation as this is the maximum period of time for the parliamentary appropriation process. In less mature markets, issues of convertibility of currency and restrictions on repatriation of funds are also bankability issues upon termination. Release of security interests may not be a relevant concern in some jurisdictions, such as France, where lenders would not typically take security over the project assets as this would only give them limited rights. They would more usually take security over the Private Partner itself.
CONDITION AT HANDBACK RISK *The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not*				●	The Private Partner bears the risk of the project assets and land being handed back to the Contracting Authority in accordance with the contract and meeting the required handback conditions. This is linked to maintenance of the assets during the contract and may be complex given the need to define relevant asset standards. The circumstances around handback will vary from one PPP contract to another and will depend on matters including: the Contracting Authority's intentions with regard to post PPP usage, the nature of the asset (e.g. the network may be usable for much longer than the initial PPP project duration), the stage at which the PPP contract comes to an end, whether termination occurs during construction or	In civil law jurisdictions, assets built on publicly owned land and/or used for a public service will often be subject to particular restrictions. For example, mandatory handback at termination may be embedded in underpinning administrative law principles or legislation and there may be mandatory access or rights of use for third parties. In some countries (such as France), ownership will sit with the

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in the contractually required condition at the time of handback to the Contracting Authority.					operation and any requirements under underlying laws in the relevant jurisdiction. To mitigate the risk of unexpected consequences, the contract should set out the requirements and process, including the Private Partner's obligations to facilitate an effective handover, hand over relevant licences and documentation and cooperate with the Contracting Authority so that the asset can continue the service. To mitigate the risk of the assets not being returned in the expected condition, the contract should include a mechanism for surveying conditions in advance of expiry and requiring relevant remediation. Typically the contract will provide for a retention fund to be established to fund remediation a certain period in advance of contract expiry, or for the Private Partner to provide some form of financial bond. Any funds remaining in existing lifecycle funds should be used/shared appropriately. For a more detailed analysis of typical handback provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.*	Contracting Authority throughout the duration of the contract, with assets built on such land automatically becoming Contracting Authority property as soon as they are built and handed back for free at natural expiry. The PPP contract will set out the specific accompanying detail about asset condition and cooperation obligations, taking into account the underlying mandatory law provisions. Typically, in a common law jurisdiction, the Private Partner will have been leased the PPP project land by the Contracting Authority (and may have been permitted to sub-lease it to the relevant sub-contractors). The headlease to the Private Partner is usually coterminous with the PPP contract, so the land will revert to the Contracting Authority at the same time as the PPP project asset. In civil law jurisdictions, the PPP project land may have been made available through an administrative contract such as a "land concession" or other precarious right of use and is land within the public domain.

APPENDIX E:

Heavy Rail PPP Risk Allocation Matrix

PPP RISK ALLOCATION MATRIX: HEAVY RAIL

PURPOSE OF MATRIX	**This appendix contains a matrix of risks typically found in a heavy rail PPP transaction, together with guidance on how those risks are typically allocated between the government Contracting Authority and the Private Partner, the rationale for such risk allocation, mitigation measures and possible government support arrangements. It aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks in a PPP contract.**
CAUTIONARY NOTE	**This matrix contains an indicative – but not exhaustive – list of the main risks typically to be considered in heavy rail PPP projects and their typical allocation between the Contracting Authority and the Private Partner. It may be used as a starting point for understanding the risk allocation issues commonly arising in heavy rail projects and for developing an individual risk matrix for the project in question. A project's individual circumstances and its jurisdiction will influence the appropriate contractual risk allocation and there may be additional risks that need to be considered.** *See Detailed Risk Identification and Analysis in the Introduction*.

TYPE OF PROJECT AND SCOPE CONSIDERATIONS	This matrix addresses the common risks for the rehabilitation, finance, operation, maintenance, transfer (at the end of the PPP contract) of a PPP intercity passenger rail project (including the track infrastructure, rolling stock and rail service). There are many procurement permutations in the heavy rail sector. It is unusual to see the track infrastructure (superstructure, substructure, stations and communications/signalling) procured in the same transaction as rolling stock, but for completeness, this matrix includes considerations relating to rolling stock. *See Market Approaches below.*
ASSUMPTIONS	The Private Partner finances the development of the heavy rail rehabilitation project and only starts to receive payment from the Contracting Authority (and/or where applicable, users) once the heavy rail project is in operation. The rail assets are handed back to the Contracting Authority on early termination or natural expiry of the contract, together with all consents and licences (including intellectual property licences) necessary to continue operating the railway, in accordance with the contractual handback requirements.
MARKET APPROACHES	As mentioned above, there are a variety of procurement permutations for heavy rail projects, particularly related to scope. The contractual scheme in the rail sector may be determined by applicable national or supra-national law as regards unbundling of (potentially monopolistic) services – for example, within the EU it is common for the track infrastructure to be delivered by a different operator (infrastructure network owner) to the rolling stock and rail service provider (train operator). In this contractual scheme, the train operator or operators will charge the end users, which will form the substance of the revenues of the train operator. The train operator will in turn pay the infrastructure network owner a track access charge under a track access charge contract, based on track usage by number and type of trains, and this will form the basis of the infrastructure network operator's project revenues. PPP projects in the heavy rail sector are less common than in the light rail sector. Demand risk projects have been procured but these have tended to have outcomes of variable success. The risks addressed in this matrix and much of the risk allocation guidance will be relevant to different contractual structures and procurement models, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending and how the pricing mechanism works).
PROJECT REVENUES, INCLUDING PAYMENT MECHANISMS	In the rail sector, new infrastructure requires considerable capital expenditure and will not typically be capable of generating the required revenue through users to be viable without some form of government subsidy, such as upfront subsidy towards capital expenditure (i.e. construction costs) typically payable on construction completion or completion of certain construction milestones, and/or a minimum revenue/usage guarantee in the operating period. Whether this is required on a rehabilitation project will depend on the level and cost of rehabilitation works required. For a heavy rail project, project revenues are typically generated either through availability payments by the Contracting Authority or a combination of availability payments and user ticket sales (which will involve an element of demand risk being borne by the Private Partner based on passenger or train numbers (or, as regards rolling stock pricing, based on mileage bands). Deductions or penalties are typically applied to availability payments where the Private Partner has not met contractual availability and performance standard criteria. Opportunities for additional third party revenue streams through station and other trackside facilities (to the extent these are permitted) should also be assessed and addressed under the contract *See Performance/price risk under Operating risk and Demand risk.*
KEY RISKS	**Site and existing asset condition risk:** Site condition and suitability risk and existing asset risk will be borne by the Private Partner to the extent satisfactory and accurate surveys can be undertaken. This is particularly acute in relation to rehabilitation projects and the Contracting Authority may have to retain certain maintenance and interface risks. *See Land acquisition, access and site risk, Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.* **Demand/revenue risk, if user payment:** Demand risk on a user pays project will be borne in some part by the Private Partner on the basis of the Private Partner's demand projections, although (as described above) typically the Contracting Authority may need to provide minimum revenue or usage guarantees. In a rehabilitation project, past traffic studies will typically be available and may be indicative in assessing traffic forecast and better calibrating public sector financial support. There may also be compensatory mechanisms if higher usage than forecast gives rise to increased maintenance costs. *See Demand risk.* **Environmental/social risk:** The Private Partner will bear the risk of obtaining and complying with environmental consents in connection with rehabilitating and operating the project, but there will be an element of shared risk in relation to changes in approach from permitting authorities and external environmental events. As regards social risk, the Contracting Authority will bear the

	risk of the impact of its transport policies on the local community and businesses , but the Private Partner will bear the risk of failing to implement contractually agreed social management measures and there will be shared elements in relation to, for example, industrial action. *See Environmental risk and Social risk.* **Maintenance standards:** Compliance with maintenance standards for both the network and rolling stock is a key risk for the Private Partner. *See Maintenance standards under Operating risk.* **Completion (including delay and cost overrun) risk:** The risk of successfully completing a heavy rail rehabilitation project will primarily sit with Private Partner This is a key risk for the Private Partner, given the complex nature of the commissioning/completion processes, especially in difficult terrain and where tunnelling and bridges are part of the design, or where rolling stock is also being procured. *See Works completion risk under Construction risk.*
OTHER CONSIDERATIONS	**Staged operation commencement:** The Contracting Authority may wish to implement a multi-staged operation commencement process enabling the Private Partner to begin to receive payment once significant components of the project are substantially completed. This can help increase cash flow during the overall construction/rehabilitation process, reduce the Private Partner's financing costs and incentivize the phasing of construction/rehabilitation works in order to ensure critical components are completed on time. On the other hand, staged completion dates may also increase the complexity of the construction/rehabilitation programme, limit the Private Partner's ability to mitigate construction/rehabilitation delays and/or have agreed damages attached to them, which can increase the risk to the Private Partner. This is likely only to be suitable where distinct sections of the network can become operational in phases (including where compatible rolling stock is available) and where commencement of operation will not distract from ongoing construction/rehabilitation requirements.
PRIVATE SECTOR RISK MITIGATION	**Allocation of risks to sub-contractors:** *See Risk Allocation in PPP contracts in the Introduction* and *Cost overruns and Works completion delays under Construction risk*. As regards construction /rehabilitation, the Private Partner will often enter into a lump sum construction contract with a construction sub-contractor to pass down its obligations under the PPP contract and to manage the risk of cost overruns and delays (subject to certain relief to which the sub-contractor will be entitled under the sub-contract). The Private Partner will bear the risk of liability caps agreed under the sub-contract being reached or warranty periods under the sub-contract being shorter than the Private Partner's defect rectification obligations towards the Contracting Authority. The Private Partner will similarly typically enter into an agreed price operating sub-contract with an operating sub-contractor to pass down its operating phase obligations to the extent practicable. **Insurance:** *See Risk Allocation in PPP contracts in the Introduction*. **Effective implementation of social and environmental management plan:** *See Environmental risk and Social risk*. **Additional equity and other funding support:** *See Market Conditions in the Introduction*.
PUBLIC SECTOR RISK MITIGATION	**Carrying out detailed feasibility and ground surveys:** *See PPP Project Preparation and Delivery in the Introduction*. In addition, studies for new and rehabilitation heavy rail projects should include (as applicable) identification and suitability of corridor, additional land needs, interface with existing and future transport networks (and corresponding impact on the project), usage forecasts and social and environmental impact of both the construction/rehabilitation and operation of the heavy rail network. Where the project involves rehabilitation and upgrade of existing rail assets, this is key to provide a baseline position for bidders. Detailed ground surveys should also be carried out where practicable. Where such information is provided to bidders to rely on in pricing their bids, Contracting Authorities may elect to guarantee accuracy but not necessarily completeness or interpretation – this will depend on project-specific factors including the experience of the bidders and the ability to obtain other relevant information.
	Running an efficient and fair procurement process: *See PPP Project Preparation and Delivery in the Introduction.* Enacting enabling legislation and complying with domestic procurement laws in relation to the project are primarily the Contracting Authority's risk and responsibility. As the Private Partner will be affected by the consequences of breach of such legislation, it will carry out due diligence itself on these matters. Interference with the tender process and other issues attributable to the Private Partner will remain a Private Partner risk.
	Timely consultation on social and environmental impact: It is key for the Contracting Authority to consider the effect of the project on people, wildlife and habitat and to implement effective management of stakeholder interests and public perception before and (in conjunction with the Private Partner) during the project. *See Environmental risk and Social risk.*
	Having competent advisers: *See Detailed Risk Identification and Analysis in the Introduction*.
	Timely involvement of internal stakeholders and contract management team: *See Detailed Risk Identification and Analysis in the Introduction*.
	Careful assessment and quantification of risk: *See Detailed Risk Identification and Analysis in the Introduction.*
	Taking performance security: The Contracting Authority may seek certain security direct from the Private Partner and its sub-contractors, or their parent companies, in respect of certain contractual (or tender) obligations. This may be in the form of bid bonds during the tender stage and, following the tender stage, completion bonds, performance bonds and guarantees. As an alternative, cash reserving mechanisms could be used during the life of the contract. Although the Contracting Authority may be able to call on this security in certain circumstances (such as performance failures by the Private Partner), the security will have a cost attached. This will feed through to pricing and may affect value for money, particularly since the security may never be called.
PUBLIC SECTOR SUPPORT MEASURES	The Contracting Authority may provide certain financial support to the project, in terms of subsidies or guarantees, although the consequences of such commitments and the potential liabilities for the public sector should be carefully considered, including how such support may dilute the risk/reward distribution under the PPP contract and affect value for money. Where the Contracting Authority's own credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in projects where the Contracting Authority is not part of central government or it is a local authority. To mitigate this Contracting Authority counterparty risk, a sovereign or central government (e.g. finance ministry) guarantee (or equivalent support) may be needed, though the full implication for the public sector should be carefully assessed, including the potential impact on the government's contingent liabilities and fiscal sustainability. *See Demand risk*, *Project Revenues, Including Payment Mechanisms above and Strength of Contracting Authority payment covenant under Early termination risk.*

KEY TO MATRIX

Risk category rows		Broadly, the first row of a particular risk category summarises the risk and its main allocation. The subsequent rows detail specific issues relevant to that risk and its allocation.
Risk allocation symbols	●	Indicates how the main risk described in the relevant row is typically allocated.
	[●]	Indicates how the risk (or part of the risk) may be allocated differently in the particular additional circumstances described.
Defined terms		Certain terms used in the matrix are defined in the Glossary. For example, the terms compensation event and relief event are used throughout this matrix with respect to how a PPP contract addresses the eventuation of certain risks. For a detailed explanation of those contractual mechanisms, refer to the definition of compensation event and relief event in the Glossary.

SUMMARY MATRIX[1]

RISK CATEGORY	DESCRIPTION	BASIC RISK ALLOCATION		
		Public	Shared	Private
LAND AVAILABILITY, ACCESS AND SITE RISK	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.	●		
SOCIAL RISK	The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.	●	●	
ENVIRONMENTAL RISK	The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.		●	●
DESIGN RISK	The risk that the project design is not suitable for the purpose required; approval of design; and changes.			●
CONSTRUCTION RISK	The risk of construction/rehabilitation costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.			●
VARIATIONS RISK	The risk of changes requested by either party to the service which affect construction/rehabilitation or operation.		●	
OPERATING RISK	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.			●
DEMAND RISK	The risk of user levels being different to forecast levels; the consequences for revenue and costs; and government support measures.	[●]	[●]	[●]
FINANCIAL MARKETS RISK	The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●	
STRATEGIC / PARTNERING RISK	The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.		●	●
DISRUPTIVE TECHNOLOGY RISK	The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	
FORCE MAJEURE RISK	The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.		●	
MAGA RISK	The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.	●		
CHANGE IN LAW RISK	The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.	●		
EARLY TERMINATION RISK	The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.		●	
CONDITION AT HANDBACK RISK	The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.			●

[1] Cautionary note: The summary matrix identifies typical risk allocation on an aggregated basis. For each risk allocation, however, there are generally exceptions. For the full discussion on typical risk allocation arrangements, please see the detailed guidance provided in the matrix below.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
LAND AVAILABILITY, ACCESS AND SITE RISK *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.*	**Provision of required land – general**	●	[●]		As with a new heavy rail PPP project, on a rehabilitation PPP project, the Contracting Authority typically bears the risk of selecting the corridor (where applicable) and acquiring/expropriation any additional 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). In a rehabilitation project, whether the railway was procured originally by PPP or otherwise, the Contracting Authority is generally responsible for providing a "clean" accessible site, with no restrictive land title issues. This can be a key risk in rail projects due to the length and nature of the railway, particularly if the Contracting Authority has not fully addressed certain land rights issues even though the railway is in existence. *See also Access to the site and associated infrastructure under Land availability, access and site risk.* 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/rehabilitation and operation of the railway. 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 If the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through compulsory acquisition/expropriation), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases). *See also Social risk.* The Contracting Authority bears the principal risk as the Private Partner is acquiring an interest in an existing railway.	In certain markets, land rights (in particular reliable utilities records, and land charges and third party rights to (access) land) 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, this will increase the risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risk as the Private Partner will not be able to bear them. The rights of private landowners against compulsory acquisition/expropriation might be stronger in developed markets, so the Contracting Authority may need to allow more time to acquire the land
	Timing of provision of required land	●			**Acquisition pre-signature:** The Contracting Authority should complete the process of land acquisition before the contract is awarded so that all issues and risks are known and managed. All relevant processes will need to be carried out in a timely manner. The timeframe will depend on the issues affecting the site and the applicable processes. The risk that all necessary processes have been satisfied will be the Contracting Authority's risk.	
		●			**Acquisition post-signature:** If the Contracting Authority is not able to provide the land by contract award, it will bear the risk of providing it in accordance with a contractually agreed programme. Failure to obtain the land by a certain date may entitle the Private Partner to terminate the contract *(see also MAGA risk)*. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process.	
	Provision of permanent additional land	●			**Identification pre-signature:** If a permanent need for additional land is identified and agreed by the parties before contract signature then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing the additional land, unless the need for additional land is specific to a bidder (for example, due to a different design).	
				●	**Identification post-signature:** If a permanent need for additional land is only identified after contract signature then this will be a Private Partner risk as the need should have been identified and factored in to the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					with acquisition where the land is essential, with costs being borne by the Private Partner.	
	Provision of temporary additional land	●		[●]	**Identification pre-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction/rehabilitation) are identified in the procurement phase and are common to all bidders, then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing such land, unless the need for such land is specific to a bidder (for example, due to its construction/rehabilitation methods and equipment) – in which case the risk should be allocated to that bidder and the cost factored into its bid price. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
				●	**Identification post-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction/rehabilitation) are identified, they should be a Private Partner risk as such need should have been identified and factored into the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
	Heritage / indigenous land rights	●		[●]	Land rights issues involving indigenous groups will be the responsibility of the Contracting Authority. The Private Partner will bear the risk of complying with legislation and contractual obligations imposed on it in this regard. The Private Partner's obligations with regard to indigenous rights is well legislated for in some markets. In the absence of legislation, indigenous land rights issues and community engagement can be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project (e.g. compatible with the Equator Principles). This will be particularly relevant if international financing options are desirable. *See also Social risk.*	This issue is coming under increasing focus from multilateral agencies and other finance parties, as well as civil society and human rights organisations. For example, the World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. Many finance parties (including commercial finance parties) adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). Examples of specific legislation are native title legislation in Australia and the equivalent First Nations law in Canada. These include a requirement to seek consent from the indigenous parties affected and to enter into indigenous land use agreements.
	Resettlement				*See Resettlement under Social risk.*	
	Suitability of land		●		**General:** The risk that the land is not suitable is typically shared as the Contracting Authority may be able to secure the availability of the corridor, but the suitability of the corridor may be dependent on the Private Partner's design and construction/rehabilitation plan (such as catenary location for overhead power as opposed to diesel/hybrid or third rail solutions). *See also Design risk.*	In some jurisdictions, it may not be possible to obtain the requisite planning consents until such time as the Private Partner has been identified and/or detailed design is known.
		●		[●]	**Underground:** Risk with regard to stability and suitability of the underground sits with the Contracting Authority if no or unreliable data is available and the risk cannot be transferred (or transferring the risk does not represent value for money). To the extent reliable data is available in the tender phase and can be relied upon by the Private Partner, the risk sits with the Private Partner. *See also Site condition under Land availability, access and site risk.*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	Sub-category	Public	Shared	Private		
	Key planning consents	●			**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents.	
		●		[●]	**Post-signature:** If consents for key permits are not obtained before contract signature and the Contracting Authority wants to sign the contract, it will typically bear the risk of the consents being delayed or not obtained (subject to the Private Partner complying with any reasonable requirements) – this may be treated as a compensation event. Failure by the Contracting Authority to obtain the consents by a certain date is likely to entitle the Private Partner to terminate the contract. Permit risk may be complicated further if there are different levels of authorities involved, and interaction between levels of design and authorisations may impact the timeline. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process. *See also MAGA risk, Design risk and Environmental risk.*	
	Subsequent planning approvals	[●]		●	Obtaining subsequent detailed planning consent and other approvals will be a Private Partner risk. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also Environmental risk and MAGA risk.*	
	Access to the site and associated infrastructure	●			The Contracting Authority will typically be required to grant the Private Partner all land rights it requires to implement the project. The Private Partner will be responsible for assessing the adequacy of the land rights granted (including any associated easements and access rights in relation to third party land). The Contracting Authority will then be responsible for ensuring the Private Party has these rights, whether by way of legislation/statutory powers or through contract. If the risk of non-availability of land access is too great, this may deter some investors and financiers from engaging in or continuing in the bid process. **Construction/rehabilitation phase:** In principle the Contracting Authority will be responsible for ensuring the Private Partner can access the site during construction/rehabilitation (including for example closing adjacent heavy rail lines or roads to enable construction/rehabilitation to take place over them). Either (i) it will pay the costs of providing access itself, or (ii) the Private Partner will pay such costs and be reimbursed through the contract price (or permitted ticket price) to the extent it has priced such costs into its bid. This will depend on the nature of the access required. Failure to provide access may be treated as a compensation event. *See also MAGA risk.* The parties will need to agree the extent to which the Private Partner may bear some responsibility for the impact on access routes of heavy loads.	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.
		●			**Operation phase:** The Contracting Authority should bear the risk of ensuring that users can access the new rail line via the existing transport network. In a heavy rail project where the Private Partner payment is based at least in part on usage volume this will be a key Contracting Authority risk. This may be treated as a compensation or MAGA event. *See also Demand risk and MAGA risk.*	
	Site security	●		●	**Construction/rehabilitation phase/operation phase:** Risk allocation with respect to site security will depend on the political climate, opposition to the project, nature of the risk and the stage of the project. Parties should aim to have a complete understanding of the risks involved in physically securing the site and those that will affect the construction/rehabilitation and operation of the heavy rail network. Ordinarily the Private Partner will be responsible for day to day site security. However, the Contracting Authority may need to use statutory means to properly secure the site for the Private Partner (such as police involvement or eviction) and in some circumstances may be required to provide additional site security / assistance during operations to manage this risk. Failure may be treated as a compensation or MAGA event. *See also Force majeure risk, MAGA risk, Social risk and Vandalism under Construction*	For example, where there is public opposition to the heavy rail network, there may be protestor action, or there may be issues safeguarding the equipment and installation.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					risk and Operating risk.	
	Utilities and installations	[●]		●	**Costs or delays caused by relocation of /access to utilities:** To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of any costs or delays caused by statutory undertakers and utility providers in carrying out diversions or connections. Costs and delays caused by re-location of existing utilities or access to utilities for the purposes of the project which are due to the Private Partner's design or construction/rehabilitation plan are usually allocated to the Private Partner. For connections to existing infrastructure, *see also Project management and interface with other works/facilities under Construction risk.* The Contracting Authority will bear risk if no reliable information is available. It will also bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Lack of data on existing utilities location can make it difficult for the Private Partner to assess (and price) the cost and time needed for relocation which can impact on the construction/rehabilitation timetable and ultimately on meeting the operation commencement date. If the Private Partner bears this risk, the Contracting Authority may need to share the risk by capping the Private Partner's liability or by having a cost sharing mechanism.	In some markets or challenging locations, there may be little data on location of utilities (water, sewage, oil, gas, optical fibre etc) and the Private Partner may be unable to accept all or part of this risk. In markets where the utility provider is a private entity, this risk is likely to be treated as a relief event (and the utility company will bear the risk) – this is common in mature markets. In less mature markets, particularly where the utility provider is a state-owned entity, the risk is likely to be allocated to the Contracting Authority as a compensation or MAGA event.
		[●]	●		**Costs or delays caused by utility provider:** Costs and delays caused by a utility provider could arise in both phases and the risk will be allocated according to the relevant circumstances and market and ownership of the utility. The risk could be shared or allocated to the Contracting Authority.	
	Site condition	[●]		●	**Surveyed:** The Contracting Authority usually undertakes detailed geotechnical and ground/soil surveys during the feasibility stage (if not already publicly available) and discloses such information as part of the bidding process. Sharing the surveys will save bidders' costs (all which would otherwise feed through to the Contacting Authority in the contract price). To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of such conditions causing cost and delay. The Contracting Authority will bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation of the data. Where projects involve large elements of tunnelling, geotechnical risks will be more carefully assessed by the Private Partner. *See also Construction risk.*	In a mature market, the Contracting Authority normally hands over the site to the Private Partner in an "as-is" condition on the basis of the surveys provided. The Private Partner can rely on the surveys but otherwise bears the risk. In some markets, the bidders carry out the surveys during the tender process – this may be the best solution in some circumstances, but may also limit competition unless bidders are compensated for these costs.
		●	[●]		**Unsurveyed:** Where it is not possible to fully survey site condition prior to award (e.g. in high density urban areas), the risk for unsurveyable land will be allocated to the Contracting Authority (e.g. as a compensation event) (*See also Existing asset condition).* The risk may be shared by the Private Partner (e.g. as a relief event) in some circumstances, for example where the risks were within the knowledge of the Private Partner when it priced its bid or an experienced contractor would have considered their existence as being possible. The impact on the project and the cost of remediation works for certain existing site conditions can be significant so the ultimate risk allocation will depend on the project specifics.	In some markets there may be less historic data available to the parties to assess risk. It may however be easier to perform comprehensive surveys in a less urban area.
		●	[●]		**Cultural / Archaeological finds:** Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk. One approach is to share the risk such that the Private Partner bears the risk in respect of designated areas (such as a low risk area) and the Contracting Authority bears the risk outside such areas (such as a high risk area). Another approach is for the Private Partner to be	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of finds is often treated as a relief event.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					obliged to coordinate work, but for the Contracting Authority to appoint specialised contractors and to bear cost/delay and interface risk.	
		●	[●]		**Unexploded bombs, land mines and other munitions:** Discovery of munitions can cause delays and costs as they will need to be defused and removed. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of munitions risk is often treated as a relief event. In some countries, the risk of unexploded land mines can be high and specific site surveying and cost provisions may need to be agreed.
		●		[●]	**Pre-existing environmental pollution:** Pre-existing pollution is typically the Contracting Authority's risk except to the extent it was known to and priced by the Private Partner. Remediation works for certain existing environmental conditions can be expensive so the ultimate risk allocation will depend on the project specifics and the surveys provided to the Private Partner. *See also Environmental risk and Change in law risk.*	
	Existing asset condition	[●]		●	As there are highly likely to be existing assets proposed to be used in a rehabilitation project, these should be fully surveyed (and potentially warranted) by the Contracting Authority. In the context of a rehabilitation/upgrade project, these surveys are critical to the robustness of bids. To the extent reliable data relating to the condition of existing assets is shared by the Contracting Authority during the tender process and can be relied upon during implementation, the Private Partner can price the risk of using them, including the interface with other aspects of the project and latent defect risks. The Private Partner will then bear the corresponding risk. The Contracting Authority will bear risk to the extent such data proves inaccurate or insufficient, and to the extent of any warranties it provides. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation, although it is likely that some risk may have to be retained by Contracting Authorities where it is not possible to conduct comprehensive surveys of complex existing assets. If latent defects are discovered in assets which are due to be replaced at some point in the life of the contract, the Contracting Authority may be able to mitigate its risk to some extent by having a contractual mechanism which brings forward the replacement date. *See also Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
SOCIAL RISK *The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.*	**Community and businesses**	●			Ultimately, the policy relating to the social impact of the provision of infrastructure is for the government. The Contracting Authority will bear this risk except to the extent the Private Partner is responsible for implementing any social management measures. The social impact of a heavy rail project (new and rehabilitated) on communities and businesses may be a key issue and must be carefully assessed and managed by the parties. During the feasibility stage, the Contracting Authority should have considered the impact on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries – both in terms of the construction/rehabilitation and operation of the network. It may need to carry out social impact studies and aim to minimise any negative impact of the project. Consultation may reduce the risk of opposition if outcomes are incorporated in the strategy and tender requirements. The approach, compensation schemes and what is acceptable should be addressed in the bid requirements and the contract. Investors and lenders may expect to see a plan addressing social impact, including the execution of any necessary contractual arrangements. The Contracting Authority may choose to adopt internationally recognised social and environmental standards and practices for the project to manage social risk, especially if international financing options are desirable. All the way through construction/rehabilitation and operations, active stakeholder engagement by the Contracting Authority will be critical to avoid litigation, achieve key milestones on time and ensure it is	This issue is coming under increasing focus from multilateral agencies, development finance institutions and other international finance parties, as well as civil society and human rights organisations. Finance parties (including commercial finance parties) will look very closely at how these risks are managed at both private and public sector level. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). The World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. In civil law jurisdictions the obligation upon the Contracting

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
				[●]	delivering infrastructure that serves its public purpose. Both the Private Partner and the Contracting Authority should develop sound environmental and social risk management plans before construction/rehabilitation begins. Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation (*see also Resettlement under Social risk*) and continued efforts to manage the social and political impact of the project on and around the site (possibly including a compensation regime for affected businesses adjacent to the railway). The Private Partner will bear the risk of non-compliance with any contractual social risk obligations as well as social risk obligations set out in the underlying legal system, although even where social risk obligations are passed onto the Private Partner, the consequences of such risks occurring may come back to the Contracting Authority. For this reason, the Contracting Authority should critically analyse just what social risk obligations should be passed onto the Private Partner and what should be retained. Where there is public opposition, there may be protestor action in both construction/rehabilitation and operating phases, and/or issues safeguarding the site equipment and installation. *See also Site security and Access to the site under Land availability, access and site risk, and Vandalism under Construction risk and Operating risk.* For a detailed analysis on how governments can better address aspects related to social inclusion in the delivery of infrastructure, see the GI Hub's practical guidance on *Inclusive Infrastructure and Social Equity*.	Authority to act "in the general interest" and to justify and document decisions may strengthen the stakeholder process. This is because the level of transparency and justification required should ensure that stakeholder views are properly taken into account and the risk of arbitrary decisions (and consequent challenges) reduced.
	Resettlement	●		[●]	Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation. This may include the removal of formal and/or informal housing or businesses and resettlement of communities in another location, potentially also with compensation. The Private Partner is responsible for implementing any social risk management measures contractually agreed – these should be clearly specified by the Contracting Authority in the procurement phase to enable the Private Partner to price the cost and associated risks.	Resettlement of whole communities by the Contracting Authority is more likely in less developed markets where informal housing and businesses may be more prevalent. The affected parties may not have the means (or the transport) to relocate themselves, even if paid compensation, and whole communities may need to be moved together. In developed markets, affected parties may be more able to rely on rights under compulsory acquisition/expropriation laws and compensation received.
	Heritage / indigenous people	●		[●]	As with land use rights involving indigenous groups, any other social impact risks involving such groups will usually be the responsibility of the Contracting Authority but the Private Partner will bear the risk of complying with relevant legislation and contractual obligations. In the absence of legislation, indigenous rights issues and community engagement may be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project, particularly if international financing options are desirable. *See also Heritage/indigenous land rights under Land availability, access and site risk.*	The Private Partner's obligations with regards to indigenous rights is well legislated for in some markets and in other markets there may be more reliance on internationally recognised standards. *See also Heritage/indigenous land rights under Land availability, access and site risk.*
	Industrial action	●	●	●	The Private Partner assumes the risk of labour disputes and strike action adversely affecting the project except to the extent such action falls into the category of political risk – the Contracting Authority may bear the risk (if a MAGA event) or share the risk (as a force majeure or relief event) for strikes and other widespread events of labour unrest. For example, nationwide and sector strikes are usually Contracting Authority risks, but strikes at the Private Partner's facilities will be a Private Partner risk. *See also Force majeure risk and MAGA risk.*	In less politically stable jurisdictions the Contracting Authority may have to accept more risk for strikes than in some jurisdictions. In markets where the risk of strikes is low, the Private Partner may be comfortable accepting this risk as a relief event.
ENVIRONMENTAL RISK	**Pre-existing conditions**	●		[●]	*See Site condition and Existing asset condition under Land availability, access and site risk.*	Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.	**Obtaining environmental consents**	[●]		●	**Pre-signature**: In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents. In many major projects, the environmental authorisations are a key component of the project and may take significant time to be prepared and approved. In some cases, these authorisations are initiated (such as preparing the environmental impact assessment) and prepared by the Contracting Authority ahead of the procurement process. At a specified point in time, the Private Partner will take over the risks related to obtaining detailed environmental licences or permits related to the project.	sound environmental and social risk management plans before construction/rehabilitation begins. The risk of delay in obtaining approvals may be greater in some jurisdictions, particularly where different levels of government are involved. Delays in obtaining environmental permits have caused significant construction delays in some sectors (for example, in some projects in South America) and the timeframe required should not be underestimated. If adequate relief is not given to the Private Partner, this may deter the private sector from participating in new projects in the same sector or jurisdiction. International finance parties, multilateral agencies and development finance institutions are particularly sensitive about environmental and social risks. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (which are described in the Equator Principles). Finance parties will look very closely at how these risks are managed at both private and public sector level and this scrutiny is helpful to mitigate the risks posed by these issues. *See also Communities and businesses under Social risk.*
		[●]		●	**Post-signature:** Except as specifically identified otherwise, the Private Partner typically bears the risk of obtaining all environmental licences, detailed permits and environmental authorisations required for the project after contract signature. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event or MAGA event. *See also MAGA risk*. In some countries, there may be different levels of governmental approval required. Local authorities may interpret certain requirements in their own way after the contract price has been submitted and impose unexpected conditions on the Private Partner. This could adversely affect the project's financial model. The parties should ensure that the contract sets out clearly how any such interpretation or unexpected requirement is addressed to avoid disputes as to which party bears the consequences. *See also Key Planning Consents under Land availability, access and site risk, Change in law risk and Compliance with environmental consents and laws under Environmental risk*.	
	Compliance with environmental consents and laws	[●]		●	The Private Partner bears the risk of complying with all environmental licences, detailed permits and environmental authorisations required for the project as well as applicable environmental laws. The environmental impact of a heavy rail project (new and rehabilitated) on habitat, communities and businesses (e.g. in terms of pollution and noise) can be a key risk and must be carefully assessed and managed by the parties. The parties should ensure that change in law provisions adequately address changes in (mandatory) environmental standards and laws to avoid disputes as to which party bears the consequences of any requirements imposed after contract signature. *See also Change in law risk.* In the absence of legislation, environmental obligations can be managed by the Contracting Authority through the adoption of internationally recognised standards and practices for the project, particularly if international financing options are desirable. *See also Communities and businesses under Social risk.*	
	Environmental conditions caused by the project			●	The Private Partner bears the risk of environmental events caused by the project to the extent due to its failure to comply with applicable licences, laws and contractual obligations. This includes conditions affecting both the project itself and third parties. The Contracting Authority may want to satisfy itself as to the overall robustness and suitability of environmental plans proposed by the Private Partner, to ensure that such plans will be adequate to appropriately manage the risks of the project, but the Contracting Authority should not take on any risk in doing so.	
	External environmental events		●		**Outside both parties' responsibility:** The risk of environmental events external to the project occurring which adversely affect the project (or, as a result, third parties) should be treated according to the nature and cause. They may be a form of shared risk, such as a relief event or force majeure event (e.g. if an accidental chemical escape from a nearby factory forces the track closure for a period).	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		●			**Within Contracting Authority's responsibility:** If environmental events are within the responsibility of the Contracting Authority or government they may be treated as a compensation event or MAGA event (e.g. where the government has failed to more generally enforce environmental laws and the pollution damages the heavy rail network or leads to legal action against the project by third parties). *See also MAGA risk and Climate change event under Environmental risk.*	
	Climate change event	[●]	●		Market practice is developing with greater focus on events caused by climate change and the Contracting Authority should consider the risk and impact of climate risk events on the infrastructure (both one-off external weather events and more gradual effects, such as rising sea levels or temperatures). It may be appropriate to treat certain events as force majeure events if they occur beyond certain thresholds (e.g. temperatures outside certain ranges). Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common. An alternative may be to consider a separate contractual mechanism to address these type of risks over the long term life of the contract. As with other variations required by the Contracting Authority, any changes to the project scope to mitigate climate change effects are likely to need to be funded by the Contracting Authority where the Private Partner cannot foresee such developments and has no means of passing on the cost (and no other agreement as to cost sharing is in place). As it is likely to be more costly to retrofit measures, it is essential that the Contracting Authority consider this risk during the feasibility phase, and that both parties continue to consider this issue further during the tender process. *See also Force majeure risk and Operational risk.*	If clear requirements are not included, this may lead to different bidders taking this risk into account in different ways. To avoid speculation and disputes, post-contract award, these issues should be clearly set out in the tender documents and negotiated throughout the tender process.
DESIGN RISK *The risk that the project design is not suitable for the purpose required; approval of design; and changes.*	**Suitability of design**	[●]		●	Generally the Contracting Authority should aim to transfer design risk to the Private Partner but the extent to which this is possible will depend on how involved the Contracting Authority wants or needs to be in specifying design requirements in the tender documentation. Alternative approaches are described below. **Output specification:** Where possible, the Contracting Authority usually aims to set a broad output driven specification in the tender documents, requiring the Private Partner to design and build/rehabilitate the project in a way which satisfies the performance specifications and ensures compliance with applicable legal requirements (e.g. track gauge requirements for compatibility purposes), good industry practice standards and, where applicable, minimum quality standards. This allows for private sector innovation and efficiency gains in the design. With this approach, the Private Partner will have principal responsibility for adequacy of the design of the rehabilitated network and its compliance with the output / performance specification. Depending on the scope of a rehabilitation project, there may be more constraints on design due to relevant existing network/rolling stock. Where rolling stock is procured as part of a heavy rail PPP, it will be key to ensure that the rolling stock is compatible with the infrastructure (both physical and signalling software) and this requirement should be clear in the output specification. A design review process during the contract will allow for increased dialogue and cooperation between the Contracting Authority and the Private Partner, but care should be taken to ensure that the mutual review process does not reduce or limit the Private Partner's overall liability. In limiting how prescriptive it is in the performance specification, the Contracting Authority may wish to request a degree of cooperation and feedback during the bidding phase to ensure that the bidding consortia's expectations in terms of an appropriate risk allocation for design responsibility are taken into account when finalizing the performance specification. If the Contracting Authority provides bidders with a basic design, bidders will typically be responsible for any errors, if they assume this basic design in developing their detailed design. An alternative is to provide (more) detailed design, but to contractually oblige the bidders to comment on and subsequently accept the (amended) design. Depending on the scope of a rehabilitation project, there may be more constraints on design due to	In more developed PPP markets, the Contracting Authority typically drafts a broad output specification, unless permit or other regulatory requirements oblige it to provide more detailed and descriptive specifications. Projects in some less established PPP markets may be particularly dependent on availability of reliable resources necessary for construction/rehabilitation and operation, which has implications for the Private Partner's ability to meet the reliability requirements in the performance specification and take full design risk. The quality of the information provided by the Contracting Authority and the Private Partner's limited ability to verify such data can hinder the Private Partner's ability to unconditionally take full design risk in some markets. Attempts to transfer the risk in such circumstances may also lead the Private Partner to price in expensive risk premiums that do not represent value for money for the Contracting Authority. The design of the rolling stock is ultimately the responsibility of the manufacturer. There will be a detailed design review process set out in the supply agreement. The manufacturer will usually exclude liability for the risk of infrastructure upgrades being completed and therefore the interface risk will continue to sit with the Private Partner to the extent that there is a single procurement for infrastructure and rolling stock. Emerging market rail projects may be particularly dependent

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Risk	Sub-category	Public	Shared	Private		
					relevant existing network/rolling stock. The Contracting Authority should bear the risk of technical information provided by it proving inaccurate to the extent the Private Partner was allowed to rely on it for design purposes (e.g. inaccurate usage forecasts or site condition or existing asset surveys). *See also Changes to design under Design risk*.	on availability of reliable traction power or fuel availability, which have implications for the Private Partner's ability to meet the reliability requirements in the output specification.
		●			**Prescriptive specification:** A prescriptive specification can, where essential, ensure the Contracting Authority receives bids on a particular (and similar) basis. However, the disadvantage of this approach is that it will restrict private sector innovation and efficiency gains in the design and may not result in best value for money. The Contracting Authority may also retain some design risk in certain aspects of the system or related works, if it is more prescriptive in the performance specification. For example, if the performance specification is too prescriptive (e.g. the required railway corridor constrains the efficiency of the design or the range of compatible rolling stock), the Private Partner's ability to warrant the fitness for purpose of its design solution may be impacted and the Contracting Authority will to that extent share in the design risk. The prescriptiveness of the performance specification is likely to be dependent on the depth of the feasibility study and in a rehabilitation project will also depend on the project scope and relevant existing network/rolling stock. Where the Contracting Authority has a preferred design solution (for example, for the system to run without overhead power supply), it should include this in the performance specification in a way which still allows for private sector innovation and efficiency gains. Some jurisdictions allow only limited room for individual design, since all key aspects and many details are already fixed in the official planning approval decision. If the Private Partner wants to deviate from these requirements it must conduct formal amendment procedures, which in practice have such process and risk impact that bidders are not willing to take the risk that comes with initiating such amendment procedures. *See also Changes to design under Design risk.*	
		[●]			**Existing infrastructure:** If the project is being integrated into existing infrastructure, the Private Partner's ability to warrant the fitness for purpose of its design solution for rehabilitation must be considered – it may not be able to warrant defects in the existing infrastructure which may impact the project's performance and the Contracting Authority may have to bear this risk, if surveys are not able to fully disclose defects. *See also Existing asset condition under Land availability, access and site risk, Works completion delays and Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
	Approval of designs	[●]		●	The Private Partner will bear the risk of obtaining design approvals as it will have principal responsibility for preparing the detailed design and obtaining relevant approvals from the appropriate state or other body. However, if the Private Partner has complied with all relevant conditions and time frames, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also MAGA risk.* Where specific solutions or consultants are imposed by the Contracting Authority (e.g. architectural or technical), some risk may remain with the Contracting Authority.	
	Changes to design	●		●	The risk of changes to design after contract signature is allocated according to the reason for the change. If the original design is deficient (including, for example, rolling stock compatibility with infrastructure and communication/signalling), this will be a Private Partner risk, subject to the aspects which are the Contracting Authority's risk (as outlined in *Approval of designs and Suitability of design under Design risk*). If changes are required by the Contracting Authority, this would as a rule be a Contracting Authority risk (with the consequent time and cost implications borne by the Contracting Authority on the	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					same principles as for compensation events). *See also Variations risk.* Contractual amendment procedures can in practice have such process and risk impact that the Private Partner may not be willing to take the risk that comes with initiating such amendment procedures. Requesting design changes or alternative or more detailed design development during the procurement stage will delay the procurement timetable and cause bidders to incur additional costs. The lack of certainty and potential cost may deter bidders and, depending on the change in requirements, may result in the procurement process needing to be re-run to comply with procurement laws or risk later challenge	
CONSTRUCTION RISK *The risk of construction/rehabilitation costs exceeding modelled costs; completion delays; project management; interface; quality standards compliance; health and safety; defects; intellectual property rights compliance; industrial action; and vandalism.*	**Cost overruns**	[●]	[●]	●	Cost overruns (i.e. costs exceeding the construction/rehabilitation costs assumed in the project's financial model) can have a variety of causes, such as mistakes in construction/rehabilitation cost estimates, increased cost of materials, actions of the Contracting Authority or government, as well as delays in – or mitigating potential delays in – the construction/rehabilitation programme. Completion of the construction/rehabilitation phase on budget will be a key risk, given the complex nature of the commissioning/completion processes, especially in difficult terrain and where tunnelling and bridges are part of the design, or where rolling stock is also being procured. The Private Partner typically assumes the risk of cost overruns to the extent these are not caused by force majeure, compensation events (such as in relation to unsurveyed site or existing asset conditions) or MAGA events, and are not addressed through other bespoke provisions (e.g. Change in law or provisions specifically addressing exchange rate risk during construction/rehabilitation – *see also Change in law risk and Exchange rate fluctuation risk under Financial markets risk)* or hardship doctrines *(see Glossary definition)* in underlying law. The Private Partner will mitigate these risks by passing them through as far as possible to its sub-contractors (for example, the construction sub-contractor carrying out the rehabilitation). The Private Partner's financial model will typically include contingency pricing for cost overruns (as will the sub-contractor's assumptions). *See also Force majeure risk and MAGA risk.*	In certain markets, risk is considered manageable by the Private Partner through robust pass through of obligations to credible and experienced sub-contractors and by allowing appropriate timetable and budget contingency. The Private Partner can mitigate the risk of sub-contractor non-performance by obtaining appropriate security from the sub-contractors (for example, parent company guarantees and/or performance bonds). The Contracting Authority may sometimes seek additional security itself to ensure such costs can be met - see Taking performance security under Public Sector Risk Mitigation. Enforcement of construction/rehabilitation budgets may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Where projects involve large elements of tunnelling, this element of construction/rehabilitation risk will be more carefully assessed by the Private Partner. In some projects this may lead to tunnelling components being separately procured on a non-PPP basis.
	Works completion delays	[●]	[●]	●	Delays in delivering the rehabilitated infrastructure by the relevant works completion date can have a variety of causes, such as unavailability of construction materials, delays in shipping and mistakes in programme scheduling, as well as weather events, civil unrest or industrial action and actions of the Contracting Authority or government. Completion of the construction/ rehabilitation phase on schedule is typically a key risk due to the consequences of delays and given the complex nature of the commissioning/completion processes, particularly where complex terrain and design are involved, or where rolling stock is also being procured. The Private Partner typically assumes the risk of delays to the extent they are not caused by relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions. *See also Force majeure risk and MAGA risk.* In most projects, the relevant date is the scheduled operation commencement date and to achieve that the works will need to be evidenced as complete. Some projects may instead (or in addition) require separate works completion deadlines to be met. This may be the case in jurisdictions where specific acceptance processes are required by law for construction works under public contracts and/or for insurance purposes. Both new and rehabilitated rail projects generally require complex commissioning and testing regimes given the intricacies involved in ensuring that the rolling stock, power systems, signalling systems, communications systems and the wider system will meet the necessary reliability and punctuality requirements. The consequences for the Private Partner of delays to the relevant works completion date are loss of	Enforcement of construction/rehabilitation deadlines may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Where projects involve large elements of tunnelling, this element of construction/rehabilitation risk will be more carefully assessed by the Private Partner. In some projects this may lead to tunnelling components being separately procured on a non-PPP basis. Some heavy rail network projects in less mature markets have faced significant construction issues and the Contracting Authority will need to be prepared to enforce its rights to manage the consequences of a failure by the Private Partner to meet the construction/rehabilitation milestones. In less mature markets, the management of completion risk is typically addressed by having either: (i) a scheduled completion date (with attached agreed damages for delay) followed by a fixed period for operation; or (ii) a scheduled construction/rehabilitation period forming part of the overall contract term which is itself fixed, subject to extensions for certain events such as force majeure. With the latter

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Risk	Sub-category	Public	Shared	Private		
					expected revenue due to arise on the relevant date and ongoing construction/rehabilitation and financing costs. In extreme cases, there is also a risk of potential termination for failing to meet the "longstop date" (a final later date by which the Private Partner must complete the project works/commence operation to avoid the Contracting Authority being entitled to terminate). The Private Partner will pass through these risks as far as possible to its sub-contractors (and may require the sub-contractors to pay it agreed damages to compensate for the delay to and loss of its overall project income and act as an incentive for timely completion). The Contracting Authority may also consider imposing agreed delay damages on the Private Partner to compensate it for delay to the start of the operating phase. However, imposing such agreed damages will typically result in the Private Partner building additional contingency time and cost into the project's construction/rehabilitation plan and the Private Partner should already be sufficiently incentivised to meet the relevant works completion date on time so that its revenue streams can commence. Some jurisdictions require certain criteria to be met in contractual provisions imposing delay damages if they are to be legally enforceable. Broadly speaking, if the damages exceed the Contracting Authority's likely real losses they may be seen instead as a disproportionate penalty and the provisions may be unenforceable. In some instances where the railway is taken over as a going concern the Private Partner's right to increase or set tariffs will not arise unless the new or upgraded works have been completed.	scenario, the Contracting Authority may attempt to additionally impose agreed delay damages on the Private Partner. The difference between the two structures is that the former preserves the project's revenue generating operation phase and the Contracting Authority relies on the agreed delay damages to incentivise timely completion of the works and operation commencement. In the latter case, the incentive to complete the works and meet the scheduled operation commencement date is that any delay at the Private Partner's risk will reduce the revenue-generating operating phase.
	Project management and interface with other works/facilities	[●]		●	**Project management:** The Private Partner is best placed to integrate complex works, bridge works, tunnelling, station and communication and signalling design and installation in both new and rehabilitation projects. Typically, the Private Partner assumes project management risk. **Interface with other works/facilities:** Interdependence with other projects may also affect contract obligations and risk allocation. If some or all of the project is dependent either on the Contracting Authority carrying out particular works or making available an existing facility, or on related infrastructure work being completed by a third party (for example separate new connecting power, railway, road, port or airport facilities being ready), that interface risk will be the Contracting Authority's risk. If the operation commencement date will be delayed due to such works not being carried out on time or the Contracting Authority otherwise failing to meet its obligations, this will be a compensation event or MAGA event. For example, the Private Partner may be reliant on Contracting Authority authorisation for temporary closure of existing rail assets or roads or bridges to facilitate construction/rehabilitation works, particularly in a project involving rehabilitation/upgrades. Equally, the Private Partner will be responsible for the scheduling of such works to ensure that disruption is minimised/eliminated. *See also MAGA risk.* *See also Utilities and installations and Access to the site and associated infrastructure under Land availability, access and site risk, Suitability of design under Design risk, Maintenance standards under Operating risk, Demand risk and MAGA risk.*	Emerging market rail projects may be particularly dependent on availability of reliable traction power. In some markets the Private Partner may be allocated the risk of third party work being properly and timely completed, particularly if the Private Partner has the opportunity to enter into interface arrangements with the third party. These interface agreements will result in the interface risk being shared between the Private Partner and the third party.
	Quality assurance and other construction regulatory standards		●		Meeting relevant quality standards will be a Private Partner risk, but where standards or codes are revised after the bid submission date this risk allocation will depend on whether the changes are mandatory and whether the Private Partner has priced the risk of such changes into its bid. The Contracting Authority may consider increasing the contract price to account for increased costs of compliance or the Private Partner may be excused from compliance with the new standard if it is not mandatory. This may be dealt with through the change in law provisions. *See also Change in law risk.*	
	Health and safety compliance			●	Responsibility for health and safety compliance on the construction site is typically a Private Partner responsibility. The Private Partner typically bears the risk of complying with health and safety laws/requirements and indemnifies the Contracting Authority in respect of any breach of such requirements. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the	In some jurisdictions with developed construction legislation, the Private Partner's responsibilities in the construction phase will be set out in law with strict liability for certain incidents. There may be specific bodies which

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					health and safety incident was caused or contributed to by the Contracting Authority or other government entity and/or the affected party. Some projects require an annual safety review which enables the parties to assess relevant performance and safety management. Otherwise, the engagement of an experienced contractor with a strong safety record is also a mitigant.	will sanction it for breaches of applicable health and safety legal obligations. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability			●	Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to the rehabilitation works . The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third-party claims against it over this threshold.	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Defects and defective materials			●	The Private Partner should be required to design and construct the project in accordance with good industry practice, and bears the risk and responsibility for completing the project free of defects. Defects are typically categorised as (i) visible and (ii) latent/hidden defects and are treated differently under the contract. The risk of visible defects is sometimes covered by an interim acceptance at completion of the works (and may result in a one off payment of agreed damages). As latent defects may not be noticeable for some years, the Private Partner is typically liable for such defects for a number of years following completion and the Contracting Authority may request a performance bond from the Private Partner to support this obligation (which the Private Partner will require from the relevant construction sub-contractor). The Contracting Authority may retain latent defects risk in existing structures. *See also Existing asset condition under Land availability, access and site risk and Maintenance standards under Operating risk.*	
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction/rehabilitation and operation of the heavy rail network and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction/rehabilitation and/or operation/maintenance.	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will often be a Private Partner risk, sometimes with a threshold/cap above which the Contracting Authority will bear/ share the risk, depending on the configuration of the site and the extent to which the Private Partner will control all elements of the site. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials, site access and security during construction/rehabilitation, etc. *See also Site Security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where the political climate opposes the construction/rehabilitation of the network.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
VARIATIONS RISK *The risk of changes requested by either party to the service which affect construction/rehabilitation or operation.*		●	[●]	●	**Contracting Authority change:** The Contracting Authority typically bears the risk and cost of service changes implemented following its request. The contract will specify the extent to which it is entitled to require changes and the reasonable grounds on which the Private Partner may refuse. The Contracting Authority will also bear the risk of ensuring it can meet its cost liabilities. **Private Partner change:** The Private Partner will bear the risk and cost of service changes implemented following its request, unless the parties have agreed a sharing mechanic as part of their discussions of the change. A sharing mechanic may be appropriate where the Contracting Authority wants to incentivise the Private Partner to introduce innovative or environmentally-friendly solutions. If the Contracting Authority is liable for costs, it should mitigate its risk by requiring a transparent costing review process, which it can due diligence. This is likely to be particularly a concern during the construction phase. As with any potential liabilities under the PPP contract, the Contracting Authority will want to consider how best it can fund such payments (e.g. through financing the variation direct itself, requiring the Private Partners to procure committed but undrawn funding at financial close or to establish a reserve to fund future variations, each of which will come at a cost and may affect value for money, or requiring the Private Partner to procure financing at the time of implementation of the variation. Where financing is procured by the Private Partner, whether at financial close or at the time of implementation, the Private Partner's revenues will need to be adjusted to fund repayment of the financing. The risk and cost associated with changes arising due to other provisions will be addressed according to those provisions. *See also Changes to design under Design risk, Climate change event under Environmental risk, Disruptive technology risk and Change in law risk.*	Some jurisdictions have detailed change protocol templates to follow for variations to ensure that costing is fair and transparent. Due to the impact changes can have on construction/rehabilitation or operation (e.g. in terms of timing, cost and delivery), there may be restrictions placed on the ability to request changes of certain types or in certain phases. The Contracting Authority's ability to request and meet any changes costs will also be a concern, particularly where it has a weak credit. In particular, where rolling stock is included in the procurement, variations can have a significant consequential cost and timing impact on the rolling stock supply contract.
OPERATING RISK *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.*	**Increased operating costs and affected performance**	[●]	[●]	●	Increased costs and delays in the operating phase can have a variety of causes, ranging from mistakes in maintenance cost estimates to extreme weather events. Aside from adjustments for inflation, the Private Partner broadly assumes the risk of events which inhibit performance and/or give rise to cost increases beyond modelled costs, to the extent these are not relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions or hardship doctrines *(see Glossary definition)* in underlying law. *See also Force majeure risk and MAGA risk.*	
	Performance/ price risk			●	The Private Partner bears the risk of meeting the performance specification under the contract (i.e. by ensuring that the works and the operational performance are of the necessary quality and level). In an availability-based payment structure the Private Partner's payment may be subject to abatement if availability criteria and performance-based standards are not met. For example, availability criteria may be linked to the network infrastructure being open and operational in particular periods and performance standards may be linked, for example, to punctuality or train and station cleanliness. In a payment structure including an element of demand risk, poor performance by the Private Partner may adversely affect demand and consequently project revenues. Where certain availability criteria or performance indicators cannot be met due to actions by the Contracting Authority (or other government entities) or unforeseen circumstances, the Private Partner may be entitled to relief (e.g. if caused by a relief, force majeure, MAGA or compensation event). For example, if police or emergency services require suspension of services, the contract should be clear on how such action affects the Private Partner. *See also Force majeure risk and MAGA risk.* The Contracting Authority is responsible for enforcing the performance regime and for ensuring that the performance specifications are attainable and properly tailored to what the Private Partner can deliver based on relevant market data and policy objectives. The appropriateness of the metrics can be assessed by reference to standards of similar services provided by the Contracting Authority (or other government body), value for money, the nature of the project and the relevant markets. The Private Partner may be entitled to compensation to the extent this is the fault of the Contracting	In mature markets, the Contracting Authority should have access to various data sources to develop realistic and attainable performance specifications and models. For other markets, particularly in the case of market first projects, the preparation of attainable standards by the Contracting Authority is complicated by the lack of relevant market data. The Contracting Authority should set standards which are achievable in the relevant market, taking into account, for example, applicable track maintenance standards. These may vary across different markets. In less mature markets, the Private Partner may require the Contracting Authority to reduce the performance requirements during the settling in period and possibly readjust the performance metrics once the performance of the railway has stabilized. This can mitigate the risk of long-term performance failure. In emerging markets, in projects expecting extremely high ridership, it may be difficult to achieve a meaningful punctuality / headway metric; it may be appropriate to focus

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Authority. *See also Demand risk.*	on requiring the Private Partner to provide a volume driven output service.
	Operational resources or input risk		●	●	The Private Partner bears the principal risk and responsibility of ensuring an uninterrupted supply of resources for the project (such as utilities, maintenance equipment and materials, and specialist vehicles) and to manage the costs of those resources. It will need to consider this when structuring its supply arrangements. This is especially relevant for heavy rail projects where the Private Partner's obligations also include catering for special, but regular weather conditions, such as winter railway clearance, or monsoon flooding or, where in scope, recovery/towing equipment. In some markets, there may be specific instances where the risk needs to be shared (e.g. in relation to availability of energy supply or reliance on local source materials) where resources may be affected by labour disputes, embargos or other political risks. These may be treated as relief, force majeure, compensation or MAGA events. *See also Force majeure risk and MAGA risk.*	Certain markets are generally more susceptible to market volatility and major cost variations. Emerging market rail projects may be particularly dependent on fuel availability. Mature markets generally do not experience market volatility to the extent of less mature markets, and resource availability is less of a concern. However, energy costs may still vary significantly over the course of a project.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction/rehabilitation and operation of the heavy rail network and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction/rehabilitation and/or operation/maintenance.	
	Health and safety compliance	[●]		●	The risk allocation for health and safety will, in part, depend upon operating responsibility for the asset. The Private Partner will typically bear this risk in respect of its operational responsibility, as well as in respect of maintenance/repair works and other health and safety aspects related to the services provided by the Private Partner during this phase. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority and/or a third party. To the extent that the Contracting Authority has operational control of the asset, the Contracting Authority would typically retain "day to day" operational health and safety responsibility.	In some jurisdictions with developed construction and working practices legislation, certain of the Private Partner's responsibilities will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations, for example, in relation to maintenance work being carried out in the operating phase. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability	[●]		●	The risk allocation for these liabilities will depend upon operating responsibility for the asset. Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to any building issues/defects and on-going maintenance/repair services and any other services/responsibilities of the Private Partner The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third party claims against it over this threshold. *See also Liability for death, personal injury, property damage and third party liability under Construction risk.*	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Maintenance			●	The Private Partner will bear the principal risk of meeting the appropriate standards regarding	In mature markets, the Private Partner generally assumes the

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	standards				maintenance as set out in the performance specification, so that the system remains robust and is handed back in the expected condition on early termination or expiry of the agreement *(see also Condition at handback risk)*. This includes day-to-day routine maintenance as well as lifecycle maintenance and replacement of particular assets. Failure to maintain the assets in accordance with the performance specification will lead to payment deductions and, where significant, potentially breach, so this can be a key risk for the Private Partner. In practice, estimating life cycle works may be challenging. It requires experience and, to the extent available, the Contracting Authority may be able to provide data on life cycle cost. As the standard for **PPP** is often set at a much higher level than for existing (non-**PPP**) projects, such data is likely to require a multiplier. Life cycle funding/reserving mechanisms may mitigate life cycle risk but are also difficult to design adequately and Contracting Authorities should bear in mind that these can have an impact on risk allocation/value for money. The involvement of the Private Partner in the operation, maintenance and rehabilitation of the project, and the linking to payment entitlement, can provide several benefits. It should incentivize greater care and diligence by the Private Partner in both the construction/rehabilitation and operating phase, and increase the useful life of the infrastructure. The Contracting Authority may establish a facilities management committee to oversee the Private Partner's performance of the maintenance and rehabilitation services, along with a formal mechanism to discuss and resolve performance related issues. Generally speaking, the Contracting Authority should avoid undue interference with the Private Partner's provision of maintenance and rehabilitation services so as not to dilute the risk transfer benefits.	overall risk of periodic and preventative maintenance, emergency maintenance work, work stemming from design or construction errors, rehabilitation work, and in certain instances, work stemming from implementing technological or structural changes. *See also Disruptive technology risk.* Some projects in less mature markets have been procured on a design-build basis with a view to then passing over the assets to an operations concessionaire. In this case the Contracting Authority will need to ensure that it has sufficient warranties of the project components to allow the operator to manage the ongoing maintenance risk.
				●	**Demand-risk projects:** Where the Private Partner is taking on demand risk, it takes the primary risk that the heavy rail network will be maintained to a sufficient level of quality and reliability to ensure that it can continue to attract business. However where the heavy rail network constitutes an essential public service or is an effective monopoly operation over that route, it would be sensible for the Contracting Authority to include appropriate key performance indicators to monitor the service levels and take effective enforcement action (e.g. through penalties or reduced fare revenue entitlements). *See also Existing assets in the project and Existing (or other) assets interfacing with the project below.*	
		●	[●]		**Usage higher than forecast:** If usage is much heavier than forecast and beyond the specification required by the Contracting Authority, it may be necessary to agree a mechanism to pay the Private Partner compensation in respect of increased maintenance costs.	
		●		●	**Existing assets in the project:** As regards existing infrastructure, such as bridges, the maintenance risk should be allocated to the Private Partner to the extent the condition of the existing assets is known and future maintenance work can be assessed properly by an experienced contractor In some cases, particularly where the Private Partner bears demand risk, the Contracting Authority may need to retain the maintenance or latent defect risk of some existing assets (and fit for purpose standards may need to be appropriately adjusted). **Existing (or other) assets interfacing with the project:** Similarly, on a heavy rail project where the Private Partner bears demand risk, the Contracting Authority will bear risk if it is required to guarantee and proactively manage the maintenance of existing heavy rail lines (or other transport mode) that integrate with the project as these will be key to providing access to the new heavy rail lines. *See also Access to the site and associated infrastructure under Land availability, access and site risk.* **Enforcement of regulatory regime:** Changes to the regulatory framework which cause higher maintenance costs/shorter asset life or lack of enforcement should be a Contracting Authority responsibility (and may be treated as a compensation or MAGA event or change in law). *See also MAGA*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					risk and Change in law risk.	
	Interface				*See Maintenance standards under Operating risk, Project management and interface with other works/facilities under Construction risk, Access to the site and associated infrastructure under Land availability, access and site risk and Demand risk.*	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will usually be a shared risk, for example with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials and restrict access to certain areas etc. For example, the Private Partner may elect to use materials which can be more easily cleaned of graffiti, or have a security guard in place at certain ticket machine locations. Once the heavy rail network is in operation, it is likely to be unreasonable for the Private Partner to be able to secure the entire site from vandalism. *See also Site security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where the political climate opposes the heavy rail network.
DEMAND RISK *The risk of usage levels being different to forecast levels; the consequences for revenue and costs; and government support measures.*	**General principles**				Allocation of demand risk (the risk of usage 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. 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 usage forecasting. If there is high uncertainty over usage projections and uncertainty over revenues (for example, due to fare level limitations and/or currency volatility), this may be one reason to structure the project on an availability payment basis. A demand risk structure could still involve the Private Partner receiving some form of government payment or support, as well as fare payments. In the rail sector, new or rehabilitated infrastructure requires considerable capital expenditure and will not typically be capable of generating the required revenue to be viable without some form of government subsidy. *See also Government support measures under Demand risk.* If any demand risk is to be allocated to the Private Partner, bidders will want to carry out their own assessment of the risk and extensive usage 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 station and other trackside facilities (to the extent these are permitted) should also be assessed and addressed under the contract. Where the Private Partner is relying on demand revenues for the project to be financially viable, this will be a key risk.	It has become more common for heavy rail projects in all markets to provide for the Contracting Authority to retain at least some of the demand and fare revenue risk and to pay the Private Partner some availability-based payment (or provide alternative revenue underpinning such as guaranteeing some level of debt). Indeed, some projects have been adjusted before award (subject to relevant procurement rules) due to adverse market reaction to demand risk. Post-award, this trend has been observed in 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 usage 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. 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 transport 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.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Considerations	●			**Appropriateness of asset for transfer of demand risk:** The nature and quality of the asset is an important factor in the ability to transfer demand risk to the Private Partner. The potential for demand risk transfer in heavy rail projects will depend on a variety of factors, including the impact of other adjacent or connecting projects (such as interconnecting heavy rail lines or alternative modes of transport e.g. long distance buses or road systems etc) likely to affect demand and pricing. **Ticket price fixing:** Generally speaking the Private Partner will not be free to set fare levels beyond certain levels and will be bound by relevant regulatory and/or contractual restrictions. If the Contracting Authority or other government entity is required to take action to set fares, a failure to do so in a reasonable manner should be treated as a compensation event or MAGA event if it has an adverse financial effect on the Private Partner. This could include failing to increase fares or increasing fares to a level which adversely affects user demand.	
	Higher demand than anticipated		[●]	●	The Private Partner in principle bears the upside of demand fluctuations where demand risk is allocated to it. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control than the Private Partner's. Higher demand should increase revenues, but in practice there are some issues to consider. First, the increased usage is likely also to impact costs as greater maintenance spend than anticipated will be required to keep the network (including rolling stock) in good condition and maintain user levels. The output specification in the contract will have anticipated a certain number of services and if the network is bearing more traffic and rolling stock being utilised more intensively then there may be some significant lifecycle issues to consider which may outweigh the additional revenue which the Private Partner is receiving. A failure to address upgraded maintenance needs could result in the heavy rail network becoming unusable before the expiry of its term. Second, if actual demand is higher than forecast, there may be public perception issues if the Private Partner is thought to be making a higher profit than originally anticipated (even if in reality it is facing higher maintenance costs as described above). If the network faced public opposition originally then this perception is likely to be exacerbated. This could cause problems for the Private Partner if users start to boycott the network or launch protests, as well as be politically uncomfortable for the Contracting Authority. In order to manage these issues, the parties may want to ensure the contract addresses such possibilities. For example, there may need to be a mechanic to update the output specification so that maintenance is adequately funded if revenue/use is above a certain level. Equally, there may need to be a mechanism for sharing the profit above a certain level (having taken into account increased costs), either through payment to the Contracting Authority or by reduction in fares. This might be particularly appropriate where the Contracting Authority has provided some form of subsidy or revenue support or if the reason for the higher demand is due to a Contracting Authority action which was not anticipated at the time of bidding.	.
	Lower demand than anticipated			●	Although the Private Partner in principle bears the downside of demand fluctuations where demand risk is allocated to it, in practice the situation is likely to be qualified. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control. **Private Partner risk:** The Contracting Authority should be mindful that the competitive bidding process may encourage bidders to be aggressive with their usage and revenue forecasting. Over-optimistic forecasting can create financial problems for the Private Partner, and may lead to project failure. The Contracting Authority can mitigate the risk by commissioning its own demand analysis to assist it in evaluating bids and their underlying forecasts. Other Private Partner risks include where it sets fares which are too high (to the extent it is permitted to set the fare levels) or fails to maintain the heavy rail network and such actions adversely affect user levels.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]	[●]		**Contracting Authority risk:** Some factors affecting demand are not within the Private Partner's control and the risk of such factors may instead lie more appropriately with the Contracting Authority. For example, in most cases, demand risk is unlikely to be accepted by the Private Partner in the absence of a regime that protects the Private Partner from "material adverse changes" which would impact user and revenue levels and which are outside its control. Such changes (and any materiality threshold) should be clearly defined and might include the construction of new competing transport options, changes to surrounding traffic and network conditions, or demographic/macroeconomic changes. The parameters of such protection will need to be carefully negotiated to ensure the Contracting Authority and other relevant government bodies retain sufficient flexibility to implement other necessary transport and other development over the term of the project. Failure by the Contracting Authority to comply with any contractual obligations or measures would typically be treated as a compensation event or MAGA event. *See also Maintenance standards under Operating risk and MAGA risk.*	
	Government support measures		[●]		Projects where the Private Partner accepts demand risk are often underpinned by some form of government support in order for them to bankable. The effect of these measures is that the Contracting Authority shares demand risk. **Subsidies:** Support may be in the form of an upfront subsidy towards capital expenditure (i.e. construction/rehabilitation costs) where fare revenue is forecast to be insufficient for the Private Partner to meet its debt service and other financial needs (as is typically the case with rail infrastructure). **Minimum revenue/usage guarantees:** An alternative to upfront subsidies is for the Contracting Authority to guarantee a minimum level of revenue/service for the Private Partner. The contract will provide that if revenue falls below a specific level, the Contracting Authority will pay the Private Partner an amount to ensure it receives a minimum revenue. The threshold for the guarantee should be set at a level which incentivizes the Private Partner and other stakeholders (e.g. other public sector entities) to increase user demand and the contract should still require appropriate levels of maintenance. This is to ensure that the Private Partner is not incentivised to rely solely on the guarantee and discourage users and reduce maintenance costs. **Other support:** The Contracting Authority may also share demand risk by setting upper and lower revenue limits within which the Private Partner bears full demand risk and outside of which the Contracting Authority bears or shares the risk.	This type of support may be seen across all markets in some demand risk sectors. Substantial upfront public subsidy has been seen in France, for example, and minimum revenue guarantees are often a feature of projects in some sectors in less developed markets (such as in Africa). Avoiding Private Partner reliance on minimum revenue/service guarantees is a specific perceived challenge in certain projects in some sectors (e.g. in Africa). These guarantees can also create challenges and excess liabilities for the government where the level of the guarantee is so high that demand risk is essentially retained by the government. Many demand risk projects, most notably in South America, transfer demand risk but have cap and collar revenue arrangements. This results in a hybrid position where demand risk is fully transferred to the Private Partner within a certain revenue range, but outside of this the Contracting Authority retains full demand risk.
FINANCIAL MARKETS RISK *The risk of inflation; exchange rate fluctuation; interest rate*	**Inflation**	[●]		●	**Construction/rehabilitation phase:** The risk of construction/rehabilitation costs increasing due to inflation is typically borne by the Private Partner who will generally price in this risk in markets where such risk can be projected and quantified. Where this is not possible the Contracting Authority is likely to be asked to bear some risk.	The fluctuation of inflationary costs is a greater risk in less mature markets than it is in other markets and the Private Partner's expectation will be that this risk is borne and managed by the Contracting Authority during the contract

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
fluctuation; unavailability of insurance; and refinancing.		●			**Operation phase:** Inflation risk in the operating phase is typically borne by the project user (on demand-risk projects) or the Contracting Authority (on availability-based projects). The Private Partner will look to be kept neutral in respect of both international and local inflationary costs through an appropriate inflation uplift or fare adjustment regime. There is always a time lag in how quickly the indexation price increase is available to the Private Partner. On availability-based projects, this is achieved by the availability payment typically including both a fixed component (where debt has been hedged) and a variable component which includes an escalation factor that accounts for rises in costs. On demand risk projects, the ability to increase fares may often be restricted (as fare increases are likely to be a sensitive political issue). The Contracting Authority may need to provide a subsidy to the Private Partner if users cannot bear the cost increase.	term. The variable component of the availability payment is typically defined by the consumer price index in mature markets. In other markets, the selected indexation method will need to reflect variable financing costs and variable inputs such as staff and materials. It will be more crucial in less mature markets to find appropriate indicators which mirror the project needs rather than a general consumer price index.
	Exchange rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority may expect the Private Partner to bear the risk of an exchange rate fluctuation for a specific time period (e.g. 90 days) between submission of bid and financial close Where there is a prolonged period between bid submission and financial close, the Contracting Authority may need to bear the risk. Where exchange rates are volatile or long term currency swap markets are illiquid, the Private Partner may have limited ability to accept the risk of exchange rate fluctuation and will seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as USD.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of a change in exchange rate. Exchange rate risk can be substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets.
		[●]	[●]	●	**Rate changes during project:** Allocation of exchange rate fluctuation risk over the life of a project will depend on the relevant project jurisdiction and the nature of the project costs. In most PPPs, the Private Partner will bid and be paid (whether by the Contracting Authority or through fare payments) in the domestic currency of that country. It may, however, incur costs in a foreign currency and such costs are translated into the bid price in the domestic currency on the basis of a particular exchange rate. In some PPPs, the Private Partner (and its lenders) may seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as the USD. **Construction/rehabilitation phase:** Exchange rate risk can arise where some or all of the construction/rehabilitation costs are denominated in a currency different to the domestic currency. For example, where construction/rehabilitation of the asset requires equipment that is manufactured overseas, adverse exchange rate movement may result in such equipment becoming more expensive than anticipated when converting domestic currency. This may use up the contingency the Private Partner has provided for in its financial arrangements (and priced into its bid) and/or require the Private Partner to take on additional borrowing in the construction/rehabilitation phase to finance these costs. **Operating phase:** As with construction/rehabilitation costs, a similar risk may arise if the Private Partner incurs operating costs in a currency different to the currency of the PPP contract payments. For example, exchange rate risk can arise if the debt used to finance construction/rehabilitation is denominated in a currency different to the domestic currency of the price paid under the PPP contract. Adverse exchange rate movements during the operating phase where the debt is being repaid will result in debt repayment in the foreign currency requiring a larger proportion of the Private Partner's revenue. This may result in the Private Partner having insufficient funds to service its debt and/or may eat into its projected equity return. **Mitigation:** The Private Partner typically looks to mitigate exchange risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the costs the Private Partner incurs are effectively fixed instead of fluctuating, and protects it against adverse rate movements.	Exchange rate risks are more substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets). In more mature markets, the risk of currency fluctuations is typically not substantial enough to require the Contracting Authority to provide support and exchange rates risks are addressed solely through the Private Partner's own hedging arrangements. Where the exchange rates are more volatile, access to long term hedging may be either unavailable or too expensive. The likelihood of debt being dominated in a foreign currency is more likely in markets where financing by multilateral or international banks may be required (e.g. in less mature markets where there is limited depth in the local debt capital markets). *See also Strength of Contracting Authority payment covenant under Early Termination risk.* Some cost risk can be managed on demand-risk projects by

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					The cost of such hedging will be part of the contract price bid. Devaluation of a local currency beyond a certain threshold may also trigger a non-default termination, or a "cap and collar" subsidy arrangement from the Contracting Authority.	passing the risk through to the user by way of fare adjustments, but the ability to do this may be limited.
	Interest rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority normally expects the Private Partner to bear the risk of a change in the reference interest rate between submission of bid and financial close for, a specific time period (e.g. 90 days). Any rate changes after this time period will be a Contracting Authority risk	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of an adverse change in interest rate.
				●	**Rate changes during project:** The Private Partner will typically bear the risk of interest rate fluctuations over the life of the project but this will depend on the specific project and its jurisdiction. The Private Partner will seek to mitigate this risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the interest rate the Private Partner is required to pay is effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid.	In mature markets, the risk of interest rate fluctuations is not substantial enough to require the Contracting Authority to provide support and is typically addressed solely through the Private Partner's own hedging arrangements. In other (less stable) markets this may not be possible due to interest rate volatility or lack of long term hedging availability and in some circumstances it may be more appropriate for the Contracting Authority to retain interest rate risk if it can bear the risk more efficiently than the private sector.
	Unavailability of insurance .		●		The responsibility for placing required insurances and the cost of doing so is typically borne by the Private Partner. However, PPP contracts typically also include provisions to address the risk of insurance becoming unavailable or only available at a cost which exceeds a level at which the Private Partner is able to price in reasonable contingency. This only applies if the uninsurability is due to factors unrelated to the Private Partner. Where neither party can better control the risk of insurance coverage becoming unavailable or more expensive, this is typically a shared risk. How this is addressed will depend on the specific project and jurisdiction. For the purposes of PPP projects, insurance is generally deemed unavailable to the extent (a) it is no longer available in the international insurance market from reputable insurers of good standing or (b) the premiums are prohibitively high (not just more expensive) such that contractors in the project jurisdiction are commonly not insuring such risk in the international market. As part of the feasibility study the Contracting Authority should consider what insurances are necessary and available at a reasonable premium and whether insurance might become unavailable (or too expensive) for the project given the location and other relevant factors. This is essential for assessing risk allocation for relevant events (e.g. force majeure risk allocation) and for the Private Partner to price its risks.	The standard approach as regards unavailability is common in mature markets. In some less mature markets, if insurance becomes unavailable, the Private Partner is typically relieved of its obligation to take out the required insurance but, unlike the mature market position, the Contracting Authority does not become insurer of last resort and the Private Partner bears the risk of the uninsured risk occurring. If the uninsured risk is fundamental to the project (e.g. physical damage cover for major project components) and the parties are unable to agree on suitable arrangements, then the Private Partner may need an exit route (e.g. the ability to terminate the project on the same terms as if the unavailability of the insurance were an event of force majeure). In negotiating an insurer of last resort position, the Private

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
			●		**More costly premium:** Where the cost of the required insurance increases significantly (without becoming prohibitive), the risk is typically shared by the parties by either having an agreed cost escalation mechanism up to a ceiling or a percentage sharing arrangement. This allows the Contracting Authority to quantify the contingency that has been priced for this risk.	Partner and, in particular, its lenders, will carefully assess the Contracting Authority's credit and its ability to meet liabilities if an uninsurable event occurs. This is a reason why this position may be more likely in economically stable markets. In less stable markets the parties may negotiate more over whether a particular insurance should be an obligation in the first place and how the risk (and its occurrence) might be managed (e.g. through the force majeure provisions). In less mature markets, wider reference criteria may be needed in defining unavailability (e.g. to address a situation where the pool of benchmark contractors is insufficient to draw a meaningful comparison). Projects in some locations may find it more difficult to get insurance for certain events under commercially viable conditions. In this case the parties will need to find a solution to unavailability at the start of the contract.
			●		**Unavailability:** A standard approach in mature markets to manage unavailability of insurance is that where required insurances become unavailable, the contract typically requires the parties to try to agree a solution to manage the uninsurable risk and the Private Partner is relieved from breach of its obligation to take out the required insurance to the extent the unavailability is not due to its actions. If a solution is not agreed, the Contracting Authority is typically given the option to either terminate the project or to proceed with the project as "insurer of last resort" (i.e. to effectively self-insure and/or put in place its own insurance cover and pay out in the event the risk eventuates). If the Contracting Authority chooses to assume responsibility for the uninsurable risk, it may require the Private Partner to regularly approach the insurance market to try to obtain the relevant insurance and the contract price should be adjusted to reflect that the Private Partner is no longer paying the corresponding insurance premium.	
			●		**Occurrence of uninsurable event:** With the mature market standard approach, if an uninsurable event occurs, the Contracting Authority may (a) terminate the contract (typically on a force majeure basis plus corresponding third party liability payments) or (b) pay the Private Partner the equivalent of insurance proceeds and continue the project. The approach to termination compensation reflects the general acceptance that uninsurability is neither party's fault and should be a shared risk.	
		[●]		[●]	**Unavailability due to fault:** Risk allocation will be affected by the reason for unavailability. As highlighted above, the provisions should only apply to the extent the Private Partner is not responsible for the insurance unavailability. Equally, if the unavailability is caused by the Contracting Authority's actions, the Private Partner may want to negotiate a right to terminate if a fundamental risk becomes uninsurable.	
	Refinancing		●	[●]	There are two key risks associated with refinancing (the changing or replacing of the existing terms on which the Private Partner's debt obligations have been incurred): (i) the risk that a project will be unable to raise the required capital to refinance a project at a given point in time; and (ii) the risk that a refinancing of debt will create additional project risks (e.g in terms of potential increased liabilities for the Contracting Authority and increased financial instability of the Private Partner). The risk of failing to raise required capital will arise in projects where the Private Partner (a) needs to seek a rescue refinancing to reschedule its borrowings if it is struggling financially, or (b) needs to replace short term (mini perm) financing which may have been the only financing option available to (or desirable for) the project initially. This is typically a Private Partner risk. Mitigation measures can include, in the case of mini perm financing, raising debt capital that has a repayment schedule that is matched to the PPP contract and project revenues available over the period of the PPP contract or by structuring the debt in several tranches of different tenors so that refinancing risks are smaller but arise more frequently. Refinancings may also occur where the Private Partner wants to take advantage of better financing terms available in the market (e.g. where the market recovers after a global financial crisis or after construction/rehabilitation completion when the project is perceived to be less risky by funders). The risk of a refinancing creating additional project risks will be a risk for both the Private Partner and the Contracting Authority. The Contracting Authority needs to ensure that a refinancing does not adversely affect it (e.g. by increasing the level of its potential liability for termination compensation above what would have been the case under the original financing documents/financial model or increasing the risk of such liability falling due if the financial stability of the Private Partner is affected).	Refinancing risks will ultimately depend on the depth and liquidity of the relevant capital markets. In more developed capital markets, the risk of failing to raise required capital is unlikely to be a significant risk as long-term finance is available from the outset. Mini perm financing is more common in countries where the capital markets are less developed and there is a lack of a market for long term debt instruments. However, banks globally already face greater regulatory pressure which affects the loan tenor they can offer, and it is likely they will face increasing restrictions even in developed markets which may lead to shorter initial debt tenors and increased refinancing needs.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					To mitigate this risk, the contract should specify that the Contracting Authority's consent is required in specified carefully drafted circumstances. Where the result of a refinancing is that the Private Partner's debt costs are reduced, resulting in greater profit and in turn a higher equity return (typically known as "refinancing gain"), it may be appropriate for the gain to be shared between the parties (e.g. to the extent it increases the original forecast equity return in the financial model). The Contracting Authority may expect to share a percentage of the refinancing gain (e.g. 50%) and this is particularly important given the use of public funds (or fares) to pay for the PPP project. To ensure it does not miss out on an anticipated share of any refinancing gain, the Contracting Authority should ensure that all relevant definitions are carefully drafted. The way the Contracting Authority receives its share of the gain will depend on the nature of the refinancing and discussions at the time. Options include: (a) a lump sum upon the refinancing to the extent the Private Partner receives such amounts at the time of the refinancing; (b) a lump sum or periodic sums at the time of receipt of the relevant payments, or the receipt of the projected benefit (in the case of a "user pays" model); (c) a reduced availability payment (in the case of the "government pays" model); (d) reduced user fares; or (e) by a combination of the above (in accordance with the applicable payment model). For a more detailed analysis of typical refinancing provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	It has become increasingly acknowledged in mature PPP markets that it would not be fair for the Private Partner to enjoy the entire benefit of a refinancing gain where it is not entirely responsible for the availability of improved financing terms (e.g. where the market recovers after a global financial crisis). In emerging markets, particularly for demand risk projects, there may be limited scope for the Contracting Authority to negotiate refinancing gain sharing if such gain is a key incentive for potential bidders. Refinancing provisions may not be included. This is more likely in untested "riskier" markets where the prospect of refinancing gain is a key driver to bidders' participation (as has been the case, for example, in the Philippines). As with more mature markets, the potential for sharing refinancing gain should increase as the PPP market becomes more established and perceived risks decrease.
STRATEGIC/ PARTNERING RISK *The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.*	**Private Partner failure/insolvency**			●	The Private Partner essentially bears the risk of failing to have the requisite technical or financial capability to deliver the project in accordance with the contract. However, as the consequences of such failures can lead to interruption in service and inconvenience to the Contracting Authority and users, as well as potential termination liabilities for the Contracting Authority, the Contracting Authority must carry out a thorough evaluation of each bidder to ensure that it selects the right partner to deliver the project, with whom it can develop the necessary long term partnership and meet any aspirations it may have as regards community engagement and local employment and skills development. *See also Risk Allocation in PPP contracts in the Introduction.*	
	Sub-Contractor failure/insolvency			●	The Private Partner is responsible for its sub-contractors and bears any associated risks, unless the Contracting Authority imposes mandatory sub-contractors, in which case it may need to bear, or share, certain sub-contractor-related risks. However, the sub-contractors should form part of the Contracting Authority's evaluation of each bid for the reasons highlighted in relation to the Private Partner.	
	Change in Private Partner ownership			●	Complying with any contractual restrictions on change in ownership will be a Private Partner risk. The Contracting Authority wants to ensure that the Private Partner to whom the project is awarded remains involved and that any restrictions on, for example, foreign ownership of critical infrastructure are not circumvented. As the project is awarded on the basis of the Private Partner's technical expertise and financial resources, it will also want to ensure key parties such as parent company sponsors (and sub-contractors) remain involved. The Contracting Authority will typically prohibit any change in the Private Partner's shareholding for a period (e.g. by a lock-in for the construction/rehabilitation period or until a couple of years into the operating phase) and thereafter may impose a regime restricting change in control without consent or where pre-agreed criteria cannot be met. The Contracting Authority's desire for certainty of involvement of key participants will need to be balanced with the private sector's requirements for flexibility in future business plans. This is particularly in respect of the equity investor markets and the added benefits of allowing capital to be 'recycled' for future projects.	In less mature markets, there is typically more restriction on the Private Partner's ability to restructure or change ownership. Overly restrictive provisions may deter investment, so this needs to be assessed in terms of the benefits to the Contracting Authority of both ensuring sufficient competition in the bid phase, and enabling parties to recycle their investment into other projects in the jurisdiction. Once the project is operational, for example, it may be reasonable for financial investors seeking regular returns to invest in place of certain of the initial (e.g. construction party) sponsors. The importance of these risks varies from transaction to transaction. For example, in a highly regulated market like the UK the participants are major corporates not special purpose vehicles, so there is less of a focus on change in control from the Contracting Authority's perspective (although wider issues such as restrictions on foreign ownership of critical infrastructure or anti-trust may affect

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						ownership changes).
	Permitted Contracting Authority step-in	●		●	The risk associated with Contracting Authority step-in depends on the grounds for stepping in and whether due to the Private Partner's fault or not. Step-in circumstances include emergencies involving the emergency services, intervention to protect against social and environmental risks and fulfilling a legal duty to provide essential services of continuity of service. The scope and terms of the Contracting Authority step in is a key bankability point due to the potential impact on the parties' liability. **Private Partner fault:** If step in is due to Private Partner fault or an event it is responsible for, the Private Partner essentially bears the risk of costs incurred by the Contracting Authority (and itself). In some jurisdictions this liability may be capped. The Private Partner is usually given relief from performance of its affected obligations and may receive some payment in respect of its obligations. **No Private Partner fault:** In this situation, the Contracting Authority bears the risk and will be responsible for its own costs. The Private Partner will be given relief from performance of its affected obligations and be entitled to extensions of time and relief on the basis of a compensation event (except to the extent the cause falls under another provision (such as force majeure) in which case that provision will apply). It will be entitled to full payment subject to certain deductions and may also require a cost indemnity from the Contracting Authority. In each case, risk should be allocated in respect of later issues around interface between solutions implemented during step in and the Private Partner's planned delivery solution, as well as any other risks that are allocated to the Private Partner. For a more detailed analysis of typical Contracting Authority step-in provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	In some jurisdictions (e.g. France), step-in is only contemplated in a breach situation and the Private Partner typically bears all cost up to a certain percentage (e.g. 15%) of project costs. A termination right may arise if the situation subsists for a certain period (e.g. 6 – 12 months). In some jurisdictions, the Private Partner may receive full payment as if it was performing the service in full or partial payment to reflect the affected obligations. In each case this will be subject to deductions and could result in zero payment. In some jurisdictions (e.g. in some EU countries and Australia), the Contracting Authority may not accept any liability when stepping in due to a Private Partner breach or event which is the responsibility of the Private Partner, except in the case of gross negligence in an emergency step in, fraud or bad faith. The scope and terms of step-in will be particularly relevant for Private Partners in jurisdictions which are less predictable or have underdeveloped or less stable legal or regulatory frameworks as the Private Partner will be concerned to limit the Contracting Authority's potential effect on the delivery of the PPP project. It may only want to agree to such rights in projects in sectors and jurisdictions where the Contracting Authority is committed to ensuring continuous delivery of the essential public service and has demonstrable experience in such delivery
	Change in Contracting Authority ownership/status	●			The Contracting Authority should bear the risk of any change to its ownership/status which adversely affects the project, for example, where its financial covenant and credit are adversely impacted. The Private Partner will typically have a right to terminate if certain criteria are not met and be entitled to compensation.	In stable markets, this risk may not be specifically addressed in the contract if satisfactory statutory or constitutional protections are available to the Private Partner. In less stable and untested markets, more specific provisions may be required, particularly where the Contracting Authority is not a central government entity.
	Disputes		●		**Private Partner/Contracting Authority disputes:** The risk of disputes is a shared risk and the consequences will depend on the outcome of the dispute. To minimise the risk of uncertain and costly outcomes, the contract should expressly include a clear governing law (typically the domestic law of the Contracting Authority's jurisdiction) and choice of dispute resolution forum (courts or arbitration). Efficient and fair dispute resolution processes should be included which provide for an escalated procedure where matters cannot be resolved between the parties' senior management, resolution of technical disputes by an independent expert, and recourse to the chosen forum. If the contract does not contain appropriate procedures this is likely to deter potential bidders and their lenders as efficient dispute resolution is a key bankability issue. A failure by the Contracting Authority to follow contractually agreed processes may also have an adverse effect on private sector interest in other PPP projects in that jurisdiction. There may be investment treaties applicable to the PPP arrangements with foreign parties, but these are no substitute for proper dispute resolution provisions in the contract itself. The Contracting Authority may be expected to waive any privileges and sovereign immunities which it enjoys before local and	Contracting Authorities will typically select domestic law and local courts as the forum for disputes. This is for a variety of reasons including familiarity and compatibility with any concession/PPP legislation. It also minimizes the risk that local users and other stakeholders will bring claims in a different court. In jurisdictions with a less established and experienced legal system, the Private Partner is likely to want an established dispute resolution forum (such as a recognised arbitration centre for the particular region), rather than to rely on local courts. There may be circumstances where this option needs to be considered by the Contracting Authority as a necessary compromise in order to ensure the project is bankable. For the same reason, there may be certain cases where the

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					foreign courts (such as immunity from any suits by the Private Partner). Transparency and public access to information about disputes may be an important factor in choice of forum. In some jurisdictions the legal process is public which contrasts with arbitration which is generally a confidential and private process. Where additional agreements govern the relationship between the parties themselves, consolidation of related disputes and the joinder of related parties may be appropriate. To reduce the risk of concurrent processes, the agreements should include similar dispute resolution clauses agreeing to this. The Private Partner should be obliged to continue with performance of the contract while the dispute is resolved and, if so, will bear the risk of failing to do so. For a more detailed analysis of typical governing law and dispute resolution provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Contracting Authority will consider having a foreign law as the governing law of the contract. Choice of forum may be restricted in some jurisdictions due to local law requirements (e.g. prohibiting referral of disputes to a foreign court or international arbitration, or being subject to a "foreign" law). This is particularly common in certain civil law countries where solely specific administrative courts are able to judge public authority decisions and/or contracts. Additionally, there may be local law limitations (under constitutional arrangements, public policy or otherwise) on contractually agreeing to waive sovereign immunity. There may also be reputational and political issues if a Contracting Authority is seen to exempt public sector projects from the jurisdiction of domestic courts.
				●	**Sub-contractor disputes:** The Private Partner is responsible for disputes with its sub-contractors. The Contracting Authority should avoid the risk of getting involved in expensive and time-consuming peripheral disputes with other parties. However, it may want to consider allowing certain disputes it has with the Private Partner to be joined with disputes on the same matter between the Private Partner and its sub-contractor where the forum for resolving the dispute is appropriate. Any assessment of the need for joinder provisions is likely to be fact-dependent.	
DISRUPTIVE TECHNOLOGY RISK *The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.*		●	●	●	Responsibility for disruptive technology risk depends on the project circumstances. The Private Partner's obligation is to meet the output specification. If it fails to do so due to obsolescence of equipment or materials it is likely to suffer payment deductions and, above a particular threshold, may be at risk of termination. In this case it bears the risk of potentially having to replace relevant technological solutions (e.g. if the solution it has chosen is no longer supported). However, if it is performing above that threshold, the Contracting Authority cannot require it to replace technology simply because more efficient technological solutions are available unless there is an agreed contractual mechanism for doing so. To address this, the Contracting Authority may consider imposing obligations on the Private Partner to adopt and/or integrate with new technologies, such as a new fare collection system and ticketless travel through smartphone technology (e.g. which may require upgraded ticket barriers) or to allow for other foreseeable developments (such as new data collection systems for monitoring service performance). The Private Partner will seek to mitigate potential exposure through agreed cost and improvement parameters, beyond which it will be entitled to relief as a variation. There is unlikely to be any meaningful risk transfer to the Private Partner of disruptive technology risk on a heavy rail project, given its nature, as regards track infrastructure, signalling and rolling stock. However, an obligation can be imposed on the Private Partner to undertake continuous improvement for minor changes. For example, the Private Partner will usually have an obligation to co-operate/ interface with any new fare collection system. An obligation to operate in accordance with best industry practice may also impose some obligation on the Private Partner to take on improvements in technology. It may be appropriate additionally to agree a specific cost sharing mechanic under which the Contracting Authority can request technological upgrades with appropriate cost sharing according to the reason for the request (e.g. if the replacement solution will improve health and safety or have social/environmental benefits). The same considerations apply if the Private Partner wants to make a technological change which is not strictly necessary and it may be appropriate for the Contracting Authority to consider incentivising the Private Partner to propose changes which will be of public or environmental benefit.	Disruptive technology risk is becoming under increasing focus in all markets. This is particularly the case in relation to technological changes relating to environmental protection and this area may require its own treatment in the contract (e.g. through specific treatment under the contractual variations mechanism and/or through other specific contractual obligations). This risk is unlikely to be passed to the Private Partner in an emerging markets rehabilitated rail project where technology is unlikely to be a major component of the project.

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					This is a way to make technological changes which are not necessarily new (i.e. they may reflect technology which existed at the time of the procurement process, but which the Contracting Authority did not specify as a requirement in the design solution). Similarly, this is a mechanism for incorporating changes which might develop the existing design solution further. The Private Partner will seek to mitigate its potential exposure through clear contractual cost and improvement parameters, beyond which any changes will be treated as a Contracting Authority variation of the PPP contract and entitle the Private Partner to relief in accordance with the contractual variation mechanic. *See also Variations risk.* It is important to take into account that some disruptive technologies may have both upside and downside effects on a project, as well as efficiency or social and environmental benefits. It may therefore be appropriate to consider mitigating mechanisms in any contractual solution. For example, increased use of ticketless travel may mean fewer ticket staff are required, but other staff and systems costs may be incurred instead using the new technological solution. In many jurisdictions changes can be made only in accordance with pre-agreed contractual mechanisms, to avoid third party challenges on the basis that the amendments are so substantial that the existing contract should be retendered.	
FORCE MAJEURE RISK *The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.*	**Force majeure events**		●		Force majeure is typically treated as a shared risk where neither party is better placed than the other to manage the risk or its consequences. **Scope:** Force majeure is an event (or combination of events) outside the reasonable control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law jurisdictions – the definition may require the event to be unforeseeable or not reasonably avoidable. Many jurisdictions have a concept of force majeure under general law and, particularly in civil law jurisdictions, this can limit the freedom of the parties to derogate from the scope of the legal concept and agree something different in the contract. However, most PPP contracts include specific force majeure provisions, whether they are civil law or common law governed, as this provides contractual certainty. The contract should be clear to what extent underlying law applies. **Approach:** Depending on the jurisdiction, the definition of force majeure may be an open-ended catch-all definition, an exhaustive list of specific events, or a combination of both. The open-ended catch-all definition is often seen in civil law-governed contracts and may also be more appropriate in markets which are less developed or stable and where there is little precedent or certainty. A non–exhaustive list of events may also be included. Qualifying events may be "natural force majeure" events (such as natural disasters and severe weather events, and possibly climate change events) and certain "political force majeure" events (such as strikes, war, government action etc). The exhaustive limited list approach is more common in developed and stable markets where the Private Partner has more certainty as regards the risk of events occurring and how it can manage them. It may be comfortable that events which might be force majeure in a less mature market (e.g. some types of industrial action) may instead be treated as relief events in a developed and predictable market. Under this approach, force majeure events are typically (but not necessarily exclusively) events which are uninsurable. Typical events include (i) war, armed conflict, terrorism or acts of foreign enemies; (ii) nuclear or radioactive contamination; (iii) chemical or biological contamination; and (iv) discovery of any species-at-risk, fossils, or historic or archaeological artefacts. As market practice develops, certain climate change events might also be included. *See also Site Condition under Land availability, access and site risk and Climate Change event under Environmental risk.* For a more detailed analysis of typical force majeure provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	The scope of force majeure will depend on the particular project and jurisdiction. In France, for example, the affected party is relieved from its obligations if force majeure prevents performance and French jurisprudence has defined the characteristics of a force majeure event as (i) beyond the control of the parties, (ii) unforeseeable and (iii) impossible to overcome. In less mature markets, the list of specific events is likely to be wider than in more mature markets and include natural risk events, which typically can be insured (e.g. fire / flooding / storm etc), and force majeure events which typically cannot be insured (e.g. strikes / protest, terror threats / hoaxes, emergency services action, suicide / accident, passenger emergency, collision / derailment, emergency services, trespass etc). The extent to which the risk will be shared or allocated to one of the parties will depend on its nature and on the particular jurisdiction. Manufacturer supply agreements for rolling stock will generally have specific force majeure arrangements and will

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					Risk qualification: The Contracting Authority should consider whether it can limit its risk by carefully defining the events which qualify as force majeure, and/or qualifying or excluding them as appropriate. For example, in some projects earthquakes may only qualify as force majeure if they are above a specified seismic intensity. Alternatively, an event may only qualify if it has subsisted for a particular length of time. In some projects, risk is allocated to the Private Partner and/or shared for the first few months, and subsequently becomes a shared risk or Contracting Authority risk (with entitlement to terminate if the force majeure event continues for more than a defined time period (e.g. 6 – 12 months)). Using an open-ended definition of force majeure widens the risk shared by the Contracting Authority, but may be appropriate in some markets. The availability of insurance for certain events will be one of the main criteria in determining whether an event should qualify as force majeure and/or how the consequences should be addressed. Certain risks may be more likely to constitute a force majeure event if they occur in one phase than another (e.g. events in the construction/rehabilitation phase affecting materials supply).	typically terminate after prolonged force majeure.
		●			**Contracting Authority political risk:** In some markets, certain political risk events may need to be allocated in full to the Contracting Authority because the Private Partner cannot reasonably be expected to bear any of the risk and/or because the Private Partner may price in such a high contingency in respect of the risk that it makes the contract unaffordable. Where the Contracting Authority bears the full risk of these risks, this may be addressed under the force majeure provisions but with "political force majeure" receiving different treatment to the shared risk force majeure events. Alternatively, these political risks may be treated in a separate provision under the heading of "material adverse government action" or similar (which may also include other forms of event for which the Contracting Authority is deemed solely responsible). *See also MAGA risk.*	In certain markets, it may be necessary to differentiate how similar types of risk events are treated, depending on where they occur. For example, in more politically volatile jurisdictions, war events might be wholly a Contracting Authority risk where they occur within the country, but a shared risk otherwise. *See also MAGA risk.*
	Force majeure consequences		●		The basic principle of force majeure is that the risk is shared and each party bears its own losses. However, there may be circumstances where it is appropriate for the Contracting Authority to provide relief to the Private Partner, provided the Private Partner has made reasonable efforts to mitigate the force majeure effects and to the extent it was not responsible for the event. In addition to granting the Private Partner relief from breach of its affected obligations, certain time or cost relief may be granted (sometimes where a particular threshold of costs or time delay has been reached). This will depend on the phase in which the event occurs and should be considered at the time, together with the impact of the event on the Contracting Authority and the options available to it. Termination following prolonged force majeure (e.g. 6 – 12 months) may also be available. If the Private Partner has the ability to terminate the PPP contract on the basis of a prolonged force majeure event, the Contracting Authority may want to include an option to require the PPP contract to continue, provided that the Private Partner is adequately compensated. This approach is more likely to be encountered in a more established PPP market. **Construction/rehabilitation phase:** The consequences for the Private Partner of a force majeure event in the construction/**rehabilitation** phase are that it may be unable to meet all or part of its contractual obligations, in particular key dates (such as the operation commencement date); may suffer delayed and/or lost revenue; and may incur additional financing and other costs (e.g. in relation to mitigating the event), both during and after the force majeure event. As well as relief from breach of the affected obligations, the Contracting Authority may decide to grant certain cost relief (either while the force majeure event subsists or through the operating phase if the contract continues) on the basis that the Private Partner has limited means to absorb additional costs and it may be in both parties' interests to avoid the Private Partner going insolvent. For example, it may elect to make a compensation payment at the time or, if the contract continues, grant extensions of time and/or an extended operating period so that the Private Partner has the opportunity to recoup lost revenue and costs. Alternatively, availability payments could be increased or (subject to law and social and political ramifications), an increase in	The approach to cost and deductions relief varies across jurisdictions. In developed markets (particularly some civil law jurisdictions) Contracting Authorities may be more willing to make compensation payments during a force majeure event. In some jurisdictions, the contract will expressly identify only specific force majeure risks for which the Contracting Authority will grant financial relief (e.g. raw materials price volatility). It may not be as common in less mature markets for cost compensation to be paid during force majeure unless caused by an event deemed to be a political risk for which the Contracting Authority is wholly responsible (e.g. a MAGA event). *See also MAGA risk.* Force majeure relief should be distinguished from relief available under any hardship doctrines *(see Glossary definition)* existing under the underlying law of the project jurisdiction.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					fares permitted. **Operating phase:** The consequences for the Private Partner of a force majeure event in the operating phase are that it may be unable to meet all or part of its contractual obligations (including failing to deliver the service); may suffer delayed or lost revenue; may incur additional financing and other costs; and may possibly be unable to service its debt repayment obligations. Again, in addition to relief from breach of its affected obligations, the Private Partner may be granted grant certain cost relief on the same principles as described in the construction/rehabilitation phase. In an availability payment model, it may also grant payment deductions relief or relaxed performance standards and in a demand-based model some element of fare subsidy. **Insurance:** Project insurance (physical damage and loss of revenue coverage) will be a key mitigant in respect of physical damage, to the extent it is available, and an important consideration in respect of compensation and how to continue the project. For example, if the network or the rolling stock is destroyed prior to handover as a result of force majeure, the Private Partner will typically be obliged to re-build/re-procure it at its own cost, to the extent the risk is insurable. Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common.	
MATERIAL ADVERSE GOVERNMENT ACTION RISK (MAGA) *The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.*		●			In projects where a MAGA provision is appropriate, the Contracting Authority bears the risk of specific "political" actions having a material adverse effect on the Private Partner's ability to perform its contractual obligations, or on its rights or financial status. The Contracting Authority is responsible for costs and delays and is typically at risk of termination for prolonged MAGA events. Although not all jurisdictions use the term "MAGA", many have equivalent provisions under different terminology. MAGA events typically include: deliberate acts of state such as outright nationalisation or expropriation of the PPP contract; a moratorium on international payments and foreign exchange restrictions; certain governmental acts (such as not granting essential approvals where the Private Partner is not at fault or, in a heavy rail project, building a competing road adjacent to the project network); and politically-inspired events such as national strikes. Change in law is also a form of MAGA. Although some of these events may not seem as obviously within the Contracting Authority's control itself as others (e.g. if they relate to other arms of government), market practice is that they are accepted by the Contracting Authority. This is because passing them to the Private Partner may result in it being unable to enter into the contract or pricing in such contingency that the contract is unaffordable. The list of events will depend on the individual project circumstances and the position agreed on force majeure events, and the Contracting Authority can limit its risk by qualifying relevant events by reference to a clearly defined materiality threshold. The process and consequences of MAGA are broadly similar to force majeure as regards the parties trying to find a solution and how the Private Partner may be compensated. The key difference is that the underlying principle behind MAGA relief is to put the Private Partner back into the position it would have been in had the MAGA event not occurred. The parties may terminate for prolonged MAGA, with compensation payable on a similar basis to Contracting Authority default termination. The Contracting Authority may be able to reduce its liability in some cases if it can negotiate different treatment for MAGA events which are not as clearly within its own control and influence. For a more detailed analysis of typical MAGA provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. *See also MAGA/Change in law termination under Early Termination risk.*	MAGA type clauses are more likely in less predictable and stable markets where the Private Partner (and its lenders) may require a clear regime to address specific government-related actions for which the Contracting Authority is responsible. This may be because of an actual or perceived likelihood of certain MAGA events occurring (e.g. war or civil unrest), or a lack of track record of PPP contracts being run successfully free from political interference over long periods of time and across political cycles. In mature politically stable markets, the Private Partner (and its lenders) are often comfortable that the type of MAGA risks likely to arise are limited. Instead of being detailed in a specific Contracting Authority risk clause, they can be addressed through the shared risk force majeure provisions and compensation event type provisions (and the general right to terminate for Contracting Authority default in limited circumstances). Investors and lenders may be able to obtain political risk insurance in respect of some of these types of risks. This is more common in politically young or unstable markets. Some jurisdictions are more politically volatile internally than others and certain political risks will be treated differently. For example, war events may be treated as MAGA if they occur within the country, and shared risk force majeure if outside it.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
CHANGE IN LAW RISK *The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.*	**Compliance with applicable law**	 ● ●		● [●]	Compliance with applicable law and mandatory regulation is each party's risk. The Private Partner is typically subject to an express contractual obligation and will be in breach if it does not comply with applicable law, subject to change in law relief. The contract must be clear what laws and other mandatory regulations and industry codes the Private Partner is obliged to comply with. This is essential not only so the Private Partner can price its compliance, but also in order to determine what constitutes a change in law so that change in law risk can be allocated effectively. Compliance by third parties is likely to be a Contracting Authority risk where it has failed to enforce compliance and there is an adverse effect on the project (e.g. this may be the case where the police fail to take action to prevent or remove trespassers unlawfully on or next to the track and full service provision is prevented for a particular period). *See also Maintenance Standards under Operating risk.*	
	Change in law (and taxation)	●	[●]		The Contracting Authority primarily bears the risk of unexpected changes in law which were not in the public domain before a specified cut-off date in the bid phase and which cause the Private Partner's performance of its contractual obligations to be wholly or partly impossible, delayed or more expensive than anticipated (or impact its investors). This is because the Private Partner has contracted to provide the specific project at a specified price based on a known legal environment and typically has limited means of offsetting adverse consequences of unexpected law changes. As change in law may also benefit the Private Partner, change in law clauses are often reciprocal, to ensure the Contracting Authority benefits from the "positive" financial consequences of a legislative change. The Contracting Authority's risk can be mitigated by ensuring that the contract clearly defines what constitutes a change, the relevant cut-off date and what constitutes being in the public domain. This will vary according to the nature of the project and jurisdiction concerned. There are various approaches to risk allocation as briefly summarised below and the degree of risk sharing will depend on the type of change and the approach suitable to the maturity and stability of the relevant legal market. Any risk that is transferred to the Private Partner is likely to be reflected by contingency pricing in its bid which may result in the Contracting Authority paying for something that never happens. The Contracting Authority should be mindful of how it will fund changes in law which are at its risk should they arise. For a more detailed analysis of typical change in law provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Change in law risk may be treated as a MAGA event if the treatment agreed for this form of political risk is the same as for other MAGA events. Generally speaking, where a detailed approach to risk allocation is involved and where the consequences do not lead to termination, change in law is best dealt with separately – this is more typical is established markets. *See also MAGA risk.* In defining a change it may be appropriate for the definition to include any modification in the interpretation or application of any applicable law. This is particularly likely in common law jurisdictions. As highlighted by the different approaches, in mature legally stable markets the Private Partner will likely have less protection than in jurisdictions where changes in law are less predictable and/or more likely due to underdeveloped or less stable legal or regulatory frameworks. Approach (a) is often seen in developing markets with less established legal environments as it may be the only way that private finance can be raised and should also enable the Private Partner to offer a more competitive price. Approach (b) has also been seen in more developed markets and some emerging markets. Approach (c) is seen in more experienced PPP markets. While it will involve some contingency pricing, this approach is considered generally more beneficial to the Contracting Authority, but may not be bankable in every jurisdiction and should be contemplated on a case-by-case basis. Even in markets using this approach there will be instances where this risk allocation is not fully achievable due to the nature of the PPP project and the extent to which the applicable legal and regulatory regime is settled. Projects in the rail sector involve a close interaction with passengers and safety regulation plays a paramount role. A
		●			**Approach (a) Contracting Authority risk:** The basic approach is that the Contracting Authority bears all the risk of change in law and provides full relief to the Private Partner.	
		●	●		**Approach (b) Limited risk sharing:** A more nuanced approach is for the Private Partner to accept a certain annual monetary threshold up to which it accepts any unexpected change in law risk and above that threshold the Contracting Authority bears the risk/cost. This enables the Private Partner to price the risk it bears.	
			●		**Approach (c) Advanced risk sharing:** With this approach the Private Partner is kept whole in respect of unexpected changes in law which are: (i) discriminatory (e.g. to the project or the Private Partner); or (ii) specific (e.g. to the rail sector or to investors in rail businesses); or (iii) require capital expenditure after construction/rehabilitation completion (i.e. in the operating period). (Applicable law may protect the Private Partner from unexpected changes in the construction/rehabilitation period if the relevant legal regime provides that changes in law affecting capital expenditure during construction/rehabilitation do not apply retrospectively.) With this more detailed approach the Private Partner bears (some of) the	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					general business risk that applies to all businesses (including operational expenditure or taxation affecting the market equally) and can absorb this in part through the indexation provisions typically contained in the pricing mechanism (or possibly through increased fares).	change in health and safety legislation may well be of general effect but may have a disproportionate effect on the rail sector. The parties are expected to comply with foreseeable changes in law. Past models (including in the UK) used to require the Private Partner to assume, and price for, a specified level of general change in law capex risk during the operational period, before compensation would be paid. The UK Government ultimately decided that this allocation did not represent value for money and reversed this position. Some countries which adopted the UK model had already taken this approach. Although a Contracting Authority may bear all change in law risk at the start of a PPP program, once a track record and/or legal environment is established in its jurisdiction which gives the private sector greater confidence in the stability and predictability of the regime, Contracting Authorities procuring new PPP projects may be able to explore some risk transfer to the Private Partner. A termination right as a consequence of change in law is not considered necessary in all jurisdictions. In civil law jurisdictions it is common for the Private Partner to have a specific right to terminate the contract where performance of the PPP contract would entail a breach of law that cannot be remedied by a Contracting Authority variation. This is not usually seen in common law jurisdictions with established legal frameworks as the Private Partner and its lenders are able to take a view that it is highly unlikely that a change in law would result in such drastic consequences without means of holding the government accountable. In civil law jurisdictions, Private Partners may sometimes rely on underlying legal principles such as hardship doctrines *(see Glossary definition)* for relief. However, widespread market practice across civil and common law jurisdictions has shown that the private sector is unwilling to enter into PPP contracts on such a basis as both lenders and sponsors require express contractual certainty in relation to the potentially significant impact of changes in law.
			●		**Bespoke mechanisms:** It may be appropriate to have bespoke mechanisms for certain changes in law, such as those relating to climate change and environmental protection – market practice is still developing in this regard. *See also Climate change event under Environmental risk.*	
		●			**Consequences:** The Private Partner should always be entitled to relief from breach of contract where a mandatory change in law occurs which conflicts with an existing obligation or would make compliance illegal (and/or impossible). The contract typically contains a mechanism by which the Contracting Authority is deemed to request a corresponding contractual variation of the relevant obligation. The nature of the cost relief given to the Private Partner will be as described for a compensation event. Alternatively, the Private Partner may be entitled to a right to terminate (typically on a Contracting Authority default basis). Costs could also be passed on to the users of the facility,but the Contracting Authority is likely to want to place contractual constraints on any fare increases for public policy (and customer protection) reasons. Increasing the fare levels could also undermine users' desire for the service and result in lower PPP project revenues than forecast for the Private Partner.	
		●			**Stabilization provisions:** Some projects may also provide for a stabilization clause that entrenches certain legal positions (such as the current tax regime) against any future changes in law. This may require a level of parliamentary ratification of the project contract.The stabilization method is generally not favoured by governments or non-governmental organisations (e.g. because the concept of Private Partner immunity from changes in environmental protection laws is unsatisfactory) and the Contracting Authority should instead seek contractual mechanisms to address such matters.	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
EARLY TERMINATION RISK *The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant;.*	**Contractual termination provisions**		●		The allocation of risk for early termination depends on the termination grounds and these also determine the financial consequences of termination. The key risks relating to the contract being terminated early are that the Private Partner is deprived of its expected revenue stream to repay the debt it incurred developing the project and the project asset or service ceases to be delivered for the Contracting Authority. The complexity and variety of termination circumstances result in parties in all jurisdictions almost always seeking to include clear contractual mechanisms in the PPP contract which set out comprehensively what circumstances may give rise to termination, who may terminate and what the consequences of termination will be for the Contracting Authority and the Private Partner, as well as for lenders or other key third parties. Without such certainty, bidders and potential lenders may be deterred from bidding. The Contracting Authority should not be "unjustly enriched" by receiving an asset for which it has not paid the expected contractual price. This is an underlying legal principle in most jurisdictions and should be taken into account in the drafting of applicable termination compensation provisions. The Contracting Authority, besides making a payment, will need to consider the other risks associated with termination, such as the reputational risks, continuity of service delivery, completion of the works or maintaining the asset itself, or re-tendering the project (or a mix). For a more detailed analysis of typical early termination and termination payment provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	The increasingly market standard approach in all jurisdictions is to include contractual termination provisions in the PPP contract. However, in some civil and common law jurisdictions there may be underlying laws addressing certain termination rights and their consequences which apply without the PPP contract having to include termination provisions. While relying on underlying law rather than express contractual provisions is an approach less likely to be seen in common law jurisdictions, there can be certain exceptions as described, for example, under *Contracting Authority default termination and Voluntary termination by Contracting Authority*. Furthermore, if the transaction is financed in a shariah-compliant manner (such as through an ijara (lease) structure) consideration must be given to how ownership will be transferred following the termination. This is typically achieved through a Purchase Undertaking or Sale Undertaking of the underlying assets. In less developed PPP markets, it may not be easy to re-tender a project if there is no pool of alternative contractors to take on the project. In certain circumstances, the Contracting Authority may require a direct agreement in relation to a maintenance contract. It will invariably require a direct agreement in relation to any rolling stock lease, preventing the Private Partner from terminating without giving the Contracting Authority certain step in rights, designed to enable the Contracting Authority to perform its statutory duty to provide railway passenger services.
	Contracting Authority default termination	●			**Termination right:** The Contracting Authority bears the risk of termination for breaches which have a material adverse effect on the Private Partner or the project (e.g. expropriation in relation to the PPP project and failure to pay). The test is typically that the default event has made it impossible for the Private Partner to perform the contract or rendered the continued relationship untenable and any materiality threshold should be clearly defined. *See also MAGA risk*. To mitigate the risk of termination, the Contracting Authority should ensure that grace periods are built in (e.g. for non-payment) so that it has the opportunity to rectify the default and reduce the risk of a termination right arising purely from, for example, administrative error. **Compensation:** Although the exact approach depends on the relevant jurisdiction, the underlying principle is that the Private Partner should be fully compensated by the Contracting Authority as if the PPP contract had run its full course. The Private Partner would typically receive an amount in respect of senior debt (including where applicable hedge break costs), junior debt, equity investment and a level of equity return which from the Contracting Authority's perspective should where possible reflect the actual performance level of the Private Partner. Redundancy and sub-contractor break costs will also be included. The Contracting Authority should mitigate the amount it pays out by setting off deductions available to the Private Partner in respect of, for example, insurance proceeds, bank accounts, hedge break	There are some common law jurisdictions (e.g. Australia) where the Private Partner is expected to rely on its common law rights to terminate for Contracting Authority default instead of having an express contractual right. This may be because termination for Contracting Authority default is such a fundamental step with enormous business and other ramifications for the Private Partner that the focus is instead on the enforceability of the contractual payment and time/cost compensation provisions applicable to breaches by the Contracting Authority. Similarly, in civil law jurisdictions the PPP Contract may be silent, and the Private Partner may need to apply to an administrative court to request contract termination (as was the case in earlier PPP contracts in France). Relying on underlying law is likely to deter bidders in markets where there is insufficient legal precedent and certainty.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					entitlements and surplus maintenance funds.	
	MAGA / Change in law termination	●			**Termination right:** Some PPP contracts may contain specific MAGA provisions which entitle the parties to terminate the PPP contract if there is a protracted MAGA event. The type of political risk events addressed by a MAGA provision may include the type of Contracting Authority defaults outlined under *Contracting Authority default termination* and also change in law where there is no solution agreed to continue the contract. This could mean that a PPP contract (i) only has a MAGA provision, (ii) only has a Contracting Authority default provision, or (iii) has a combination of the two and/or separate provisions addressing specific political risk matters such as changes in law. *See also MAGA risk and Change in law risk.* **Compensation:** The same principles will apply as outlined for Contracting Authority default termination but some jurisdictions may only allow the Contracting Authority to terminate for protracted MAGA-style events by implementing a voluntary termination. The Contracting Authority may be able to negotiate a reduced termination payment in respect of "no fault" MAGA events. *See also MAGA risk and Voluntary termination by Contracting Authority under Early termination risk.*	Markets which are politically and legally stable are less likely to have separate MAGA termination provisions as the Private Partner and its lenders will be comfortable relying on a Contracting Authority default termination provision, combined with a shared risk force majeure provision and other contractual provisions (e.g. compensation events) which provide time and/or money relief to the Private Partner in relevant circumstances of Contracting Authority responsibility.
	Voluntary Termination by Contracting Authority (Also commonly referred to as termination for convenience, public policy or interest. termination at will or unilateral termination.)	●			**Termination right:** In return for having the right to terminate for convenience, the Contracting Authority bears the risk of this event. It should have fully considered and prepared for termination before deciding to exercise its right to terminate. The notice period should be the minimum sufficient for both parties to make appropriate arrangements in respect of the handback of the project and to facilitate compliance with handback obligations. **Compensation:** The Private Partner's prime concern will be to ensure it is fully compensated for such early termination and able to comply with its handback obligations. The termination payment will be based on the same principles as for Contracting Authority default.	In some jurisdictions (more typically civil law) the Contracting Authority may be entitled to terminate the PPP contract on the grounds of public interest even without an express contractual right. This inalienable right is rarely invoked but the private sector (Private Partner, sub-contractors and lenders) will still require the PPP contract to cater for this low probability but high risk event as comprehensively as possible. The Contracting Authority may be required to substantiate the validity of the public interest ground (for instance, termination may not be permitted purely on financial grounds). In some jurisdictions (e.g. France) it is not possible to contractually waive the right to unilaterally terminate in the public interest, but it is possible for parties to agree in advance the procedure and consequences of such termination. In practice, these are usually identical to voluntary termination, or even a Contracting Authority default scenario. This is because the Private Partner is not

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
						responsible for, nor capable of mitigating, a public policy-driven decision to terminate unilaterally.
	Force Majeure and Uninsurability termination		●		**Termination right:** The risk of a force majeure termination arising is shared by the parties. Typically it will arise after 6-12 months of prolonged force majeure where the parties are unable to agree a solution to continue with the project. **Compensation:** The Contracting Authority pays termination compensation to the Private Partner reflecting the principle that force majeure events are neither party's fault and the financial consequences should be shared. This is not "full" compensation as this would result in the Contracting Authority bearing all the financial pain. Typically outstanding senior debt (including where applicable hedge break costs), initial equity, redundancy payments and sub-contractor break costs will be paid, less any applicable deductions as on Contracting Authority default termination). The Private Partner will lose all its forecast equity return (i.e. its anticipated profit) but the payment will be sufficient to repay all of its outstanding senior debt which will help address bankability concerns as to whether the debt will be kept whole in this termination scenario. The equity element will serve as a buffer for lenders if the termination payment does not cover 100% of the outstanding debt.	In some (typically less developed) markets, the Contracting Authority may succeed in negotiating paying no termination compensation in respect of certain natural risks which are insurable (and would reasonably be expected to be insured against as good operating practice), or a reduced amount reflecting insurance payments received (or receivable) by the Private Partner. This to some extent reflects the practice in more developed markets where these type of events may instead be classified as relief events which entitle the Private Partner to time relief only (but no ultimate right of termination). This will of course depend on the risk assessment by the Private Partner and its lenders. In less mature markets it is not uncommon for the senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted.
	Private Partner default termination			●	**Termination right:** The Private Partner bears the risk of termination by the Contracting Authority for serious failures by the Private Partner connected to delivering the PPP project. Termination events may be performance-related or relate more specifically to the financial status and corporate activity of the Private Partner. In order to mitigate the risk of termination, the contract should clearly define the default events and they should have reasonable in-built tolerance levels so that an appropriate threshold of poor performance has to be reached before termination rights arise. The opportunity to rectify should be given where feasible. The Contracting Authority can mitigate the risk of a termination payment arising as it has control over serving the termination notice that triggers it. It also has the ability to mitigate against the risk of Private Partner default even before the PPP contract is signed, by careful selection of the winning bidder. *See also PPP Project Preparation and Delivery in the Introduction.* **Compensation:** The Private Partner will typically be entitled to a compensation amount equal to a pre-set percentage (around 80 – 100%) of the scheduled outstanding debt, minus applicable deductions, and no equity compensation. The aim of a lender "hair cut" of less than 100% debt is to incentivise lenders to conduct proper due diligence and exercise their monitoring and step-in rights to ensure the Private Partner delivers the project satisfactorily so that it avoids termination and can repay the whole of the lenders' outstanding debt. Alternatively, a market value retendering of the contract may take place (or be deemed to take place) and the compensation paid to the Private Partner will be the price tendered (or deemed tendered), less applicable deductions. A third alternative is for the Private Partner to receive a payment based on book value.	In some civil law jurisdictions, insolvency laws may have an impact on the right to terminate the PPP in the event of insolvency of the Private Partner (or its shareholders). A debt-based compensation method is the most common approach in emerging markets and availability-based PPP projects in jurisdictions such as France and is also seen in Germany. The market value retendering approach is more likely in a mature PPP market where there are likely to be a number of potentially interested purchasers in the relevant sector. Lenders to PPP projects in certain jurisdictions or in relation to certain assets may be reluctant to rely on a market-based valuation method for fear of undervaluation or underpayment. This is particularly likely to be the case in emerging markets where there is a limited PPP track record and a limited market. Some European jurisdictions have followed a book value approach but this may not accurately reflect sums owed and is not as common. In less mature markets it is not uncommon for a high percentage or the full senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted. The higher percentage haircut is seen in markets where the risks in respect of project failure and of the ability to rescue it are considered low (e.g. from a technical or resourcing perspective, or because the market is known), and the overall security package available to Lenders is otherwise sufficient to cover their debt. Lenders in such markets (e.g. in some projects in the US) may alternatively accept no compensation for the same reason but this is not common

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	Sub-category	Public	Shared	Private		
						practice. If available in the relevant jurisdiction, lenders will seek a direct/tri-partite agreement with the Contracting Authority. The purpose of this is to give lenders step-in rights if the Contracting Authority serves a default termination notice or if the Private Partner is in default under the loan documentation. The lenders would typically be given a grace period to gather information, manage the Private Partner and seek a resolution to rescue the project and the right to ultimately novate the project documents to a suitable substitute private partner.
	Strength of Contracting Authority payment covenant	●		[●]	The Contracting Authority bears the risk of making the relevant termination payment on time and in the amount required. To mitigate the risk of failure, it will need to assess whether it will be able to pay a lump sum if such a large payment is not budgeted for or does not have backing from its government treasury department. Payment over time may be preferable and the Contracting Authority should in any event try to negotiate a reasonable grace period long enough to raise the necessary funds. The Private Partner and its lenders will typically want to close off their exposure to a terminated PPP project and avoid Contracting Authority credit risk as soon as possible. It is likely that they will favour a lump sum payment, particularly on Contracting Authority default termination where the most likely cause of termination is failure to pay. In some cases, the Contracting Authority may be asked to provide credit support of its payment obligations. Lenders may be reluctant to release security interests held over the PPP project assets until compensation payments have been made in full. This may make the transfer of relevant assets back to the Contracting Authority difficult. In certain circumstances, the Contracting Authority may be able to negotiate an interim solution at the time of the termination, such as an arrangement whereby it has a right to access the PPP project assets during the period from the termination date until all termination compensation is paid, so long as the Contracting Authority complies with the payment terms with respect to such compensation. This approach is unlikely to be agreed at contract signature and certain issues will need to be clearly addressed (such as liability for damage to the asset while in the Contracting Authority's use).	In jurisdictions where the Contracting Authority's credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in less stable regimes or emerging markets or in projects where the Contracting Authority is not part of central government. Support may be available via multilateral or export credit agencies or central government or sovereign guarantees. Lenders and investors may seek political risk insurance to cover the risk of the Contracting Authority or any government guarantor defaulting on its payment obligation. A key concern for lenders in some jurisdictions relates to the requirement for parliamentary approval of appropriations in respect of contingent liabilities under project contracts. In the Philippines, for example, the government requires a two-year grace period for the payment of termination compensation as this is the maximum period of time for the parliamentary appropriation process. In less mature markets, issues of convertibility of currency and restrictions on repatriation of funds are also bankability issues upon termination. Release of security interests may not be a relevant concern in some jurisdictions, such as France, where lenders would not typically take security over the project assets as this would only give them limited rights. They would more usually take security over the Private Partner itself.
CONDITION AT HANDBACK RISK *The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.*				●	The Private Partner bears the risk of the project assets and land being handed back to the Contracting Authority in accordance with the contract and meeting the required handback conditions. This is linked to maintenance of the assets during the contract and may be complex given the need to define relevant asset standards. The circumstances around handback will vary from one PPP contract to another and will depend on matters including: the Contracting Authority's intentions with regard to post PPP usage, the nature of the asset (e.g. the network and rolling stock is usable for much longer than the initial PPP project duration), the stage at which the PPP contract comes to an end, whether termination occurs during construction/rehabilitation or operation and any requirements under underlying laws in the relevant jurisdiction. To mitigate the risk of unexpected consequences, the contract should set out the requirements and process, including the Private Partner's obligations to facilitate an effective handover,	In civil law jurisdictions, assets built on publicly owned land and/or used for a public service will often be subject to particular restrictions. For example, mandatory handback at termination may be embedded in underpinning administrative law principles or legislation and there may be mandatory access or rights of use for third parties. In some countries (such as France), ownership will sit with the Contracting Authority throughout the duration of the contract, with assets built on such land automatically becoming Contracting Authority property as soon as they

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					hand over relevant licences and documentation and cooperate with the Contracting Authority so that the asset can continue the service. To mitigate the risk of the assets not being returned in the expected condition, the contract should include a mechanism for surveying conditions in advance of expiry and requiring relevant remediation. Typically the contract will provide for a retention fund to be established to fund remediation a certain period in advance of contract expiry, or for the Private Partner to provide some form of financial bond. Any funds remaining in existing lifecycle funds should be used/shared appropriately. For a more detailed analysis of typical handback provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.*	are built and handed back for free at natural expiry. The PPP contract will set out the specific accompanying detail about asset condition and cooperation obligations, taking into account the underlying mandatory law provisions. Typically, in a common law jurisdiction, the Private Partner will have been leased the PPP project land by the Contracting Authority (and may have been permitted to sub-lease it to the relevant sub-contractors). The headlease to the Private Partner is usually coterminous with the PPP contract, so the land will revert to the Contracting Authority at the same time as the PPP project asset. In civil law jurisdictions, the PPP project land may have been made available through an administrative contract such as a "land concession" or other precarious right of use and is land within the public domain.

APPENDIX F:

Port PPP Risk Allocation Matrix

PPP RISK ALLOCATION MATRIX: PORT

PURPOSE OF MATRIX	**This appendix contains a matrix of risks typically found in a port PPP transaction, together with guidance on how those risks are typically allocated between the government Contracting Authority and the Private Partner, the rationale for such risk allocation, mitigation measures and possible government support arrangements. It aims to provide governments (and, additionally, private sector stakeholders) with targeted guidance on the appropriate allocation of project risks in a PPP contract.**
CAUTIONARY NOTE	**This matrix contains an indicative – but not exhaustive – list of the main risks typically to be considered in ports PPP projects and their typical allocation between the Contracting Authority and the Private Partner. It may be used as a starting point for understanding the risk allocation issues commonly arising in ports projects and for developing an individual risk matrix for the project in question. A project's individual circumstances and its jurisdiction will influence the appropriate contractual risk allocation and there may be additional risks that need to be considered.** *See Detailed Risk Identification and Analysis in the introduction*.

TYPE OF PROJECT AND SCOPE CONSIDERATIONS	This matrix addresses the common risks for the design, build, finance, operation, maintenance and transfer to the Contracting Authority (at the end of the PPP contract) of a new sea port container terminal. The scope of a sea port PPP project will be determined by the Contracting Authority and will depend on the cargo throughput projections in order to determine what type of terminals will be required at the port i.e. container terminal, bulk cargo terminal, liquids terminal, roll on roll off cargo terminal.
ASSUMPTIONS	Site selection is determined by the Contracting Authority in both emerging and developed markets. Generally there will be no competing ports within a specified geographical radius of the site (although there may be other ports that do not create meaningful competition) and the Contracting Authority will remain under an obligation not to procure any such competing ports for a specified time period. The Private Partner is granted a concession to develop and operate the port and given the exclusive right to collect the tariffs from port users. The Private Partner finances the development of the new port and only starts to receive payment from port users once the port is in operation. The operation and maintenance requirements of a port PPP project will, generally, be carried out by the Private Party rather than a sub-contractor as the Private Party will be an experienced port operator with responsibility for the development and operation of the port/terminal concession. Marine services, emergency services and customs remain public sector obligations.
MARKET APPROACHES	The concession-based approach is the most common way for Contracting Authorities to deliver port infrastructure with private sector involvement. Other non-PPP contractual structures and procurement models could be used if the Contracting Authority wanted to retain certain control itself, such as more traditional procurement of construction or operational elements of a port, and procurement of standalone maintenance and other service contracts. The risks addressed in this matrix and much of the risk allocation guidance will be relevant to different contractual structures and procurement models, but will need to be adapted appropriately taking into account the scope and duration of the relevant contract and financing methods (such as whether there is a need for long term third party lending and how the pricing mechanism works).
PROJECT REVENUES, INCLUDING PAYMENT MECHANISMS	Project revenues are generated through port user payments to the Private Partner. Where the project revenues exceed project costs over a certain threshold, there may be variable concession fee paid by the Private Partner to the Contracting Authority depending on the level of project revenues. In a port project, the Private Partner will typically pay a concession fee to the Contracting Authority which may be a fixed fee or a percentage of annual user payments collected by the Private Partner (i.e. demand/revenue risk). Port user revenues may be supported by minimum revenue guarantees from the Contracting Authority if port user revenues are unlikely to be sufficient to cover the project costs (although this would be unusual). The Private Partner may also procure revenue or service guarantees from commercial entities, such as shipping lines or specialist operators to mitigate demand risk.
KEY RISKS	**Demand/revenue risk associated with the user payment through tariff structure:** Port PPP projects are generally revenue based concessions whereby the Private Party pays a fee to the Contracting Authority for the right to operate the port concession and then collects all tariffs for services provided in the port from port users. As such the Private Party assumes demand/revenue risk and is therefore very sensitive to any factors that could adversely impact user demand for port services. This may be mitigated if there is a minimum revenue guarantee from the Contracting Authority or revenue or service guarantees from commercial entities, such as shipping lines or specialist operators. *See Demand risk.* **Environmental/social risk:** Given the nature of the services provided on a port PPP (e.g. cargo handling, loading, unloading) there is potential for significant environmental and social impact which needs to be carefully considered and managed as part of the PPP project. *See Social risk and Environmental risk*. **Force majeure risk: I**nclement weather and local political climate can have a serious impact on port PPP projects, particularly if the local port authority is not the Contracting Authority (although this is unusual). See *Force majeure risk and Material Adverse Government Action risk*.
OTHER CONSIDERATIONS	**Associated Supporting Infrastructure:** Port project development is often dependent on associated supporting infrastructure to ensure smooth onward distribution of cargo. If the existing supporting infrastructure is insufficient to support the projected throughput volume of cargo that will be processed by the new container terminal then the Contracting Authority will have to

	implement an infrastructure upgrade (typically in the supporting road and/or rail networks) prior to or simultaneously with the development of the new container terminal at the port. The Contracting Authority will be responsible for all aspects of this infrastructure upgrade and failure to implement these responsibilities will generally result in contractual relief being provided to the Private Partner under the port PPP contract. **Responsibility for Marine Services:** The Contracting Authority will remain responsible for the provision of marine services on a day to day basis for the duration of the port project. Marine services are very varied by typically consist of harbour master services (pilotage, towage, berthing procedures etc.), marine dredging and maintenance of underwater infrastructure. Failure to provide marine services by the Contracting Authority will generally result in contractual relief being provided to the Private Partner under the port PPP contract. **Competing Facilities:** It is common in port PPP contracts to include provisions which prevent the Contracting Authority from developing similar and competing port facilities within a certain geographical area in order to reduce the demand risk for container terminal services provided by the Private Partner for the duration of the port PPP project. It is also common for the Private Partner to be granted the exclusive right to develop container terminal services in the port as a whole again to mitigate the demand risk for container terminal services provided by the Private Partner.
PRIVATE SECTOR RISK MITIGATION	**Allocation of risks to sub-contractors:** *See Risk Allocation in PPP contracts in the introduction* and *Cost overruns and Works completion delays under Construction risk*. As regards construction, the Private Partner will often enter into a lump sum construction contract with a construction sub-contractor to pass down its obligations under the PPP contract and to manage the risk of cost overruns and delays (subject to certain relief to which the sub-contractor will be entitled under the sub-contract). The Private Partner will bear the risk of liability caps agreed under the sub-contract being reached or warranty periods under the sub-contract being shorter than the Private Partner's defect rectification obligations towards the Contracting Authority. Where the Private Partner is not in the business of operating ports, it may, similarly, enter into an operating sub-contract with an operating sub-contractor to pass down its operating phase obligations to the extent practicable. The operating sub-contractor may also be required to provide a minimum revenue guarantee to the Private Partner. It is unusual, however, for a Contracting Authority to award a port PPP contract to an entity that is not a proven port operator. **Demand Risk:** Accurate forecasting is essential to mitigate demand risk. Securing shipping lines to call at the port will be essential to generating revenues and a prohibition on competing facilities is also commonly seen in port concessions. **Insurance:** *See Risk Allocation in PPP contracts in the introduction*. **Effective implementation of social and environmental management plan:** *See Environmental risk and Social risk*. **Additional equity and other funding support:** *See Market Conditions in the introduction*.
PUBLIC SECTOR RISK MITIGATION	**Carrying out detailed feasibility and ground surveys:** *See PPP Project Preparation and Delivery in the introduction*. In addition, studies for ports project should include identification and suitability of corridor, additional land needs, interface with existing and future port and other transport networks (and corresponding impact on the project), throughput forecasts and social and environmental impact of both the construction and operation of the port. Detailed ground surveys should also be carried out where practicable. Where such information is provided to bidders to rely on in pricing their bids, Contracting Authorities may elect to guarantee accuracy but not necessarily completeness or interpretation – this will depend on project-specific factors including the experience of the bidders and the ability to obtain other relevant information.
	Running an efficient and fair procurement process: *See PPP Project Preparation and Delivery in the introduction.* Enacting enabling legislation and complying with domestic procurement laws in relation to the project are primarily the Contracting Authority's risk and responsibility. As the Private Partner will be affected by the consequences of breach of such legislation, it will carry out due diligence itself on these matters. Interference with the tender process and other issues attributable to the Private Partner will remain a Private Partner risk.
	Timely consultation on social and environmental impact: It is key for the Contracting Authority to consider the effect of the project on people, wildlife and habitat and to implement effective management of stakeholder interests and public perception before and (in conjunction with the Private Partner) during the project. *See Environmental risk and Social risk.*
	Having competent advisers: *See Detailed Risk Identification and Analysis in the introduction*.
	Timely involvement of internal stakeholders and contract management team: *See Detailed Risk Identification and Analysis in the introduction*.
	Careful assessment and quantification of risk: *See Detailed Risk Identification and Analysis in the introduction.*
	Taking performance security: The Contracting Authority may seek certain security direct from the Private Partner and its sub-contractors, or their parent companies, in respect of certain contractual (or tender) obligations. This may be in the form of bid bonds during the tender stage and, following the tender stage, completion bonds, performance bonds and guarantees. As an alternative, cash reserving mechanisms could be used during the life of the contract. Although the Contracting Authority may be able to call on this security in certain circumstances (such as performance failures by the Private Partner), the security will have a cost attached. This will feed through to pricing and may affect value for money, particularly since the security may never be called.
PUBLIC SECTOR SUPPORT MEASURES	Where the Contracting Authority is responsible for significant project revenues, guarantees or other contingent payment obligations (which in a port project tend to be limited to the Contracting Authority's obligation to pay termination compensation) and its own credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in projects where the Contracting Authority is not part of central government or it is a local authority. To mitigate this Contracting Authority counterparty risk, a sovereign or central government (e.g. finance ministry) guarantee (or equivalent support) may be needed, though the full implication for the public sector should be carefully assessed, including the potential impact on the government's contingent liabilities and fiscal sustainability. *See Demand risk, Project Revenues, Including Payment Mechanisms above and Strength of Contracting Authority payment covenant under Early termination risk*.

KEY TO MATRIX

Risk category rows		Broadly, the first row of a particular risk category summarises the risk and its main allocation. The subsequent rows detail specific issues relevant to that risk and its allocation.
Risk allocation symbols	●	Indicates how the main risk described in the relevant row is typically allocated.
	[●]	Indicates how the risk (or part of the risk) may be allocated differently in the particular additional circumstances described.
Defined terms		Certain terms used in the matrix are defined in the Glossary. For example, the terms compensation event and relief event are used throughout this matrix with respect to how a PPP contract addresses the eventuation of certain risks. For a detailed explanation of those contractual mechanisms, refer to the definition of compensation event and relief event in the Glossary.

SUMMARY MATRIX[1]

RISK CATEGORY	DESCRIPTION	BASIC RISK ALLOCATION		
		Public	Shared	Private
LAND AVAILABILITY, ACCESS AND SITE RISK	The risk associated with selecting land suitable for the project; providing it with good title and free of encumbrances; obtaining necessary planning approvals; providing access to the site; site security; and site and existing asset condition.	●		
SOCIAL RISK	The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.	●	●	
ENVIRONMENTAL RISK	The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.		●	●
DESIGN RISK	The risk that the project design is not suitable for the purpose required; approval of design; and changes.			●
CONSTRUCTION RISK	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.			●
VARIATIONS RISK	The risk of changes requested by either party to the service which affect construction or operation.		●	
OPERATING RISK	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.			●
DEMAND RISK	The risk of throughput levels being different to forecast levels; the consequences for revenue and costs; and government support measures.	[●]	[●]	●
FINANCIAL MARKETS RISK	The risk of inflation; exchange rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●	
STRATEGIC / PARTNERING RISK	The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.		●	●
DISRUPTIVE TECHNOLOGY RISK	The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.		●	
FORCE MAJEURE RISK	The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.		●	
MAGA RISK	The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.	●		
CHANGE IN LAW RISK	The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.	●		
EARLY TERMINATION RISK	The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.		●	
CONDITION AT HANDBACK RISK	The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.			●

[1] Cautionary note: The summary matrix identifies typical risk allocation on an aggregated basis. For each risk allocation, however, there are generally exceptions. For the full discussion on typical risk allocation arrangements, please see the detailed guidance provided in the matrix below.

RISK CATEGORY AND DESCRIPTION		**RISK ALLOCATION**			**RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)**	**MARKET COMPARISON SUMMARY**
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
LAND AVAILABILITY, ACCESS AND SITE RISK *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.*	**Provision of required land – general**	●	[●]		The Contracting Authority typically bears the risk of selecting the corridor and acquiring the required land interests for the project, whether through compulsory acquisition/expropriation 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 "clean" accessible site, with no restrictive land title issues. 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 port. 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. If the Contracting Authority needs to use its legislative powers to acquire the site (e.g. through compulsory acquisition/expropriation), this may increase social risk and other opposition to the project (e.g. due to delay caused by court cases). *See also Social risk.* It also important during feasibility stage to consider the proximity of other similar facilities that could potentially compete with the services that Private Partner and the port project will be providing.	In certain markets, land rights (in particular reliable utilities records, and land charges and third party rights to (access) land) 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, this will increase the risk of delay, cost overrun and disputes. This makes it more likely that the Contracting Authority will need to bear the associated risk as the Private Partner will not be able to bear them. The rights of private landowners against compulsory acquisition/expropriation might be stronger in developed markets, so the Contracting Authority may need to allow more time to acquire the land.
	Timing of provision of required land	●			**Acquisition pre-signature:** The Contracting Authority should complete the process of land acquisition before the contract is awarded so that all issues and risks are known and managed. All relevant processes will need to be carried out in a timely manner. The timeframe will depend on the issues affecting the site and the applicable processes. The risk that all necessary processes have been satisfied will be the Contracting Authority's risk.	
		●			**Acquisition post-signature:** If the Contracting Authority is not able to provide the land by contract award, it will bear the risk of providing it in accordance with a contractually agreed programme. Failure to obtain the land by a certain date may entitle the Private Partner to terminate the contract *(see also MAGA risk)*. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process.	
	Provision of permanent additional land	●			**Identification pre-signature:** If a permanent need for additional land is identified and agreed by the parties before contract signature then the associated risk is usually treated in the same way as the original land. Usually the Contracting Authority will bear the risk of acquiring/providing the additional land, unless the need for additional land is specific to a bidder (for example, due to a different design).	
				●	**Identification post-signature:** If a permanent need for additional land is only identified after contract signature then this will be a Private Partner risk as the need should have been identified and factored in to the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance with acquisition where the land is essential, with costs being borne by the Private Partner.	
	Provision of temporary additional land	●			**Identification pre-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified in the procurement phase and are common to all bidders, then the associated risk is usually treated in the same way as the original land. Usually the Contracting	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
				[●]	Authority will bear the risk of acquiring/providing such land, unless the need for such land is specific to a bidder (for example, due to its construction methods and equipment) – in which case the risk should be allocated to that bidder and the cost factored into its bid price. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
				●	**Identification post-signature:** Where temporary additional land needs (e.g. for materials or equipment storage during construction) are identified, they should be a Private Partner risk as such need should have been identified and factored into the Private Partner's bid. The Contracting Authority may however find it needs to provide assistance in some cases, with the cost being borne by the Private Partner.	
	Heritage / indigenous land rights	●		[●]	Land rights issues involving indigenous groups will be the responsibility of the Contracting Authority. The Private Partner will bear the risk of complying with legislation and contractual obligations imposed on it in this regard. The Private Partner's obligations with regard to indigenous rights is well legislated for in some markets. In the absence of legislation, indigenous land rights issues and community engagement can be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project (e.g. compatible with the Equator Principles). This will be particularly relevant if international financing options are being used in the port project. *See also Social risk.*	This issue is coming under increasing focus from multilateral agencies and other finance parties, as well as civil society and human rights organisations. For example, the World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. Many finance parties (including commercial finance parties) adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). Examples of specific legislation are native title legislation in Australia and the equivalent First Nations law in Canada. These include a requirement to seek consent from the indigenous parties affected and to enter into indigenous land use agreements.
	Resettlement				*See Resettlement under Social risk.*	
	Suitability of land		●		**General:** The risk that the land is not suitable is typically shared as the Contracting Authority may be able to secure the availability of the container terminal area, but the suitability of the container terminal area may be dependent on the Private Partner's design and construction plan. *See also Design risk.*	
		●		[●]	**Underground:** Risk with regard to stability and suitability of the underground sits with the Contracting Authority if no or unreliable data is available and the risk cannot be transferred (or transferring the risk does not represent value for money). To the extent reliable data is available in the tender phase and can be relied upon by the Private Partner, the risk sits with the Private Partner. *See also Site condition under Land availability, access and site risk.*	
	Key planning consents	●			**Pre-signature:** In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents.	In some jurisdictions, it may not be possible to obtain the requisite planning consents until such time as the Private Partner has been identified and/or detailed design is known. It is not uncommon for the Private Partner to be primarily responsible for procuring key planning consents, particularly in markets where there are clear procedures and time frames for procuring consents. In such circumstances some risk will
		●		[●]	**Post-signature:** If consents for key permits are not obtained before contract signature and the Contracting Authority wants to sign the contract, it will typically bear the risk of the consents being delayed or not obtained (subject to the Private Partner complying with any reasonable requirements) –	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					this may be treated as a compensation event. Failure by the Contracting Authority to obtain the consents by a certain date is likely to entitle the Private Partner to terminate the contract. Permit risk may be complicated further if there are different levels of authorities involved, and interaction between levels of design and authorisations may impact the timeline. If the risk of non-availability is too great, this may deter some investors and financiers from engaging in or continuing in the bid process. *See also MAGA risk, Design risk and Environmental risk.*	continue to be assumed by the Contracting Authority where, despite complying with the relevant procedure, the issue of the permit is delayed or withheld or the permit has unusual conditions attached to it. Such circumstances will entitle the Private Partner to time and money as a compensation event.
	Subsequent planning approvals	[●]		●	Obtaining subsequent detailed planning consent and other approvals will be a Private Partner risk. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also Environmental risk and MAGA risk.*	
	Access to the site and associated infrastructure	●			**Construction phase:** In principle the Contracting Authority will be responsible for ensuring the Private Partner can access the site during construction. Either (i) it will pay the costs of providing access itself, or (ii) the Private Partner will pay such costs and be reimbursed through the contract price (or permitted tariff) to the extent it has priced such costs into its bid. This will depend on the nature of the access required. Failure to provide access may be treated as a compensation event. *See also MAGA risk.* The parties will need to agree the extent to which the Private Partner may bear some responsibility for the impact on access roads of heavy loads.	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.
		●			**Operation phase:** The Contracting Authority should bear the risk of ensuring that users can access the new port via the existing marine infrastructure and that cargo can be readily transported onwards via existing or upgraded road and/or rail links. In a port project where the Private Partner payment is based on throughput volume this will be a key Contracting Authority risk.	
	Site security	●		●	**Construction phase/operation phase:** Risk allocation with respect to site security will depend on the political climate, opposition to the project, nature of the risk and the stage of the project. Parties should aim to have a complete understanding of the risks involved in physically securing the site and those that will affect the construction and operation of the port and/or container terminal. Ordinarily the Private Partner will be responsible for day to day site security. However, the Contracting Authority may need to use statutory means to properly secure the site for the Private Partner (such as police involvement or eviction) and in some circumstances may be required to provide additional site security / assistance during operations to manage this risk, for example providing coast guard and harbour master services. Failure may be treated as a compensation or MAGA event. *See also Force majeure risk, MAGA risk, Social risk and Vandalism under Construction risk and Operating risk.*	For example, where there is public opposition to the port, there may be protestor action, or there may be issues safeguarding the equipment and installation.
	Utilities and installations	[●]		●	**Costs or delays caused by relocation of /access to utilities:** To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of any costs or delays caused by statutory undertakers and utility providers in carrying out diversions or connections. Costs and delays caused by re-location of existing utilities or access to utilities for the purposes of the project which are due to the Private Partner's design or construction plan are usually allocated to the Private Partner. For connections to existing infrastructure, *see also Project management and interface with other works/facilities under Construction risk.* The Contracting Authority will bear risk if no reliable information is available. It will also bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Lack of data on existing utilities location can make it difficult for the Private Partner to assess (and price) the cost and time needed for relocation which can impact on the construction timetable and ultimately on meeting the operation commencement date. If the Private Partner bears this risk, the Contracting Authority may need to share the risk by capping the Private Partner's liability or by having a cost sharing	In some markets or challenging locations, there may be little data on location of utilities (water, sewage, oil, gas, optical fibre etc) and the Private Partner may be unable to accept all or part of this risk. This would also be the case where utilities are to be constructed specifically for the purpose of supporting the port project and this would typically be a Contracting Authority risk as the Contracting Authority is responsible for site selection.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	Sub-category	Public	Shared	Private		
					mechanism.	In markets where the utility provider is a private entity, this risk is likely to be treated as a relief event (and the utility company will bear the risk) – this is common in mature markets. In less mature markets, particularly where the utility provider is a state-owned entity, the risk is likely to be allocated to the Contracting Authority as a compensation or MAGA event.
		[●]	●		**Costs or delays caused by utility provider:** Costs and delays caused by a utility provider could arise in both phases and the risk will be allocated according to the relevant circumstances and market and ownership of the utility. The risk could be shared or allocated to the Contracting Authority.	
	Site condition	[●]		●	**Surveyed:** The Contracting Authority usually undertakes detailed geotechnical, marine and ground/soil surveys during the feasibility stage (if not already publicly available) and discloses such information as part of the bidding process. Sharing the surveys will save bidders' costs (all which would otherwise feed through to the Contacting Authority in the contract price). To the extent reliable data is available and shared during the tender process, the Private Partner can bear and price the corresponding risk of such conditions causing cost and delay. The Contracting Authority will bear risk to the extent data provided by it and relied upon by the Private Partner in its bid proves inaccurate. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation of the data.	In a mature market, the Contracting Authority normally hands over the site to the Private Partner in an "as-is" condition on the basis of the surveys provided. The Private Partner can rely on the surveys but otherwise bears the risk. In some markets, the bidders carry out the surveys during the tender process – this may be the best solution in some circumstances, but may also limit competition unless bidders are compensated for these costs.
		●	[●]		**Unsurveyed:** Where it is not possible to fully survey site condition prior to award (e.g. in high density urban areas), the risk for unsurveyable land will be allocated to the Contracting Authority (e.g. as a compensation event). The risk may be shared by the Private Partner (e.g. as a relief event) in some circumstances, for example where the risks were within the knowledge of the Private Partner when it priced its bid or an experienced contractor would have considered their existence as being possible. The impact on the project and the cost of remediation works for certain existing site conditions can be significant so the ultimate risk allocation will depend on the project specifics.	In some markets there may be less historic data available to the parties to assess risk. It may however be easier to perform comprehensive surveys in a less urban area.
		●	[●]		**Cultural / Archaeological finds:** Discovery of artefacts can cause delays and costs as there may be legal or other requirements in relation to reporting them and permitting archaeological study. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk. One approach is to share the risk such that the Private Partner bears the risk in respect of designated areas (such as a low risk area) and the Contracting Authority bears the risk outside such areas (such as a high risk area). Another approach is for the Private Partner to be obliged to coordinate work, but for the Contracting Authority to appoint specialised contractors and to bear cost/delay and interface risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of finds is often treated as a relief event.
		●	[●]		**Unexploded bombs, land mines and other munitions:** Discovery of munitions can cause delays and costs as they will need to be defused and removed. The risk allocation will depend on the nature of the project, the extent to which the risk was known to and priced by the Private Partner, the reliability of data provided by the Contracting Authority and whether the project location is considered high risk.	In markets where reasonable surveys/assessment can be made and the risk priced, discovery of munitions risk is often treated as a relief event. In some countries, the risk of unexploded land mines can be high and specific surveying and cost provisions may need to be agreed.
		●		[●]	**Pre-existing environmental pollution:** Pre-existing pollution is typically the Contracting Authority's risk except to the extent it was known to and priced by the Private Partner. Remediation works for certain existing environmental conditions can be expensive so the ultimate risk allocation will depend on the project specifics and the surveys provided to the Private Partner. *See also Environmental risk and Change in law risk.*	

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Existing asset condition	[●]		●	Where there are existing assets proposed to be used in the project, they should be fully surveyed (and potentially warranted) by the Contracting Authority. To the extent reliable data relating to the condition of existing assets is shared by the Contracting Authority during the tender process and can be relied upon during implementation, the Private Partner can price the risk of using them, including the interface with other aspects of the project and latent defect risks. The Private Partner will then bear the corresponding risk. The Contracting Authority will bear risk to the extent such data proves inaccurate or insufficient, and to the extent of any warranties it provides. Some Contracting Authorities will guarantee only accuracy, not completeness or interpretation. If latent defects are discovered in assets which are due to be replaced at some point in the life of the contract, the Contracting Authority may be able to mitigate its risk to some extent by having a contractual mechanism which brings forward the replacement date. *See also Suitability of design under Design risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	On brownfield port projects the Contracting Authority may take the risk in all or part of the existing port infrastructure handed over to the Private Partner prior to commencement of any expansion to ensure a certain minimum standard is achieved. Over the term of the concession the Contracting Authority may be required to continue to provide supporting infrastructure work such as ensuring that the channels are dredged and maintained at the required depth and that connecting roads, railways and utilities continue to be provided.
SOCIAL RISK *The risk associated with the project impact on adjacent properties and affected people (including public protest and unrest); resettlement; indigenous land rights; and industrial action.*	**Community and businesses**	●		[●]	Ultimately, the policy relating to the social impact of the provision of infrastructure is for the government. The Contracting Authority will bear this risk except to the extent the Private Partner is responsible for implementing any social management measures. During the feasibility stage, the Contracting Authority should have considered the impact on habitat, (social) infrastructure and communities generally, as well as on adjacent properties and industries – both in terms of the construction and operation of the port. It may need to carry out social impact studies and aim to minimise any negative impact of the project. Consultation may reduce the risk of opposition if outcomes are incorporated in the strategy and tender requirements. The approach, compensation schemes and what is acceptable should be addressed in the bid requirements and the contract. Investors and lenders may expect to see a plan addressing social impact, including the execution of any necessary contractual arrangements. The Contracting Authority may choose to adopt internationally recognised social and environmental standards and practices for the project to manage social risk, especially if international financing options are desirable. All the way through construction and operations, active stakeholder engagement by the Contracting Authority will be critical to avoid litigation, achieve key milestones on time and ensure it is delivering infrastructure that serves its public purpose. Both the Private Partner and the Contracting Authority should develop sound environmental and social risk management plans before construction begins. Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation (*see also Resettlement under Social risk*) and continued efforts to manage the social and political impact of the project on and around the site (possibly including a compensation regime for affected businesses adjacent to the port). The Private Partner will bear the risk of non-compliance with any contractual social risk obligations as well as social risk obligations set out in the underlying legal system, although even where social risk obligations are passed onto the Private Partner, the consequences of such risks occurring may come back to the Contracting Authority. For this reason, the Contracting Authority should critically analyse just what social risk obligations should be passed onto the Private Partner and what should be retained. Where there is public opposition, there may be protestor action in both construction and operating phases, and/or issues safeguarding the site equipment and installation. *See also Site security and Access to the site under Land availability, access and site risk, and Vandalism under Construction risk and Operating risk.* For a detailed analysis on how governments can better address aspects related to social inclusion in the delivery of infrastructure, see the GI Hub's practical guidance on *Inclusive Infrastructure and Social*	This issue is coming under increasing focus from multilateral agencies, development finance institutions and other international finance parties, as well as civil society and human rights organisations. Finance parties (including commercial finance parties) will look very closely at how these risks are managed at both private and public sector level. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (as described in the Equator Principles). The World Bank's commitment to sustainable development is set out in its Environmental and Social Framework which includes standards that both it and its borrowers must meet in projects it is to finance. In civil law jurisdictions the obligation upon the Contracting Authority to act "in the general interest" and to justify and document decisions may strengthen the stakeholder process. This is because the level of transparency and justification required should ensure that stakeholder views are properly taken into account and the risk of arbitrary decisions (and consequent challenges) reduced.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					Equity.	
	Resettlement	●		[●]	Depending on the nature of the project, the Contracting Authority may need to retain the risk of unavoidable interference with affected parties and mitigate this through measures such as relocation. This may include the removal of formal and/or informal housing or businesses and resettlement of communities in another location, potentially also with compensation. The Private Partner is responsible for implementing any social risk management measures contractually agreed – these should be clearly specified by the Contracting Authority in the procurement phase to enable the Private Partner to price the cost and associated risks.	Resettlement of whole communities by the Contracting Authority is more likely in less developed markets where informal housing and businesses may be more prevalent. The affected parties may not have the means (or the transport) to relocate themselves, even if paid compensation, and whole communities may need to be moved together. In developed markets, affected parties may be more able to rely on rights under compulsory acquisition/expropriation laws and compensation received.
	Heritage / indigenous people	●		[●]	As with land use rights involving indigenous groups, any other social impact risks involving such groups will usually be the responsibility of the Contracting Authority but the Private Partner will bear the risk of complying with relevant legislation and contractual obligations. In the absence of legislation, indigenous rights issues and community engagement may be managed by the Contracting Authority through the adoption of internationally recognised social and environmental standards and practices for the project, particularly if international financing options are being considered. *See also Heritage/indigenous land rights under Land availability, access and site risk.*	The Private Partner's obligations with regards to indigenous rights is well legislated for in some markets and in other markets there may be more reliance on internationally recognised standards. *See also Heritage/indigenous land rights under Land availability, access and site risk.*
	Industrial action	●	●	●	The Private Partner assumes the risk of labour disputes and strike action adversely affecting the project except to the extent such action falls into the category of political risk. In this case, the Contracting Authority may bear the risk (if a MAGA event, such as strike by the government-run customs) or share the risk (as a force majeure or relief event) for strikes and other widespread events of labour unrest. For example, nationwide and sector strikes are usually Contracting Authority risks, but strikes at the Private Partner's facilities will be a Private Partner risk. *See also Force majeure risk and MAGA risk.*	In less politically stable jurisdictions the Contracting Authority may have to accept more risk for strikes than in some jurisdictions. In markets where the risk of strikes is low, the Private Partner may be comfortable accepting this risk as a relief event.
ENVIRONMENTAL RISK *The risk associated with pre-existing conditions; obtaining consents; compliance with laws; conditions caused by the project; external events; and climate change.*	**Pre-existing conditions**	●		[●]	*See Site condition and Existing asset condition under Land availability, access and site risk***.**	Environmental scrutiny is increasing around the world. The Contracting Authority and the Private Partner must develop sound environmental and social risk management plans before construction begins. The risk of delay in obtaining approvals may be greater in some jurisdictions, particularly where different levels of government are involved. Delays in obtaining environmental permits have caused significant construction delays in some countries (for example, in some projects in South America) and the timeframe required should not be underestimated. If adequate relief is not given to the Private Partner, this may deter the private sector from participating in new projects in the same sector or jurisdiction. International finance parties, multilateral agencies and development finance institutions are particularly sensitive about environmental and social risks. Many finance parties adhere to the Equator Principles, committing to ensure the projects they finance (and advise on) are developed in a manner that is both socially responsible and reflects sound environmental management practices (which are described
	Obtaining environmental consents	[●]		●	**Pre-signature**: In most projects, there will be a benefit if planning consent for key permits and other key approvals can be obtained by the Contracting Authority before procurement – these may include key environmental consents. In many major projects, the environmental authorisations are a key component of the project and may take significant time to be prepared and approved. In some cases, these authorisations are initiated (such as preparing the environmental impact assessment) and prepared by the Contracting Authority ahead of the procurement process. At a specified point in time, the Private Partner will take over the risks related to obtaining detailed environmental licences or permits related to the project.	
		[●]		●	**Post-signature**: Except as specifically identified otherwise, the Private Partner typically bears the risk of obtaining all environmental licences, detailed permits and environmental authorisations required for the project after contract signature. However, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event or MAGA event. *See also MAGA risk.* In some countries, there may be different levels of governmental approval required. Local authorities may interpret certain requirements in their own way after the contract price has been submitted and impose unexpected conditions on the Private Partner. This could adversely affect the project's financial model. The parties should ensure that the contract sets out clearly how any such interpretation or	

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					unexpected requirement is addressed to avoid disputes as to which party bears the consequences. *See also Key Planning Consents under Land availability, access and site risk, Change in law risk and Compliance with environmental consents and laws under Environmental risk.*	in the Equator Principles). Finance parties will look very closely at how these risks are managed at both private and public sector level and this scrutiny is helpful to mitigate the risks posed by these issues. *See also Communities and businesses under Social risk.*
	Compliance with environmental consents and laws			●	The Private Partner bears the risk of complying with all environmental licences, detailed permits and environmental authorisations required for the project as well as applicable environmental laws. The parties should ensure that change in law provisions adequately address changes in (mandatory) environmental standards and laws to avoid disputes as to which party bears the consequences of any requirements imposed after contract signature. *See also Change in law risk.* In the absence of legislation, environmental obligations can be managed by the Contracting Authority through the adoption of internationally recognised standards and practices for the project, particularly if international financing options are being considered. *See also Communities and businesses under Social risk.*	
	Environmental conditions caused by the project			●	The Private Partner bears the risk of environmental events caused by the project to the extent due to its failure to comply with applicable licences, laws and contractual obligations. This includes conditions affecting both the project itself and third parties. The Contracting Authority may want to satisfy itself as to the overall robustness and suitability of environmental plans proposed by the Private Partner, to ensure that such plans will be adequate to appropriately manage the risks of the project, but the Contracting Authority should not take on any risk in doing so. Environmental risk extends to the impact of the wider project including issues such as the location in which dredging spoil is to be dumped and the wider impact of the project on marine life and wildlife. Projects in the United Kingdom and Australia have faced substantial opposition and costs in addressing and mitigating these risks.	
	External environmental events		●		**Outside both parties' responsibility:** The risk of environmental events external to the project occurring which adversely affect the project (or, as a result, third parties) should be treated according to the nature and cause. They may be a form of shared risk, such as a relief event or force majeure event (e.g. if an accidental chemical escape from a vessel or nearby factory forces the port closure for a period).	
		●			**Within Contracting Authority's responsibility:** If environmental events are within the responsibility of the Contracting Authority or government they may be treated as a compensation event or MAGA event (e.g. where the government has failed to enforce environmental laws in respect of polluting vessels and the pollution damages the port or leads to legal action against the project by third parties). *See also MAGA risk and Climate change event under Environmental risk.*	
	Climate change event	[●]	●		Market practice is developing with greater focus on events caused by climate change and the Contracting Authority should consider the risk and impact of climate risk events on the infrastructure (both one-off external weather events and more gradual effects, such as rising sea levels or temperatures). It may be appropriate to treat certain events as force majeure events if they occur beyond certain thresholds (e.g. temperatures outside certain ranges). Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common. An alternative may be to consider a separate contractual mechanism to address these type of risks over the long term life of the contract. As with other variations required by the Contracting Authority, any changes to the project scope to mitigate climate change effects are likely to need to be funded by the Contracting Authority where the Private Partner cannot foresee such developments and has no means of	If clear requirements are not included, this may lead to different bidders taking this risk into account in different ways. To avoid speculation and disputes, post-contract award, these issues should be clearly set out in the tender documents and negotiated throughout the tender process.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					passing on the cost (and no other agreement as to cost sharing is in place). As it is likely to be more costly to retrofit measures, it is essential that the Contracting Authority consider this risk during the feasibility phase, and that both parties continue to consider this issue further during the tender process. *See also Force majeure risk and Operational risk.*	
DESIGN RISK *The risk that the project design is not suitable for the purpose required; approval of design; and changes.*	**Suitability of design**	[●]		●	Generally the Contracting Authority should aim to transfer design risk to the Private Partner but the extent to which this is possible will depend on how involved the Contracting Authority wants or needs to be in specifying design requirements in the tender documentation. Alternative approaches are described below. **Output specification:** Where possible, the Contracting Authority usually aims to set a broad output driven specification in the tender documents, requiring the Private Partner to design and build the project in a way which satisfies the performance specifications and ensures compliance with applicable legal requirements, good industry practice standards and, where applicable, minimum quality standards. This allows for private sector innovation and efficiency gains in the design. With this approach, the Private Partner will have principal responsibility for adequacy of the design of the project and its compliance with the output / performance specification. A design review process during the contract will allow for increased dialogue and cooperation between the Contracting Authority and the Private Partner, but care should be taken to ensure that the mutual review process does not reduce or limit the Private Partner's overall liability. In limiting how prescriptive it is in the performance specification, the Contracting Authority may wish to request a degree of cooperation and feedback during the bidding phase to ensure that the bidding consortia's expectations in terms of an appropriate risk allocation for design responsibility are taken into account when finalizing the performance specification. If the Contracting Authority provides bidders with a basic design, bidders will typically be responsible for any errors, if they assume this basic design in developing their detailed design. An alternative is to provide (more) detailed design, but to contractually oblige the bidders to comment on and subsequently accept the (amended) design. The Contracting Authority should bear the risk of technical information provided by it proving inaccurate to the extent the Private Partner was allowed to rely on it for design purposes (e.g. inaccurate traffic forecasts or site condition or existing asset surveys). *See also Changes to design under Design risk.*	In more developed PPP markets, the Contracting Authority typically drafts a broad output specification, unless permit or other regulatory requirements oblige it to provide more detailed and descriptive specifications. Projects in some less established PPP markets may be particularly dependent on availability of reliable resources necessary for construction and operation, which has implications for the Private Partner's ability to meet the reliability requirements in the performance specification and take full design risk. The quality of the information provided by the Contracting Authority and the Private Partner's limited ability to verify such data can hinder the Private Partner's ability to unconditionally take full design risk in some markets. Attempts to transfer the risk in such circumstances may also lead the Private Partner to price in expensive risk premiums that do not represent value for money for the Contracting Authority. In emerging markets, the Private Partner will have principal responsibility for adequacy of the design of the container terminal. In emerging markets, where the projects are proposed by Private Partners on an unsolicited basis there is likely to be little input from the Contracting Authority in the design of the project. However where there is existing port infrastructure, competing ports in the same country or where the port is being procured for a particular industry (eg oil and gas terminals) the Contracting Authority may have more interest in defining the design specification.
		●			**Prescriptive specification:** A prescriptive specification can, where essential, ensure the Contracting Authority receives bids on a particular (and similar) basis. However, the disadvantage of this approach is that it will restrict private sector innovation and efficiency gains in the design and may not result in best value for money. The Contracting Authority may also retain some design risk in certain aspects of the system or related works, if it is more prescriptive in the performance specification. For example, if the performance specification is too prescriptive (e.g. the required route corridor constrains the efficiency of the design), the Private Partner's ability to warrant the fitness for purpose of its design solution may be impacted and the Contracting Authority will to that extent share in the design risk. The prescriptiveness of the performance specification is likely to be dependent on the depth of the feasibility study. Some jurisdictions allow only limited room for individual design, since all key aspects and many details are already fixed in the official planning approval decision. If the Private Partner wants to deviate from these requirements it must conduct formal amendment procedures, which in practice have such process and risk impact that bidders are not willing to take the risk that comes with initiating such amendment procedures. *See also Changes to design under Design risk.*	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
		[●]			**Existing infrastructure:** If the project is being integrated into existing infrastructure, the Private Partner's ability to warrant the fitness for purpose of its design solution must be considered. It may not be able to warrant defects in the existing infrastructure which may impact the project's performance and the Contracting Authority may have to bear this risk. This is particularly relevant to most port projects where the Private Partner is providing a terminal and cargo handling facility within an existing port area. *See also Existing asset condition under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk and Maintenance standards under Operating risk.*	
	Approval of designs	[●]		●	The Private Partner will bear the risk of obtaining design approvals as it will have principal responsibility for preparing the detailed design and obtaining relevant approvals from the appropriate state or other body. However, if the Private Partner has complied with all relevant conditions and time frames, the Contracting Authority will share this risk to the extent the relevant authority does not act properly or within approval process deadlines – this may be treated as a compensation event. *See also MAGA risk.* Where specific solutions or consultants are imposed by the Contracting Authority (e.g. architectural or technical), some risk may remain with the Contracting Authority.	
	Changes to design	●		●	The risk of changes to design after contract signature is allocated according to the reason for the change. If the original design is deficient, this will be a Private Partner risk, subject to the aspects which are the Contracting Authority's risk (as outlined in *Approval of designs and Suitability of design under Design risk*). If changes are required by the Contracting Authority, this would as a rule be a Contracting Authority risk (with the consequent time and cost implications borne by the Contracting Authority on the same principles as for compensation events). *See also Variations risk.* Contractual amendment procedures can in practice have such process and risk impact that the Private Partner may not be willing to take the risk that comes with initiating such amendment procedures. Requesting design changes or alternative or more detailed design development during the procurement stage will delay the procurement timetable and cause bidders to incur additional costs. The lack of certainty and potential cost may deter bidders and, depending on the change in requirements, may result in the procurement process needing to be re-run to comply with procurement laws or risk later challenge.	
CONSTRUCTION RISK *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.*	**Cost overruns**	[●]	[●]	●	Cost overruns (i.e. costs exceeding the construction costs assumed in the project's financial model) can have a variety of causes, such as mistakes in construction cost estimates, increased cost of materials, actions of the Contracting Authority or government, as well as delays in – or mitigating potential delays in – the construction programme. The Private Partner typically assumes the risk of cost overruns to the extent these are not caused by force majeure, compensation events (such as in relation to unsurveyed site or existing asset conditions) or MAGA events, and are not addressed through other bespoke provisions (e.g. Change in law or provisions specifically addressing exchange rate risk during construction – *see also Change in law risk and Exchange rate fluctuation risk under Financial markets risk)* or hardship doctrines *(see Glossary definition)* in underlying law. The Private Partner will mitigate these risks by passing them through as far as possible to its sub-contractors (for example, the construction sub-contractor). The Private Partner's financial model will typically include contingency pricing for cost overruns (as will the sub-contractor's assumptions). *See also Force majeure risk and MAGA risk.*	In certain markets, risk is considered manageable by the Private Partner through robust pass through of obligations to credible and experienced sub-contractors and by allowing appropriate timetable and budget contingency. The Private Partner can mitigate the risk of sub-contractor non-performance by obtaining appropriate security from the sub-contractors (for example, parent company guarantees and/or performance bonds). The Contracting Authority may sometimes seek additional security itself to ensure such costs can be met - see Taking performance security under Public Sector Risk Mitigation. Enforcement of construction budgets may be easier in markets where the Private Partner will typically have more experience and reliable access to resources.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Works completion delays	[●]	[●]	●	Delays in delivering the infrastructure by the relevant works completion date can have a variety of causes, such as unavailability of construction materials, delays in shipping and mistakes in programme scheduling, as well as weather events, civil unrest or industrial action and actions of the Contracting Authority or government. The Private Partner typically assumes the risk of delays to the extent they are not caused by relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions. *See also Force majeure risk and MAGA risk.* In most projects, the relevant date is the scheduled operation commencement date and to achieve that the works will need to be evidenced as complete. Some projects may instead (or in addition) require separate works completion deadlines to be met. This may be the case in jurisdictions where specific acceptance processes are required by law for construction works under public contracts and/or for insurance purposes. The consequences for the Private Partner of delays to the relevant works completion date are loss of expected revenue due to arise on the relevant date and ongoing construction and financing costs. In extreme cases, there is also a risk of potential termination for failing to meet the "longstop date" (a final later date by which the Private Partner must complete the project works/commence operation to avoid the Contracting Authority being entitled to terminate). The Private Partner will pass through these risks as far as possible to its sub-contractors (and may require the sub-contractors to pay it agreed damages to compensate for the delay to and loss of its overall project income and act as an incentive for timely completion). The Contracting Authority may also consider imposing agreed delay damages on the Private Partner to compensate it for delay to the start of the operating phase. However, imposing such agreed damages will typically result in the Private Partner building additional contingency time and cost into the project's construction plan and the Private Partner should already be sufficiently incentivised to meet the relevant works completion date on time so that its revenue streams can commence. Some jurisdictions require certain criteria to be met in contractual provisions imposing delay damages if they are to be legally enforceable. Broadly speaking, if the damages exceed the Contracting Authority's likely real losses they may be seen instead as a disproportionate penalty and the provisions may be unenforceable.	Enforcement of construction deadlines may be easier in markets where the Private Partner will typically have more experience and reliable access to resources. Some port projects in less mature markets have faced significant construction issues and the Contracting Authority will need to be prepared to enforce its rights to manage the consequences of a failure by the Private Partner to meet the construction milestones. In less mature markets, the management of completion risk is typically addressed by having either: (i) a scheduled completion date (with attached agreed damages for delay) followed by a fixed period for operation; or (ii) a scheduled construction period forming part of the overall contract term which is itself fixed, subject to extensions for certain events such as force majeure. With the latter scenario, the Contracting Authority may attempt to additionally impose agreed delay damages on the Private Partner. The difference between the two structures is that the former preserves the project's revenue generating operation phase and the Contracting Authority relies on the agreed delay damages to incentivise timely completion of the works and operation commencement. In the latter case, the incentive to complete the works and meet the scheduled operation commencement date is that any delay at the Private Partner's risk will reduce the revenue-generating operating phase.
	Project management and interface with other works/facilities	[●]		●	**Project management:** The Private Partner is best placed to integrate complex works, installation of equipment and connections to existing infrastructure and utilities. Typically, the Private Partner assumes project management risk. **Interface with other works/facilities:** Interdependence with other projects may also affect contract obligations and risk allocation. If some or all of the project is dependent either on the Contracting Authority carrying out particular works or making available an existing facility, or on related infrastructure work being completed by a third party (for example separate new connecting road, rail or other port facilities being ready), that interface risk will be the Contracting Authority's risk. If the operation commencement date will be delayed due to such works not being carried out on time or the Contracting Authority otherwise failing to meet its obligations, this will be a compensation event or MAGA event. For example, the project may be relying on the Contracting Authority implementing an upgrade to the existing road network connecting the port to the surrounding areas. *See also MAGA risk.*	In some markets the Private Partner may be allocated the risk of third party work being properly and timely completed, particularly if the Private Partner has the opportunity to enter into interface arrangements with the third party. These interface agreements will result in the interface risk being shared between the Private Partner and the third party. In emerging markets, a key integration risk on port projects is the procurement and installation of cranes and other goods handling machinery. These may be provided by the operator or through long term leasing arrangements entered into by the operator and will therefore be outside the construction contractor's scope. This is the Private Partner's risk and will be managed by the Private Partner as part of its project management responsibilities.
	Quality assurance		●		Meeting relevant quality standards will be a Private Partner risk, but where standards or codes are	

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	and other construction regulatory standards				revised after the bid submission date this risk allocation will depend on whether the changes are mandatory and whether the Private Partner has priced the risk of such changes into its bid. The Contracting Authority may consider adjusting the contract price to account for increased costs of compliance or the Private Partner may be excused from compliance with the new standard if it is not mandatory. This may be dealt with through the change in law provisions. *See also Change in law risk.*	
	Health and safety compliance			●	Responsibility for health and safety compliance on the construction site is typically a Private Partner responsibility. The Private Partner typically bears the risk of complying with health and safety laws/requirements and indemnifies the Contracting Authority in respect of any breach of such requirements. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority or other government entity and/or the affected party. Some projects require an annual safety review which enables the parties to assess relevant performance and safety management. Otherwise, the engagement of an experienced contractor with a strong safety record is also a mitigant.	In some jurisdictions with developed construction legislation, the Private Partner's responsibilities in the construction phase will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability			●	Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to the construction works. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP contract (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third-party claims against it over this threshold.	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Defects and defective materials			●	The Private Partner should be required to design and construct the project in accordance with good industry practice, and bears the risk and responsibility for completing the project free of defects. Defects are typically categorised as (i) visible and (ii) latent/hidden defects and are treated differently under the contract. The risk of visible defects is sometimes covered by an interim acceptance at completion of the works (and may result in a one off payment of agreed damages). As latent defects may not be noticeable for some years, the Private Partner is typically liable for such defects for a number of years following completion and the Contracting Authority may request a performance bond from the Private Partner to support this obligation (which the Private Partner will require from the relevant construction sub-contractor). The Contracting Authority may retain latent defects risk in existing structures. *See also Existing asset condition under Land availability, access and site risk and Maintenance standards under Operating risk.*	In emerging markets liability for latent defects can vary and in port projects it is unusual to see the Private Partner accepting latent defect liability over and above that imposed by applicable law. For example in the United Arab Emirates latent defect liability is referred to as decennial liability which typically exists as a matter of law for 10 years from the date of completion of the works.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the port including the terminal operating system and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance.	

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	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will often be a Private Partner risk, sometimes with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials, site access and security during construction, etc. *See also Site Security under Land availability, access and site risk and Social risk.*	Vandalism may be more of a risk where the political climate opposes the port.
VARIATIONS RISK *The risk of changes requested by either party to the service which affect construction or operation.*		● 	 [●]	 ●	**Contracting Authority change:** The Contracting Authority typically bears the risk and cost of service changes implemented following its request. The contract will specify the extent to which it is entitled to require changes and the reasonable grounds on which the Private Partner may refuse. The Contracting Authority will also bear the risk of ensuring it can meet its cost liabilities. **Private Partner change:** The Private Partner will bear the risk and cost of service changes implemented following its request, unless the parties have agreed a sharing mechanic as part of their discussions of the change. A sharing mechanic may be appropriate where the Contracting Authority wants to incentivise the Private Partner to introduce innovative or environmentally-friendly solutions. If the Contracting Authority is liable for costs, it should mitigate its risk by requiring a transparent costing review process, which it can due diligence. This is likely to be particularly a concern during the construction phase. As with any potential liabilities under the PPP contract, the Contracting Authority will want to consider how best it can fund such payments (e.g. through financing the variation direct itself, requiring the Private Partners to procure committed but undrawn funding at financial close or to establish a reserve to fund future variations, each of which will come at a cost and may affect value for money, or requiring the Private Partner to procure financing at the time of implementation of the variation. Where financing is procured by the Private Partner, whether at financial close or at the time of implementation, the Private Partner's revenues will need to be adjusted to fund repayment of the financing. The risk and cost associated with changes arising due to other provisions will be addressed according to those provisions. *See also Changes to design under Design risk, Climate change event under Environmental risk, Disruptive technology risk and Change in law risk.*	Some jurisdictions have detailed change protocol templates to follow for variations to ensure that costing is fair and transparent. Due to the impact changes can have on construction or operation (e.g. in terms of timing, cost and delivery), there may be restrictions placed on the ability to request changes of certain types or in certain phases. The Contracting Authority's ability to request and meet any changes costs will also be a concern, particularly where it has a weak credit.
OPERATING RISK *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.*	**Increased operating costs and affected performance**	[●]	[●]	●	Increased costs and delays in the operating phase can have a variety of causes, ranging from mistakes in maintenance cost estimates to extreme weather events. Aside from adjustments for inflation, the Private Partner broadly assumes the risk of events which inhibit performance and/or give rise to cost increases beyond modelled costs, to the extent these are not relief, force majeure, compensation or MAGA events, and are not addressed through other bespoke provisions or hardship doctrines *(see Glossary definition)* in underlying law. *See also Force majeure risk and MAGA risk.*	
	Performance/ price risk			●	The Private Partner bears the risk of meeting the output specification under the contract and, if applicable, any throughput guarantees it provides (i.e. by ensuring that the relevant service is available and operational performance is of the necessary quality and level). The Contracting Authority is responsible for enforcing the performance regime and for ensuring that the performance specifications are attainable and properly tailored to what the Private Partner can deliver based on relevant market data and policy objectives. The appropriateness of the metrics can be assessed by reference to standards of similar services provided by the Contracting Authority (or other government body), value for money, the nature of the project and the relevant markets. Risk profiles recognize the decreased need for mitigation as the project matures, but early stage mitigation measures may be necessary in order to stabilize early losses. Key performance indicators might include the gross number of crane movements per hour or set conservation periods for full, empty or transhipment containers.	In mature markets, the Contracting Authority should have access to various data sources to develop realistic and attainable performance specifications and models. For other markets, particularly in the case of market first projects, the preparation of attainable standards by the Contracting Authority is complicated by the lack of relevant market data. The Contracting Authority should set standards which are achievable in the relevant market. These may vary across different markets and in developing markets in particular the Private Partner will typically want freedom in how it operates the port.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					In a user fee-based payment concession structure, underperformance by the Private Partner may result in it incurring fee deductions or may adversely affect demand. Where certain performance indicators cannot be met due to actions by the Contracting Authority (or other government entities) or unforeseen circumstances, the Private Partner may be entitled to relief (e.g. if caused by a relief, force majeure, MAGA or compensation event). For example, cargo unloading turnaround times may be affected if there is a blockage in the channel to the berth due to a failure by the Contracting Authority to provide marine dredging services. *See also Demand risk.* The services and obligations which are the Contracting Authority's responsibility may vary according to the market. In some markets, a failure by the Contracting Authority to upgrade and maintain the surrounding infrastructure in a manner which enables it to deal with any increased traffic from the port will impact on the Private Partner's ability to process throughput at the port and will adversely affect berthing times and the efficiency of the project. Likewise the inability of the Contracting Authority to provide or procure the provision of marine services (e.g. pilotage, towage, port traffic control) if these are within the exclusive domain of the port authority will impact the project performance, as will a failure to ensure the efficient provision of necessary customs controls, immigration controls and quarantine (human and animal) functions at the port. The contract should be clear how such action affects the Private Partner. *See also Force majeure risk and MAGA risk.*	In less mature markets, the Private Partner may require the Contracting Authority to reduce the performance requirements during the settling in period and possibly readjust the performance metrics once the performance of the port has stabilized. This can mitigate the risk of long-term performance failure. In developing markets, the Contracting Authority's obligations will be key. Its responsibility for supporting infrastructure (road and rail networks) is of particular importance to the Private Partner, as is efficient port operation. Inefficiency will impact the competitiveness of the project and is a major concern. The Private Partner may be able to enter into service level agreements with government entities providing relevant services at the port and their non-compliance should entitle the Private Partner to relief under the port concession. Improving efficiency can lower total transaction costs and boosts the competitiveness of a project. Where the project is in competition with an existing port operated by the applicable port authority, there may be issues in the level of service provided to the project by the port authority which would need to be addressed in the project documents.
	Operational resources or input risk		●	●	The Private Partner bears the principal risk and responsibility of ensuring an uninterrupted supply of resources for the project (such as utilities, maintenance equipment and materials, and specialist equipment and vehicles) and to manage the costs of those resources. It will need to consider this when structuring its supply arrangements. In some markets, there may be specific instances where the risk needs to be shared (e.g. in relation to availability of energy supply or reliance on local source materials) where resources may be affected by labour disputes, embargos or other political risks. These may be treated as relief, force majeure, compensation or MAGA events. *See also Force majeure risk and MAGA risk.*	Certain markets are generally more susceptible to market volatility and major cost variations. Mature markets generally do not experience market volatility to the extent of less mature markets, and resource availability is less of a concern. However, energy costs may still vary significantly over the course of a project.
	Intellectual property	[●]		●	The Private Partner takes the risk of obtaining all relevant licences for the construction and operation of the port and for intellectual property infringement except to the extent that the Contracting Authority imposes certain design or other technology solutions on the Private Partner, in which case the corresponding risk may be shared or borne by the Contracting Authority. The Private Partner must ensure that all required licences are able to be transferred to the Contracting Authority (or its nominee) at the end of the contract to enable it to continue construction and/or operation/maintenance. In port projects it is particularly important that the Contracting Authority has all the required licences transferred back to it or its nominated representative to enable them to use the port/terminal operating system.	
	Health and safety compliance	[●]		●	The risk allocation for health and safety will, in part, depend upon operating responsibility for the asset. The Private Partner will typically bear this risk in respect of its operational responsibility, as well as in respect of maintenance/repair works and other health and safety aspects related to the services provided by the Private Partner during this phase. Subject to applicable law, the Private Partner's liability may be mitigated to the extent the health and safety incident was caused or contributed to by the Contracting Authority and/or a third party. To the extent that the Contracting Authority has operational control of the	In some jurisdictions with developed construction and working practices legislation, certain of the Private Partner's responsibilities will be set out in law with strict liability for certain incidents. There may be specific bodies which will sanction it for breaches of applicable health and safety legal obligations, for example, in relation to maintenance work

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					asset, the Contracting Authority would typically retain "day to day" operational health and safety responsibility.	being carried out in the operating phase. A breach of applicable health and safety obligations may give rise to criminal liability for one or both parties (and/or their personnel), including the risk of fines.
	Liability for death, personal injury, property damage and third party liability	[●]		●	The risk allocation for these liabilities will depend upon operating responsibility for the asset. Except where arising due to a breach or fault by the Contracting Authority, the Private Partner will usually bear the risk of personal injury, death and property damage to either the Contracting Authority (and its employees and other personnel) or third parties arising due to any building issues/defects and on-going maintenance/repair services and any other services/responsibilities of the Private Partner. The Private Partner will usually indemnify the Contracting Authority against any liabilities it incurs as a result of such personal injury, death and property damage. If an accident occurs on the dock, the Private Partner will only be liable to the extent applicable (e.g. if the accident occurred in part due to its failure to comply with berthing and unloading procedures). The Private Partner should take out appropriate insurance to cover its potential liabilities, but typically the Contracting Authority will set certain minimum requirements under the PPP (*see also Unavailability of insurance under Financial markets risk*). The Private Partner may seek to cap its liability to the Contracting Authority (often by reference to its required insurance cover). If the Contracting Authority accepts a cap, it will bear the risk of third party claims against it over this threshold. *See also Liability for death, personal injury, property damage and third party liability under Construction risk.*	In many jurisdictions by law it is not possible to exclude (or cap) liability in respect of death and personal injury. In certain jurisdictions, it may be appropriate for the Contracting Authority to bear certain risks relating to what are ultimately state responsibilities or other factors outside of the Private Partner's control, for example a failure or lack of intervention by emergency services.
	Maintenance standards			●	The Private Partner will bear the principal risk of meeting the appropriate standards regarding maintenance as set out in the performance specification, so that the system remains robust and is handed back in the expected condition on early termination or expiry of the agreement *(see also Condition at handback risk)*. This includes day-to-day routine maintenance as well as lifecycle maintenance and replacement of particular assets. Failure to maintain the assets in accordance with the performance specification will lead financial penalisation and, where significant, potentially breach. In practice, estimating life cycle works may be challenging. It requires experience and, to the extent available, the Contracting Authority may be able to provide data on life cycle cost. As the standard for PPP is often set at a much higher level than for existing (non-PPP) projects, such data is likely to require a multiplier. Life cycle funding/reserving mechanisms may mitigate life cycle risk but are also difficult to design adequately and Contracting Authorities should bear in mind that these can have an impact on risk allocation/value for money. The Contracting Authority should ensure that the output specification properly defines the handback obligations on the Private Partner to ensure that the port infrastructure remains robust in the event of early termination or expiry of the agreement. The involvement of the Private Partner in the operation, maintenance and rehabilitation of the project, and the linking to payment entitlement, can provide several benefits. It should incentivize greater care and diligence by the Private Partner in both the construction and operating phase, and increase the useful life of the infrastructure. The Contracting Authority may establish a facilities management committee to oversee the Private Partner's performance of the maintenance and rehabilitation services, along with a formal mechanism to discuss and resolve performance related issues. Generally speaking, the Contracting Authority should avoid undue interference with the Private Partner's provision of maintenance and rehabilitation services so as not to dilute the risk transfer benefits. In port projects the Contracting Authority is typically responsible for marine services including maintaining the access channels, turning circle and docking zones. The Contracting Authority will also usually be responsible for maintaining the related equipment used in the provision of marine services (and procuring replacement or additional equipment where required). Any non-provision of marine	In mature markets, the Private Partner generally assumes the overall risk of periodic and preventative maintenance, emergency maintenance work, work stemming from design or construction errors, rehabilitation work, and in certain instances, work stemming from implementing technological or structural changes. *See also Disruptive technology risk.* Some projects in less mature markets have been procured on a design-build basis with a view to then passing over the assets to an operations concessionaire. In this case the Contracting Authority will need to ensure that it has sufficient warranties of the project components to allow the operator to manage the ongoing maintenance risk. In emerging markets, the Contracting Authority may be required to guarantee and proactively manage the maintenance of the existing maritime infrastructure that integrates with the project. There is typically a greater focus on the obligations of the Contracting Authority in relation to the upgrade and continued maintenance of the supporting infrastructure as well as on the port authority's ability to provide the marine services and maintain the related maritime infrastructure. The Contracting Authority should ensure that the port authority is capable of fulfilling its maintenance obligations (i.e. by ensuring it has adequate funds and capacity to do so).

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					services will be a compensation event or a possible termination for material breach depending upon the severity of the non-provision by the Contracting Authority.	
				●	**Demand-risk projects:** Where the Private Partner is taking on demand risk, it takes the primary risk that the port will be maintained to a sufficient level of quality and reliability to ensure that it can continue to attract business. However where the port constitutes an essential public service or is an effective monopoly operation over that area, it would be sensible for the Contracting Authority to include appropriate key performance indicators to monitor the service levels and take effective enforcement action (e.g. through penalties or reduced tariff revenue entitlements). *See also Existing assets in the project and Existing (or other) assets interfacing with the project below.*	
		●	[●]		**Throughput higher than forecast:** If throughput is much heavier than forecast and beyond the specification required by the Contracting Authority, it may need to agree a mechanism to pay compensation in respect of increased maintenance costs (noting that increased traffic will also typically increase revenue in a demand risk project). *See also Demand risk.*	
		●		●	**Existing assets in the project:** As regards existing structures, such as utlitity connections or warehousing, the maintenance risk should be allocated to the Private Partner to the extent the condition of the existing assets is known and future maintenance work can be assessed properly by an experienced contractor. In some cases, particularly a port where the Private Partner bears demand risk, the Contracting Authority may need to retain the maintenance or latent defect risk of some existing assets (and fit for purpose standards may need to be appropriately adjusted). **Existing (or other) assets interfacing with the project:** Similarly, the Contracting Authority will bear risk if it is required to guarantee and proactively manage the maintenance of existing roads that integrate with the project as these will be key to providing access to the port. *See also Access to the site and associated infrastructure under Land availability, access and site risk.* **Enforcement of regulatory regime:** Port maintenance obligations are closely linked to change of law risk and the regulatory framework. Maintenance costs, for example, will be affected by weight/charge limits for cargo. If these restrictions are not complied with by port users or enforced, the maintenance costs will be higher. Changes to the regulatory framework or lack of enforcement should be a Contracting Authority responsibility (and may be treated as a compensation or MAGA event or change in law). *See also MAGA risk and Change in law risk.*	
	Interface				**Contracting Authority staff interface:** Although the Private Partner is typically best placed to manage many of the operating phase interface risks that could adversely affect the project, there may be certain interface risks which need to be shared with or borne by the Contracting Authority. These include, for example, where the Contracting Authority/government retains certain core services (e.g. customs and border control) which affect throughput of cargo or port schedules. *See also Access to the site and associated infrastructure under Land availability, access and site risk, Project management and interface with other works/facilities under Construction risk, Maintenance standards under Operating risk and Demand risk.*	
	Industrial action	●	●	●	*See Industrial action under Social Risk.*	
	Vandalism		[●]	●	Vandalism will usually be a shared risk, for example with a threshold/cap above which the Contracting Authority will bear/ share the risk. This will depend on the nature of the risk and the extent to which the Private Partner can effectively have an impact on/mitigate risk, design choice, use of materials and restrict access to certain areas etc. For example, the Private Partner may elect to use materials which can be more easily cleaned of graffiti, or have strict security procedures and staff in place preventing	Vandalism may be more of a risk where the political climate opposes the port.

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					unauthorised access to the Private Partner's facilities at the port. Once the port is in operation, it is likely to be unreasonable for the Private Partner to be able to secure the entire site from vandalism. *See also Site security under Land availability, access and site risk and Social risk.*	
DEMAND RISK *The risk of traffic levels being different to forecast levels; the consequences for revenue and costs; and government support measures.*	**General principles**				The default position for port projects in developed markets is for the Private Partner to retain demand risk (the risk of throughput being higher or lower than forecast and total revenue subsequently being higher or lower than expected). The Contracting Authority should do a full assessment of the risk as part of its feasibility studies, including independent throughput forecasting. If there is high uncertainty over throughput projections and uncertainty over revenues (for example, due to tariff limitations and/or currency volatility), this may impact the appetite of investors and private partners to develop the project and the Contracting Authority may need to consider additional incentives to attract interest in the project. This could involve the Private Partner receiving some form of government payment or support, as well as user tariffs. *See also Government support measures under Demand risk.* Bidders will want to carry out their own assessment of the risk and extensive throughput 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.	In emerging markets the Private Partner typically takes the full demand risk on port projects. On certain robust projects the Private Partner may also need to give minimum throughput guarantees in relation to the number of containers processed per month. The Contracting Authority's inefficient provision of marine services, insufficient maritime infrastructure maintenance or insufficient channel dredging may impact on port users' demand for the project. Accordingly it is common for Contracting Authorities to be responsible for certain levels of protection against competing ports (within a particular distance or time envelope) and to guarantee the punctual and adequate provision of certain supporting services. Competition from competing port facilities in-country (whether new or existing) is a major risk.
	Considerations	●			**Appropriateness of asset for tariff regime:** The nature and quality of the asset is an important factor in the ability to transfer demand risk to the Private Partner. The potential for demand risk transfer will depend on a variety of factors, including the impact of competing ports and their potential to affect demand and pricing. **Tariff setting:** generally speaking the Private Partner will not be free to set tariff levels beyond the maximum tariff set by law and/or other contractual restrictions such as maximum customer discount levels. If the Contracting Authority or other government entity is required to take action to set tariffs, a failure to do so in a reasonable manner should be treated as a compensation event or MAGA event if it has an adverse financial effect on the Private Partner. This could include failing to increase tariffs or increasing tariffs to a level which adversely affects user demand.	
	Higher demand than anticipated			●	The Private Partner in principle bears the upside of demand fluctuations where demand risk is allocated to it. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control than the Private Partner's. Higher demand should increase revenues, but in practice there are some issues to consider. First, the increased throughput is likely also to impact costs as greater maintenance spend than anticipated will be required to keep the port in good condition and maintain user levels. The output specification in the contract will have anticipated a certain level of throughput and if the port is processing more throughput then there may be some significant lifecycle issues to consider which may outweigh the additional revenue which the Private Partner is receiving. A failure to address upgraded maintenance needs could result in the port becoming unusable before the expiry of its term. Second, if actual demand is higher than forecast, there may be public perception issues if the Private Partner is thought to be making a higher profit than originally anticipated (even if in reality it is facing higher maintenance costs as described above). If the port faced public opposition originally then this perception is likely to be exacerbated. This could cause problems for the Private Partner if users start to	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
			[●]		boycott the port or launch protests, as well as be politically uncomfortable for the Contracting Authority. In order to manage these issues, the parties may want to ensure the contract addresses such possibilities. For example, there may need to be a mechanic to update the output specification so that maintenance is adequately funded if revenue/use is above a certain level. Equally, there may need to be a mechanism for sharing the profit above a certain level (having taken into account increased costs), either through payment to the Contracting Authority or by reduction in user tariffs. This might be particularly appropriate where the Contracting Authority has provided some form of subsidy or revenue support or if the reason for the higher demand is due to a Contracting Authority action which was not anticipated at the time of bidding.	
	Lower demand than anticipated	[●]	[●]	●	Although the Private Partner in principle bears the downside of demand fluctuations where demand risk is allocated to it, in practice the situation is likely to be qualified. There are various factors that determine or affect user demand, some of which may be more within the Contracting Authority's control. **Private Partner risk:** The Contracting Authority should be mindful that the competitive bidding process may encourage bidders to be aggressive with their throughput and revenue forecasting. Over-optimistic forecasting can create financial problems for the Private Partner, and may lead to project failure. The Contracting Authority can mitigate the risk by commissioning its own demand analysis to assist it in evaluating bids and their underlying forecasts. Other Private Partner risks include where it sets a tariff which is too high (to the extent it is permitted to set the tariff) or fails to maintain the port and such actions adversely affects traffic. **Contracting Authority risk:** Some factors affecting demand are not within the Private Partner's control and the risk of such factors may instead lie more appropriately with the Contracting Authority. For example, in most cases, demand risk is unlikely to be accepted by the Private Partner in the absence of a regime that protects the Private Partner from "material adverse changes" which would impact user and revenue levels and which are outside its control. Such changes (and any materiality threshold) should be clearly defined and might include the construction of new competing ports or changes to surrounding marine and port conditions. The Private Partner may also seek to impose obligations on the Contracting Authority to implement works to link to connecting infrastructure or to not undertake activities that might derogate from the profitability of the port. Whilst the Private Partner may feel justified in requiring these measures in support of its estimated throughput forecasts, some of these steps may prove politically unpopular and will need to be carefully considered by the Contracting Authority. The parameters of such protection will need to be carefully negotiated to ensure the Contracting Authority and other relevant government bodies retain sufficient flexibility to implement other necessary infrastructure development over the term of the project. Failure by the Contracting Authority to comply with any contractual obligations or measures would typically be treated as a compensation event or MAGA event. *See also Maintenance standards under Operating risk and MAGA risk.*	.
	Government support measures		[●]		Projects where the Private Partner accepts demand risk may be underpinned by some form of government support in order for them to bankable, depending on the specifics of the project. This type of support may be seen across all markets but it is not frequently utilised in port projects. Support may be in the form of an upfront subsidy towards capital expenditure (i.e. construction costs) or the Contracting Authority may guarantee a minimum level of revenue for the Private Partner.	Most government support in port projects in emerging markets is limited to providing a government guarantee in respect of Contracting Authority payment obligations, which in a port project tend to be limited to the Contracting Authority's obligation to pay termination compensation.
FINANCIAL MARKETS RISK *The risk of inflation; exchange*	**Inflation**	[●]		●	**Construction phase:** The risk of construction costs increasing due to inflation is typically borne by the Private Partner who will generally price in this risk in markets where such risk can be projected and quantified. Where this is not possible the Contracting Authority is likely to be asked to bear some risk.	The fluctuation of inflationary costs is a greater risk in less mature markets than it is in other markets and the Private Partner's expectation will be that this risk is borne and

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
rate fluctuation; interest rate fluctuation; unavailability of insurance; and refinancing.		●			**Operation phase:** Inflation risk in the operating phase is typically borne by the project user in demand-risk projects. The Private Partner will look to be kept neutral in respect of both international and local inflationary costs through an appropriate inflation uplift or tariff adjustment regime. There is always a time lag in how quickly the indexation price increase is available to the Private Partner. In demand risk projects, the ability to increase tariffs may often be restricted (as tariff-raising is likely to be a sensitive political issue). The Contracting Authority may need to provide a subsidy to the Private Partner if users cannot bear the cost increase.	managed by the Contracting Authority during the contract term. In emerging markets, inflation risk is typically borne by the Private Partner and transferred to the port users. The Private Partner retains the risk of the impact on demand caused by any increases in the tariffs. The Private Partner will accordingly need the ability to increase the port tariffs, but this ability may often be subject to law and regulation (as tariff-raising is likely to be a sensitive political issue), and so the Private Partner may need additional Contracting Authority support.
	Exchange rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority may expect the Private Partner to bear the risk of an exchange rate fluctuation for a specific time period (e.g. 90 days) between submission of bid and financial close. Where there is a prolonged period between bid submission and financial close, the Contracting Authority may need to bear the risk. Where exchange rates are volatile or long term currency swap markets are illiquid, the Private Partner may have limited ability to accept the risk of exchange rate fluctuation and will seek to transfer the exchange rate risk to the host country by requiring that some or all of the contract price is linked to a foreign currency, such as USD.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of a change in exchange rate. Exchange rate risk can be substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets.
			[●]	●	**Rate changes during project:** Allocation of exchange rate fluctuation risk over the life of a project will depend on the relevant project jurisdiction and the nature of the project costs. In most port projects, the Private Partner will be paid by port user tariffs) in the domestic currency of that country, unless it is commercially determined and permissible under local law for the port user tariffs to be levied in hard currencies such as USD. The Private Partner may incur costs in a foreign currency and such costs may be translated into the bid price in the domestic currency on the basis of a particular exchange rate. In some projects, the Private Partner (and its lenders) may seek to transfer the exchange rate risk to the host country by requiring that some or all of the project revenue is linked to a foreign currency, such as USD. **Construction phase:** Exchange rate risk can arise where some or all of the construction costs are denominated in a currency different to the domestic currency. For example, where construction of the asset requires equipment that is manufactured overseas, adverse exchange rate movement may result in such equipment becoming more expensive than anticipated when converting domestic currency. This may use up the contingency the Private Partner has provided for in its financial arrangements (and priced into its bid) and/or require the Private Partner to take on additional borrowing in the construction phase to finance these costs. **Operating phase:** As with construction costs, a similar risk may arise if the Private Partner incurs operating costs in a currency different to the currency of the PPP contract payments. For example, exchange rate risk can arise if the debt used to finance construction is denominated in a currency different to the currency of the price paid under the PPP contract. Adverse exchange rate movements during the operating phase where the debt is being repaid will result in debt repayment requiring a larger proportion of the Private Partner's revenue. This may result in the Private Partner having insufficient funds to service its debt and/or may eat into its projected equity return. **Mitigation:** The Private Partner typically looks to mitigate exchange risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the costs the Private Partner incurs are effectively fixed instead of fluctuating, and protects it against adverse rate movements.	Exchange rate risks are more substantial in markets where exchange rates are more volatile or long term debt or swap markets are more illiquid (such as in countries with less developed capital markets). In more mature markets, the risk of currency fluctuations is typically not substantial enough to require the Contracting Authority to provide support and exchange rates risks are addressed solely through the Private Partner's own hedging arrangements. Where the exchange rates are more volatile, access to long term hedging may be either unavailable or too expensive. It is therefore common for the Private Partner to look for the right to charge the port tariffs in USD or other hard currency rather than local currency. The likelihood of debt being dominated in a foreign currency is more likely in markets where financing by multilateral or international banks may be required (e.g. in less mature markets where there is limited depth in the local debt capital markets). *See also Strength of Contracting Authority payment covenant under Early Termination risk.* Some of the cost risk can be managed by passing the risk through to the port users by way of adjustments to the tariff, but the ability to do this may be limited.

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					The cost of such hedging will be part of the contract price bid. Devaluation of a local currency beyond a certain threshold may also trigger a non-default termination, or a "cap and collar" subsidy arrangement from the Contracting Authority.	
	Interest rate fluctuation	[●]	[●]	●	**Rate change between bid and financial close:** The Contracting Authority normally expects the Private Partner to bear the risk of a change in the reference interest rate between submission of bid and financial close for a specific time period (e.g. 90 days). Any rate changes after this time period will be a Contracting Authority risk.	Although not recommended, there can be a significant period between prices submitted at bid stage and financial close. This may be more typical in less experienced markets and will make it difficult for the Private Partner to bear the risk of an adverse change in interest rate.
				●	**Rate changes during project:** The Private Partner will typically bear the risk of interest rate fluctuations over the life of the project but this will depend on the specific project and its jurisdiction. The Private Partner will seek to mitigate this risk through hedging arrangements, to the extent possible or necessary in the relevant market. These should ensure the interest rate the Private Partner is required to pay is effectively fixed instead of fluctuating, and protects it against adverse rate movements. The cost of such hedging will be part of the contract price bid.	In mature markets, the risk of interest rate fluctuations is not substantial enough to require the Contracting Authority to provide support and is typically addressed solely through the Private Partner's own hedging arrangements. In other (less stable) markets this may not be possible due to interest rate volatility or lack of long term hedging availability and in some circumstances it may be more appropriate for the Contracting Authority to retain interest rate risk if it can bear the risk more efficiently than the private sector.
	Unavailability of insurance .		●		The responsibility for placing required insurances and the cost of doing so is typically borne by the Private Partner. However, PPP contracts typically also include provisions to address the risk of insurance becoming unavailable or only available at a cost which exceeds a level at which the Private Partner is able to price in reasonable contingency. This only applies if the uninsurability is due to factors unrelated to the Private Partner. Where neither party can better control the risk of insurance coverage becoming unavailable or more expensive, this is typically a shared risk. How this is addressed will depend on the specific project and jurisdiction. For the purposes of PPP projects, insurance is generally deemed unavailable to the extent (a) it is no longer available in the international insurance market from reputable insurers of good standing or (b) the premiums are prohibitively high (not just more expensive) such that contractors in the project jurisdiction are commonly not insuring such risk in the international market. As part of the feasibility study the Contracting Authority should consider what insurances are necessary and available at a reasonable premium and whether insurance might become unavailable (or too expensive) for the project given the location and other relevant factors. This is essential for assessing risk allocation for relevant events (e.g. force majeure risk allocation) and for the Private Partner to price its risks.	The standard approach as regards unavailability is common in mature markets. In some less mature markets, if insurance becomes unavailable, the Private Partner is typically relieved of its obligation to take out the required insurance but, unlike the mature market position, the Contracting Authority does not become insurer of last resort and the Private Partner bears the risk of the uninsured risk occurring. If the uninsured risk is fundamental to the project (e.g. physical damage cover for major project components) and the parties are unable to agree on suitable arrangements, then the Private Partner may need an exit route (e.g. the ability to terminate the project on the same terms as if the unavailability of the insurance were an event of force majeure). In negotiating an insurer of last resort position, the Private Partner and, in particular, its lenders, will carefully assess the Contracting Authority's credit and its ability to meet liabilities if an uninsurable event occurs. This is a reason why this position may be more likely in economically stable markets. In less stable markets the parties may negotiate more over whether a particular insurance should be an obligation in the first place and how the risk (and its occurrence) might be managed (e.g. through the force majeure provisions).
			●		**More costly premium:** Where the cost of the required insurance increases significantly (without becoming prohibitive), the risk is typically shared by the parties by either having an agreed cost escalation mechanism up to a ceiling or a percentage sharing arrangement. This allows the Contracting Authority to quantify the contingency that has been priced for this risk.	
			●		**Unavailability:** A standard approach in mature markets to manage unavailability of insurance is that where required insurances become unavailable, the contract typically requires the parties to try to agree a solution to manage the uninsurable risk and the Private Partner is relieved from breach of its obligation to take out the required insurance to the extent the unavailability is not due to its actions. If a solution is	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					not agreed, the Contracting Authority is typically given the option to either terminate the project or to proceed with the project as "insurer of last resort" (i.e. to effectively self-insure and/or put in place its own insurance cover and pay out in the event the risk eventuates). If the Contracting Authority chooses to assume responsibility for the uninsurable risk, it may require the Private Partner to regularly approach the insurance market to try to obtain the relevant insurance and the contract price should be adjusted to reflect that the Private Partner is no longer paying the corresponding insurance premium.	In less mature markets, wider reference criteria may be needed in defining unavailability (e.g. to address a situation where the pool of benchmark contractors is insufficient to draw a meaningful comparison). Projects in some locations may find it more difficult to get insurance for certain events under commercially viable conditions. In this case the parties will need to find a solution to unavailability at the start of the contract.
			●		**Occurrence of uninsurable event:** With the mature market standard approach, if an uninsurable event occurs, the Contracting Authority may (a) terminate the contract (typically on a force majeure basis plus corresponding third party liability payments) or (b) pay the Private Partner the equivalent of insurance proceeds and continue the project. The approach to termination compensation reflects the general acceptance that uninsurability is neither party's fault and should be a shared risk.	
		[●]		[●]	**Unavailability due to fault:** Risk allocation will be affected by the reason for unavailability. As highlighted above, the provisions should only apply to the extent the Private Partner is not responsible for the insurance unavailability. Equally, if the unavailability is caused by the Contracting Authority's actions, the Private Partner may want to negotiate a right to terminate if a fundamental risk becomes uninsurable.	
	Refinancing		●	[●]	There are two key risks associated with refinancing (the changing or replacing of the existing terms on which the Private Partner's debt obligations have been incurred): (i) the risk that a project will be unable to raise the required capital to refinance a project at a given point in time; and (ii) the risk that a refinancing of debt will create additional project risks (e.g in terms of potential increased liabilities for the Contracting Authority and increased financial instability of the Private Partner). The risk of failing to raise required capital will arise in projects where the Private Partner (a) needs to seek a rescue refinancing to reschedule its borrowings if it is struggling financially, or (b) needs to replace short term (mini perm) financing which may have been the only financing option available to (or desirable for) the project initially. This is typically a Private Partner risk. Mitigation measures can include, in the case of mini perm financing, raising debt capital that has a repayment schedule that is matched to the PPP contract and project revenues available over the period of the PPP contract or by structuring the debt in several tranches of different tenors so that refinancing risks are smaller but arise more frequently. Refinancings may also occur where the Private Partner wants to take advantage of better financing terms available in the market (e.g. where the market recovers after a global financial crisis or after construction completion when the project is perceived to be less risky by funders). The risk of a refinancing creating additional project risks will be a risk for both the Private Partner and the Contracting Authority. The Contracting Authority needs to ensure that a refinancing does not adversely affect it (e.g. by increasing the level of its potential liability for termination compensation above what would have been the case under the original financing documents/financial model or increasing the risk of such liability falling due if the financial stability of the Private Partner is affected). To mitigate this risk, the contract should specify that the Contracting Authority's consent is required in specified carefully drafted circumstances. Where the result of a refinancing is that the Private Partner's debt costs are reduced, resulting in greater profit and in turn a higher equity return (typically known as "refinancing gain"), it may be appropriate for the gain to be shared between the parties (e.g. to the extent it increases the original forecast equity return in the financial model). The Contracting Authority may expect to share a percentage of the refinancing gain (e.g. 50%) and this is particularly important given the use of public funds (or user tariffs) to pay for the PPP project. To ensure it does not miss out on an anticipated share of any refinancing gain, the Contracting Authority should ensure that all relevant definitions are carefully	Refinancing risks will ultimately depend on the depth and liquidity of the relevant capital markets. In more developed capital markets, the risk of failing to raise required capital is unlikely to be a significant risk as long-term finance is available from the outset. Mini perm financing is more common in countries where the capital markets are less developed and there is a lack of a market for long term debt instruments. However, banks globally already face greater regulatory pressure which affects the loan tenor they can offer, and it is likely they will face increasing restrictions even in developed markets which may lead to shorter initial debt tenors and increased refinancing needs. It has become increasingly acknowledged in mature PPP markets that it would not be fair for the Private Partner to enjoy the entire benefit of a refinancing gain where it is not entirely responsible for the availability of improved financing terms (e.g. where the market recovers after a global financial crisis). In emerging markets for demand risk projects there may be limited scope for the Contracting Authority to negotiate refinancing gain sharing if such gain is a key incentive for potential bidders. Refinancing provisions may not be included. This is more likely in untested "riskier" markets where the prospect of refinancing gain is a key driver to bidders' participation (as has been the case, for example, in the Philippines). As with more mature markets, the potential for sharing refinancing gain should increase as the PPP market becomes more established and perceived risks

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					drafted. The way the Contracting Authority receives its share of the gain will depend on the nature of the refinancing and discussions at the time. Options include: (a) a lump sum upon the refinancing to the extent the Private Partner receives such amounts at the time of the refinancing; (b) a lump sum or periodic sums at the time of receipt of the relevant payments, or the receipt of the projected benefit (in the case of a "user pays" tariff model); (c) reduced user tariffs (in the case of a port project); or (d) by a combination of the above (in accordance with the applicable payment model). For a more detailed analysis of typical refinancing provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	decrease.
STRATEGIC/ PARTNERING RISK *The risk of the Private Partner and/or its sub-contractors not being the right choice to deliver the project; Contracting Authority intervention in the project; ownership changes; and disputes.*	**Private Partner failure/insolvency**			●	The Private Partner essentially bears the risk of failing to have the requisite technical or financial capability to deliver the project in accordance with the contract. However, as the consequences of such failures can lead to interruption in service and inconvenience to the Contracting Authority and users, as well as potential termination liabilities for the Contracting Authority, the Contracting Authority must carry out a thorough evaluation of each bidder to ensure that it selects the right partner to deliver the project, with whom it can develop the necessary long term partnership and meet any aspirations it may have as regards community engagement and local employment and skills development. *See also Risk Allocation in PPP contracts in the introduction.*	
	Sub-Contractor failure/insolvency			●	The Private Partner is responsible for its sub-contractors and bears any associated risks, unless the Contracting Authority imposes mandatory sub-contractors, in which case it may need to bear, or share, certain sub-contractor-related risks. However, the sub-contractors should form part of the Contracting Authority's evaluation of each bid for the reasons highlighted in relation to the Private Partner.	
	Change in Private Partner ownership			●	Complying with any contractual restrictions on change in ownership will be a Private Partner risk. The Contracting Authority wants to ensure that the Private Partner to whom the project is awarded remains involved and that any restrictions on, for example, foreign ownership of critical infrastructure are not circumvented. As the project is awarded on the basis of the Private Partner's technical expertise and financial resources, it will also want to ensure key parties such as parent company sponsors (and sub-contractors) remain involved. The Contracting Authority will typically prohibit any change in the Private Partner's shareholding for a period (e.g. by a lock-in for the construction period or until a couple of years into the operating phase) and thereafter may impose a regime restricting change in control without consent or where pre-agreed criteria cannot be met. The Contracting Authority's desire for certainty of involvement of key participants will need to be balanced with the private sector's requirements for flexibility in future business plans. This is particularly in respect of the equity investor markets and the added benefits of allowing capital to be 'recycled' for future projects.	In less mature markets, there is typically more restriction on the Private Partner's ability to restructure or change ownership. Overly restrictive provisions may deter investment, so this needs to be assessed in terms of the benefits to the Contracting Authority of both ensuring sufficient competition in the bid phase, and enabling parties to recycle their investment into other projects in the jurisdiction. Once the project is operational, for example, it may be reasonable for financial investors seeking regular returns to invest in place of certain of the initial (e.g. construction party) sponsors.
	Permitted Contracting Authority step-in			●	The risk associated with Contracting Authority step-in depends on the grounds for stepping in and whether due to the Private Partner's fault or not. Step-in circumstances include emergencies involving the emergency services, intervention to protect against social and environmental risks and fulfilling a legal duty to provide essential services of continuity of service. The scope and terms of the Contracting Authority step in is a key bankability point due to the potential impact on the parties' liability. **Private Partner fault:** If step in is due to Private Partner fault or an event it is responsible for, the Private Partner essentially bears the risk of costs incurred by the Contracting Authority (and itself). In some jurisdictions this liability may be capped. The Private Partner is usually given relief from performance of its affected obligations and may receive some payment in respect of its obligations. **No Private Partner fault:** In this situation, the Contracting Authority bears the risk and will be	In some jurisdictions (e.g. France), step-in is only contemplated in a breach situation and the Private Partner typically bears all cost up to a certain percentage (e.g. 15%) of project costs. A termination right may arise if the situation subsists for a certain period (e.g. 6 – 12 months). In some jurisdictions, the Private Partner may receive full payment as if it was performing the service in full or partial payment to reflect the affected obligations. In each case this will be subject to deductions and could result in zero payment. In some jurisdictions (e.g. in some EU countries and

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		●			responsible for its own costs. The Private Partner will be given relief from performance of its affected obligations and be entitled to extensions of time and relief on the basis of a compensation event (except to the extent the cause falls under another provision (such as force majeure) in which case that provision will apply). It will be entitled to full payment subject to certain deductions and may also require a cost indemnity from the Contracting Authority. In each case, risk should be allocated in respect of later issues around interface between solutions implemented during step in and the Private Partner's planned delivery solution, as well as any other risks that are allocated to the Private Partner. For a more detailed analysis of typical Contracting Authority step-in provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Australia), the Contracting Authority may not accept any liability when stepping in due to a Private Partner breach or event which is the responsibility of the Private Partner, except in the case of gross negligence in an emergency step in, fraud or bad faith. The scope and terms of step-in will be particularly relevant for Private Partners in jurisdictions which are less predictable or have underdeveloped or less stable legal or regulatory frameworks as the Private Partner will be concerned to limit the Contracting Authority's potential effect on the delivery of the PPP project. It may only want to agree to such rights in projects in sectors and jurisdictions where the Contracting Authority is committed to ensuring continuous delivery of the essential public service and has demonstrable experience in such delivery
	Change in Contracting Authority ownership/status	●			The Contracting Authority should bear the risk of any change to its ownership/status which adversely affects the project, for example, where its financial covenant and credit are adversely impacted. The Private Partner will typically have a right to terminate if certain criteria are not met and be entitled to compensation.	In stable markets, this risk may not be specifically addressed in the contract if satisfactory statutory or constitutional protections are available to the Private Partner. In less stable and untested markets, more specific provisions may be required, particularly where the Contracting Authority is not a central government entity.
	Disputes		●		**Private Partner/Contracting Authority disputes:** The risk of disputes is a shared risk and the consequences will depend on the outcome of the dispute. To minimise the risk of uncertain and costly outcomes, the contract should expressly include a clear governing law (typically the domestic law of the Contracting Authority's jurisdiction) and choice of dispute resolution forum (courts or arbitration). Efficient and fair dispute resolution processes should be included which provide for an escalated procedure where matters cannot be resolved between the parties' senior management, resolution of technical disputes by an independent expert, and recourse to the chosen forum. If the contract does not contain appropriate procedures this is likely to deter potential bidders and their lenders as efficient dispute resolution is a key bankability issue. A failure by the Contracting Authority to follow contractually agreed processes may also have an adverse effect on private sector interest in other PPP projects in that jurisdiction. There may be investment treaties applicable to the PPP arrangements with foreign parties, but these are no substitute for proper dispute resolution provisions in the contract itself. The Contracting Authority may be expected to waive any privileges and sovereign immunities which it enjoys before local and foreign courts (such as immunity from any suits by the Private Partner). Transparency and public access to information about disputes may be an important factor in choice of forum. In some jurisdictions the legal process is public which contrasts with arbitration which is generally a confidential and private process. Where additional agreements govern the relationship between the parties themselves, consolidation of related disputes and the joinder of related parties may be appropriate. To reduce the risk of concurrent processes, the agreements should include similar dispute resolution clauses agreeing to this. The Private Partner should be obliged to continue with performance of the contract while the dispute is resolved and, if so, will bear the risk of failing to do so. For a more detailed analysis of typical governing law and dispute resolution provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Contracting Authorities will typically select domestic law and local courts as the forum for disputes. This is for a variety of reasons including familiarity and compatibility with any concession/PPP legislation. It also minimizes the risk that local users and other stakeholders will bring claims in a different court. In jurisdictions with a less established and experienced legal system, the Private Partner is likely to want an established dispute resolution forum (such as a recognised arbitration centre for the particular region), rather than to rely on local courts. There may be circumstances where this option needs to be considered by the Contracting Authority as a necessary compromise in order to ensure the project is bankable. For the same reason, there may be certain cases where the Contracting Authority will consider having a foreign law as the governing law of the contract. Choice of forum may be restricted in some jurisdictions due to local law requirements (e.g. prohibiting referral of disputes to a foreign court or international arbitration, or being subject to a "foreign" law). This is particularly common in certain civil law countries where solely specific administrative courts are able to judge public authority decisions and/or contracts. Additionally, there may be local law limitations (under constitutional arrangements, public policy or otherwise) on contractually agreeing to waive sovereign immunity. There may also be reputational and

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						political issues if a Contracting Authority is seen to exempt public sector projects from the jurisdiction of domestic courts.
				●	**Sub-contractor disputes:** The Private Partner is responsible for disputes with its sub-contractors. The Contracting Authority should avoid the risk of getting involved in expensive and time-consuming peripheral disputes with other parties. However, it may want to consider allowing certain disputes it has with the Private Partner to be joined with disputes on the same matter between the Private Partner and its sub-contractor where the forum for resolving the dispute is appropriate. Any assessment of the need for joinder provisions is likely to be fact-dependent.	
DISRUPTIVE TECHNOLOGY RISK *The risk that a new emerging technology unexpectedly displaces an established technology or the risk of obsolescence of equipment or materials used.*		●	●	●	Responsibility for disruptive technology risk depends on the project circumstances. The Private Partner's obligation is to meet the output specification. If it fails to do so due to obsolescence of equipment or materials it is likely to suffer financial penalisation and, above a particular threshold, may be at risk of termination. In this case it bears the risk of potentially having to replace relevant technological solutions (e.g. if the solution it has chosen is no longer supported). However, if it is performing above that threshold, the Contracting Authority cannot require it to replace technology simply because more efficient technological solutions are available unless there is an agreed contractual mechanism for doing so. To address this, the Contracting Authority may consider imposing obligations on the Private Partner to adopt and/or integrate with new technologies or to allow for other foreseeable developments. It may be appropriate additionally to agree a specific cost sharing mechanic under which the Contracting Authority can request technological upgrades with appropriate cost sharing according to the reason for the request (e.g. if the replacement solution will improve health and safety or have social/environmental benefits). The same considerations apply if the Private Partner wants to make a technological change which is not strictly necessary and it may be appropriate for the Contracting Authority to consider incentivising the Private Partner to propose changes which will be of public or environmental benefit. The Private Partner will seek to mitigate potential exposure through agreed cost and improvement parameters, beyond which it will be treated as a Contracting Authority variation of the PPP contract and entitle the Private Partner to relief in accordance with the contractual variation mechanic. *See also Variations risk.* In many jurisdictions changes can be made only in accordance with pre-agreed contractual mechanisms, to avoid third party challenges	Disruptive technology risk is becoming under increasing focus in all markets. This is particularly the case in relation to technological changes relating to environmental protection and this area may require its own treatment in the contract (e.g. through specific treatment under the contractual variations mechanism and/or through other specific contractual obligations).
FORCE MAJEURE RISK *The risk that unexpected events occur that are beyond the control of the parties and delay or prevent performance.*	**Force majeure events**		●		Force majeure is typically treated as a shared risk where neither party is better placed than the other to manage the risk or its consequences. **Scope:** Force majeure is an event (or combination of events) outside the reasonable control of the contracting parties which prevents one or both parties from performing all or a material part of their contractual obligations. In some – typically civil law jurisdictions – the definition may require the event to be unforeseeable or not reasonably avoidable. Many jurisdictions have a concept of force majeure under general law and, particularly in civil law jurisdictions, this can limit the freedom of the parties to derogate from the scope of the legal concept and agree something different in the contract. However, most PPP contracts include specific force majeure provisions, whether they are civil law or common law governed, as this provides contractual certainty. The contract should be clear to what extent underlying law applies. **Approach:** Depending on the jurisdiction, the definition of force majeure may be an open-ended catch-all definition, an exhaustive list of specific events, or a combination of both.	The scope of force majeure will depend on the particular project and jurisdiction. In France, for example, the affected party is relieved from its obligations if force majeure prevents performance and French jurisprudence has defined the characteristics of a force majeure event as (i) beyond the control of the parties, (ii) unforeseeable and (iii) impossible to overcome.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					The open-ended catch-all definition is often seen in civil law-governed contracts and may also be more appropriate in markets which are less developed or stable and where there is little precedent or certainty. A non–exhaustive list of events may also be included. Qualifying events may be "natural force majeure" events (such as natural disasters and severe weather events, and possibly climate change events) and certain "political force majeure" events (such as strikes, war, government action etc). The exhaustive limited list approach is more common in developed and stable markets where the Private Partner has more certainty as regards the risk of events occurring and how it can manage them. It may be comfortable that events which might be force majeure in a less mature market (e.g. some types of industrial action) may instead be treated as relief events in a developed and predictable market. Under this approach, force majeure events are typically (but not necessarily exclusively) events which are uninsurable. Typical events include (i) war, armed conflict, terrorism or acts of foreign enemies; (ii) nuclear or radioactive contamination; (iii) chemical or biological contamination; and (iv) discovery of any species-at-risk, fossils, or historic or archaeological artefacts. As market practice develops, certain climate change events might also be included. *See also Site Condition under Land availability, access and site risk and Climate Change event under Environmental risk.* For a more detailed analysis of typical force majeure provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. **Risk qualification:** The Contracting Authority should consider whether it can limit its risk by carefully defining the events which qualify as force majeure, and/or qualifying or excluding them as appropriate. For example, in some projects earthquakes may only qualify as force majeure if they are above a specified seismic intensity. Alternatively, an event may only qualify if it has subsisted for a particular length of time. In some projects, risk is allocated to the Private Partner and/or shared for the first few months, and subsequently becomes a shared risk or Contracting Authority risk (with entitlement to terminate if the force majeure event continues for more than a defined time period (e.g. 6 – 12 months)). Using an open-ended definition of force majeure widens the risk shared by the Contracting Authority, but may be appropriate in some markets. The availability of insurance for certain events will be one of the main criteria in determining whether an event should qualify as force majeure and/or how the consequences should be addressed. Certain risks may be more likely to constitute a force majeure event if they occur in one phase than another (e.g. events in the construction phase affecting materials supply).	In less mature markets, the list of specific events is likely to be wider than in more mature markets and include natural risk events, which typically can be insured (e.g. fire / flooding / storm etc), and force majeure events which typically cannot be insured (e.g. strikes / protest, terror threats / hoaxes, emergency services action etc). The extent to which the risk will be shared or allocated to one of the parties will depend on its nature and on the particular jurisdiction.
		●			**Contracting Authority political risk:** In some markets, certain political risk events may need to be allocated in full to the Contracting Authority because the Private Partner cannot reasonably be expected to bear any of the risk and/or because the Private Partner may price in such a high contingency in respect of the risk that it makes the contract unaffordable. Where the Contracting Authority bears the full risk of these risks, this may be addressed under the force majeure provisions but with "political force majeure" receiving different treatment to the shared risk force majeure events. Alternatively, these political risks may be treated in a separate provision under the heading of "material adverse government action" or similar (which may also include other forms of event for which the Contracting Authority is deemed solely responsible). *See also MAGA risk.*	In certain markets, it may be necessary to differentiate how similar types of risk events are treated, depending on where they occur. For example, in more politically volatile jurisdictions, war events might be wholly a Contracting Authority risk where they occur within the country, but a shared risk otherwise. *See also MAGA risk.*
	Force majeure consequences		●		The basic principle of force majeure is that the risk is shared and each party bears its own losses. However, there may be circumstances where it is appropriate for the Contracting Authority to provide relief to the Private Partner, provided the Private Partner has made reasonable efforts to mitigate the force majeure effects and to the extent it was not responsible for the event. In addition to granting the Private Partner relief from breach of its affected obligations, certain time or cost relief may be granted (sometimes where a particular threshold of costs or time delay has been reached). This will depend on the phase in which the event occurs and should be considered at the time, together with the impact of the	The approach to cost and deductions relief varies across jurisdictions. In developed markets (particularly some civil law jurisdictions) Contracting Authorities may be more willing to make compensation payments during a force majeure event. In some jurisdictions, the contract will expressly identify only specific force majeure risks for which the Contracting Authority will grant financial relief

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					event on the Contracting Authority and the options available to it. Termination following prolonged force majeure (e.g. 6 – 12 months) may also be available. If the Private Partner has the ability to terminate the PPP contract on the basis of a prolonged force majeure event, the Contracting Authority may want to include an option to require the PPP contract to continue, provided that the Private Partner is adequately compensated. This approach is more likely to be encountered in a more established PPP market. **Construction phase:** The consequences for the Private Partner of a force majeure event in the construction phase are that it may be unable to meet all or part of its contractual obligations, in particular key dates (such as the operation commencement date); may suffer delayed and/or lost revenue; and may incur additional financing and other costs (e.g. in relation to mitigating the event), both during and after the force majeure event. As well as relief from breach of the affected obligations, the Contracting Authority may decide to grant certain cost relief (either while the force majeure event subsists or through the operating phase if the contract continues) on the basis that the Private Partner has limited means to absorb additional costs and it may be in both parties' interests to avoid the Private Partner going insolvent. For example, it may elect to make a compensation payment at the time or, if the contract continues, grant extensions of time and/or an extended operating period so that the Private Partner has the opportunity to recoup lost revenue and costs. **Operating phase:** The consequences for the Private Partner of a force majeure event in the operating phase are that it may be unable to meet all or part of its contractual obligations (including failing to deliver the service); may suffer delayed or lost revenue; may incur additional financing and other costs; and may possibly be unable to service its debt repayment obligations. Again, in addition to relief from breach of its affected obligations, the Private Partner may be granted grant certain cost relief on the same principles as described in the construction phase. It may also grant some element of user revenues subsidy. **Insurance:** Project insurance (physical damage and loss of revenue coverage) will be a key mitigant in respect of physical damage, to the extent it is available, and an important consideration in respect of compensation and how to continue the project. For example, if the a terminal is destroyed prior to handover as a result of force majeure, the Private Partner will typically be obliged to re-build it at its own cost, to the extent the risk is insurable. Design resilience is also an important mitigating factor, for example, for projects with seasonal weather such as monsoon or where earthquakes are common.	(e.g. raw materials price volatility). It may not be as common in less mature markets for cost compensation to be paid during force majeure unless caused by an event deemed to be a political risk for which the Contracting Authority is wholly responsible (e.g. a MAGA event). *See also MAGA risk.* Force majeure relief should be distinguished from relief available under any hardship doctrines *(see Glossary definition)* existing under the underlying law of the project jurisdiction.
MATERIAL ADVERSE GOVERNMENT ACTION RISK (MAGA) *The risk of actions within the public sector's responsibility having an adverse effect on the project or the Private Partner.*		●			In projects where a MAGA provision is appropriate, the Contracting Authority bears the risk of specific "political" actions having a material adverse effect on the Private Partner's ability to perform its contractual obligations, or on its rights or financial status. The Contracting Authority is responsible for costs and delays and is typically at risk of termination for prolonged MAGA events. Although not all jurisdictions use the term "MAGA", many have equivalent provisions under different terminology. MAGA events typically include: deliberate acts of state such as outright nationalisation or expropriation of the PPP contract; a moratorium on international payments and foreign exchange restrictions; certain governmental acts (such as not granting essential approvals where the Private Partner is not at fault or, in a port project, building a competing port); and politically-inspired events such as national strikes. Change in law is also a form of MAGA. Although some of these events may not seem as obviously within the Contracting Authority's control itself as others (e.g. if they relate to other arms of government), market practice is that they are accepted by the Contracting Authority. This is because passing them to the Private Partner may result in it being unable to enter into the contract or pricing in such contingency that the contract is unaffordable. The list of events will depend on the individual project circumstances and the position agreed on force majeure events, and the Contracting Authority	MAGA type clauses are more likely in less predictable and stable markets where the Private Partner (and its lenders) may require a clear regime to address specific government-related actions for which the Contracting Authority is responsible. This may be because of an actual or perceived likelihood of certain MAGA events occurring (e.g. war or civil unrest), or a lack of track record of PPP contracts being run successfully free from political interference over long periods of time and across political cycles. In mature politically stable markets, the Private Partner (and its lenders) are often comfortable that the type of MAGA risks likely to arise are limited. Instead of being detailed in a specific Contracting Authority risk clause, they can be addressed through the shared risk force majeure provisions and compensation event type provisions (and the general right to terminate for Contracting Authority default in

RISK CATEGORY AND DESCRIPTION		RISK ALLOCATION			RATIONALE AND MITIGATION MEASURES (INCLUDING GOVERNMENT SUPPORT ARRANGEMENTS)	MARKET COMPARISON SUMMARY
Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					can limit its risk by qualifying relevant events by reference to a clearly defined materiality threshold. The process and consequences of MAGA are broadly similar to force majeure as regards the parties trying to find a solution and how the Private Partner may be compensated. The key difference is that the underlying principle behind MAGA relief is to put the Private Partner back into the position it would have been in had the MAGA event not occurred. The parties may terminate for prolonged MAGA, with compensation payable on a similar basis to Contracting Authority default termination. The Contracting Authority may be able to reduce its liability in some cases if it can negotiate different treatment for MAGA events which are not as clearly within its own control and influence. For a more detailed analysis of typical MAGA provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*. *See also MAGA/Change in law termination under Early Termination risk.*	limited circumstances). Investors and lenders may be able to obtain political risk insurance in respect of some of these types of risks. This is more common in politically young or unstable markets. Some jurisdictions are more politically volatile internally than others and certain political risks will be treated differently. For example, war events may be treated as MAGA if they occur within the country, and shared risk force majeure if outside it.
CHANGE IN LAW RISK *The risk of compliance with applicable law; and changes in law affecting performance of the project or the Private Partner's costs.*	**Compliance with applicable law**	● ●		● [●]	Compliance with applicable law and mandatory regulation is each party's risk. The Private Partner is typically subject to an express contractual obligation and will be in breach if it does not comply with applicable law, subject to change in law relief. The contract must be clear what laws and other mandatory regulations and industry codes the Private Partner is obliged to comply with. This is essential not only so the Private Partner can price its compliance, but also in order to determine what constitutes a change in law so that change in law risk can be allocated effectively. Compliance by third parties is likely to be a Contracting Authority risk where it has failed to enforce compliance and there is an adverse effect on the project (e.g. where customs inspections are over and above expected levels and cargo unloading rates are adversely affected). *See also Maintenance Standards under Operating risk.*	
	Change in law (and taxation)	●	[●]		The Contracting Authority primarily bears the risk of unexpected changes in law which were not in the public domain before a specified cut-off date in the bid phase and which cause the Private Partner's performance of its contractual obligations to be wholly or partly impossible, delayed or more expensive than anticipated (or impact its investors). This is because the Private Partner has contracted to provide the specific port project at a specified price based on a known legal environment and typically has limited means of offsetting adverse consequences of unexpected law changes. As change in law may also benefit the Private Partner, change in law clauses are often reciprocal, to ensure the Contracting Authority benefits from the "positive" financial consequences of a legislative change. The Contracting Authority's risk can be mitigated by ensuring that the contract clearly defines what constitutes a change, the relevant cut-off date and what constitutes being in the public domain. This will vary according to the nature of the project and jurisdiction concerned. There are various approaches to risk allocation as briefly summarised below and the degree of risk sharing will depend on the type of change and the approach suitable to the maturity and stability of the relevant legal market. Any risk that is transferred to the Private Partner is likely to be reflected by contingency pricing in its bid which may result in the Contracting Authority paying for something that never happens. The Contracting Authority should be mindful of how it will fund changes in law which are at its risk should they arise. For a more detailed analysis of typical change in law provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	Change in law risk may be treated as a MAGA event if the treatment agreed for this form of political risk is the same as for other MAGA events. Generally speaking, where a detailed approach to risk allocation is involved and where the consequences do not lead to termination, change in law is best dealt with separately – this is more typical is established markets. *See also MAGA risk.* In defining a change it may be appropriate for the definition to include any modification in the interpretation or application of any applicable law. This is particularly likely in common law jurisdictions. As highlighted by the different approaches, in mature legally stable markets the Private Partner will likely have less protection than in jurisdictions where changes in law are less predictable and/or more likely due to underdeveloped or less stable legal or regulatory frameworks. Approach (a) is often seen in developing markets with less established legal environments as it may be the only way that private finance can be raised and should also enable the Private Partner to offer a more competitive price.
		●			**Approach (a) Contracting Authority risk:** The basic approach is that the Contracting Authority bears	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					all the risk of change in law and provides full relief to the Private Partner.	Approach (b) has also been seen in more developed markets and some emerging markets. Approach (c) is seen in more experienced PPP markets. While it will involve some contingency pricing, this approach is considered generally more beneficial to the Contracting Authority, but may not be bankable in every jurisdiction and should be contemplated on a case-by-case basis. Even in markets using this approach there will be instances where this risk allocation is not fully achievable due to the nature of the PPP project and the extent to which the applicable legal and regulatory regime is settled. Past models (including in the UK) used to require the Private Partner to assume, and price for, a specified level of general change in law capex risk during the operational period, before compensation would be paid. The UK Government ultimately decided that this allocation did not represent value for money and reversed this position. Some countries which adopted the UK model had already taken this approach. Although a Contracting Authority may bear all change in law risk at the start of a PPP program, once a track record and/or legal environment is established in its jurisdiction which gives the private sector greater confidence in the stability and predictability of the regime, Contracting Authorities procuring new PPP projects may be able to explore some risk transfer to the Private Partner. A termination right as a consequence of change in law is not considered necessary in all jurisdictions. In civil law jurisdictions it is common for the Private Partner to have a specific right to terminate the contract where performance of the PPP contract would entail a breach of law that cannot be remedied by a Contracting Authority variation. This is not usually seen in common law jurisdictions with established legal frameworks as the Private Partner and its lenders are able to take a view that it is highly unlikely that a change in law would result in such drastic consequences without means of holding the government accountable. In civil law jurisdictions, Private Partners may sometimes rely on underlying legal principles such as hardship doctrines *(see Glossary definition)* for relief. However, widespread market practice across civil and common law jurisdictions has shown that the private sector is unwilling to enter into PPP contracts on such a basis as both lenders and sponsors require express contractual certainty in relation to the potentially significant impact of changes in law.
		●	●		**Approach (b) Limited risk sharing:** A more nuanced approach is for the Private Partner to accept a certain annual monetary threshold up to which it accepts any unexpected change in law risk and above that threshold the Contracting Authority bears the risk/cost. This enables the Private Partner to price the risk it bears.	
			●		**Approach (c) Advanced risk sharing:** With this approach the Private Partner is kept whole in respect of unexpected changes in law which are: (i) discriminatory (e.g. to the project or the Private Partner); or (ii) specific (e.g. to the port sector or to investors in port operators); or (iii) require capital expenditure after construction completion (i.e. in the operating period). (Applicable law may protect the Private Partner from unexpected changes in the construction period if the relevant legal regime provides that changes in law affecting capital expenditure during construction do not apply retrospectively.) With this more detailed approach the Private Partner bears (some of) the general business risk that applies to all businesses (including operational expenditure or taxation affecting the market equally) and can absorb this in part through the indexation provisions typically contained in the pricing mechanism (or possibly through increased tariffs).	
			●		**Bespoke mechanisms:** It may be appropriate to have bespoke mechanisms for certain changes in law, such as those relating to climate change and environmental protection – market practice is still developing in this regard. *See also Climate change event under Environmental risk.*	
		●			**Consequences:** The Private Partner should always be entitled to relief from breach of contract where a mandatory change in law occurs which conflicts with an existing obligation or would make compliance illegal (and/or impossible). The contract typically contains a mechanism by which the Contracting Authority is deemed to request a corresponding contractual variation of the relevant obligation. The nature of the cost relief given to the Private Partner will be as described for a compensation event. Alternatively, the Private Partner may be entitled to a right to terminate (typically on a Contracting Authority default basis). In a port project, costs could be passed on to the users of the facility, but the Contracting Authority is likely to want to place contractual constraints on any price increases for public policy (and customer protection) reasons. Increasing the tariff could also undermine users' desire for the service and result in lower PPP project revenues than forecast for the Private Partner.	
		●			**Stabilization provisions:** Some projects may also provide for a stabilization clause that entrenches certain legal positions (such as the current tax regime) against any future changes in law. This may require a level of parliamentary ratification of the project contract. The stabilization method is generally not favoured by governments or non-governmental organisations (e.g. because the concept of Private Partner immunity from changes in environmental protection laws is unsatisfactory) and the Contracting Authority should instead seek contractual mechanisms to address such matters.	

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
EARLY TERMINATION RISK *The risk of a project being terminated before its natural expiry on various grounds; the financial consequences of such termination; and the strength of the Contracting Authority's payment covenant.*	**Contractual termination provisions**		●		The allocation of risk for early termination depends on the termination grounds and these also determine the financial consequences of termination. The key risks relating to the contract being terminated early are that the Private Partner is deprived of its expected revenue stream to repay the debt it incurred developing the project and the project asset or service ceases to be delivered for the Contracting Authority. The complexity and variety of termination circumstances result in parties in all jurisdictions almost always seeking to include clear contractual mechanisms in the PPP which set out comprehensively what circumstances may give rise to termination, who may terminate and what the consequences of termination will be for the Contracting Authority and the Private Partner, as well as for lenders or other key third parties. Without such certainty, bidders and potential lenders may be deterred from bidding. The Contracting Authority should not be "unjustly enriched" by receiving an asset for which it has not paid the expected contractual price. This is an underlying legal principle in most jurisdictions and should be taken into account in the drafting of applicable termination compensation provisions. The Contracting Authority, besides making a payment, will need to consider the other risks associated with termination, such as the reputational risks, continuity of service delivery, completion of the works or maintaining the asset itself, or re-tendering the project (or a mix). For a more detailed analysis of typical early termination and termination payment provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition*.	The increasingly market standard approach in all jurisdictions is to include contractual termination provisions in the PPP contract. However, in some civil and common law jurisdictions there may be underlying laws addressing certain termination rights and their consequences which apply without the PPP contract having to include termination provisions. While relying on underlying law rather than express contractual provisions is an approach less likely to be seen in common law jurisdictions, there can be certain exceptions as described, for example, under *Contracting Authority default termination and Voluntary termination by Contracting Authority*. Furthermore, if the transaction is financed in a shariah-compliant manner (such as through an ijara (lease) structure) consideration must be given to how ownership will be transferred following the termination. This is typically achieved through a Purchase Undertaking or Sale Undertaking of the underlying assets. In less developed PPP markets, it may not be easy to re-tender a project if there is no pool of alternative contractors to take on the project.
	Contracting Authority default termination	●			**Termination right:** The Contracting Authority bears the risk of termination for breaches which have a material adverse effect on the Private Partner or the project (e.g. expropriation in relation to the PPP project and failure to pay). The test is typically that the default event has made it impossible for the Private Partner to perform the contract or rendered the continued relationship untenable and any materiality threshold should be clearly defined. *See also MAGA risk.* To mitigate the risk of termination, the Contracting Authority should ensure that grace periods are built in (e.g. for non-payment) so that it has the opportunity to rectify the default and reduce the risk of a termination right arising purely from, for example, administrative error. **Compensation:** Although the exact approach depends on the relevant jurisdiction, the underlying principle is that the Private Partner should be fully compensated by the Contracting Authority as if the PPP contract had run its full course. The Private Partner would typically receive an amount in respect of senior debt (including where applicable hedge break costs), junior debt, equity investment and a level of equity return which from the Contracting Authority's perspective should where possible reflect the actual performance level of the Private Partner. Redundancy and sub-contractor break costs will also be included. In port projects it is also common to have the termination payment linked to the "Fair Market Value" of the assets that are being handed back, however, there are intrinsic issues with defining "Fair Market Value" and the lack of certainty as to whether this valuation would be sufficient to fully compensate the Private Partner in the manner outlined above. The Contracting Authority should mitigate the amount it pays out by setting off deductions available to the Private Partner in respect of, for example, insurance proceeds, bank accounts, hedge break entitlements and surplus maintenance funds.	There are some common law jurisdictions (e.g. Australia) where the Private Partner is expected to rely on its common law rights to terminate for Contracting Authority default instead of having an express contractual right. This may be because termination for Contracting Authority default is such a fundamental step with enormous business and other ramifications for the Private Partner that the focus is instead on the enforceability of the contractual payment and time/cost compensation provisions applicable to breaches by the Contracting Authority. Similarly, in civil law jurisdictions the PPP Contract may be silent, and the Private Partner may need to apply to an administrative court to request contract termination (as was the case in earlier PPP contracts in France). Relying on underlying law is likely to deter bidders in markets where there is insufficient legal precedent and certainty.
	MAGA / Change in law termination	●			**Termination right:** Some PPP contracts may contain specific MAGA provisions which entitle the parties to terminate the PPP contract if there is a protracted MAGA event. The type of political risk events addressed by a MAGA provision may include the type of Contracting Authority defaults outlined	Markets which are politically and legally stable are less likely to have separate MAGA termination provisions as the Private Partner and its lenders will be comfortable relying on

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
					under *Contracting Authority default termination* and also change in law where there is no solution agreed to continue the contract. This could mean that a PPP contract (i) only has a MAGA provision, (ii) only has a Contracting Authority default provision, or (iii) has a combination of the two and/or separate provisions addressing specific political risk matters such as changes in law. *See also MAGA risk and Change in law risk.* **Compensation:** The same principles will apply as outlined for Contracting Authority default termination but some jurisdictions may only allow the Contracting Authority to terminate for protracted MAGA-style events by implementing a voluntary termination. The Contracting Authority may be able to negotiate a reduced termination payment in respect of "no fault" MAGA events. *See also MAGA risk and Voluntary termination by Contracting Authority under Early termination risk.*	a Contracting Authority default termination provision, combined with a shared risk force majeure provision and other contractual provisions (e.g. compensation events) which provide time and/or money relief to the Private Partner in relevant circumstances of Contracting Authority responsibility.
	Voluntary Termination by Contracting Authority (Also commonly referred to as termination for convenience, public policy or interest. termination at will or unilateral termination.)	●			**Termination right:** In return for having the right to terminate for convenience, the Contracting Authority bears the risk of this event. It should have fully considered and prepared for termination before deciding to exercise its right to terminate. The notice period should be the minimum sufficient for both parties to make appropriate arrangements in respect of the handback of the project and to facilitate compliance with handback obligations. **Compensation:** The Private Partner's prime concern will be to ensure it is fully compensated for such early termination and able to comply with its handback obligations. The termination payment will be based on the same principles as for Contracting Authority default.	In some jurisdictions (more typically civil law) the Contracting Authority may be entitled to terminate the PPP contract on the grounds of public interest even without an express contractual right. This inalienable right is rarely invoked but the private sector (Private Partner, sub-contractors and lenders) will still require the PPP contract to cater for this low probability but high risk event as comprehensively as possible. The Contracting Authority may be required to substantiate the validity of the public interest ground (for instance, termination may not be permitted purely on financial grounds). In some jurisdictions (e.g. France) it is not possible to contractually waive the right to unilaterally terminate in the public interest, but it is possible for parties to agree in advance the procedure and consequences of such termination. In practice, these are usually identical to voluntary termination, or even a Contracting Authority default scenario. This is because the Private Partner is not responsible for, nor capable of mitigating, a public policy-driven decision to terminate unilaterally.
	Force Majeure and Uninsurability termination		●		**Termination right:** The risk of a force majeure termination arising is shared by the parties. Typically it will arise after 6-12 months of prolonged force majeure where the parties are unable to agree a solution to continue with the project. **Compensation:** The Contracting Authority pays termination compensation to the Private Partner reflecting the principle that force majeure events are neither party's fault and the financial consequences should be shared. This is not "full" compensation as this would result in the Contracting Authority bearing all the financial pain. Typically outstanding senior debt (including where applicable hedge break costs), initial equity, redundancy payments and sub-contractor break costs will be paid, less any applicable deductions as on Contracting Authority default termination). The Private Partner will lose all its forecast equity return (i.e. its anticipated profit) but the payment will be sufficient to repay all of its outstanding senior debt which will help address bankability concerns as to whether the debt will be kept whole in this termination scenario. The equity element will serve as a buffer for lenders if the termination payment does not cover 100% of the outstanding debt.	In some (typically less developed) markets, the Contracting Authority may succeed in negotiating paying no termination compensation in respect of certain natural risks which are insurable (and would reasonably be expected to be insured against as good operating practice), or a reduced amount reflecting insurance payments received (or receivable) by the Private Partner. This to some extent reflects the practice in more developed markets where these type of events may instead be classified as relief events which entitle the Private Partner to time relief only (but no ultimate right of termination). This will of course depend on the risk assessment by the Private Partner and its lenders. In less mature markets it is not uncommon for the senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted.

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Risk	**Sub-category**	**Public**	**Shared**	**Private**		
	Private Partner default termination			●	**Termination right:** The Private Partner bears the risk of termination by the Contracting Authority for serious failures by the Private Partner connected to delivering the PPP project. Termination events may be performance-related or relate more specifically to the financial status and corporate activity of the Private Partner. In order to mitigate the risk of termination, the contract should clearly define the default events and they should have reasonable in-built tolerance levels so that an appropriate threshold of poor performance has to be reached before termination rights arise. The opportunity to rectify should be given where feasible. The Contracting Authority can mitigate the risk of a termination payment arising as it has control over serving the termination notice that triggers it. It also has the ability to mitigate against the risk of Private Partner default even before the PPP contract is signed, by careful selection of the winning bidder. *See also PPP Project Preparation and Delivery in the introduction.* **Compensation:** The Private Partner will typically be entitled to a compensation amount equal to a pre-set percentage (around 80 – 100%, although in some port projects in emerging markets this can be 100%) of the scheduled outstanding debt, minus applicable deductions, and no equity compensation. The aim of a lender "hair cut" of less than 100% debt is to incentivise lenders to conduct proper due diligence and exercise their monitoring and step-in rights to ensure the Private Partner delivers the project satisfactorily so that it avoids termination and can repay the whole of the lenders' outstanding debt. Alternatively, a market value retendering of the contract may take place (or be deemed to take place) and the compensation paid to the Private Partner will be the price tendered (or deemed tendered), less applicable deductions. A third alternative is for the Private Partner to receive a payment based on book value.	In some civil law jurisdictions, insolvency laws may have an impact on the right to terminate the PPP in the event of insolvency of the Private Partner (or its shareholders). A debt-based compensation method is the most common approach in emerging markets and availability-based PPP projects in jurisdictions such as France and is also seen in Germany. The market value retendering approach is more likely in a mature PPP market where there are likely to be a number of potentially interested purchasers in the relevant sector. Lenders to PPP projects in certain jurisdictions or in relation to certain assets may be reluctant to rely on a market-based valuation method for fear of undervaluation or underpayment. This is particularly likely to be the case in emerging markets where there is a limited PPP track record and a limited market. Some European jurisdictions have followed a book value approach but this may not accurately reflect sums owed and is not as common. In less mature markets it is not uncommon for a high percentage or the full senior debt to be guaranteed as a minimum in every termination scenario, and for rights of set-off below that figure to be restricted. The higher percentage haircut is seen in markets where the risks in respect of project failure and of the ability to rescue it are considered low (e.g. from a technical or resourcing perspective, or because the market is known), and the overall security package available to Lenders is otherwise sufficient to cover their debt. Lenders in such markets (e.g. in some projects in the US) may alternatively accept no compensation for the same reason but this is not common practice. If available in the relevant jurisdiction, lenders will seek a direct/tri-partite agreement with the Contracting Authority. The purpose of this is to give lenders step-in rights if the Contracting Authority serves a default termination notice or if the Private Partner is in default under the loan documentation. The lenders would typically be given a grace period to gather information, manage the Private Partner and seek a resolution to rescue the project and the right to ultimately novate the project documents to a suitable substitute private partner.
	Strength of Contracting Authority payment covenant	●		[●]	The Contracting Authority bears the risk of making the relevant termination payment on time and in the amount required. To mitigate the risk of failure, it will need to assess whether it will be able to pay a lump sum if such a large payment is not budgeted for or does not have backing from its government treasury department. Payment over time may be preferable and the Contracting Authority should in any event try to negotiate a reasonable grace period long enough to raise the necessary funds. The Private Partner and its lenders will typically want to close off their exposure to a terminated PPP project and avoid Contracting Authority credit risk as soon as possible. It is likely that they will favour a lump sum payment, particularly on Contracting Authority default termination where the most likely cause of	In jurisdictions where the Contracting Authority's credit is weak or uncertain, additional credit support may be sought by the Private Partner and its lenders. This may be the case, for example, in less stable regimes or emerging markets or in projects where the Contracting Authority is not part of central government. Support may be available via multilateral or export credit agencies or central government or sovereign guarantees. Lenders and investors may seek

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					termination is failure to pay. In some cases, the Contracting Authority may be asked to provide credit support of its payment obligations. Lenders may be reluctant to release security interests held over the PPP project assets until compensation payments have been made in full. This may make the transfer of relevant assets back to the Contracting Authority difficult. In certain circumstances, the Contracting Authority may be able to negotiate an interim solution at the time of the termination, such as an arrangement whereby it has a right to access the PPP project assets during the period from the termination date until all termination compensation is paid, so long as the Contracting Authority complies with the payment terms with respect to such compensation. This approach is unlikely to be agreed at contract signature and certain issues will need to be clearly addressed (such as liability for damage to the asset while in the Contracting Authority's use).	political risk insurance to cover the risk of the Contracting Authority or any government guarantor defaulting on its payment obligation. A key concern for lenders in some jurisdictions relates to the requirement for parliamentary approval of appropriations in respect of contingent liabilities under project contracts. In the Philippines, for example, the government requires a two-year grace period for the payment of termination compensation as this is the maximum period of time for the parliamentary appropriation process. In less mature markets, issues of convertibility of currency and restrictions on repatriation of funds are also bankability issues upon termination. Release of security interests may not be a relevant concern in some jurisdictions, such as France, where lenders would not typically take security over the project assets as this would only give them limited rights. They would more usually take security over the Private Partner itself.
CONDITION AT HANDBACK RISK *The risk of deterioration of the project assets/land during the life of the PPP and the risk that the project assets/land are not in the contractually required condition at the time of handback to the Contracting Authority.*				●	The Private Partner bears the risk of the project assets and land being handed back to the Contracting Authority in accordance with the contract and meeting the required handback conditions. This is linked to maintenance of the assets during the contract and may be complex given the need to define relevant asset standards. The circumstances around handback will vary from one PPP contract to another and will depend on matters including: the Contracting Authority's intentions with regard to post PPP usage, the nature of the asset (e.g. ports are usable for much longer than the initial PPP project duration), the stage at which the PPP contract comes to an end, whether termination occurs during construction or operation and any requirements under underlying laws in the relevant jurisdiction. To mitigate the risk of unexpected consequences, the contract should set out the requirements and process, including the Private Partner's obligations to facilitate an effective handover, hand over relevant licences and documentation and cooperate with the Contracting Authority so that the asset can continue the service. To mitigate the risk of the assets not being returned in the expected condition, the contract should include a mechanism for surveying conditions in advance of expiry and requiring relevant remediation. Typically the contract will provide for a retention fund to be established to fund remediation a certain period in advance of contract expiry, or for the Private Partner to provide some form of financial bond. Any funds remaining in existing lifecycle funds should be used/shared appropriately. For a more detailed analysis of typical handback provisions and sample drafting, see the World Bank's *Guidance on PPP Contractual Provisions 2019 Edition.*	In civil law jurisdictions, assets built on publicly owned land and/or used for a public service will often be subject to particular restrictions. For example, mandatory handback at termination may be embedded in underpinning administrative law principles or legislation and there may be mandatory access or rights of use for third parties. In some countries (such as France), ownership will sit with the Contracting Authority throughout the duration of the contract, with assets built on such land automatically becoming Contracting Authority property as soon as they are built and handed back for free at natural expiry. The PPP contract will set out the specific accompanying detail about asset condition and cooperation obligations, taking into account the underlying mandatory law provisions. Typically, in a common law jurisdiction, the Private Partner will have been leased the PPP project land by the Contracting Authority (and may have been permitted to sub-lease it to the relevant sub-contractors). The headlease to the Private Partner is usually coterminous with the PPP contract, so the land will revert to the Contracting Authority at the same time as the PPP project asset. In civil law jurisdictions, the PPP project land may have been made available through an administrative contract such as a "land concession" or other precarious right of use and is land within the public domain.

Important Information

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CONTACT US
GLOBAL INFRASTRUCTURE HUB

P: +61 2 8315 5300

E: contact@gihub.org

W: ppp-risk.gihub.org

@gi_hub

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