Financing Infrastructure in APEC Economies

APEC/OECD Report on Selected Effective Approaches
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Foreword

APEC Finance Ministers have recognised the importance of mobilising long-term investment in infrastructure and the relevance of quality infrastructure as a basis for sustainable economic growth. Diversifying financing sources and fostering private sector involvement in infrastructure projects is considered by APEC Finance Ministers to be an important solution to meet the significant demand for long-term capital for infrastructure, complementing public infrastructure investment.

The APEC Cebu Action Plan\(^1\) agreed by APEC Finance Ministers in 2015 highlighted the need to accelerate infrastructure development and financing (Pillar 4), and builds on earlier APEC efforts to promote quality infrastructure development and financing. In 2017, in recognition of efforts made in this area, APEC Finance Ministers endorsed a Policy Statement\(^2\) on “Diversifying Financing Sources and Fostering Private Sector Involvement in Infrastructure Investment in APEC Economies” (Annex A to the 2017 Joint Ministerial Statement) and encouraged its implementation on a voluntary and non-binding basis.

To this end, APEC Finance Ministers called for further work to identify and analyse good practices and approaches in APEC economies, relevant to the issues addressed in the Policy Statement, and asked the OECD, in cooperation with other international organisations including multilateral development banks (MDBs), to report on these good practices at their next meetings in 2018 and 2019.

Within APEC, as part of the development of a capacity building package of tools to help economies adopt measures to accelerate infrastructure development and financing, it was agreed in 2018 that this package would comprise a **selected set of effective approaches to financing infrastructure in APEC economies**, including blended finance. These effective approaches would draw on the results of planned surveys, with two phases of work envisaged given the wide scope of the Policy Statement. A first report, considered to be a preliminary analysis of the results, was presented to APEC Finance Ministers in October 2018.

This report concludes the work with a final set of selected effective approaches to financing infrastructure in APEC economies. These identified effective approaches are examples of practices that have been adopted and are regarded as having been successful in achieving the intended objective of improving the financing of infrastructure. They are illustrative and non-binding, and are not comprehensive. They are meant to assist policymakers and stakeholders, and are thus accompanied by examples and case studies.

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Papua New Guinea led in the organisation of the work for this report in 2018, followed by Chile in 2019, with the support of the OECD and APEC Secretariat. APEC economies that responded to either or both of the surveys or otherwise provided input include: Australia, Canada, Chile, China, Chinese Taipei, Indonesia, Japan, Mexico, New Zealand, Papua New Guinea, the Philippines, Russia, Singapore, Thailand, and the United States.

Going forward, further regional cooperation among APEC economies is expected in this area, both to explore and develop effective financing solutions for infrastructure, and to promote private sector involvement in infrastructure projects in the region. The OECD, in cooperation with relevant regional and international organisations including the MDBs, is ready to support these efforts.

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Key findings of the report

This report presents selected effective approaches to financing infrastructure in APEC economies based on input received from 15 APEC member economies: Australia, Canada, Chile, China, Chinese Taipei, Indonesia, Japan, Mexico, New Zealand, Papua New Guinea, the Philippines, Russia, Singapore, Thailand, and the United States.

The report identifies and analyses good practices and effective approaches to diversifying financing sources and fostering private sector involvement in infrastructure investment in APEC economies, as called for in the Joint Ministerial Statement of the 2017 APEC Finance Ministers’ Meeting. It thus provides guidance and support to the voluntary implementation of the policy messages presented in the Policy Statement on Diversifying Financing Sources and Fostering Private Sector Involvement in Infrastructure Investment in APEC Economies, endorsed by Finance Ministers in 2017. The effective approaches applied by APEC economies span the five dimensions covered by the Policy Statement:

(I) Diversified sources and instruments for the finance of infrastructure

APEC economies are developing innovative financing strategies for addressing their infrastructure investment needs. They are establishing capital market instruments and vehicles for attracting equity investment for infrastructure projects. They are also promoting the use of infrastructure bonds and syndicated lending in order to raise large amounts of debt and distribute risks. Governments and national development banks (NDBs) are also using credit enhancement mechanisms as a means of improving the risk profile for investors. The adoption of these approaches is facilitated by various forms of public support such as using targeted incentives, diversifying funding sources, and providing credible commitments to investors.

(II) Institutional investors and promoting infrastructure as an asset class

In order to enable greater participation of institutional investors in financing infrastructure, APEC economies have conducted reviews of the regulatory and supervisory framework for insurance companies and pension funds with a view to reducing barriers to investment. They have also established collaborative platforms for pooling capital that benefit from credit enhancement and risk mitigation support. A number of innovative approaches such as capital recycling and securitisation are being applied to generate attractive investment opportunities for institutional investors and free-up capacity for new investment. A few economies are supporting the use of green or sustainability-related instruments in order to attract ESG or impact-oriented investors.
(III) Public-private Partnerships, effective transaction design and risk allocation

APEC economies have established institutional arrangements, and legal and regulatory frameworks for enabling the implementation of public-private partnerships (PPPs). Governments also seek to ensure that there is a reliable and stable funding basis through using a variety of payment schemes and funding sources. In order to assist contracting authorities, including sub-national governments, to prepare, procure and manage PPPs, governments are providing guidelines, tools, support and capacity building. APEC economies recognise the importance of allocating risks transparently to the parties best capable of managing them as a pre-condition for involving private financing. In this respect, a number of governments provide formal guidance on how to allocate or mitigate specific risks in PPP contracts. Innovative approaches to support the implementation of PPPs include the creation of dedicated guarantee funds, and the bundling of small projects to attract investors.

(IV) Risk mitigation instruments and techniques

Governments are applying de-risking instruments such as guarantees, and leverage the capabilities of NDBs and MDBs to de-risk projects in order to support alternative infrastructure financing models. Some economies have been seeking ways to manage specific risks, such as currency risk, by promoting local currency bond market development or promoting the use of hedging instruments. Blended finance approaches are also being used to catalyse commercial finance in specific sectors or geographies that suffer from insufficient market development or high risk perception.

(V) Infrastructure project pipelines

Long-term infrastructure strategies that support sustainable infrastructure planning and project prioritisation, form the basis for the development of credible project pipelines in a number of APEC economies. Furthermore, governments ensure that infrastructure pipelines are aligned with economic development plans, policy priorities and broader strategies for addressing user and citizen needs. They also apply robust systems for project evaluation to ensure that selected projects represent value for money. Governments enhance the quality of project pipelines and facilitate the participation of the private sector through enhancing information disclosure, data collection and the sharing of best practices.
## Overview of identified effective approaches

### I. Diversified sources and instruments for the finance of infrastructure

#### 1. Analysis and implementation of innovative and diversified instruments

<table>
<thead>
<tr>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing principles, strategies, and institutional capacity for the promotion of innovative and diversified infrastructure finance</td>
</tr>
</tbody>
</table>

#### 2. Equity instruments

<table>
<thead>
<tr>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allowing direct stock exchange listings by infrastructure project companies</td>
</tr>
<tr>
<td>Fostering the development of a range of capital market instruments that can mobilise private capital for equity investments in infrastructure projects</td>
</tr>
<tr>
<td>Establishing incentives for promoting equity investment in infrastructure</td>
</tr>
<tr>
<td>Establishing co-financing vehicles, platforms and partnerships for mobilising private capital to invest in the equity of infrastructure projects.</td>
</tr>
<tr>
<td>Government equity participation in infrastructure projects</td>
</tr>
<tr>
<td>Establishing government infrastructure banks or public funds that can invest in the equity of infrastructure projects that are aligned with government policies.</td>
</tr>
</tbody>
</table>

#### 3. Debt financing diversification through capital markets development

<table>
<thead>
<tr>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promoting the development of domestic bond markets for infrastructure financing</td>
</tr>
<tr>
<td>Strengthening the enabling conditions for loan syndication</td>
</tr>
<tr>
<td>Promoting the use of infrastructure project bonds</td>
</tr>
<tr>
<td>Using credit enhancement to attract larger amounts of private debt for infrastructure projects</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emerging / Innovative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengthening security and certainty for lenders to infrastructure</td>
</tr>
<tr>
<td>Promoting the use of Islamic finance</td>
</tr>
</tbody>
</table>
### 4. Promotion of a reliable long-term funding basis

<table>
<thead>
<tr>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversifying funding sources and providing public financial support</td>
</tr>
<tr>
<td>to enable innovative financing approaches</td>
</tr>
<tr>
<td>Providing stable, long-term, transparent, and credible commitments to</td>
</tr>
<tr>
<td>investors</td>
</tr>
<tr>
<td>Reallocation of taxes between levels of government to support</td>
</tr>
<tr>
<td>infrastructure investment</td>
</tr>
</tbody>
</table>

### II. Institutional investors and promoting infrastructure as an asset class

#### 1. Reducing barriers to infrastructure investment by institutional investors

<table>
<thead>
<tr>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reviewing the regulatory and supervisory framework for insurance</td>
</tr>
<tr>
<td>companies and pension funds with a view to identifying, and, where</td>
</tr>
<tr>
<td>appropriate, reducing barriers to investment in infrastructure</td>
</tr>
<tr>
<td>Establishing collaborative platforms for pooling capital and</td>
</tr>
<tr>
<td>attracting institutional investors to infrastructure investment</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Emerging / Innovative / Innovative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing dedicated vehicles or units within public pension</td>
</tr>
<tr>
<td>schemes to make direct investments in public infrastructure</td>
</tr>
<tr>
<td>Promoting data collection on infrastructure assets, including</td>
</tr>
<tr>
<td>historical cash flows and qualitative information on project</td>
</tr>
<tr>
<td>characteristics and sustainability</td>
</tr>
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</table>

#### 2. Structuring assets as attractive investment opportunities

<table>
<thead>
<tr>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing suitable financing instruments for infrastructure (such</td>
</tr>
<tr>
<td>as infrastructure bonds) with features that appeal to the risk appetite</td>
</tr>
<tr>
<td>and preferences of institutional investors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emerging / Innovative / Innovative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adopting and incentivising asset recycling models to draw-in private</td>
</tr>
<tr>
<td>capital</td>
</tr>
<tr>
<td>Streamlining and standardising infrastructure securitisation</td>
</tr>
<tr>
<td>Supporting the use of green or sustainability-related instruments or</td>
</tr>
<tr>
<td>funds for infrastructure projects to attract ESG or impact-oriented</td>
</tr>
<tr>
<td>institutional investors</td>
</tr>
</tbody>
</table>

### III. Public-Private Partnerships (PPP), effective transaction design and risk allocation

#### 1. Creating a suitable institutional environment

<table>
<thead>
<tr>
<th>Common</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishing a sound institutional arrangement, and legal and</td>
</tr>
<tr>
<td>regulatory framework for PPPs with clearly defined roles and</td>
</tr>
<tr>
<td>responsibilities</td>
</tr>
</tbody>
</table>
### Specifying sectors/priorities in advance where PPPs can be used to deliver projects

Ensuring that there is a reliable and stable funding basis for PPPs through using a variety of payment schemes and funding sources

Promoting effective coordination of the various stakeholders at the early stages of project preparation in order to streamline the PPP preparation process

Adopting and enforcing competitive and transparent tendering processes for PPPs.

### 2. Improving knowledge and strengthening capacity

| Common          | Providing guidelines, tools, support and capacity building to assist contracting authorities, including sub-national governments, to prepare, procure and manage PPPs
|                 | Establishing standardised forms and templates for tender documentation and for PPP contracts in different sectors to improve the efficiency, quality and bankability of PPP projects |

### 3. Risk allocation

| Common   | Allocating risks transparently to the parties best capable of managing them
|          | Establishing formal guidance on how to allocate or mitigate specific risks in PPP contracts

| Emerging / Innovative | Supporting the bundling of multiple small projects into a single PPP contract to generate sufficient scale to attract investors |

### IV. Risk mitigation instruments and techniques

#### 1. Public risk mitigation instruments

| Common          | Supporting alternative infrastructure financing models through financial structures and vehicles that contain governmental de-risking instruments
|                 | Leveraging the capabilities of NDBs and MDBs to de-risk projects
|                 | (Quasi-)equity contributions to enhance financing structures and risk profiles

| Emerging / Innovative | Establishing dedicated guarantee funds to support the development of PPPs |
## 2. Alternative techniques for reducing or managing risks

<table>
<thead>
<tr>
<th>Emerging / Innovative</th>
<th>Eliminating or managing currency risk through local currency financing or hedging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adopting innovative contractual mechanisms for allocating or sharing demand risk in PPPs</td>
</tr>
<tr>
<td></td>
<td>Establishing governance frameworks for project development that support judicious management of commercial, financial and legal risks</td>
</tr>
<tr>
<td></td>
<td>Promoting blended finance approaches involving the government, NDBs, MDBs, or development finance institutions</td>
</tr>
<tr>
<td></td>
<td>Offering dispute resolution services</td>
</tr>
</tbody>
</table>

## V. Infrastructure project pipelines

### 1. Enabling structures and competency building

<table>
<thead>
<tr>
<th>Common</th>
<th>Developing long-term infrastructure strategies for sustainable project planning and prioritisation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Creating and promoting well-structured project pipelines</td>
</tr>
<tr>
<td></td>
<td>Establishing domestic project preparation facilities or successful engagement with external facilities such as those provided by MDBs</td>
</tr>
<tr>
<td></td>
<td>Enhancing information disclosure, data collection and sharing of best practices</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emerging / Innovative</th>
<th>Institutional arrangements that provide for independent assessment of needs, appraisal and prioritisation of projects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ensuring that infrastructure pipelines are backed by medium- to long-term funding</td>
</tr>
</tbody>
</table>

### 2. Identification of viable and priority projects

<table>
<thead>
<tr>
<th>Common</th>
<th>Ensuring that infrastructure pipelines are aligned with economic development plans, policy priorities, and broader strategies for addressing citizen and user needs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Applying robust systems for project evaluation to ensure that selected projects represent value for money and are aligned with national development goals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emerging / Innovative</th>
<th>Identification and promotion of projects with high social content</th>
</tr>
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</table>
Introduction

Infrastructure development is fundamental to supporting many of APEC’s priorities including trade integration, inclusive growth, supply chain connectivity, and sustainable development. In view of the vast infrastructure investment needs across the APEC region, private financing for infrastructure development will need to complement public resources in order to achieve key development goals.

As highlighted in the APEC Finance Ministers’ Policy Statement (see Box 1 for a summary), the improvement of financing of infrastructure via the diversification of financing sources and with greater private sector involvement requires actions across a number of interdependent areas (see Figure 1):

- Diversified sources and instruments for the finance of infrastructure;
- Institutional investors and promoting infrastructure as an asset class;
- Public-Private Partnerships, effective transaction design and risk allocation;
- Risk mitigation instruments and techniques; and
- Infrastructure project pipelines.

Figure 1. APEC recommendations for infrastructure development and financing

A coherent and mutually reinforcing set of practices and approaches
Recommended measures from categories I through V are highly interdependent aspects of infrastructure investment and financing. Approaches should be mutually aligned to form a coherent strategy.
It is important to note that the ensemble of measures from categories I through V not only need to be mutually aligned but must also be tailored to the needs of the specific economy in which they are deployed. For instance, measures need to be tailored to the particularities of local markets, the political, regulatory and legal environment, as well as to the interaction with foreign economies.

In particular, markets in emerging economies might exhibit a lower coverage and maturity, and higher levels of fragmentation compared to markets in developed economies. Instruments introduced by governments hence need to be tailored and targeted to those specific needs, and market-improving measures are highly important. Those measures should be backed by a stable and predictable regulatory and legal environment, which frames and enables the proper functioning of markets, inter alia by guaranteeing contractual enforceability.

Furthermore, risk and information constraints in emerging economies might differ from those in developed economies. For instance, emerging economies might seek to attract a larger share of foreign investors. This implies that risks for investors, such as those arising from exchange rate fluctuations and uncertainties due to unavailable or non-standardised and hence poorly comparable information on projects and market structures, might considerably decrease the attractiveness of infrastructure investments to potential investors. Also, the type of investment plays an important role, as in some economies greenfield investment needs prevail whereas in others the upgrading or rehabilitation of brownfield investment is the priority.

The results of the survey exercises demonstrate that APEC economies have adopted a wide range of policies that support the implementation of the voluntary and non-binding recommendations of the Policy Statement. Policies are qualified as effective when they are considered to be effective by implementing economies, and when experience, results and evidence suggest that this is the case.

The effective approaches identified in this report are not comprehensive; they are illustrative and non-binding. They are intended as examples to assist policy makers and other relevant stakeholders in improving access to finance for infrastructure. Approaches are considered to be common, emerging or innovative depending on their level of adoption, and whether they address an emerging challenge or offer a novel approach to an issue.3

3 Common approaches: Regulatory, supervisory or industry-based measures and practices that have been widely endorsed or adopted in a number of jurisdictions and are considered to effectively implement key aspects of the Policy Statement.

Emerging approaches: Measures adopted or used specifically to address a new or emerging challenge.

Innovative approaches: Policy approaches that undertake a different, alternative or novel approach to an issue.
Box 1. Summary of APEC Finance Ministers’ Policy Statement

I. Diversified sources and instruments for the finance of infrastructure

- **Analysis and implementation of innovative and diversified instruments:** Effective financing approaches, instruments, and vehicles which increase the diversity of financing options can lower the cost and increase the availability of finance. The formation of local capital markets can expand financing options. The use of blended finance approaches, meaning the strategic use of public finance, can serve to de-risk and mobilise private investment in infrastructure.

- **Equity instruments:** The deployment of equity instruments such as trusts and open- and closed-end funds can support the establishment of robust unlisted infrastructure equity markets.

- **Diversified debt financing through the development of capital markets:** Encouraging the development of capital markets can complement traditional lending with a variety of market mechanisms such as project bonds or securitisation that serve to diversify financing sources and reduce overall risk in the banking system.

- **Promotion of a reliable long-term funding basis:** Private investment can be incentivised by ensuring adequate revenue streams through the promotion of a reliable long-term funding basis for infrastructure projects.

II. Institutional investors and promoting infrastructure as an asset class

- **Fostering institutional investment through a review of financial regulations:** Institutional investment can be incentivised by reducing regulatory barriers, taking into account prudential, investor protection, and overarching financial stability objectives.

- **Structuring assets as attractive investment opportunities:** Providing revenue streams and risk-return profiles that match investors’ return expectations and liability structures.

- **Identifying potential frameworks for cooperation amongst the main stakeholders** as a way to promote stable and diversified financing for infrastructure.

- **Analyses of infrastructure assets:** A full understanding of drivers and impediments of infrastructure investment supported by data collection on infrastructure assets can help promote infrastructure as an asset class.

III. Public-Private Partnerships (PPP), effective transaction design and risk allocation

- **Creating a suitable institutional environment:** A supportive institutional environment should address three elements (i) a clear, predictable and legitimate institutional framework, (ii) PPP selection grounded in value for money criteria, and (iii) budgetary process transparency to minimise fiscal risks and ensure integrity.


- **Efficient risk allocation in PPP**: A deep understanding of risk allocation principles enables efficient risk transfer to the parties best able to manage them, and should be reflected in effective contractual arrangements.

### IV. Risk mitigation instruments and techniques

- **Using public financing to make infrastructure projects viable**: This is particularly important in APEC developing economies where investment is sometimes hindered by inadequate policy frameworks and governance.

- **A variety of risk mitigation techniques are required to facilitate private investment**: Contractual arrangements, insurance, and guarantees are effective instruments for mitigating or transferring commercial risks. Joint ventures or alliances with local companies and political risk insurance along with co-investment platforms and funds can reduce political risks. Tools for managing currency risk such as hedging instruments or matching cash flows are important for developing APEC economies.

### V. Infrastructure project pipelines

- **Enabling structures and competency building**: Project preparation facilities, technical assistance, standardised documentation, training programmes, information dissemination and communication strategies are necessary for developing project pipelines and for implementing projects on the ground.

- **Identification of viable and priority projects**: A robust system for project evaluation, pricing and analysis should be in place so that the pipeline is aligned with member economies’ development goals and the most appropriate financing scheme is chosen.
I. Diversified sources and instruments for the finance of infrastructure

Policy Statement *

The analysis of diversified instruments is essential to provide the foundation for the identification of effective financing approaches, instruments, and vehicles that could broaden the financing options available for infrastructure projects and increase as well as diversify the investor base. This also has the potential to lower the cost of funding and increase the availability of financing in infrastructure sectors or regions where financing gaps might exist. The formation of local capital markets, including in local currency denominated debt and equity, is an important step in securing long-term financing for infrastructure projects and can increase the options available for governments. By using 'blended finance' - the strategic use of public finance and developing financing to mobilize further additional private investment - governments can de-risk and mobilize private investment in infrastructure.

Regarding equity instruments, there are several key areas to consider including the establishment of robust unlisted infrastructure equity markets and the ability of equity funds (cross-border investment) to access infrastructure assets in the local market. Listed equity instruments including trusts, open- and closed-end funds, could be reviewed as potential models for infrastructure across APEC economies.

In most economies, commercial bank lending is the dominant source of debt financing for commercially financed infrastructure. A financial system dominated by banks may mean higher risk of overexposure for the banking system. This, and the call for diversification of financing sources plays in favor of encouraging the development of capital markets. Traditional lending may be complemented by (i) the syndication of bank loans through capital markets, allowing banks to recycle capital for new projects, (ii) the development of a robust project finance market (such as project bonds) as an alternative to traditional infrastructure loans, (iii) the formation of lending consortia through debt funds, direct investment by institutional investors, and other key stakeholders such as Multilateral Development Banks (MDBs) and governments, and (iv) securitization which supports the bundling of small-scale loans in order to reach scale and diversification.

The financial attractiveness of a project is reliant in part on its stage of development and whether its revenues are proven, compared to the type and extent of risks that are present at that stage. Through strengthening policy frameworks and regulations, governments could promote reliable long-term funding basis of infrastructure projects (including through relevant cash-flow structures) so as to ensure the flow of revenue streams is adequate to attract private investment.

* Annex A. Diversifying Financing Sources and Fostering Private Sector Involvement in Infrastructure Investment in APEC Economies, §2-5.
Background

Governments can maximise the benefits of scarce public resources by developing and applying innovative financing approaches that can help reduce costs of funding projects and attract a more diversified investor base, inter alia from the private sector or institutional investors. Adopting innovative financing approaches will assist with the provision of infrastructure and in effectively allocating the risks and returns from a project. A key aspect is determining the most effective capital structure and mix of private and public funding through the life cycle of the project from the greenfield to the brownfield phase.

To attract investments into infrastructure from a diversified investor base, governments can introduce a variety of innovative capital market instruments and vehicles. A comprehensive list of existing financial market instruments and vehicles has been mapped by the OECD (OECD, 2015d). Table 1 provides an overview.

Table 1. Taxonomy of instruments and vehicles for infrastructure financing

<table>
<thead>
<tr>
<th>Modes</th>
<th>Infrastructure Finance Instruments</th>
<th>Market vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Category</td>
<td>Infrastructure Project</td>
<td>Corporate Balance Sheet / Other Entities</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>Bonds</td>
<td>Project Bonds</td>
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<td>Municipal, Sub/sovereign Bonds</td>
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<td>Green Bonds, Sukuk</td>
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<td>Loans</td>
<td>Direct/Co-investment lending to infrastructure project, syndicated project loans</td>
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<td>Mixed</td>
<td>Hybrid</td>
<td>Subordinated Loans/Bonds, Mezzanine Finance</td>
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<td>Equity</td>
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<td>Unlisted</td>
<td>Direct Co-Investment in Infrastructure project equity, PPP</td>
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Source: OECD, 2015b
A well-aligned and diversified system of market instruments and vehicles has the potential to improve efficiency and lower financing costs. An optimal set of instruments and vehicles should consider (i) the specific needs and circumstances of the economy and the financial system, such as the level of development of local capital markets; (ii) the desired mix of private and public finance for infrastructure investment; and (iii) the ways in which the various instruments and vehicles might be efficiently combined, both to attract investors and achieve stable, low-cost financing. Therefore, governments may analyse the scope for innovation in market instruments and vehicles with regard to their suitability for their specific needs and circumstances and develop appropriate strategies to optimise their intended results. While these strategies may be centralised, their implementation depends on a wide range of stakeholders, with different competencies and responsibilities.

**Equity instruments** foster equity finance of infrastructure projects, encompassing all financial resources that are provided in return for an ownership interest. Project investors may sell shares in the investment if a market exists or they may get a share of the proceeds if the asset is sold. Therefore, equity instruments promote the feasibility of (re-)financing large-scale projects by enabling the acquisition of external risk capital and the re-employment of risk capital for new infrastructure investment. In order to exploit the full potential of equity instruments, a well-functioning capital market is crucial, and, if defective or inexistent, a targeted development of infrastructure equity markets becomes necessary. Depending on the nature of the investment, and particularly in the case of PPP contracts and concessions, those instruments may have debt-like characteristics due to the contracted cash flows.

As infrastructure investment projects exhibit considerable risk characteristics, a **diversification of sources for debt financing through the development and improvement of capital markets** reduces concentrated risk exposure. For instance, in many economies, commercial bank lending is the dominant source of debt financing which may result in an overexposure of the banking system to risk. Well-functioning capital markets can complement traditional lending by (i) the syndication of bank loans through capital markets, allowing banks to recycle capital for new projects, (ii) the development of a robust project finance market (such as project bonds) as an alternative to traditional infrastructure loans, (iii) the formation of lending consortia through debt funds, direct investment by institutional investors, and other key stakeholders such as Multilateral Development Banks (MDBs) and governments, and (iv) securitisation which supports the bundling of small-scale loans in order to reach scale and diversification.

Unstable policies and regulations are a considerable source of risk for infrastructure investment. A strong policy framework and a stable regulatory environment promoting a **reliable long-term funding basis for infrastructure projects** reduce the risk exposure of all parties involved and hence increase the attractiveness of investments for a diversified investor base.
Effective Approaches

I.1. Analysis and implementation of innovative and diversified instruments

Common

Developing principles, strategies, and institutional capacity for the promotion of innovative and diversified infrastructure finance.

The adoption of innovative financing solutions and the diversification of financial instruments for infrastructure should be framed within a broader infrastructure financing strategy that takes into account economy-wide infrastructure investment needs, the supply of public and private capital, the depth and scale of local capital markets, and access to international to financial markets, and considers the role of PPPs, the potential contribution of public credit and de-risking instruments and tax incentives, reforms to the financial regulatory framework, and the impact of the broader investment and regulatory environment, amongst other factors.

When establishing institutional arrangements for designing financing solutions, APEC economies should ensure that they are well-aligned with how responsibilities for infrastructure planning and delivery are distributed within their economy. In most economies infrastructure development is highly decentralised; sectoral ministries or agencies, along with sub-national governments are responsible for the bulk of investment planning. Given the high-level of technical expertise required to design and implement diversified financial instruments and structure projects accordingly not all government entities have the requisite capabilities. When responsibilities are dispersed central authorities can nevertheless support planning and delivery entities by providing high-level principles that set out the goals and expectations that should guide the choice of financing solutions. Alternatively, they can centralise expertise within a specialised agency that can provide advice, guidance and support to sub-national governments or sectoral bodies on designing funding and financing approaches for meeting their infrastructure investment needs.

To address the potential knowledge gap, create consistency, and improve horizontal and vertical coordination, a number of APEC economies provide centralised guidance and support to ministries and sub-national governments. For example, the Commonwealth Government in Australia has developed ‘Principles for Innovative Financing’ setting out the government’s goals for its substantial investment in Australia’s land transport infrastructure, and its expectations on how projects are selected and alternative funding and financing decisions are considered. The Commonwealth Government works with state governments to ensure these principles are put into practice when developing, prioritising and delivering the infrastructure Australia needs.

Some governments have established central bodies that support sector ministries, procuring authorities, and sub-national governments in developing financing strategies for infrastructure projects. The Australian government, for instance, has established the Infrastructure and Project Financing Agency (IPFA) which works closely with the private sector to develop funding and financing solutions to deliver infrastructure projects. In Canada, part of the role of the Canada Infrastructure Bank (CIB) is to advise governments and public authorities on the planning, design, procurement and implementation of revenue generating infrastructure projects, and to work with project proponents to explore new and innovative approaches to project finance and delivery (Box 2). Malaysia has
established an infrastructure financing company wholly-owned by the Ministry of Finance dedicated to developing innovative financing schemes for infrastructure projects mandated by the Government. DanaInfra’s role is to advise on the best methods of financing and most effective payment structures; develop structures for long-term funding at efficient cost; execute and implement financing and payment strategies; and identify strategic investors.4

A number of APEC economies such as China, Indonesia, and Thailand have established central PPP units that perform a similar role advising contracting authorities on, among other things, identifying appropriate financing modalities and structuring PPP projects.

In Mexico, in order to foster private investment in infrastructure and promote efficiency in risk allocation, the federal government developed a comprehensive strategy that involved the use of a number of tools and vehicles, namely: (i) a new Public Private Partnerships (PPPs) strategy; (ii) the participation of national development banks (NDBs), including BANOBRAS, which is in charge of financing infrastructure; and (iii) the participation of the National Infrastructure Fund (FONADIN). The creation of diverse new financial products has been a key element in this strategy, alongside the promotion of PPP projects. As part of reform efforts, and in recognition of investor risk aversion, Mexican NDBs were allowed to offer and operate new financial guarantees in order to increase private sector investment in public infrastructure projects. Where new financial products designed to enhance infrastructure financing have been introduced, and securities laws and other financial provisions have been amended, changes to the investment regulations of insurance companies and pension funds have been made to enable investment in the new products, subject to prudential constraints (see further below).

Box 2. Canada – Canada Infrastructure Bank (CIB)

As a key component of the Government of Canada’s CDN 180 billion long-term infrastructure plan, the Canada Infrastructure Bank (CIB) was established to leverage public funds of CDN 35 billion to invest, and seek to attract investment from private sector and institutional investors in revenue generating infrastructure projects that are in the public interest. The CIB works collaboratively with public and private sector partners to plan, finance and deliver on a wide array of infrastructure projects that otherwise would not have been undertaken in Canada.

The CIB model will push the involvement of the private sector in Canadian infrastructure one step further by having it invest directly in infrastructure where the project has revenue-generating potential through various user-pricing models. The key benefits include bringing private capital to large-scale projects that are within the public interest, reducing fiscal pressure on governments at all levels for managing their infrastructure, and transferring more project risk to the private investors. Under this mechanism, the private sector is incentivised to take on a significant portion of the demand and revenue risk for the project.

The CIB operates like a merchant or investment bank that brings investors together and implements appropriate financial capital structures for infrastructure projects, and will: a) help public dollars go further by attracting private investment to free up government resources for other infrastructure priorities; b) use federal support strategically by

advancing new and innovative financing models to help more projects get built, including major transformational projects; c) act as a centre of expertise in support of evidence-based decision-making through fostering better data collection across the Canadian infrastructure sector; and d) develop a pipeline of potential projects and promote investment opportunities to catalyse the market. The CIB will work closely with procurement agencies and with industry to develop projects, share knowledge, and promote innovative approaches to project design, financing and structuring.

The CIB will use a wide breadth of financial instruments: a) debt (e.g., loans), both unsubordinated and subordinated; b) equity investments, both unsubordinated and subordinated; c) where appropriate, loan guarantees; and d) other innovative financial tools.

The CIB will work with proponents to develop investment structures involving private sector and government sponsors. This will include seeking input from private sector actors, identifying risk trade-offs, providing financing support to make projects commercially viable where they otherwise would not be, and sharing relevant project expertise and knowledge base. The government sets high-level priorities for the CIB’s investments, but with flexibility for the Bank to negotiate optimal investments.

Source: APEC-OECD survey response

I.2. Equity instruments

Common

Fostering the development of a range of capital market instruments that can mobilise private capital for equity investments in infrastructure projects.

Mature capital markets allow institutional investors to diversify their portfolios through providing a large choice of capital market instruments and channels, including, for example, public and private equity, mutual funds and other types of collective investment vehicles, exchange-traded funds (ETFs), and real estate investment trusts (REITs). These instruments allow investors to invest during different stages of infrastructure projects as well as to differentiate between brownfield and greenfield investments according to their risk appetite. By regulating these instruments under domestic and international securities laws, governments further support the establishment of infrastructure as an asset class.

For example, in order to provide infrastructure projects within alternative sources of financing, Mexico has introduced a number of capital market instruments and vehicles including Structured Equity Securities or CKDs, CERPIS, and FIBRA E, an equity vehicle, similar to real estate investment trusts, but used to finance mature projects in the energy sector with steady cash flows (Box 3).

Collective investment schemes in the form of infrastructure funds or trusts enable institutional and retail investors to invest in portfolios consisting of the equity of infrastructure projects. Through listing the units of such schemes, authorities can provide investors with greater liquidity, and enable a broad range of investors, including in some cases, retail investors, to participate.

For instance, the Thai government has promoted the development of a number of such schemes in order to diversify sources of finance for infrastructure projects as well as to broaden the range of equity products in the capital market. For example, Infrastructure Funds (IFF) are vehicles regulated by the Securities and Exchange Commission, that can
I. DIVERSIFIED SOURCES AND INSTRUMENTS FOR THE FINANCE OF INFRASTRUCTURE

Invest in both domestic greenfield and brownfield projects in 12 types of infrastructures, such as railways, airports, waterworks, expressways, telecommunications, electricity and alternative energy. IFFs have been used as an additional source of finance for state-owned enterprises and private companies involved in developing large infrastructure projects. The units of IFFs can be offered to retail investors if the infrastructure project is brownfield (completed and commercially operated) and the greenfield project component is less than 30%. After the issuance, the IFFs’ units will be listed in the Stock Exchange of Thailand (SET) for greater liquidity. Infrastructure Trusts (IFT) are similar instruments that qualify for a stock exchange listing yet they differ in that they can also invest in foreign assets.

**Box 3. Mexico – Capital market instruments**

Mexico has introduced a number of capital market instruments that enable the private sector and institutional investors to diversify their debt and equity portfolios, and access different types of infrastructure assets. These that include CEBURES (stock exchange certificates), FIBRA (real estate trusts), CKD’s (certificates of capital development), and private equity funds. In 2015, the Federal Government launched two new types of vehicles: FIBRA E (energy and infrastructure) and CERPI’s (investment projects certificates). Depending on the particular characteristics of these vehicles, some of them specialise in brownfield financing (FIBRA and FIBRA E), whilst others mainly finance greenfield projects (CKD’s and CERPI’s).

These instruments are listed on the Mexican stock market, and are regulated by the Regulatory Framework of the Securities Market Law and the Investment Funds Law. The current Rules of procedure of the Bolsa Mexicana de Valores, S.A.B. de C.V. (BMV, Mexican Stock Exchange), as well as the diverse reforms, adopted by the National Banking and Securities Commission, apply to these instruments.

A large number of projects have been financed through these vehicles. However, given that these instruments are relatively new in the Mexican market, there is not enough data to assure the liquidity of the secondary market of these instruments. Yet, recently, the Mexican government has given an impulse to these instruments, in particular to the FIBRA E instruments, through launching several successful issues in the market. In 2018, CFE (the state-run electricity company) issued a FIBRA E focused on the electric sector in Mexico. CFE raised 16.4 billion MXN through instruments placed in the Mexican Stock Exchange with a demand exceeding 25 billion MXN. This transaction included the participation of institutional investors, private banks, and investment funds in Mexico, the United States, Canada, Australia, and Europe.

Source: APEC-OECD survey response

**Indonesia** has also introduced a range of capital market vehicles that facilitate infrastructure investments, which may include debt and/or equity instruments. These include Limited Mutual Funds (RDPT), Real Estate Investment Funds (DIRE), and Infrastructure Investment Fund (DINFRA). An RDPT is a type of mutual fund that is offered only to a limited number of investors, and which is required to include instruments issued by state-owned companies and their subsidiaries for the financing of government infrastructure projects. DINFRA is a mutual fund that is offered to the public (institutional

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and retail investors) and which is designed to channel investment funds to public infrastructure projects. Indonesian’s financial services regulator, OJK, issued regulations on DINFRA as part of its efforts to support Indonesia’s 2015 – 2019 National Medium-Term Development Plan, in relation to the financing needed for national infrastructure development. The OJK has been seeking to enhance the role of capital markets as a source of financing for infrastructure development.

In the Philippines, the Government Service Insurance System (GSIS), a state-run defined benefit pension fund for public sector employees, has been playing a key role in supporting the country’s infrastructure development programmes through its investments in private infrastructure assets through the Philippine Investment Alliance for Infrastructure (PIAI), the first private equity fund earmarked for infrastructure projects in the Philippines. GSIS has invested alongside other investors including the Asian Development Bank (ADB), Algemene Pensioen Groep (APG) from the Netherlands, and Macquarie Group. PIAI is a 10-year, Philippine Peso denominated, closed-end fund with total committed capital of approximately PhP 28 billion (USD 625 million), of which 64% is provided by GSIS. The investments made under this fund include solar power and wind farm projects, power plants and railways. PIAI is managed by Macquarie Infrastructure and Real Assets (MIRA); a condition for being the fund manager was co-investment in the fund. An objective of PIAI is to encourage the creation of more private equity funds in the country, attract more institutional capital, and further develop domestic capital markets. The fund vehicle also allows the expertise of experienced investors to be tapped, which is regarded as helping to ensure a good risk-return profile for investments.

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Allowing direct stock exchange listings by infrastructure project companies.

A number of APEC economies facilitate direct listings of infrastructure project companies on their domestic stock exchanges as a means of tapping financial markets and broadening and diversifying their investor base. A key challenge in allowing such listings is the absence of a trading period and negative profitability for project companies in their early stages which is when they most need to raise equity capital to cover the construction phase. Securities regulators and stock exchanges typically overcome this challenge by waiving some of the listing requirements for infrastructure project companies.

The Securities Commission of Malaysia has a well-established framework for listing infrastructure project companies (IPC) on the stock exchange. Under the IPC listing framework, an infrastructure project company qualifies for listing if it possesses the right to build and operate an infrastructure project under a minimum concession period of 15 years and with a total cost of RM500 million (USD153 million) or more. While the IPC framework waives some of the requirements that apply to standard listings, it imposes additional disclosure requirements relating to, for example, the agreement underlying the concession and construction risks that could impact the business (IOSCO 2014). Thailand has also developed a special company category (“Infrastructure Business”) with its dedicated listing criteria for infrastructure project companies. In Hong Kong, China the Stock Exchange of Hong Kong (SEHK) also allows listings by infrastructure project companies. Certain basic listing requirements relating to the trading period (minimum of three years) and financial standards can be waived if the project satisfies a number of conditions. However, because of the additional perceived risks surrounding infrastructure projects, the Hong Kong Securities and Futures Commission applies a number risk-mitigation factors when considering listing applications by such companies. Similarly, in the Philippines, the Philippine Stock Exchange (PSE) has established supplemental listing and disclosure rules for PPP companies. Under these rules, a PPP company may apply for listing if it is a corporation holding a PPP contract or a Special Purpose Company (SPC) incorporated by the corporation or consortium holding a PPP contract. These companies are exempt from the minimum 3-year track record and operating history required by the PSE to list on its main board. The PPP contracts should have a minimum cost of PhP 5 billion. The company can only apply for listing when it has completed the construction works or has commenced commercial operation.

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the listed company is considered co-terminus with the project concession period, but with a minimum contract of 15 years.

**Establishing incentives for promoting equity investment in infrastructure.**

APEC economies apply a range of incentives for attracting equity investment in infrastructure including through providing grants and subsidies, risk mitigation, or improving the tax treatment of equity in infrastructure projects (e.g. tax credits).

Tax credits are used by a number of APEC economies to promote equity investment in infrastructure. **Chinese Taipei** also offers an income tax credit for investors in the stock of private institutions participating in a major infrastructure project upon its incorporation or expansion. Similarly, **Papua New Guinea** has established an Infrastructure Tax Credit Scheme to incentivise companies in the mining, petroleum and primary industry sectors to build key infrastructure. The **Philippines** offers income tax holidays or incentives for qualifying investments in sectors or areas defined in the Investment Priorities Plan (IPP) 2017-2020, established by the Board of Investments. These include investments in infrastructure and logistics which cover the establishment and operation of physical infrastructures vital to the country's economic development and prosperity such airports, seaports, (air, land and water), and transport, among others.  

Different types of grants and subsidies are also used by APEC economies to support equity investment in infrastructure. For instance, in **Chinese Taipei**, for projects where the revenues are not sufficient to fully cover the financing costs, the authority in charge may subsidise part of the interest on the loan, or grant a subsidy, depending on the operating performance.

**Russia** is launching a new guarantee mechanism to support equity investment in Russian infrastructure. The guarantee, offered by the Russian Development Bank VEB.RF (Vnesheconombank), would cover part of the equity investment in an infrastructure project for an annual cost of between 1 and 6% of the investment. The first such deals with a number of foreign investors are under consideration.

**Establishing co-financing vehicles, platforms and partnerships for mobilising private capital to invest in the equity of infrastructure projects.**

Equity investors in infrastructure projects can face barriers relating to the illiquidity of such investments, their large size, the nature of the risks (e.g. construction risk), the elevated transaction costs and the difficulty in achieving diversification. Governments can help in overcoming such barriers by establishing co-financing vehicles and platforms that can enable pooling of investments, provide risk mitigation, support project preparation, and perform due diligence and monitoring.

For example, the Canada Infrastructure Bank leverages public funds to crowd-in private equity and debt investment into large, transformative revenue generating infrastructure projects that are in the public interest across **Canada**. With its $CDN 35 billion budget, the CIB is able to close financing gaps in large-scale projects, thereby enabling private investors to participate in investment opportunities that otherwise would not be viable.

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In China, the Ministry of Finance in collaboration with the National Social Security Fund and selected financial institutions has established the China PPP Fund with the goal of supporting PPP projects in China through providing both equity and debt as well as guarantees.

Box 4. Thailand – Thailand Future Fund

The Thailand Future Fund (TFFIF), an infrastructure fund launched by the Thai government, is a new alternative source of financing for public infrastructure development and will help lessen dependency on traditional sources, namely government budget and borrowing, allowing the government to utilize its budget and debt capacity to pursue other investments lacking adequate financial return or developments in a broader range of investment sectors. The TFFIF is listed on the Stock Exchange of Thailand (STE), and investment units in the fund can be held by both retail and institutional investors. This way, not only can the TFFIF accelerate infrastructure development, it also promotes the Thai capital market and provides investment opportunities in quality public infrastructure assets with stable cash flows for investors.

The initial assets that were included in the TFFIF were the two expressways of the Expressway Authority of Thailand (EXAT) of which 45% of net toll revenues will be transferred to the fund through a Revenue Transfer Agreement (RTA). The Thai cabinet has stated that the assets of two other motorways may be transferred to the TFFIF. EXAT can use the proceeds from the funds raised by the transfer of revenues to develop new greenfield projects. In order to provide assurance and mitigate risk for investors, the Ministry of Finance has retained at least a 10% of issued investment units in TFFIF, subject to a 5-year lock-up post-listing to demonstrate its commitment to the success of the fund.

Source: APEC-OECD survey response; Presentation by Prapas Kong-led, Director General of the State Enterprise Policy Office (SEPO), The Launch of Thailand Future Fund, “Thailand Focus 2018: The Future is Now” 29th August 2018, Grand Hyatt Erawan Bangkok Hotel
In Indonesia, PT Sarana Multi Infrastruktur (PT SMI) is a state enterprise that is 100% owned by the Government of Indonesia through the Ministry of Finance. It was established with a mandate to be a catalyst for the acceleration of infrastructure development in Indonesia, and to support the implementation of PPP schemes. It aims to maximise economic and social benefits for communities and to support the achievement of Sustainable Development Goals (SDGs) as well as mitigate climate change. Its operational scopes covers financing and investment, advisory services and project development. The financing and investment pillar covers commercial, municipal, sharia, sustainable financing as well as equity investment. PT SMI’s equity investments are aimed at enhancing the ability of projects to raise funding from other sources.

Such platforms can also facilitate capital recycling by acquiring operational assets and thus releasing public funds for new investments. For example, in Thailand, the government established a central infrastructure fund called Thailand Future Fund (TFFIF) for this purpose (Box 4).

Government equity participation in infrastructure projects.

Equity or quasi-equity participation by the government in an infrastructure project allows governments to maintain policy control and oversight over the project whilst transparently dealing with project risk and benefiting from the imposed commercial diligence on the project, including performance monitoring, reporting and accountability. In addition, equity participation models contemplate the role of institutional investors when the business and its assets are privatised.

Some APEC economies establish dedicated state-owned project delivery and management companies that provide equity financing for large infrastructure projects. When doing so they ensure that the state-owned enterprises are subject to proper board governance and oversight, operate efficiently, and are subject to commercial pressures. Australia, for example, makes regular use of Government Business Enterprises (GBE) as an equity financing mechanism for infrastructure project delivery and management (Box 5). In Indonesia as well, state-owned enterprises play an important role in financing and delivering infrastructure (e.g. The Trans Sumatra Toll Road delivered by PT Hutama Karya and the 35GW Electricity Program delivered by PT PLN).

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16 PT SMI, webpage, [www.ptsmi.co.id](http://www.ptsmi.co.id/) (accessed 20 September 2019)
Box 5. Australia – Government Business Enterprises

A GBE is a commercially-focused government owned business that is established to fulfil a Commonwealth Government purpose. In the infrastructure context, the Australian Government has used GBEs as an equity financing mechanism for infrastructure project delivery and management.

The Board of Directors provides stewardship, strategic leadership, governance and oversight of GBEs, while also acting as a bridge between Commonwealth policy-making and operational implementation by GBEs. The Board of Directors of a GBE has ultimate fiduciary responsibility for the performance of the GBE, and are fully accountable to Shareholder Ministers.

The Directors are responsible for the financial stewardship and the ongoing solvency of the GBE and must ensure that its resources are properly deployed to meet its purpose. A key objective of a GBE, like that of a private sector company, is to add to its shareholder value.

In order to add to its shareholder value, a GBE should:

- **operate efficiently**: minimum cost for given scale and quality of outputs
- **price efficiently**: have regard to market forces, recognising there may be government imposed price conditions or community service obligations
- **earn at least a commercial rate of return**: given its obligations to operate and price efficiently.

Current examples of GBEs in the infrastructure space include:

- **Western Sydney Airport**, a GBE wholly owned by the Australian Government, established to build a new international airport. Western Sydney Airport is represented by the Minister for Finance and the Minister for Urban Infrastructure as shareholder ministers, and has an experienced Chair and Board that draws expertise from the private sector.

- **Sydney Motorway Corporation (SMC)**, is a private company limited by shares and established by the NSW Government, commissioned to deliver and finance WestConnex, a series of urban connecting road projects. A 51% stake in SMC has been awarded to a private consortium with the NSW Government retaining a 49% residual stake.

Source: APEC-OECD survey response

**Establishing government infrastructure banks or public funds that can invest in the equity of infrastructure projects that are aligned with government policies.**

In view of the critical enabling role that equity investment plays in catalysing private financing strategies, a number of APEC economies empower public infrastructure banks or funds to take equity positions in projects that are aligned with policy priorities.

For instance, in **Canada**, the new Canada Infrastructure Bank (CIB) is a Crown corporation that uses federal support to invest in and attract private sector and institutional investment to new, transformative and revenue-generating infrastructure projects that are in the public interest (Box 2).
Chinese Taipei has established a national development fund, which mainly participates in private sector equity investments (such as transportation construction, information and communication technology, energy, etc.) that are aligned with government policies. The Russian Direct Investment Fund (RDIF) is Russia’s sovereign wealth fund with reserved capital of USD 10 billion under management. Acting as a catalyst for direct investment, RDIF has invested over 1.5 trillion rubles (around USD 23 billion) in the Russian economy. RDIF can assume up to 50% participation in co-investment projects, which are equity investments. By law, up to 20% of the Fund’s capital can be invested in foreign projects, if they create added value for the Russian economy.

I.3 Debt financing diversification through capital markets development

Common

Promoting the development of domestic bond markets for infrastructure financing

Well-developed domestic bond markets can support infrastructure investment by providing an alternative to bank lending and enabling greater diversification of the investor base through, for example, encouraging the participation of institutional investors. Financing in domestic currency bond markets is also the most effective mechanism for eliminating exchange rate risk by matching the currency of project revenues with that of the liabilities. Governments can support the development of domestic bond markets through establishing market infrastructure (e.g. electronic bond auction platforms, government yield curves), fostering a range of debt instruments, strengthening disclosure requirements, and expanding the investor base, both domestic and foreign.

Thailand, for example, has made significant efforts to develop the domestic bond market so that it becomes a sustainable source of financing that can support investments in large infrastructure projects through offering a reasonable cost of financing and a wide range of debt instruments (Box 6). Russia has also made important strides in developing its domestic corporate bond market through expanding the number of issuers, streamlining placement procedures, and increasing the range of instruments and tenors. As a consequence of these positive developments the majority of infrastructure projects in Russia are accompanied by bond issuances (Box 7).
Box 6. Thailand – Developing the domestic bond market

The Ministry of Finance’s Public Debt Management Office (PDMO) has promoted the development of the domestic bond market through a range of measures including:

- **Developing market infrastructure**, such as an electronic bond auction platform, government bond yield curve as a reference rate, and a Thai bond information centre to effectively support fairness, access to information and transparency for both onshore and offshore investors.

- **Developed a variety of debt instruments**, such as 3 – 50-year benchmark bond, amortized bond, inflation-linked bond, retail bond, foreign currency bond, term loan, promissory note, and bill, which are related to government spending and matches with all types of investor.

- **Developing debt management tools** such as Back-to-Back, Prefunding, and Bond Switching, which can mitigate the refinancing risk and improve government portfolio management.

- **Expanding the investor base** by introducing the variety of products, easing access to information, and promoting fairness and transparency. PDMO is seeking to further expand the investor base and increase liquidity in the secondary market by promoting the listing of Thai government bonds in global bond indexes.

The combination of these measures will ensure that the domestic bond market becomes a sustainable source of investment for a wide range of investors, such as commercial banks, financial institutions, government-related organisations, mutual funds, insurance companies, and non-profit organizations. Interest also extends to global investors that increasingly consider Thai bond market as a credible destination for investments. Moreover, the PDMO captures local individual investors by issuing retail bonds directly to Thai citizens who seek to invest in the low-risk securities.

Consequently, the recently developed bond market can support large infrastructure project investments through offering a reasonable cost of funding, making available a wide variety of debt instruments, and enabling the diversification of the investor base.

Source: APEC-OECD survey response

The **Philippines** government is shifting towards domestic capital markets for issuing Philippine Peso denominated debt, while retaining options to tap comparatively cost-effective financing from international markets other than USD bonds (e.g. Panda Bonds, Samurai Bonds, Global Peso Bonds, Euro Bonds) as well as funding sourced from official development financing/co-financing, which enables the government to build more big-ticket projects and obtain the best value for money while taking advantage of lower interest rates and a longer maturity period. The government has introduced a series of reforms that promote competition, develop market infrastructure, improve pricing, and strengthen risk management in government bond markets. By aligning Philippines market-making measures with international best practices, the authorities aim to increase interest and participation in the domestic capital market through better integrating the Philippines into the global capital market.

In the **United States**, a significant proportion of the infrastructure is financed at the state and local level through the well-developed municipal bond market. The market, totalling approximately USD 3.8 trillion, includes a variety of mutual funds and exchange-traded funds (ETFs), and is easily accessible by domestic and foreign investors.
Box 7. Russia – Developing the domestic bond market

In the recent years, the Russian domestic bond market has gone through slumps and shocks but has proved to be resilient and able to thrive. Comparing the period of 2015 – 2018 it is worth mentioning that the number of bond issuers has increased by 70%, the number of issues by 21%, and the total volume of the Russian corporate bond market has leapt by more than 91%. Such essential market development stems from advances in the functioning of the transmission mechanism, ease of multiple issuance procedures, and the creation of options for small and medium enterprises to participate in the bond market. Meanwhile, large borrowers have been actively opting for placing bonds over bank lending based on a lower cost of borrowing. The real sector positively perceives the current trends in the bond market – the majority of infrastructure projects are accompanied by bond issuances.

Russian authorities are constantly working on removing or mitigating restrictions that inhibit the growth of the bond market, which include measures to reduce administrative cost and time required for bond issuance, and to develop exchange, accounting and independent risk assessment infrastructure, including the development of a national rating industry.

Currently, the Russian corporate bond market provides both foreign and domestic investors with a wide range of instruments with short-, mid- and long-term tenors and volumes up to tens of billions of Russian rubles. A recent introduction of the new bond type that is a corporate bond placed on a closed subscription for a-priori known circle of investors expanded the opportunities for funding intra-group transactions. The publicly issued concession bond, introduced in 2016, is a relatively new but prominent instrument for financing infrastructure projects.

Source: APEC-OECD survey response

Strengthening the enabling conditions for loan syndication.

Loan syndication whereby debt is spread across multiple banks is commonly applied in APEC economies. It enables borrowers to raise larger amounts of debt thus allowing very capital-intensive projects to be financed. In addition, loan syndication simplifies lending procedures compared to engaging separately with multiple banks to raise similar amounts of finance. By spreading debt across multiple banks, loan syndication reduces the exposure of any given institution to a particular project, thereby favouring diversification and improving risk management.

Governments can support bank loan syndication by strengthening the enabling conditions for syndication, including applying risk-based capital charges that decrease with increased diversification in infrastructure projects, fostering infrastructure pipelines that facilitate planning and pooling, and supporting the rule of law to facilitate contract enforcement. National development banks (NDB) can catalyse the participation of commercial banks in lending for infrastructure projects through playing the role of lead arranger for a loan syndicate. For instance, in Japan, the Development Bank of Japan (DBJ) works alongside other financial institutions to arrange syndicated loans for infrastructure projects such as renewable energy, road and airport concession.

Russia has adopted a law on syndicated loans that allows banks to engage in syndicated lending under Russian legislation (previously, structuring based on English law was used).
In 2018, Russia established a Project Finance Factory, a new mechanism for long-term investment in Russia’s priority industries, introduced and operated by the Russian Development Bank VEB.RF (Vnesheconombank). It allows borrowers to obtain funding under syndicated loan (credit) agreements, and raise more funds to deliver government-backed projects. The Project Finance Factory applies financing on the principle of «80 to 20», where 80% are the funds borrowed through syndicated loans (tranches) issued by VEB.RF, and 20% are the funds owned by the project initiator.

Promoting the use of infrastructure project bonds.

Project bonds can bring beneficial dynamics to capital markets and to enable a more productive use of institutional funds for long-term investment. Governments promote the use of infrastructure project bonds through streamlining issuance and placement procedures, providing clear definitions for “infrastructure” project bonds as well as providing tax incentives. Traded project bonds can also be included in mainstream market indices, therefore attracting institutional investors, such as pension funds, asset managers, and insurance companies. However, it should be noted that local currency bonds, in particular in developing economies, are often characterised by lower liquidity due to heightened currency risk. The development of liquid domestic bond markets is therefore a pre-condition for the effective use of infrastructure project bonds.

A number of APEC economies are successfully using project bonds to finance infrastructure investment. For example, Canada has a long history of financing infrastructure through a mature and robust project bond market, allowing institutional investors to invest in infrastructure projects through relatively low-risk, tradeable securities. Its established availability-based PPP market relies on a strong supply of long-term project bonds, which provides long-term, low-cost upfront financing in PPP projects.

In the Russian Federation, the major state-owned companies have issued bonds to finance their large infrastructure investments. Since 2013, however, new regulation allowing project bonds to be secured by the rights related to the project itself have cleared the path for expanding the role of bonds to finance PPPs or concession agreements (Box 9). Funds raised are usually directed to road infrastructure and housing and communal services development. Project bonds issued for regional financing purposes are usually not guaranteed, but bonds issued for central government financing purposes generally have a government guarantee.

Indonesia has launched its first project bond in 2017 which was used to refinance the concession for the Jakarta Outer Ring Road (Box 8).

In the United States, the Private Activity bonds (PABs) program allows the U.S. Department of Transport (DOT) to allocate authority to issue tax-exempt bonds on behalf of private entities constructing highway and freight transfer facilities. PABs have been used to finance many public private partnership projects.

Bonds issued to finance infrastructure investment can incorporate specific features that are adapted to the particular cash-flow profile and risks of infrastructure projects. In Thailand, the debt management office (PDMO) developed a new debt instrument called “Amortized Bond”, which has features related to the characteristics of project investments including a huge initial disbursement by investors and returns earned at a later stage to cover the repayment of debts in subsequent years. PDMO issued a long tenor 25-year amortized bond, in which the outstanding debt will be reduced by 20% annually throughout the last 5 years. Such a structure mitigates refinancing risk and supports...
PDMO’s debt portfolio management. An additional aim was to establish a benchmark for amortized bond issuance, so that corporates are able to issue this type of bond in order to finance their own investment projects in the future.

**Box 8. Indonesia – Project bond collateralisation**

A good example of an infrastructure project bond in Indonesia was PT Jasa Marga’s (Indonesia Toll Road Company) Project Bond. After its success in launching Indonesia’s first asset securitisation, which raised a total of IDR 2 Trillion and was 2.6 times oversubscribed, PT Jasa Marga is now on its way to introducing Indonesia’s first project bond under PT Marga Lingkar Jakarta named MLJ BondsI/2017.

PT Marga Lingkar Jakarta is the concessionaire of the Jakarta Outer Ring Road (JORR)-W2N, which is majority-owned by PT Jasa Marga (65%), with the remainder owned by PT Jakarta Marga Jaya (Jaya Group).

JORR-W2N is considered a newly-operated toll road that opened for operation in late-2014. Though relatively new, given its strategic location in Greater Jakarta, traffic is already sufficient to cover interest charges proven by its interest cover ratio (ICR) of 2.05x as of December 2016.

The project bond aimed to raise a total of IDR 1.5 Trillion and will use JORR-W2N section as collateral. The project bond is specifically chosen by JSMR as part of its refinancing strategy to trade-in the existing IDR 1.3 Trillion debt in a 9.5-10% floating bank loan rate for a cheaper and fixed rate cost.

As opposed to the ordinary bond which is issued at parent level, the project bond is issued at the subsidiary level, i.e. PT MLJ. The bonds have idAAA rating from Pefindo compared to PT Jasa Marga rating of idAA. The coupon rate varies from 7.0% to 9.0% for five tranches with tenors from 3-12 years.

Source: APEC-OECD survey response
Box 9. Russia – Advancing the market for infrastructure bonds

Bonds are a common source of finance for infrastructure in Russia. A regulatory initiative of 2008 introduced a simplified procedure for bond offerings on the stock exchange from Russian issuers guaranteed by the Russian Federation, or a warranty or bank guarantee of the Russian Development Bank VEB.RF (Vnesheconombank). It enables bonds issued by SPVs to be included in quotation lists and therefore to qualify for financing from pension funds and other institutional investors. At the moment, the list of issuers contains large public companies such as Russian Railways, the Federal Road Agency, Gazprom, the Federal Grid Company or concession companies related to them.

In addition, securitisation regulation introduced in 2013 enables the issuance of highly structured project bonds involving special bankruptcy and remote project finance vehicles. These vehicles may be used to raise bond financing in infrastructure PPPs, concessions, leasing and other potential investment projects.

Further progress was made in 2018 with the passing of Russian legislation including amendments with regard to the expansion of the areas of activity of the specifically-designated project finance companies (Russian equivalent of SPV) and to the regulation of procedures for pledging encumbrance in favour of the bond-holders arising from the implementation of concession agreements and PPP agreements. A board of experts on long-term investments created by the Bank of Russia with market participants actively facilitates the idea of developing infrastructure bonds in the Russian domestic bond market.

Source: APEC-OECD survey response

Using credit enhancement to attract larger amounts of private debt for infrastructure projects.

Governments and NDBs can leverage their balance sheets and creditworthiness to attract substantial amounts of private sector investment for infrastructure development. Credit enhancement can be provided through a variety of reimbursable and non-reimbursable instruments including grants, subordinated loans, and guarantees. These instruments improve the risk-return profile for investors, thus helping to attract larger amounts of private investment at lower cost.

For example, in the United States, the Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides credit assistance for qualified projects of regional and national significance (Box 10). TIFIA requires projects to have a dedicated revenue source through tools, user fees, or tax increment financing (TIF) in order to be eligible for funding. The program's fundamental goal is to leverage Federal funds by attracting substantial private and other non-Federal co-investment in critical improvements to the nation's surface transportation system. The TIFIA helps finance surface transportation projects through direct loans, loan guarantees (their preferred approach over direct loans), and lines of credit. TIFIA was created because state and local governments that sought to finance large-scale transportation projects with tolls and other forms of user-backed revenue often had difficulty obtaining financing at reasonable rates due to the uncertainties associated with these revenue streams.
Box 10. US – TIFIA

The Transportation Infrastructure Finance and Innovation Act (TIFIA) helps finance surface transportation projects through direct loans, loan guarantees, and lines of credit. The amount of Federal credit assistance through TIFIA may not exceed 33 percent of total reasonably anticipated eligible project costs, meaning projects need to meet funding costs through different channels of investment.

Recent TIFIA-funded projects include:

i. Capital Beltway High Occupancy Toll (HOT) Lanes in Fairfax County, Virginia: The Capital Beltway High Occupancy Toll (HOT) Lanes project (officially the 495 Express Lanes) is a public-private partnership between Virginia DOT and Capital Beltway Express, LLC (a joint venture of Fluor and Transurban) that opened in November 2012. In addition to TIFIA loans, this project was funded by PABs, private equity, state grants, and interest income.

ii. Crenshaw/LAX Transit Corridor Project in Los Angeles, California: Estimated at USD 2.1 billion, TIFIA loans cover USD 545.9 million of the cost. The rest of the project is funded by federal grants, state and local bonds, and local options sales tax increases voted by local residents.

Source: APEC-OECD survey response

Innovative/Emerging

Strengthening security and certainty for lenders to infrastructure.

Both the availability and cost of debt financing will depend on the level of security afforded to creditors. Transaction limits, the use of a bank as a monitoring agent over transactions but also the use of escrow accounts that are managed by escrow agents who are assigning funds and transactions to counterparties upon fulfilment of services are effective instruments to improve bond security or ensure the payment of liabilities.

For example, in Russia, the Civil Code defines two new types of accounts: nominal accounts and escrow accounts. Nominal accounts can be used to limit the range of transactions that can be performed at the owner’s instructions (the project company), thus making it possible to eliminate the risks of unauthorized use of funds and the rights of claims used to secure the bonds. An escrow account involves depositing funds in an account that is managed by an escrow agent (bank) for the purpose of assigning these funds to another party – the beneficiary when specific grounds for such action arise. An escrow account is a widespread mechanism that project companies use as additional bond security, or as backup funds to repay liabilities on securities that can be deposited by the shareholders of a project company and tapped in case of default.

Promoting the use of Islamic finance.

Islamic finance is growing rapidly, and Sharia-compliant financial instruments such as sukuk can help to widen the investor base for infrastructure. The issuance of sukuk is expanding, but is still in its early days. The overall trend however is for greater issuance volumes, a maturation of Sharia interpretation of the various instruments, growing levels of savings that seek Sharia compliant investments, and also growing appeal from western economies to access savings in Islamic economies. In order for this potential to be realised,
however, regulatory, supervisory, and international coordination will be necessary for fostering stability and creating durable interpretations of Sharia law for the financing of infrastructure.

**Malaysia** which now accounts for just under 60% of total outstanding sukuk securities has pioneered the use of Islamic finance for financing infrastructure development. Malaysia has issued RM 61 billion in Islamic securities through DanaInfra Nasional Berhad, a state-owned infrastructure financing entity, in order to finance the development of a three-line mass rapid transit system (MRT) in Kuala Lumpur. Sukuk have also been used to finance a number of privately-held expressway concessions.

The **Indonesian** government has issued sharia-based financing (sukuk) to encourage both domestic and foreign sharia financial institutions and other Islamic funds (such as Hajj Fund) to participate in financing infrastructure development. In early 2019, the government of Indonesia issued USD 750 million of green sukuk with a five-and-a-half-year tenor and USD 1.25 billion of regular sukuk with a 10-year tenor, both of which were oversubscribed. Furthermore, efforts are being made to mobilise community funding (Zakat or Waqaf) to support infrastructure development.

**I.4. Promotion of a reliable long-term funding basis**

**Common**

**Diversifying funding sources and providing public financial support to enable innovative financing approaches.**

The use of innovative financing approaches can diversify and expand the sources of private financing, thereby enabling more infrastructure projects to be delivered. However, it depends on projects generating sufficient revenues. When projects do not generate sufficient revenues to provide an adequate financial return for investors, various forms of public financial support and alternative funding such as land value capture, special assessment districts and tax increment financing can be considered.

The **Australian** Government, for example, considers a range of mechanisms for infrastructure funding and financing including: concessional loans; guarantees; phased grants and availability payments; equity injections; value capture; wider application of user charging.

The **Mexican** development bank, BANOBRAS, through the National Infrastructure Fund (FONADIN), offers specific products to promote private investment in projects with high social benefits but low economic profitability, such as solid waste, waterworks and public transport. FONADIN is a very flexible vehicle offering non-reimbursable and reimbursable products across the whole project cycle. When a socially profitable project does not generate a financial return required to attract investors, the Fund provides financial grants subordinated to the equity enhancing the risk return profile to levels attractive for investors.

The **United States** has established a Center for Innovative Finance Support under the Federal Highway Administration to encourage state and local jurisdictions to look for new

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revenue sources through value capture to address funding shortfalls and is available to provide technical assistance in these areas. These sources can include development impact fees, joint development, land value tax, sales tax districts, or tax increment financing (TIF). TIF applies to redeveloped areas in which property values rise and the municipality can then use the additional tax money generated by the increase to pay for redevelopment. Examples of projects using such policies include:

- Maryland’s light rail project, which is partly funded by the Federal government, permits local governments to use TIF for transit-oriented development infrastructure.
- Seattle’s South Lake Union Streetcar project established a special property tax levy through the formation of a Local Improvement District, funding around 47 percent of the project in addition to a mix of state and Federal funding.

**Providing stable, long-term, transparent, and credible commitments to investors.**

Governments seek to increase private sector participation by presenting stable, long-term, transparent, predictable, and credible commitments to investors as well as by strengthening the long-term certainty in policy and legal frameworks. In particular, retroactive changes to existing support schemes damage investor confidence, and threaten future private investor participation.

Many privately financed infrastructure projects are funded by availability payments made directly by governments or by contracting authorities. Given the long-term nature of these payments and their impact on government finances they should be considered in long-term financial planning and included in the government’s budget. Such measures are not only necessary for ensuring fiscal sustainability but also for providing reassurance to investors that the government has sufficient resources allocated to the project. In China, PPP regulations require that government payment obligations in PPP contracts be considered in combination with medium- and long-term financial plans, and be included in the budget of the government at the same level.

Moreover, when incurred by a contracting authority or a state-owned enterprise, such payment obligations may require the backing of a state guarantee. Mexico’s development bank BANOBRAS provides a range of guarantees to investors for infrastructure projects including guarantees which cover the periodic payment obligations of the contracting authorities derived from the service provision contracts signed with the suppliers of the service.

Uncertainty regarding the regulatory and tax regime can also create concerns over future project funding. In order to address this issue, in 2019 Russia adopted an improved mechanism of the so-called Special investment contracts (SPIC 2.0) according to which the state ensures the stability of the business environment, and provides the investor with fixed tax conditions (zero income tax rate to be credited to the federal budget, and reduced income tax rate at the regional level) throughout the life of the contract. Unlike the SPIC 1.0, under the 2019 version, the requirement for a minimum amount of investment was excluded. Under the new mechanism, it is proposed to conclude SPIC contracts for up to 15 years in case of investments of up to 50 billion rubles, or for 20 years if the amount of investments exceeds 50 billion rubles. The adoption of this mechanism will contribute to the development of competition, and attract long-term private investments in projects.
involving the introduction of modern technologies. Such contracts have already been signed with a number of international corporations.

Reallocation of taxes between levels of government to support infrastructure investment.

Infrastructure development responsibilities are typically shared across levels of government. Sub-national governments are responsible for a significant portion of total public investment yet often do not have sufficient own resources to cover their expenditures. In response, central governments reallocate taxes to the levels of government that are responsible for infrastructure investment. Such transfers provide a more stable long-term funding basis that can support private investment in infrastructure.

In Australia’s federal system of government, the Australian (the Commonwealth) Government raises the majority of taxation revenue, approximately 82 per cent, while the State and Territory (state) governments deliver the majority of public economic as well as social infrastructure, including schools and hospitals. To address this ‘vertical fiscal imbalance’, the Commonwealth Government provides grants to State governments to assist with the cost of service delivery in sectors such as health, education and infrastructure. These grants are in two forms ‘special purpose’ grants to fund particular activities such as education and health with the balance being as general purpose ‘untied’ grants.

In Mexico, federal transfers to municipalities serve to cover payments for infrastructure financed by private investors. The resources raised from private investors are channelled to the construction of social and basic infrastructure, such as waterworks, electricity, roads, education and health. The programme called BANOBRAS-FAIS and administered by BANOBRAS provides financing to municipalities characterised by high levels of poverty and which face financial constraints that make them unattractive to commercial banks.

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II. Institutional investors and promoting infrastructure as an asset class

Policy Statement*

There is a large potential to expand investment by public and private institutional investors – particularly multilateral and national development banks, pension funds, insurance companies, Sovereign Wealth Funds (SWFs) and mutual funds. Governments may review financial regulations that may potentially pose unintentional barriers to infrastructure investment by institutional investors, taking into account prudential, investor protection, and overarching financial stability objectives.

In order to attract institutional investors to the full spectrum of infrastructure assets, such assets need to be structured as attractive investment opportunities, providing revenue streams and risk-return profiles that match investors' return expectations and liability structures.

Policy recommendations could identify opportunities to catalyse greater private sector participation in financing infrastructure projects across multiple stages. It may also be possible to identify a potential framework for cooperation amongst the main stakeholders as a way to promote stable and diversified financing for infrastructure.

To arrive to a full understanding of the drivers and impediments of infrastructure investment, detailed analysis of infrastructure assets is required. A standard template for data collection on infrastructure assets, including historical cash flows and qualitative information on project characteristics and sustainability could help promote infrastructure as an asset class and may be considered for APEC economies.


Background

The promotion of infrastructure investments as an asset class can enable institutional investors such as multilateral and national development banks, pension funds, insurance companies, sovereign wealth funds (SWFs) and mutual funds to be brought into infrastructure brownfield and greenfield investment. Firstly, institutional investment in brownfield infrastructure assets previously held by public entities allows the government to recover infrastructure funds and create additional fiscal room to deploy (effectively recycle) these funds into other government activities, whether infrastructure or other services. In particular asset recycling, which can involve the monetisation of existing infrastructure assets by public entities to free up capital to invest in new greenfield infrastructure, is a process that can be useful to ameliorate strained public finances. In this way, public entities continue to be key sponsors for the procurement and delivery of new infrastructure assets, while investors can step-in and finance operational assets, perpetuating the cycle of development and advancement of the infrastructure pipeline.
Secondly, an increased direct institutional investment into greenfield infrastructure projects can be enabled.

The current market for infrastructure assets is characterised by a wide-ranging lack of information and high levels of uncertainty. For instance, institutional investors may struggle to identify attractive investments in emerging economies where central or even regional markets often exhibit individual characteristics and reliable and comparable information is scarce. As a result, investments in different economies have to be assessed on a fragmented basis which significantly increases transaction costs, and even then, an identification of appropriate returns is difficult. Political and regulatory uncertainties are challenging to assess and impose a considerable barrier to attracting institutional capital.

As a consequence, in order to promote investments into infrastructure assets by public and private institutional investors, a review and adjustment of financial regulations is appropriate, with a view to identifying any unnecessary barriers to those investments. Regulators therefore need to have a better understanding of the investment channels for infrastructure investment and related risks in order to calibrate regulatory frameworks accordingly. Also, in order to address the lack of information related to infrastructure investment, comparable and standardised data and information on assets needs to be easily accessible and structured information should be provided, thereby allowing assets to be analysed and benchmarked. Additional policy measures improving investment conditions such as establishing a framework for cooperation amongst the main stakeholders can further attract institutional investment and promote infrastructure assets as an attractive asset class.

Effective Approaches

II.1. Reducing barriers to infrastructure investment by institutional investors

Common

Reviewing the regulatory and supervisory framework for insurance companies and pension funds with a view to identifying, and, where appropriate, reducing barriers to investment in infrastructure.

While insurance companies and pension funds represent large pools of assets that can be used to finance infrastructure, they often face regulatory barriers to investing in alternative assets such as infrastructure. Some restrictions, such as caps on alternative investments, may be necessary for prudential reasons. However, governments should review existing barriers with a view to enabling greater institutional investment in infrastructure.

In Canada, for example, the 2018 Canadian Federal Budget introduced legislative amendments to permit life and health insurance companies to make long-term investments in public infrastructure. In particular, a federal life and health insurance company will, subject to conditions to be specified via regulations, be able to acquire control of, or acquire or increase a substantial investment in, a permitted infrastructure entity, that is, an entity that only makes investments in infrastructure assets or engages in any other permitted activities. The regulatory framework for these changes is currently being developed.

Chinese Taipei has introduced a number of measures aimed at encouraging insurance companies to invest in priority industries (referred to as 5+2 industries) as well as infrastructure. For instance, insurance industry funds are allowed to act as a participating
bank in syndicated loans and invest in loans guaranteed by government credit guarantee institutions where the syndicated loans relate to the 5+2 industries. They are also permitted to invest in state-level investment companies and domestic private equity funds established by subsidiaries of investment companies or securities companies for investment in infrastructures and the 5+2 industries. Furthermore, insurers that have good performance in terms of investment in infrastructure and 5+2 industries, are allowed to increase the number of approved products for review and benefit from reduced levy amounts for the Insurance Guaranty Fund. Finally, Chinese Taipei has developed specific guidance relating to build-operate-transfer (BOT) projects for the purpose of channelling insurance industry investment into infrastructure.\(^\text{19}\) The guidance clarifies and rationalises provisions of tender documentation and concession agreements, and eliminates concerns of the insurance industry when making investments in infrastructure projects.

In Chile, the Productivity Law approved by Congress in August of 2016, includes measures that aim to facilitate different sources of financing for infrastructure, while at the same time tackling the low-yield environment in order to improving attainable returns by both the pension funds and insurance companies. Specifically, it enabled pension funds to invest in alternative assets, including those linked to infrastructure. In the insurance industry, the law allows the Securities and Insurance Superintendence (SVS) to waive restrictions for concessionaires investing in public infrastructure. Thus, the law broadened the spectrum of financing sources for infrastructure, allowing at the same time a greater diversification towards higher-yield instruments, all within a regulatory framework that limits overall risk by introducing caps to these investments.

In Mexico, financial reforms following the global financial crisis in 2008, have expanded the instruments available to pension funds and insurance companies for investing in infrastructure. For example, when Structured Equity Securities or CKDs were introduced, regulation was modified in order to enable pension funds’ participation. In addition, amendments to secondary regulation allowed Investment Project Fiduciary Certificates (CERPI’s) and the Fiduciary Stock Certificates over Energy and Infrastructure (FIBRA E) to be included in the investment regime of insurance companies.

The Philippines government has recently introduced a number of legislative amendments aimed at encouraging greater participation of insurance companies and pension funds in financing infrastructure expansion and development programmes. The changes include allowing insurance and reinsurance companies to invest in infrastructure projects included in the Philippine Development Plan (PDP) 2017-2022, and reducing the capital charges associated with such projects. Similarly, legislative amendments have enhanced the ability of the Social Security System (SSS), a state-run pension fund, to invest its reserve funds in infrastructure projects (Box 11).

\(^{19}\) The Reference of the Terms of BOT Projects Tender Document and Concession Agreement for the Participation of Insurance Enterprises to Join with a Professional Third Party.
Box 11. The Philippines – Encouraging institutional investor participation in infrastructure development

The government of The Philippines has recently made a number of amendments to the legal and regulatory frameworks governing insurance and pensions in order to enable increased participation in infrastructure investment:

i) Insurance Commission Circular Letter No 2018-74, which provides that an insurance or professional reinsurance company seeking to invest in an infrastructure project under the Philippine Development Plan (PDP) may enter into or avail itself of debt and/or equity security instruments and/or any other appropriate agreement or contract through the following capacities: as project proponent, financer or sponsor of an infrastructure project, or operation and maintenance contractors. The projects that may be undertaken include, among others, highways, railways, ports, airports, power generation, telecommunications, and IT and database infrastructure.

ii) Insurance Commission Circular Letter 2019-19, which eased the rules for insurance firms looking to place funds in infrastructure projects, and provides insurance firms with lower capital charges for infrastructure investments included in the PDP.

iii) Republic Act No. 11199 otherwise known as the “Social Security Act of 2018”, which amended the Social Security Act of 1997, enhancing the ability of the Social Security System (SSS), a state-run pension fund, to invest its reserve funds in infrastructure projects, subject to prescribed investment ceilings.

Source: APEC-OECD survey response; see also Rule 42 of Implementing Rules and Regulations of Republic Act No. 11199 or The Social Security Act of 2018

Establishing collaborative platforms for pooling capital and attracting institutional investors to infrastructure investment.

Through mobilising the participation of a range of stakeholders including public financial institutions and commercial banks that can provide credit enhancement and risk mitigation support, collaborative platforms can facilitate institutional investor involvement in infrastructure financing by mitigating risks and lowering transaction costs.

Canada, for example, has established the new Canada Infrastructure Bank (CIB) with the objective of exploring more user-pricing models with appropriate risk transfer and encourage direct institutional investment into infrastructure. The CIB is mandated to use federal support to attract private sector and institutional investments to new revenue-generating infrastructure projects that are in the public interest.

Indonesia has established PT Indonesia Infrastructure Finance (IIF) as a private national company providing infrastructure financing and advisory services that are focused on commercially viable infrastructure projects. PT SMI, Asian Development Bank (ADB), the International Finance Cooperation (IFC), KFW and SMBC are the shareholders of IIF. The IIF’s main purpose is to catalyse financing for infrastructure development in Indonesia. Supported by the strong capitalization from the shareholders as well as long-term subordinated loans from development partners, IIF has a very sound basis to provide solutions for financing infrastructure development in Indonesia.
Japan’s Nippon Export and Investment Insurance (NEXI), which provides government-backed trade insurance, and 13 international major banks have concluded a memorandum of cooperation in order to mobilise more capital from institutional investors for quality infrastructure projects. NEXI will consider an insurance scheme targeted for both infrastructure funds and project bonds, where NEXI would help manage risks for institutional investors by insuring the infrastructure funds and project bonds arranged by these banks. The scheme is expected to encourage Japanese companies to expand their business to those emerging markets where NEXI offers such coverage. NEXI and major banks aim to launch the scheme by the end of 2019.

The Russian Direct Investment Fund (RDIF) invites foreign institutional investors (in particular, sovereign wealth funds) to participate in financing infrastructure in Russia. For example, RDIF and Saudi Arabia’s sovereign wealth fund, the Public Investment Fund (PIF) have created a partnership to invest in attractive projects in Russia.

In 2018, Thailand launched the “Thailand Future Fund (TFF)”, which was the first fund created in Thailand for pooling capital and investing in infrastructure projects. The TFF is open to retail investors, financial institutions, and government-related organizations, and provides investors with annual dividends (Box 4).

Innovative/Emerging

Establishing dedicated vehicles or units within public pension schemes to make direct investments in public infrastructure.

Public pension schemes constitute large sources of long-term patient capital that are well-matched to the long-term nature of infrastructure investments. However, a lack of suitable capital market instruments can sometimes be a hindrance to their participation in the infrastructure market. Some pensions funds have are addressing this barrier by developing specialised infrastructure units that have the capacity to analyse, structure and perform due diligence of projects.

For example, at the provincial level in Canada, innovative efforts have been made to encourage institutional investor involvement in public infrastructure projects. The Québec government has established an innovative partnership with La Caisse de dépôt et placement du Québec (CDPQ) under a new subsidiary, CDPQ Infra. Under the terms of the agreement, the government is responsible for identifying important infrastructure needs, while CDPQ Infra is responsible for project planning, financing, development and operation of these infrastructure projects. This unique partnership allows CDPQ Infra to invest in tangible assets while benefitting Québec, and to implement global best practices to execute work on time and on budget.

Promoting data collection on infrastructure assets, including historical cash flows and qualitative information on project characteristics and sustainability.

Lack of comparable data and benchmarks on the financial and ESG performance of infrastructure investments is a significant barrier to attracting greater levels of institutional investment to infrastructure. Governments can encourage greater data transparency,

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II. INSTITUTIONAL INVESTORS AND PROMOTING INFRASTRUCTURE...

standardisation and availability by establishing infrastructure databases and platforms to collect, store, search, analyse and publish project information.

The Monetary Authority of Singapore, for example, has supported the establishment of EDHEC Infrastructure Institute-Singapore (“EDHECinfra”) to create usable performance benchmarks for privately held infrastructure debt and equity investments. These benchmarks aim to provide investors with a clear view on the risk and return characteristics, as well as facilitate quantitative comparisons of privately held infrastructure debt and equity against other asset classes. As part of its research work, EDHECinfra has also created a global infrastructure company classification standard which aims to classify infrastructure through business risk, industrial activities, geo-economic factors and corporate governance. The classification will play a role in helping to promote infrastructure as an asset class.

II.2. Structuring assets as attractive investment opportunities

Common

Establishing suitable financing instruments for infrastructure (such as infrastructure bonds) with features that appeal to the risk appetite and preferences of institutional investors.

Institutional investors require access to financial products that match their preferences and risk appetite, and are adapted to their level of financial sophistication and investment capabilities.

Canada has an established track-record of institutional investment in infrastructure with a number of its largest pension funds being active participants in the market. Canada’s long history of financing infrastructure through a mature and robust project bond market has allowed institutional investors to invest in infrastructure projects through relatively low-risk, tradeable securities.

The use of concession bonds in Russia facilitates the participation of Non-governmental Pension Funds (NPFs) and insurance companies in infrastructure investment. Around half of Russian NPFs are active participants in infrastructure financing in Russia, with a share of about 11% in total infrastructure investment volume. The share of insurance companies in total infrastructure investment in the country is much lower so far.

Thailand’s long-term “Amortized Bond” used to finance infrastructure investment has proved particular popular with insurance companies and pensions funds.

Innovative/Emerging

Adopting and incentivising asset recycling models to draw-in private capital.

Governments consider asset recycling models an effective instrument to free up dormant capital in mature infrastructure assets with the aim of fostering the re-investment of this capital in greenfield infrastructure investment. Asset recycling takes advantage of private investors’ appetite for mature infrastructure assets which can provide stable and long-term cash-flows. Governments thus transfer mature projects to private investors and thereby match these projects’ return structures with the comparative advantages and preferences of private sector participants. By appealing to private investors’ appetite for brownfield
projects with stable and low-risk revenue streams, governments can design more efficient financing methods while releasing capital to invest in new infrastructure.

For example, Australia’s Asset Recycling Initiative (ARI) has been an effective tool for satisfying private sector demand for brownfield assets and unlocking infrastructure spending without increasing taxes or borrowing (Box 12).

Japan has used capital recycling to support the development of renewable energy. For example, the Development Bank of Japan Inc. (“DBJ”) has cooperated with Japan Wind Development Co., Ltd. in the nation’s first capital recycling model in an effort to expand the use of wind power in Japan. These approaches promoted utilization of private finance for the project. DBJ sees the promotion of capital recycling programs throughout the renewable energy field as an important means of giving financial support to proprietors wishing to speed up investment and reduce project costs.

When assets as well as re-investment competencies are located at the sub-national level, central governments can incentivise lower-level governments to monetise mature assets by providing support payments if the freed up capital is reinvested in greenfield projects. Under Australia’s ARI, the Commonwealth Government would make an incentive payment equal to 15% of the proceeds from an asset divestment, on the condition that the State government reinvested the proceeds from the asset into additional productivity enhancing infrastructure.

Box 12. Australia – Asset Recycling Initiative (ARI)

To promote the availability of brownfield infrastructure assets available for investment, the Commonwealth Government implemented the Asset Recycling Initiative (ARI) which provided States and Territories with financial incentives if they sold assets and recycled the capital into additional economic infrastructure. Under ARI, the Commonwealth Government would make an incentive payment equal to 15% of the proceeds from an asset divestment, if the State government reinvested the proceeds from the asset into additional productivity enhancing infrastructure.

ARI recognised that private sector demand for brownfield infrastructure assets which have proven, stable revenues remains very high, so divestment of these brownfield assets is an effective way for State governments to fund greenfield infrastructure without reliance on taxes or debt. Privatisation can have wide productivity benefits (e.g. introducing new competitors) and can release dormant government funds.

The ARI agreement concluded on 30 June 2019. Through ARI, over $17 billion in infrastructure spending has been unlocked.

Source: APEC-OECD survey response

Mexico has also implemented a form of capital recycling to expand capacity for new investment in infrastructure. Many of the country’s highway concessions have been transferred to the National Infrastructure Fund (FONADIN). The tolls from these concessions serve to fund new infrastructure investment. In order to raise additional funds for new infrastructure investment, FONADIN sells or securitises some of its toll road assets (Box 13).
Following Mexico’s financial crisis in 1995, many of country’s toll road concessions became insolvent. A fund called FARAC was established in 1997 to nationalise these toll roads.

When the National Infrastructure Fund (FONADIN) was created, its initial equity included some of the toll road concessions from the former FARAC fund.

In addition to these assets, other toll road assets have been transferred to FONADIN through modifications to their concession titles granted by the Secretaria de Comunicaciones y Transportes (SCT) in 2011. Currently, FONADIN is the concessionaire of 50 highways (47 in operation and 3 under construction) from one concession title, two operating highways of the former Golfo-Centro Trust (mainly part of the Mexico – Pachuca highway) from another concession title granted by the SCT in 2016, and the Oaxaca – Puerto Escondido highway (under construction) from another concession title granted in 2017. As a result, FONADIN is the largest concessionaire in Mexico and in Latin America with more than 4,300 km of roads, the majority of which are now brownfield assets. Currently, toll road assets are the main source of funds for infrastructure investment.

Since 2007, FONADIN has released some highways from its main concession title with the purpose of raising funds to finance infrastructure development in the country. Thus recycling its assets.

This process of recycling assets once they have passed the riskier phases of the project is labelled as asset harvesting by the Mexican authorities. The commonality with the asset recycling scheme is that there is a sale of brownfield assets to private investors, and the proceeds of the sale are earmarked for further infrastructure investment. However, in this model there is no (partial) matching by the federal government to the FARAC or FONADIN.

More recently, FONADIN raised MXP 15 billion through the securitisation of the Mexico – Puebla highway, to which FONADIN held the concession rights. This is the biggest highway securitisation in the Mexican market history. The proceeds will be used to foster the fund’s infrastructure investment.

Source: APEC-OECD survey response

Streamlining and standardising infrastructure securitisation.

Securitisation on capital markets allows for the aggregation of assets or financial flows thus making smaller assets more valuable and attractive for investors, while spreading the risk over numerous investments. Securitisation of infrastructure assets can therefore be an effective mechanism for distributing risks, appealing to the different categories of investors, and freeing-up bank’s balance sheets to enable them to make new loans. It can thus be an instrument to channel capital more effectively into the infrastructure sector as well as to align domestic investment procedures to international standards. Governments can promote the development of asset securitisation by increasing the efficiency of securitisation processes such as by making approval procedures more transparent, standardised and simpler. Ultimately, infrastructure securities can be included in mainstream market indices, thereby attracting institutional investors, such as pension funds, asset managers, and insurance companies.
China views asset securitisation as an effective means to boost infrastructure financing through securitising financial flows such as sewage treatment fees, garbage disposal fees, tolls of the highway financed by government borrowing, and electricity fees. More specifically, instruments such as Asset-Backed Notes (ABN) and Project Revenue Notes (PRN) are being actively promoted to provide the financial support for infrastructure construction. In order to support the development of securitisation, the Chinese government has established a series of regular rules, such as normative documents and business guides, with reference to the general norms of international asset securitisation, and developed detailed regulation implementing these rules.

Chinese Taipei has established two types of securitisation procedures that can be applied to infrastructure projects: financial asset securitisation and real estate securitisation. Financial asset securitisation involves the originator entrusting their creditor’s rights and their security interests to a trustee or transferring them to a special purpose company with a special objective, and then issuing beneficiary securities or asset-based securities on the basis of these creditor’s rights and security interests. Real estate securitisation involves a trustee issuing beneficiary securities to an investor for investment in real estate and other subjects, or the trustor transfers its real estate or real estate-related rights to the trustee and receives beneficiary securities issued by the trustee (Box 14).

**Box 14. Chinese Taipei – Real Estate Securitisation**

In Chinese Taipei, in addition to financial asset securitisation options, infrastructure projects may also be securitised on the basis of the Real Estate Securitisation Act. According to the Act, “real estate includes land, construction improvements, roads, bridges, tunnels, rails, wharfs, parking lots, as well as other structures of economic value affixed to land and appended facilities thereto, provided such facilities, if separated from the land and structures affixed to land, cannot create value alone, thereby resulting in impairment of value of the land and structures affixed to it (Subparagraph 1, Paragraph 1 of Article 4 of the Real Estate Securitisation Act)”. Infrastructure projects that fit this definition may be securitised according to the Act.

Privately-placed REIT funds are allowed to invest 100% of their assets in infrastructure projects. Considering the high risk of infrastructure during the construction period, REIT funds that are publicly placed in many foreign economies are generally not allowed to invest in development-oriented real estate. In jurisdictions where such investments are allowed, specific limits for the investment percentages are imposed. According to the Real Estate Securitisation Act (before an amendment introduced in June 2017), the investment of a REIT fund in development-oriented real estate could not exceed a certain percentage of the value of the trust fund’s property (15% for a publicly offered fund and 40% for a privately placed fund).

However, considering that professional investors have better risk assessment capabilities and higher risk tolerance, the Financial Supervisory Commission (FSC) introduced an amendment the Real Estate Securitisation Act whereby a privately-placed REIT fund would no longer be subject to the 40% limit of the value of the fund’s trust property for its investment in development-oriented real estate or in infrastructure projects as defined in the Act for Promotion of Private Participation in Infrastructure Projects. In other words, the amendment allows a REIT fund to invest 100% (of its trust property) in infrastructure projects, in order to encourage the private sector to participate in infrastructure financing.

Source: APEC-OECD survey response
Box 15. Singapore – Bayfront Infrastructure Capital

Bayfront Infrastructure Capital (BIC) is an Infrastructure Take-Out Facility (TOF) that serves to mobilise institutional capital for infrastructure debt in Asia-Pacific and the Middle East. It does so by facilitating the transfer of exposure in long-term project and infrastructure loans from banks to institutional investors. The TOF was designed and structured by Clifford Capital, a specialist arranger and provider of project and structured finance solutions to Singapore-based companies. Clifford Capital is supported by the Government of Singapore and also acts as both the sponsor and manager of the facility.

The portfolio, worth US$458 million, comprises 37 infrastructure loans, covering 30 projects spread across 16 Asian and Middle Eastern economies. The 30 projects largely have stable and predictable long-term cash flows, including through offtake agreements entered into with reputable and creditworthy counterparties including major global corporates, state-owned enterprises, and government or government-linked sponsors. The underlying project and infrastructure loans were sourced from leading commercial banking institutions, including DBS, HSBC, MUFG, SMBC and Standard Chartered.

In order to eliminate currency risk, the loans are generally denominated in US dollars. Since the original loans were unrated, they had to be subjected to a credit estimate performed by Moody’s ahead of being included into the portfolio. Just under 40 percent of the loans benefit from external credit support provided by export credit agencies, insurers, or multilateral financial institutions.

The portfolio loans have been bundled into three investment grade rated notes that are listed on the Singapore Exchange. A separate unrated subordinated note serving as a first-loss tranche and corresponding to 10% of the total issue has been retained solely by Clifford Capital thus providing credit enhancement to the senior notes. In order to be selected for inclusion in the portfolio, each of the projects was subject to a review and credit approval process by each of the contributing banks, Clifford Capital and, where applicable, the export credit agencies and multilateral financial institutions.

BIC fulfils several strategic objectives, including:

- Addressing Asia-Pacific’s infrastructure financing gap by mobilising a new pool of institutional capital;
- Unlocking additional capital for Asia-Pacific infrastructure financing through facilitating capital recycling by banks;
- Creating a new asset class for institutional investors to access project and infrastructure loans in Asia-Pacific and the Middle East regions in a credit-enhanced structure, and;
II. INSTITUTIONAL INVESTORS AND PROMOTING INFRASTRUCTURE...

- Addressing existing market frictions that prevent large scale mobilisation of institutional capital for infrastructure financings, thereby facilitating institutional participation in the project finance asset class in a readily accessible manner.


Securitisation can also be used by public financial institutions in order to raise new capital for infrastructure investments. For example, Mexico’s National Infrastructure Fund (FONADIN) has securitised the income stream from a highway concession, the proceeds of which will be used to finance new investments (Box 13).

Governments can also establish specialised vehicles for securitising infrastructure loan books and distributing them as asset-backed securities to institutional investors. Singapore, for example, has established an Infrastructure Take-Out Facility, Bayfront Infrastructure Capital (BIC), to mobilise institutional capital for infrastructure debt in Asia-Pacific and the Middle East (Box 15). It does so by facilitating the transfer of exposure in long-term project and infrastructure loans from banks to institutional investors.

Supporting the use of green or sustainability-related instruments or funds for infrastructure projects to attract ESG or impact-oriented institutional investors.

Institutional investors such as pension funds and insurance companies are increasingly integrating ESG criteria into their investments. Governments can tap into demand from ESG and impact-oriented investors by supporting the development of appropriate green instruments and standards.

Chinese Taipei has developed a “Green Financial Action Plan” which includes measures to promote the development of a green bond market and encourage institutional investors to invest in the green energy industry (Box 16).

Thailand’s Public Debt Management Office (PDMO), for instance, is presently studying the possibility of introducing a “Green Bond” in order to connect financing from investors to green investments. The PDMO is currently surveying investors’ demand and considering the features of green bond issuance, such as green bond principles, investor base, and currency of green bond issuance. In doing so, the Thai authorities are leveraging the joint work of the ASEAN Capital Market Forum and the International Capital Market Association in introducing ASEAN Green Bond Standards, which aim to facilitate ASEAN capital markets in tapping green financing within the region. Furthermore, the Thai Securities and Exchange Commission (SEC) is adapting the regulation and green bond standard in order to enable both the public and private sectors to issue green bonds in Thailand.

Governments can also kick-start the market for green bonds and establish benchmarks. Chile, for example, launched its first green bond in 2019 raising USD 1.4 billion to invest in electrified public transport (trains, buses); solar projects; energy efficiency; renewable
energy; water management and green buildings. The issue was thirteen times oversubscribed indicating heavy demand for this instrument with interest from both traditional investors in sovereign bonds as well as dedicated green bond investors.21


Chinese Taipei’s Green Financial Action Plan was approved on November 6, 2017. It covers credit, investment, capital market financing, talent cultivation, promotion of development of green financial products or services, information disclosure, and promotion of green sustainability. Its short-term goal is to assist the green energy industry to obtain business development funds, and, in the long run, to establish a culture that values sustainable development.

The important measures and current achievements include:

- Encouraging domestic banks to lend to the green energy industry, expanding the scope of application of the Equator Principles, and loosening foreign bank credit and fundraising regulations to assist the green energy industry in obtaining bank financing. As of the end of the first quarter of 2019, the balance of loans given to the green energy technology industry was about 34.3 billion USD (1.1 trillion NTD), an increase of nearly 1.875 billion USD (60 billion NTD) on the end of 2017.

- Establishing and developing the green bond market, in order to facilitate industrial financing to promote environmental improvement, green economy transformation and guide capital market responsible investment. The establishment of the market was completed in May 2017; as of the end of the first quarter of 2019, 23 bonds were listed, and the issuance scale was about 1.684 billion USD (53.9 billion NTD).

- Encouraging insurance and other funds to invest in the green energy industry, including indirect investment in green energy through private equity funds, venture capital, venture capital management, etc. For example, as of the end of the first quarter of 2019, eight insurance industry renewable energy power plant investment cases were approved corresponding to a total investment amount of about 0.31 billion USD (9.8 billion NTD).

Source: APEC-OECD survey response

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III. Public-Private Partnerships (PPP), effective transaction design and PPP risk allocation

Policy Statement*

Improving PPP knowledge, models and expertise will assist in further attracting private capital into infrastructure investment. Some international organizations highlight for instance that three elements\(^2\) are especially useful to define governments’ support of PPP and therefore create a suitable institutional environment: i) establish a clear, predictable and legitimate institutional framework supported by competent and well-resourced authorities; ii) ground the selection of Public-Private Partnerships in Value for Money; and iii), use the budgetary process transparently to minimize fiscal risks and ensure the integrity of the procurement process. The enabling environment is fundamental in attracting private sector investment, with the rule of law, enforcement of contracts and regulatory quality found to be of key importance to infrastructure.

Increasing levels of private investment and financing in PPPs will entail significant risk transfers to the private sector, placing risk allocation at the centre of every PPP transaction which is crucial for long-term viability. A deep understanding of the risk allocation principles, measures and government support arrangements is a precondition to attract private sector capital. Consequently, risks need to be clearly classifiable, measurable and contractually allocated to the party best able to manage them. Effective contractual arrangements align the service delivery objectives of the government with the private sector’s objectives to generate profits at an expected level of risk.

* Annex A. Diversifying Financing Sources and Fostering Private Sector Involvement in Infrastructure Investment in APEC Economies, §10-11.

Background

Public Private Partnerships (PPP) are an important tool governments deploy to finance infrastructure assets, particularly those assets that do not generate revenues through user fees. Compared to pure public sector or private sector infrastructure financing, PPPs maintain public ownership while allowing a *risk transfer away from public budget*. Also, private involvement exhibits potential for *increased project efficiency*, which is due, in particular, to a reduction in construction delays, cost-overruns and long-term performance failure, as private investors are inherently incentivised to minimise project cost and delivery times in order to maximise the returns of their upfront investment. Also, if well-functioning asset markets exist, private investors can refinance projects and further optimise their risk profile.

However, in order to exploit the full potential of PPPs, governments have to make sure that enabling preconditions are satisfied, and efficiency gains through private involvement exceed the cost of attracting and involving private sector capital into investments. First,

\(^{22}\) OECD Recommendation on Principles for Public Governance of Public Private Partnerships.
sound risk identification, classification, measurement and mitigation mechanisms are crucial, as private investors are more likely to submit proposals if their expected returns are likely to be satisfied. Second, a stable and predictable regulatory and institutional environment is necessary to ensure good execution and enforceability of contractual agreements. This is especially important, as governments can face difficult circumstances if private partners fail to deliver. Both preconditions are especially relevant in emerging economies.

Hence, sound PPP models which adequately ensure private sector returns on investment and compliance with contracts can be a powerful means of attracting private capital into infrastructure investment, reduce cost and improve risk allocation efficiency. Nevertheless, governments have to decide which specific infrastructure sectors or investments shall be subject to PPPs. The optimal design of PPPs is highly dependent on project, sector and domestic economic, regulatory and political specifications.

Effective Approaches

III.1. Creating a suitable institutional environment

Common

Establishing a sound institutional arrangement, and legal and regulatory framework for PPPs with clearly defined roles and responsibilities.

While the specific functions of these units may vary, most APEC economies that have responded to the survey have established centralised PPP units to assist in the development of PPPs. China, for example, has established a PPP unit under the Ministry of Finance to fulfil the obligations of policy research, project management, promotion, capacity building, information collection and disclosure, international exchanges, etc. Similarly, in Papua New Guinea, the PPP Act authorises the establishment of a PPP Centre that will be responsible for identifying PPP projects and creating a pipeline of viable projects (Box 17).

In certain economies, PPP units have also been established at the sub-national level. In Australia, most states and territories have established dedicated units to support the financing, funding, procurement and delivery of infrastructure including PPPs. Similarly, in Canada, where public infrastructure projects are predominantly owned and procured by provincial or municipal governments, provinces and territories have established PPP agencies to develop and deliver PPP projects, especially for hospitals and schools, which fall under provincial/territorial jurisdiction.

A number of APEC economies have also passed specific PPP legislation to provide a firm legal basis for the development of PPPs.
Box 17. Papua New Guinea – PPP Project framework as core component of growth strategy

The PNG government has a PPP Policy and Act that was approved in 2014. The institutional framework is captured in the PPP Regulation. The PPP Act authorises the establishment of a PPP Centre, PPP Steering Committee and PPP Forum. The PPP Unit also known as the PNG PPP Centre, will undertake the role of identifying PPP projects in the country and creating a pipeline of viable projects for the government to undertake in collaboration with the private sector. The PPP Centre is yet to be operational. The PPP Steering Group is a supervisory committee established to support the PPP Centre and oversee the implementation of the PPP programme.

The PNG Department of Treasury is currently the lead government agency tasked to implement the PPP Act and Policy in PNG, working in collaboration with other government agencies. The main purpose of the PPP Policy and Act was for the PNG government to identify least cost financing options and arrangements for providing services/infrastructure to the people of Papua New Guinea - using private sector financing and technological expertise.

Source: APEC-OECD survey response

Specifying sectors/priorities in advance where PPPs can be used to deliver projects.

By specifying in advance which sectors are eligible for delivery as PPPs, governments can promote a more stable and predictable environment for both contracting authorities and investors. It also enables a greater focus of resources to meet the demanding requirements of PPP development, and fosters learning and economies of scale. For example, since the early 1990s Chile has applied PPPs very successfully, but the instrument has been implemented primarily for delivering motorway concessions, with the result that the country has been able to build significant expertise, and refine and adapt its approach over time.

In Thailand, the cabinet approved the Public Private Partnership Strategic Plan that specifies the subsectors in which infrastructure projects should be developed as PPPs. Similarly, Russia has announced 12 National Projects, which outline government priorities up to 2024, and in particular priority projects, which can be financed using PPP mechanism.

Ensuring that there is a reliable and stable funding basis for PPPs through using a variety of payment schemes and funding sources.

The long-term sustainability of PPP projects and the ability to attract investors to these projects depends on having reliable and stable funding basis for the duration of the project. Revenues for PPPs may consist of availability payments, user fees, revenues from complementary services (e.g. rents from retail shops in railway stations), or a combination. Having multiple revenue streams can help to create a more sustainable funding basis.
The use of availability payments is a common feature in APEC economies. When using availability payments, governments often ensure that they are accompanied by performance-based incentives or penalties. In Australia, for instance, most states and territories apply availability payments and a number of them also consider user charges when appropriate. They also apply abatements to the availability payments when the operator fails to meet key performance indicators. Some Australian states provide capital contributions to reduce the private financing requirement.

China also links a portion of availability payments to performance as in the case of the Waste Interception Project around Erhai Lake. This project also makes use of revenues derived from new tourism facilities (e.g. water parks and hotels) developed above an underground wastewater treatment complex (Box 18 on next page).

Some APEC economies use viability gap funding when user fees are insufficient to cover costs. Indonesia, for example, has introduced a Viability Gap Fund (VGF) scheme to provide direct contributions to projects that are not viable on the basis of user fees alone.

**Promoting effective coordination of the various stakeholders at the early stages of project preparation in order to streamline the PPP preparation process.**

The development of PPPs typically involves multiple stakeholders from across government. Poor coordination among these stakeholders can be one of the reasons for project delays.

In order to address this challenge, Thailand has introduced a special measure called “PPP Fast Track” which streamlines the PPP preparation process and reduces the time required to bring sound projects to the market from twenty-five months to only nine months. By bringing together relevant agencies, such as the State Enterprise Policy Office (SEPO), the Office of the National Economic and Social Development Council, and the Office of Attorney General at an early stage, the project owner is able to conduct a comprehensive feasibility study, and ensure that these agencies are well-prepared in advance.

In Indonesia, the PPP Joint Office serves as the coordination forum among the government stakeholders while also providing project facilitation and capacity building. There are seven line ministries and institutions represented the PPP Joint Office, with each playing a specific role in the project selection process of the Ministry of Planning:

- Ministry of Finance in fiscal support and facility delivery
- National Public Procurement Agency (LKPP) in transaction process
- Indonesia Investment Coordinating Board (BKPM) in exploring market interest and value
- Ministry of Home Affair in Availability Payment for local government coordination
- Coordinating Ministry of Economic Affairs in debottlenecking
- Indonesia Infrastructure Guarantee Fund (IIGF) in infrastructure guarantee delivery

Availability payments are payments made by a contracting authority to a sponsor organisation for the availability of an asset, irrespective of demand for that asset.
Box 18. China – Waste Interception around Erhai Lake (PPP Project)

Erhai Lake, whose basin area is 2,565 square kilometers with 117 rivers flowing into the lake, is the main drinking water source of the City of Dali, covering 16 villages and towns of Dali with a population of 833,000 people. In recent years, the pollution of the water source has become increasingly severe and the water quality has been declining. In order to control the pollution and protect the water quality, Dali decided to carry out this project via PPP model.

The total estimate investment of Dali Waste Interception around Erhai Lake PPP Project was RMB 3.49 billion according to the original project construction plan. The construction period was expected to be 3 years. The project needed a large amount of capital investment and has a long cycle. The previous project plan had been optimised through systematic research and scientific test based on the expertise and experience of the private sector after adopting PPP model. The total investment decreased to 2.98 billion RMB from 3.49 billion RMB of the planned investment, and the first phase of the project was later expected to be completed ahead of schedule.

Benefiting from adopting PPP model, the project full-life cycle cost from the planning, design, construction to operation was reduced, the quality and efficiency of the environment management improved, and the short-term fiscal burden alleviated, which fully reflects the essence of Value for Money of PPP. This project highlights are as follows:

I. Government provides supporting policies to ensure the project sustainability

In order to reduce its fiscal burden, Yunnan provincial government gave strong support to this project by allowing Dali municipal government to charge a fee for Erhai Lake sights protection to expand its fiscal revenue, and also promised to provide a certain amount of subsidy to the project. Dali municipal government made full use of such fiscal resources and allocated subsidies before and after the construction completion to alleviate its fiscal pressure and ensure that the project could be financially sustainable.

II. Government makes performance-based payment to improve the performance of fiscal fund

In this project, the investment cost and corresponding reasonable return could not be fully recovered when reaching the final acceptance. The operation and maintenance cost and the corresponding reasonable return was estimated to range from 5% to 7% of the annual services payment from the government, while the investment cost and the corresponding reasonable return was estimated to account for 93% to 95% of the annual services payment from the government. Through the competitive consultation, the SPV could only get 85% of services payment from the government while the remaining 15% needed to be linked to its operation and maintenance performance. This kind of arrangement could motivate the SPV to provide good operation and maintenance over the full project cycle.

III. Using competitive consultation as the procurement method achieves full competition

The procurement method of this project was competitive consultation, which helped to achieve full competition over the procurement process. One of the key factors for the project success was conducting several rounds of market testing at the early
stage. More than 20 corporate partners expressed their interest during the market testing. The private sector helped to optimise the previous feasibility study by bringing their expertise to the project, and save the investment. The private sector has replaced the government in providing the environment management service with good quality and efficiency to the public, which reflects the original purpose of adopting PPP model.

**IV. The private sector optimises overall planning and provides innovative technology**

During half a year, the successful bidder (CITIC Water Industry Fund Management Co., Ltd.) figured out the pollution factors, pollution load and pollution contribution for the entire region through scientific and systematic research and analysis. A comprehensive business case of water ecological environmental management was made considering the development plan, tourism plan and ecological plan of Dali. The successful bidder had the independent intellectual property of the fifth-generation subsidence-type renewed water technology that is particularly environment-friendly. This technology was applied to the project. All six sewage treatment plants along the lake are underground, which cuts off noise and odour. High-quality flowing water parks, tourist service centres, hotels, electricity charging piles and other tourist facilities are on the ground of the plant. As a water ecological complex that combines science education, ecological landscape, recreation, culture and tourism together, the tourism quality along the lake is greatly improved. The tourism service revenue can be the supplementary income to effectively reduce the fiscal pressure, improve investment efficiency, and achieve Value for Money.

Source: APEC-OECD survey response

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**Adopting and enforcing competitive and transparent tendering processes for PPPs.**

Because PPP projects are inherently natural monopolies the use of competitive tendering is essential for ensuring that projects yield value for money for both users and taxpayers. Information disclosure underpins open and competitive procurement processes, and is also crucial for attracting investors and establishing a market for PPPs.

**In China**, for instance, regulations relating to PPPs emphasise the need for openness and transparency, and require the timely and full disclosure of information relating to project implementation plans, tendering and bidding, procurement documents, project contracts, project progress, and operating performance, so as to effectively protect the public’s right to know and ensure fair market competition.

**In Mexico** every infrastructure project that is part of the National Infrastructure Program must follow a bidding process which enables free competition. In addition, all bidding processes (public or with restricted invitation), contracts and the results must be made public. Information that is disclosed must include, among other things: the name of the winner, the supervision mechanisms, urban and environmental impact studies, the origin of the funding resources, and a progress report on work completed. Furthermore, the Law of Public Works and Services Related includes a list of requirements to make the contracting process clear for all participants. This Law mandates the use of CompraNet, a public information electronic system where all public entities publish their annual programmes of public work contracts. The system also includes information on public works contractors, a list of social witnesses, as well as information related to calls for tender and sanctions for public contractors.
III.2. Improving knowledge and strengthening capacity

**Common**

Providing guidelines, tools, support and capacity building to assist contracting authorities, including sub-national governments, to prepare, procure and manage PPPs.

A number of APEC economies provide centralised support and guidance for developing PPPs. In **Australia**, for instance, national PPP Policy and Guidelines have been developed to provide a consistent framework that enables public and private sectors to work together to improve service delivery through private sector provision of public infrastructure and related services. These documents have been prepared and endorsed by Infrastructure Australia and the State and Territory governments as an agreed framework for the delivery of PPP projects. All Australian, State and Territory Government agencies now apply the National PPP Policy and Guidelines to all public private partnership projects released to the market. The National Guidelines explain how to consider and select a suitable procurement method for a public infrastructure project where project characteristics indicate that a PPP delivery should be considered. It provides a framework to assess the viability of PPP delivery against other procurement methods. Furthermore, when developing PPP business cases, jurisdictions are encouraged to seek guidance from Infrastructure Australia and the Infrastructure and Project Financing Agency.

In **Canada**, PPP Canada, a federal Crown agency, was established in 2008 to promote the adoption of the PPP model across Canada. PPP Canada played a key role in establishing PPPs as an effective way to ensure performance of infrastructure from design and planning, to long-term maintenance. In order to promote the adoption of PPPs across Canada, PPP Canada published knowledge products as well as risk matrices for asset-specific projects. It also prioritised capacity building with provincial and territorial governments. PPPs have since become widely used by different jurisdictions in Canada, successfully fulfilling PPP Canada’s mandate and, as a result, the agency was dissolved in 2018. Provincial PPP agencies, which develop and deliver PPP projects, serve as regional centres of expertise on the PPP model, and utilise data and standardised processes to reduce procurement costs and facilitate development of PPPs. For example, Infrastructure Ontario publishes its procurement policies and project assessment guide publicly on its website, and provides a standardised risk matrix template to bidders. Partnerships British Columbia also publishes a suite of documents regarding PPP procurement and quantitative methodology.

In **China**, the China PPP Centre and the Ministry of Finance organise capacity building workshops for local governments. Local governments also provide training for PPP practitioners in their region where PPP experts from the public sector, PPP operators, financial institutions, consulting agencies and academic institutions are invited to share their expertise.

In **Indonesia**, the central government provides assistance to sub-national governments in preparing PPP projects and the related documentation needed (e.g. contract documents).

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Moreover, several capacity-building programs are also provided for sub-national governments through workshops and a short course on PPPs. Since 2017, the PPP Joint Office performs coordination among the government stakeholders, and project facilitation and capacity building. In addition, the Ministry of National Development Planning conducts training on Project Appraisal and Valuation for officials who are responsible for assessing projects proposed by line ministries. This capacity building covers several aspects, such as regulation, project business cycle, project assessment and evaluation tools, and project selection.

**Singapore** has collaborated with the International Finance Corporation (IFC) to run the IFC-Harvard PPP (Public-Private Partnership) capacity building programme in Singapore in 2017 and 2019. This programme brings together regional government PPP units and companies based in Singapore, to learn from best practices in structuring PPPs and how they could be applied to infrastructure projects.

**Chinese Taipei** provides training and issues professional qualifications for PPP professionals. It also promotes the sharing of best practices through identifying and disseminating successful cases.

**Establishing standardised forms and templates for tender documentation and for PPP contracts in different sectors to improve the efficiency, quality and bankability of PPP projects.**

The use of standardised documentation can help streamline the project preparation process, increase consistency across projects, and improve the overall quality and bankability of projects through ensuring that they reflect international best practices and standards.

In **Russia**, for example, the government has approved thirteen standardised forms of concession contracts, including on the following sectors: housing and utilities, culture and sport, healthcare, roads, education, pipelines, electricity, railways, airports, sea and river ports, ships, hydraulic facilities, and subways.

The Ministry of Finance in **Chinese Taipei** has developed a “Tender Documentation and Concession Agreement Template” as a reference for procurement authorities. The template provides standard provisions relating to issues such government commitments and terms for providing assistance, contractual changes, force majeure, dispute resolution, etc. The objective is to allocate risks to the most capable and responsible party through the establishment of a general contractual template. In addition, the government has developed reference documents and operational guidelines for activities such as performing feasibility assessments, advanced planning and performance management that are based on successful contracting experiences in order to guide the authorities in managing infrastructure PPP projects and improving operational quality. This is complemented by the dissemination and promotion of successful project cases to promote learning among authorities charged with developing projects.

The adoption of standardised documentation and model agreements can also support the participation of smaller local banks in financing infrastructure and enable small-scale projects to apply the PPP model. For instance, in **Russia**, some banks adopt model concession agreements (“boxed solutions”) for certain industries (social, public utilities) with standardised terms and risk matrices. This enables, on the condition that the bank’s requirements are satisfied, even small projects to access debt financing on favourable terms. Some “boxed solutions” are developing now for infrastructure projects in the social sphere which are more or less standardised.
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III.3. Risk allocation

Common

Allocating risks transparently to the parties most capable of managing them.

Governments commonly seek partnerships with the private sector with the intent to allocate project risks to the parties best able to manage such risks. An efficient allocation of risks reduces the overall financing costs for a project, and is likely to result in more sustainable projects that deliver the intended results. Governments and contracting authorities should therefore identify and map the many risks facing specific projects and assign them to the appropriate partner based on their comparative advantage with regard to managing those risks. If excessive risks are shifted to the private partner, it may not only raise the costs of the projects, but increase the prospects of project failures, renegotiations and disputes. However, when private partners have the ability and incentive to influence certain risks such as, for instance, construction and operating risks, then a transfer of those risks to these partners can be beneficial for the project. On the other hand, risks over which the private sector has no control, such as political and regulatory risks, and, in some cases, demand risk, should be borne by the public sector.

In Canada, there is generally a likeminded approach across Canadian jurisdictions with respect to risk mitigation. Provincial agencies in Canada have established risk matrices that allow proper risk allocations to the parties that can best manage them, and are generally standardized across jurisdictions. Most Canadian jurisdictions also encourage the sharing of unidentifiable or uncontrollable risks between the public and private partners.

In China, for example, a Ministry of Finance circular provides the basic principles of risk allocation. Thus, taking the government risk management ability, payment mechanism and market risk control ability into consideration, PPP project risks shall be allocated reasonably between the government and the private sector according to the principles of risk allocation optimisation, risk-return equivalence, and risk controllability. In Indonesia, the PPP Risk Allocation Guideline specifies that risks should be allocated to the parties who are best able to manage or bear them. Where risk is borne by the private sector, governments seek to transparently price risks and assure value for money for the public. For example, in Canada, when structuring its investments including PPP procurements, the Canada Infrastructure Bank (CIB) aims to ensure that appropriate project risks are transferred to the private sector.

Furthermore, the allocation of risks is reflected transparently in PPP agreements. For instance, in Canada PPP project agreements outline requirements for insurance coverage and performance bonds from the private partners, which ensures the identified risks are properly covered. In Chinese Taipei, the Ministry of Finance has developed a “Tender Documentation and Concession Agreement Template” to allocate risk to the most capable and responsible party. In addition, concession agreements specify how different risks are shared and allocated among the partners.

Establishing formal guidance on how to allocate or mitigate specific risks in PPP contracts.

The success of PPP projects depends on achieving an efficient allocation of risks between the public sector and the private stakeholders. A number of governments provide centralised guidance on risk allocation to assist contracting authorities in structuring
III. PUBLIC-PRIVATE PARTNERSHIPS (PPP), EFFECTIVE TRANSACTION DESIGN AND…

projects, streamlining project preparation, and ensuring a degree of consistency with regard to how risks are managed.

In **China**, for example, two Ministry of Finance circulars outline the overarching principles that should guide risk allocation and specify the basic risk allocation arrangements. The guidance specifies that risks usually borne by the government include land acquisition risk, project approval risk, and political force majeure. The risks borne by the SPV (Special Purpose Vehicle) include project financing risk, as well as project design, construction, and operation and maintenance risks. Natural force majeure is usually shared by both parties.

**Indonesia** has developed an official PPP Risk Allocation Guideline (can be found in www.iigf.co.id) which requires that risk allocation be considered in the pre-feasibility study, and that it forms the basis for the obligations set-out in the PPP contract. The Guidelines are regularly updated and improved through gathering feedback from key stakeholders. Similarly, in **Canada**, provincial agencies have established standardised risk matrices that allow proper risk allocations to the parties that can best manage them.

In **Chinese Taipei**, the PPP Act specifies a number of measures that can be taken by the authorities to mitigate risks such as changes in urban planning, the acquisition of public land, the provision of subsidies to the insufficiently self-financed portion, coordination and provision of medium/long-term loans for private institutions, and the provision of loans following major natural disasters.

The **Philippines** has developed a Generic Preferred Risk Allocation Matrix (GPRAM) that serves as a guide for government entities and the private sector in structuring PPP projects specifying the risks to be borne by the government or the private sector, and the risks that may be shared between the government and the private sector. The formulation of the GPRAM was based on the results of studies performed under the Philippines-Australia Partnership for Economic Governance Reforms (PEGR) Facility.

**Innovative/Emerging**

**Supporting the bundling of multiple small projects into a single PPP contract to generate sufficient scale to attract investors.**

Financing small projects is often a challenge since they may not be of interest to large financial institutions and will also have relatively large transactions costs. The bundling of small projects not only increases the appeal of projects to investors, but it also enables better planning by considering assets as part of functional systems and increases the efficiency of transactions.

**China** considers that it has developed good practices on the bundling multiple small projects into a single PPP contract. This approach is seen as not only helping to attract investors but also providing better economic and social benefits through overall planning. For instance, China has procured within a single 31-year BOT contract a package of sewage treatment plants and pipes covering 31 villages in 4 counties of Longyan City in Fujian Province (Box 18). The total scale of sewage treatment is about 110,000 tons per day and the total length of the pipe network is about 10 kilometres. Authorities in Anhui Province used a similar approach to developed comprehensive new zone made of multiple components including municipal roads and bridges, along with a school, and a number of sport facilities. **Chinese Taipei** also considers combining small-scale infrastructure PPP projects according to the type of project and policy needs such as in the case of highway...
In the **United States**, project pooling is successfully being carried out at the local and state level. Larger bundled contracts attract private investors, and larger and more experienced contractors, and help sponsoring agencies reduce project backlogs. States and other project sponsors are using multiple funding sources and financing tools to pay for these larger contracts. In addition to attracting more competitive bids, the bundled projects are more efficient for staff to manage.

When projects from different sectors are bundled together, different regulatory regimes can result in regulation and coordination challenges. In order to address this issue, **Indonesia** has developed overarching presidential regulation to address conflicts between sectoral regulations.
IV. Risk mitigation instruments and techniques

Policy Statement*

In promoting the judicious use of risk mitigation techniques, governments and development finance institutions can use public financing (at either concessional or market terms) to enable the viability of infrastructure projects. This is particularly important in APEC developing economies where investment is sometimes further hindered by inadequate policy frameworks and governance. A variety of risk mitigation techniques including guarantees, insurance and hedging, as well as syndication, and debt subordination provide relevant tools to facilitate private investment.

Contractual arrangements, insurance, and guarantees are the most effective instruments for mitigating or transferring commercial risks in several APEC economies. To mitigate political risks, joint ventures or alliances with local companies and political risk insurances were reported to be the most effective instruments, along with co-investment platforms and funds. Tools for managing currency risk such as hedging instruments or matching cash flows are important for developing APEC economies.


Background

Infrastructure projects are vulnerable to a wide range of risks including inter alia technological, operational, political, regulatory, social, environmental and economic. Furthermore, risks vary over the course of a project’s lifecycle with, for instance, construction risk in the early stage superseded by operating and demand risks once the project is operational. These risks strongly influence the cost of capital for an infrastructure project, and determine the minimum return investors seek when investing and agreeing to bear some of these risks. As a consequence, infrastructure investment involves complex risk analysis, risk allocation and risk mitigation, given the highly idiosyncratic and illiquid nature of such investment.

The contract constitutes the basic instrument for allocating risks between the various parties involved in financing and delivering a project. However, the efficient allocation of risks through contracts may be a necessary but not a sufficient condition for implementing innovative financing solutions for infrastructure. Specific circumstances relating to the nature of the project and the counterparties, or the wider legal, regulatory, political and economic circumstances may require additional forms of risk sharing or risk transfer to third parties.

When market instruments are unavailable or provide insufficient protection, public intervention may become necessary in order to facilitate private sector involvement. This is particularly the case when implementing financing solutions that involve the participation of institutional investors with lower risk appetites. Under such conditions a
judicious and targeted use of public resources can serve to de-risk projects, and to mobilise private capital. Risk mitigation instruments provided by the public sector such as subordinated debt or guarantees can shape the risk profile of investments, and thus help to widen and diversify the pool of investors. Guarantees are particularly common instruments that can be developed to address a wide range of risks (credit risk, payment obligations, revenue risk, etc.), and applied to different stakeholders in the financing complex (e.g. lenders, bondholders, sponsors). NDBs and MDBs are key actors in infrastructure financing particularly in developing economies due their capacity to mitigate risks both through the provision of instruments and through active management (e.g. due diligence and monitoring).

Specific risks arising from factors such as uncertainty over future demand or the volatility of exchange rates can pose particular challenges for infrastructure investors since they often escape the control of both public and private partners. Approaches that involve sharing these risks or their outright elimination (e.g. through local currency financing) are therefore relevant.

**Effective Approaches**

**IV.1 Public risk mitigation instruments**

**Common**

**Supporting alternative infrastructure financing models through financial structures and vehicles that contain governmental de-risking instruments.**

Governments support alternative infrastructure financing models by facilitating financial structures that contain governmental de-risking factors, including government guarantees, risk sharing arrangements with the government which may entail hybrid structures of debt and equity, direct risk transfer to the government via wraps executable under specific eligibility conditions, and bespoke government interventions and fiscal tools. Guarantees are commonly used within APEC economies to protect repayment of debt (e.g. credit guarantee), or provide certainty to cash-flows (e.g. guaranteeing payment obligations). Guarantees can also be applied to specific risks such as revenue risk, currency risk, or political risk.

For example, in **Chinese Taipei**, private institutions (including but not limited to SMEs) involved in infrastructure PPP projects that need financing can apply for a credit guarantee and obtain funding through the Small and Medium Business Credit Guarantee Fund. In **Mexico**, the national development bank BANOBRAS through the National Infrastructure Fund (FONADIN) offers specific products to promote private investment in projects with high social benefits but low economic profitability. It provides financial grants as well as a range of guarantees that serve to de-risk projects and thereby improve the financing terms for projects (Box 19). The **Japan** Bank for International Cooperation (JBIC) also provides guarantees against risks such as currency conversion and transfer risks, and country risk (Box 20). The **Indonesia** Infrastructure Guarantee Fund (IIGF) provides guarantees to mitigate risk in PPP projects with a view to improving the creditworthiness and bankability of projects.
Box 19. Mexico – The National Bank of Public Works and Services (BANOBRAS)

The National Bank of Public Works and Services (BANOBRAS), as the Mexican development bank in charge of financing infrastructure through the National Infrastructure Fund (FONADIN), offers specific products to promote private investment in projects with high social benefits but low economic profitability.

FONADIN is a fund created by a Presidential Decree in 2008 as a vehicle to address market gaps in the highest risk segments of socially relevant projects. FONADIN is a very flexible vehicle offering non-reimbursable and reimbursable products across the whole project cycle. When a socially profitable project does not generate a financial return required to attract investors, the fund provides financial grants subordinated to the equity in order to enhance the project’s risk and return profile. Reimbursable products aim mostly to reduce credit risk in financially viable projects and include subordinated debt, partial credit and financial guarantees.

The fund also seeks to support medium sized Mexican concessionaires in the energy and construction sector through equity investments. This is aimed to help them compete with international or larger sponsors. FONADIN also seeks to enhance the mobilisation of capital from institutional investors by participating in private capital funds. As of the end of 2017, FONADIN had authorized on a cumulative basis 116 projects providing more than USD 8.3 billion in financing.

Also financial guarantees can be used to de-risk infrastructure projects, offer private investors certain cash-flows and diminish construction risk. The introduction of legal amendments enabled BANOBRAS to offer new financial guarantees in order to increase private sector investment in public infrastructure projects.

BANOBRAS provides financial guarantees as schemes for both states and municipalities, as well as for projects. They are designed to enhance private participation in the financing of public infrastructure and BANOBRAS provides different variants:

- Securities debt guarantees: These guarantees can be used to support bonds issued to the market by project developers.
- Bank guarantees: These guarantees support the debt service the project must pay to a bank due to contracted loans.
- Guarantees for service provision projects: These guarantees are intended to cover the periodic payment obligations of the contracting units derived from the service provision contracts signed with the suppliers of the service.
- Pari-passu guarantees are other similar schemes with the main difference that losses are assumed pro rata between BANOBRAS and commercial banks.

The main benefit for subnational governments is the access to better financial conditions (better: fees, amounts and/or terms), due to the improvement in its credit rating. In addition, when subnational governments access financial markets, they have incentives to adopt better accounting practices, sound public finances, accountability and transparency.

Source: APEC-OECD survey response
Leveraging the capabilities of NDBs and MDBs to de-risk projects.

A number of APEC economies are taking steps to support the de-risking of infrastructure especially through promoting collaboration with and participation of NDBs and MDBs. The various roles of these institutions are being leveraged in this context, including performing project due diligence, financial structuring, equity co-investments, and the provision of guarantees for a range of risks (e.g. political risk, credit risk, and (re-)financing risk). Some of these tasks or instruments can also be provided by other (specialised) public authorities or private entities.

For example, in Canada, as part of its mandate to help crowd-in private capital, the Canada Infrastructure Bank (CIB) acts as an agency that can both mitigate risks through capital contribution and structuring, and also redistribute risks such that all proponents have an incentive to efficiently manage the project (Box 2).

APEC economies also rely on full or partial guarantees provided by MDBs to provide credit protection and enhancement on debt for infrastructure projects. Such guarantees can increase the availability and reduce the cost of finance, thereby expanding the potential pool of investors. They can also be a key enabler for the issuance of project bonds and the development of local capital markets. The Asian Development Bank’s (ADB) project bond facility, for example, has provided credit enhancement for bonds denominated in local currencies and targeted to local institutional investors in order to refinance brownfield projects.

For instance, in 2016, the ADB supported the Tiwi-MakBan geothermal project refinancing in the Philippines through a partial credit guarantee and a project loan that enabled the issuance of pesos-denominated project bond Ps 8.025 billion (USD 175 million) – the bond was 75 percent guaranteed by the ADB. The bond specifically targeted
the refinancing of AP Renewables Inc.’s (APRI) capital expenditure; it was the first Climate Bond certified bond in Asia-Pacific and the first local currency project bond in the Philippines (OECD 2017a).

A further multilateral source of credit guarantees for companies in the ASEAN region is the Credit Guarantee and Investment Facility (CGIF) established by the ten members of the Association of Southeast Asian Nations (ASEAN) together with the People's Republic of China, Japan, Republic of Korea (ASEAN+3) and the Asian Development Bank (ADB). CGIF provides guarantees for local currency denominated bonds issued by investment grade companies in ASEAN+3 countries. It aims to help these companies secure long-term financing to fund infrastructure projects, reduce their dependency on short-term foreign currency borrowing, and address currency and maturity mismatches.

**(Quasi-)equity contributions to enhance financing structures and risk profiles.**

Governments frequently use equity or quasi-equity contributions to enhance a project’s financing structure and risk profile. This instrument also allows governments to maintain political control and oversight over infrastructure projects and programmes as well as to participate in potential returns from a project.

For example, the Fund Corporation for the Overseas Development of Japan’s ICT and Postal Services (JICT, Japan ICT Fund) supports overseas expansion of Japanese corporates in telecommunication, broadcasting, and postal services by supplying risk capital through equity investment, and through providing hands-on support by dispatching experts. Canada’s new infrastructure bank is also capable of making equity investments in revenue-generating projects as a means of mobilising private sector participation (Box 2).

**Innovative/Emerging**

**Establishing dedicated guarantee funds to support the development of PPPs.**

Dedicated guarantee funds to support PPP projects can provide both greater predictability to the private sector with regard to the terms and level of public support, as well as place a limit on the total potential contingent liabilities resulting from such state support.

The Government of Indonesia has established the Indonesia Infrastructure Guarantee Fund (IIGF) which ring fences guarantees for infrastructure projects from the state budget. Through the IIGF, a state-owned company, guarantees are made available to well-structured PPPs with the aim of providing more certainty in achieving financial closure, by way of improving the creditworthiness or bankability of PPP projects. The IIGF guarantees are also intended to increase transparency, clarity, and assurance in the provision of guarantee process. The IIGF also cooperates with development partners such as the World Bank as a means of increasing its guarantee capacity.

China’s PPP Fund, in addition to providing debt and equity financing, offers guarantees for PPP projects. Although the Ministry of Finance is one of the shareholders of the China PPP Fund, the Fund operates as an independent institutional investor, and the guarantee it provides for projects is not a government guarantee.

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IV.2 Alternative techniques for reducing or managing risks

Innovative/Emerging

Eliminating or managing currency risk through local currency financing or hedging.

Financing projects using local banks or bond markets is a preferred option since it eliminates the possibility of mismatches between the currency of project revenues and the currency in which debt needs to be repaid. Thailand for instance had made great strides in developing its domestic bond markets which can be deployed to financing infrastructure projects in local currency (Box 6). However, when local banking and capital markets are not sufficiently developed, it becomes necessary to secure financing in foreign currency. Under such circumstances, currency risk can be a major barrier to obtaining financing for projects, particularly when they are based in jurisdictions with currencies that are less liquid.

Currency risk can be reduced or eliminated by structuring a project so that all or a portion of the project’s revenues are sold in the same currency as the liability. For example, Thai banks provided Thai-baht denominated loans to the Nam Theun 2 hydropower project in Laos. Since part of the energy production is sold to Thailand, the Thai baht-denominated loans are not exposed to currency risk (OECD 2017a). In Papua New Guinea, companies use foreign currency accounts approved by the Bank of PNG (central bank) to match cash inflows against cash outflows in various currencies. Companies engaged on the construction of infrastructure projects sponsored or funded by the Government of PNG use the approved foreign currency accounts to manage their currency risks.

Hedging tools provide an alternative means for managing currency risk. Indonesia, for example, permits the use of FX Call Spread Options (CSOs) that involve purchasing call options at a specific strike price while also selling the same number of calls of the same asset and expiry date but at a higher strike price; however, these CSOs must be linked to an underlying transaction, such as trade, investment or loans in currencies. CSOs are regarded as being more cost-efficient than conventional derivative instruments, such as forward transactions28. Bank Indonesia requires non-bank corporates meeting certain criteria to hedge a portion of their foreign currency exposure29. These hedging requirements apply to project loans30.

Adopting innovative contractual mechanisms for allocating or sharing demand risk in PPPs.

Future demand for infrastructure services, particularly in the case of greenfield projects with no historical usage data, is highly uncertain, and is thus a major source of risk for project sponsors and investors. Private sector parties are often reluctant to accept demand risk, particularly when they do not have the ability to influence demand. In order to address

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29 Ibid, p. 63.

this source of risk, governments have developed a number of innovative contractual mechanisms for allocating or sharing demand risk.

**Chile** for instance applies two approaches for addressing demand risk in contracts for road concessions: a minimum income guarantee (MIG) and the least present value of revenues mechanism (LPVR) (Box 21). In **Russia** private investors can reduce risks in concession projects and compensate revenue shortfalls arising from factors beyond the concessionaire’s control using the mechanism of minimum guaranteed income. Through this mechanism, the public authority compensates the private actor by paying the difference between estimated and actual income.

**Box 21. Chile - Approaches used to address demand risk in PPPs**

**Minimum Income Guarantees (MIG) or traffic guarantees in the case of transport infrastructure**

In Chile, MIGs are the primary risk mitigation mechanism. They are designed to mitigate risk and lower projects financial costs through covering up to 70 percent of the investment cost as well as the operation and maintenance costs. A lower band is defined every year, which triggers compensation if real revenues fall below. Similarly, if traffic is higher than the expected level the private partners have the obligation to share the benefits – the obligation can be triggered if the Internal Rate of Return (IRR) exceeds 15 percent in a given year or if the revenues are above a pre-defined level.

**Least Present Value of Revenues bidding mechanism**

The Least Present Value of the Revenues (LPVR) is a mechanism by which the government grants the concession for an infrastructure project to the bidder that requires the lowest Net Present Value (NPV) to cover its cost. This system reduces the likelihood that the concession terms will be subject to renegotiation.

In this model, the concessionaire bids on the total amount of revenue throughout the concession (with the lowest bid winning). Bids are controlled for inflation by discounting at a fixed or floating rate depending on the preference of the bidder. This model has several advantages. It lowers probability of bankruptcy and renegotiation as well as the demand for government guarantees, putting fewer burdens on the host government. It is also easy to calculate and mitigates the winner’s curse (bidding lower than needed in a cost-based bid). It also makes it difficult to renegotiate in an opportunistic manner saving government time and resources.

One criticism is that the model does not control for fluctuations, but this is also true in a normal road concession. The model can also be difficult for bankers since there isn’t a fixed concession length by which to base a loan tenor. In Chile, however, it seems that market has adjusted given the extensive track record of projects awarded using this mechanism.

Source: OECD (2017a), Selected Good Practices for Risk Allocation and Mitigation in APEC Economies
Establishing governance frameworks for project development that support judicious management of commercial, financial and legal risks.

A strong focus on risk management within infrastructure development and contracting authorities is key to developing projects that are bankable for investors and represent value for money taxpayers.

In Australia, the Infrastructure and Project Financing Agency (IPFA) establishes frameworks for governance of new infrastructure development and ownership entities and major project commercial and financial risk management. IPFA supports judicious risk management by facilitating project delivery through leading legal, commercial and financial workstreams and negotiating commercial, financial and governance arrangements with the States and Territories or the private sector.

Promoting blended finance approaches involving the government, NDBs, MDBs, or development finance institutions.

Commercial finance often fails to reach geographies or sectors with the greatest need as a result of barriers including weak market development, insufficient revenues, or high risk perception. Private finance for the development of essential infrastructure in low- and middle-income countries can be catalysed through the participation of development finance. Blended finance involves the strategic use of development finance for the mobilisation of additional finance towards sustainable development in developing economies (OECD 2017b). Not only does blended finance involve combining public and private funds, but it also typically includes risk mitigation measures that ease the way for private finance and lower the overall cost of financing.

Along with other methods of infrastructure provision, Indonesia is starting to promote blended finance as a source of financing for projects. This scheme will become a policy in the next Medium Term Development Plan (RPJMN) 2020-2024 that will: 1) provide legal and regulatory framework as the basis of funding innovations that support the blended finance scheme; 2) support government funding to contribute as leverage and a catalyst for other funding resources; and 3) utilise non-government funding resources in accordance with financial, economic, and social feasibility.

Furthermore, Indonesia has established SDG Indonesia One, a platform that applies blended finance principles for mobilising investment in order to achieve the Sustainable Development Goals (SDG) (Box 22).

Indonesia, along with Canada, has also supported the development of the Tri Hita Karana (THK) Roadmap for Blended Finance which was launched in Indonesia in October 2018. The THK Roadmap establishes a shared value system among international partners, and the terms of reference that enable collective action among a variety of actors that are required to scale private investments in the SDGs, including in infrastructure.31

The Philippines has successfully applied blended finance approaches to improve delivery of water infrastructure and thus improve access to water services in the country. Through establishing a facility that blends concessional loans from the Japan International

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31 The goal of the Tri Hita Karana Roadmap is to achieve together an outcome that is greater than the sum of the organisations represented, by mobilising and better-targeting additional resources for sustainable development. The Government of Indonesia and the OECD, together with the other key partners from governments as Canada and the European Commission, development financiers and private sector entities, will now work towards turning the Roadmap into action.
Cooperation Agency (JICA) with funds from private financial institutions backed by a credit guarantee from USAID, the Development Bank of the Philippines (DBP) is able to provide long-term loans at accessible interest rates to both public and private water service providers (Box 23).

**Box 22. Indonesia– SDG Indonesia One**

In 2018, the Ministry of Finance established SDG Indonesia One (SIO) as an innovative financial platform managed by PT Sarana Multi Infrastruktur (PT SMI), a non-bank financial institution, 100% owned by the Government of Indonesia. Under this platform, PT SMI pools fund from donors and investors in order to support projects related to the achievement of SDGs. It is designed to apply the blended finance principle in the form of investment and financing activities through innovative financing structures involving diverse funding sources.

SIO consists of an integrated platform providing project development support, de-risking and debt and equity financing. Sources of capital for SIO include philanthropists, donors, climate funds, green investors, multilateral development banks, international agencies, commercial banks, sovereign wealth funds, and institutional investors. It applies a wide range of financial instruments which vary depending on the nature of the project and its phase of development including grants, concessional loans, commercial loans, bonds, sukuk and equity.

As of December 2018, SIO had mobilised a total of USD 2.46 billion from a wide range of sources. The facility will support the implementation of a project pipeline of 93 projects worth approximately USD 18.2 billion across a range of sectors including renewable energy, urban transport, healthcare, ports and water, among others.

Source: Presentation by PT SMI, SDG (Sustainable Development Goal) Indonesia One, January 2019.
Box 23. Philippines – The Philippine Water Revolving Fund

As a result of a long period of underinvestment in the water sector which led to water shortages and water pollution, the Philippine government established the Philippine Water Revolving Fund (PWRF), in order to enable private participation in the financing of water infrastructure. Prior to this intervention the private sector had no or very limited exposure to water-related projects as a result of elevated credit risk which resulted in a cost of lending which was prohibitive for water utilities.

The primary objective of the PWRF is to encourage private sector participation in financing water sector projects. At the same time, the co-financing mechanism allows a reduction of the interest rates to end-borrowers by blending ODA funds with money from private financial institutions.

The project is implemented by the Development Bank of the Philippines (DBP) and involves the participation of JICA and USAID. JICA allocated an initial JPY 1.5 billion (USD 16.3 million) concessional loan to the DBP with a 30-year maturity (inclusive of a 10-year grace period) combined with co-financing from PFI funds which are then on-lent to both public (local governments and water districts) and private water service providers. The financing mix between DBP and PFIs is set at 75%–25% of the approved loan amount. The facility can provide tenors of up to 20 years at fixed interest rate allowing water service providers to better manage their debt capacity. Private sector participation under PWRF is not only through debt but also equity or a combination of both. The initial loan allocation from JICA has been increased to JPY 7.6 billion, which has been fully disbursed.

Concurrently, PFIs apply for a credit risk guarantee covering a maximum of 85 percent of their exposure. The guarantee is issued by the Local Government Guarantee Corporation (LGUGC), a private entity. This is backed by a co-guarantee facility provided by USAID’s Development Credit Authority, leading to a reduction in the credit risk exposure of the PFIs and incentivising lending to the water sector.

According to impact measurement undertaken by DBP, the PWRF project resulted in approximately 225,594 additional households which are connected to water services (as of October 2015).


Offering dispute resolution services.

Infrastructure disputes are inherently complex, involving a mixture of legal, technical and financial issues, and therefore tend to take a long time to resolve. The absence of effective and impartial dispute resolution services can exacerbate project risks and undermine the effectiveness of risk mitigation instruments such as guarantees or insurance. Parties will benefit from a flexible framework to deal with disputes as and when they arise, so that projects can stay on track and on budget. Governments ensure the availability of effective and efficient dispute resolution services, for instance arbitration, mediation and litigation services, which parties may use to resolve disputes in return for payment.

Singapore, for example, has been working with a range of stakeholder to develop the city-state into an international dispute resolution hub. It offers a full suite of dispute resolution services for parties to choose from depending on their needs (ranging from arbitration at
the Singapore International Arbitration Centre to mediation at the Singapore International Mediation Centre (SIMC) to litigation at the Singapore International Commercial Court. The SIMC has signed an MOU with the Asian Development Bank (ADB) to help public and private parties resolve disputes that may arise in infrastructure public-private partnership (PPP) projects, under ADB’s Infrastructure Reference Program (IRP). Singapore has also developed the Singapore Infrastructure Dispute-Management Protocol (SIDP) to help parties involved in mega-infrastructure projects manage disputes and minimise the risks of time and cost overruns (Box 24).


The Protocol was developed by a Working Group convened by the Ministry of Law and comprising eminent private sector infrastructure and dispute resolution specialists, the Singapore International Mediation Centre (SIMC) and the Singapore Mediation Centre (SMC).

The Protocol helps parties proactively manage differences to prevent them from escalating into disputes, and minimise the risks of time and cost overruns. Under the Protocol, parties will from the start of the project appoint a Dispute Board comprising up to three neutral professionals who are experts in relevant fields such as engineering, quantity surveying and law. The Dispute Board will follow the project from start to finish and proactively help to manage issues that may arise, through a range of customised dispute avoidance and resolution processes.

The Protocol builds on international best practices and introduces a few novel features to address the challenges complex infrastructure projects face:

- **First**, it takes a proactive dispute prevention approach. The Dispute Board is appointed from the start of the project, rather than only after disputes have arisen. It helps anticipate issues and prevent differences from snowballing and escalating into full-blown disputes which become difficult and expensive to resolve.

- **Second**, should disputes arise, it provides a wider range of methods which can help address the disputes at hand. These include mediation, opinion and determination.

- **Third**, it provides full professional and administrative support through the Singapore International Mediation Centre (SIMC) and the Singapore Mediation Centre (SMC) which can help with identifying and appointing Dispute Board members as well as with meeting, escrow and other administrative services.

Source: APEC-OECD survey response
V. Infrastructure project pipelines

Policy Statement*

Building project pipelines is conducive to encouraging private sector involvement in infrastructure, and may benefit from a concerted APEC effort to increase or expand capabilities, project preparation facilities, and technical assistance. The formation of a project pipeline may be a prerequisite for certain infrastructure finance strategies, such as for instance, establishing the use of project bonds through local debt markets. The development of standardized documentation, accompanied by capacity building instruments like tool-kits and training programs, information dissemination and communication strategies, has helped empower authorities to not only develop a pipeline of commercially viable PPP projects but also to implement the projects on the ground.

Good practices that bring about public investment efficiency should be considered. Infrastructure development is typically hampered by issues such as poor project selection, delays in design and completion of projects, complicated procurement practices, cost over-runs, right of way issues and failure to operate and maintain assets effectively. The infrastructure project pipeline should, thus, focus on efficiency and promote viable and priority projects. A robust system for project evaluation, pricing and analysis should be in place so that the pipeline is aligned with national development goals and the most appropriate financing scheme is chosen.


Background

When mobilising private investment in infrastructure, infrastructure project pipelines are essential for governments to address both information and uncertainty constraints which might inhibit private investors from engaging in infrastructure investment.

Amongst private investors, a trend towards a high and increasing willingness to invest in infrastructure projects in both developed and emerging markets is observable. However, since information on infrastructure projects is often not available, particularly in emerging markets, transaction costs remain high.

In order to exploit the full potential of private investors’ willingness to invest, a central and coordinated provision of information on planned infrastructure projects is beneficial, enabling a linking of private investors with public infrastructure projects. Infrastructure project pipelines should therefore provide a consolidated list of all infrastructure projects that are underway or planned across the economy over a certain planning horizon.

A prerequisite for the provision of this information is government long-term strategic infrastructure planning, deciding on which projects should be selected and prioritised. This planning may be performed at different levels of government, should include consultation processes involving different public and private stakeholders, and should be
aligned with overall government goals. Project pipelines developed at regional or central government levels can be included in international infrastructure project pipeline platforms in order to increase the private investor base by providing international investors with standardised and hence comparable project information.

In addition, pooled assistance for project implementation through capacity building instruments like tool-kits and training programmes, information dissemination and communication strategies is essential to the development of robust project pipelines.

Effective Approaches

V.I Enabling structures and competency building

Common

Developing long-term infrastructure strategies for sustainable project planning and prioritisation.

Governments develop long-term infrastructure strategies, programmes and plans to ensure clear and sustainable long-term planning and project prioritisation as well as to ensure the development of credible project pipelines. Long-term infrastructure strategies typically identify future infrastructure needs and gaps based on medium- to long-term economic and social development objectives, and a rigorous analysis of future trends and challenges such as climate change. These infrastructure strategies then provide the foundation for the development of infrastructure plans and pipelines. Such an approach ensures that infrastructure prioritisation and the resulting project pipelines are robust, resilient and aligned with a country’s main development priorities.

Some economies have established independent infrastructure agencies that provide an independent assessment of future challenges and needs. For instance, in Australia, Infrastructure Australia produces an infrastructure audit every four years that presents a forward-looking view of the country’s infrastructure challenges and opportunities over the next 15 years and beyond. The latest audit released in 2019 assesses infrastructure needs in energy, transport, telecommunications, water, as well as social infrastructure and waste. The audit is used to inform Infrastructure Australia’s rolling 15-year infrastructure plans that specify national and state level priorities, as well as the planning conducted by sectoral ministries and state governments (Infrastructure Australia, 2019).

In other economies, such long-term strategies are developed at the sectoral level. For example, in Chile, the Ministry of Public Works developed a strategic vision for Chile that was based on achieving a per capita income of USD 30,000 by 2030 (Plan 30/30). The plan covered road and water infrastructure, and was developed following an extensive consultation process covering the country’s various regions (Chile MOP, 2018).

Creating and promoting well-structured project pipelines.

Governments structure project pipelines according to the nature of investments (e.g. greenfield vs. brownfield) and their maturity. This helps the market to better understand an economy’s project pipeline, gives a clear idea of the risks and returns for each project, and allows investors to diversify their portfolio across different projects. At the same time, a well-structured pipeline allows governments to pool funds from domestic and international investors and to bring due diligence levels to international standards.
For example, in Australia, Infrastructure Australia develops a rolling Infrastructure Priority List which consists of a prioritised list of nationally significant investments.\textsuperscript{32} The investments outlined in the Priority List undergo a rigorous prioritisation process and are independently assessed by the Infrastructure Australia Board. The Priority List is made up of two broad groups:

- \textit{Projects} are infrastructure solutions to a defined problem or opportunity for which a full business case has been completed by the proponent and positively evaluated by Infrastructure Australia.

- \textit{Initiatives} are potential infrastructure problems / opportunities or ‘early stage’ solutions for which a business case has not yet been completed. Initiatives are identified through a collaborative process between proponents and Infrastructure Australia, using the Australian Infrastructure Audit and other data as evidence of infrastructure needs.

In Canada, where the majority of infrastructure is owned at the provincial/territorial and municipal levels, provincial/territorial procurement agencies often publish their pipelines and project assessment guides to ensure transparency throughout the procurement process. For example, Infrastructure Ontario and Partnerships BC publish project pipelines for Ontario and British Columbia respectively, which allow the two governments to plan for their long-term capital budgets, while also providing insights for potential investors.

At the federal level, the Canada Infrastructure Bank (CIB) is planning to produce a National Project Pipeline of future projects under development. Many projects take considerable time to plan and come to market, and the pipeline will be an instrument to showcase projects that may need investment, or that may come forward in the future. Longer-term projects may be put on a public pipeline to test market interest and inform the market about future supply so industry can plan accordingly. The pipeline could also catalyse unsolicited proposals from the private sector for public projects to offer innovative suggestions to governments in achieving objectives.

The Philippines publishes a list of Infrastructure Flagship Projects (IFP) consisting of 75 high-impact infrastructure projects that are fundamental for improving connectivity and promoting growth corridors in Metro Manila and in several burgeoning growth centres in the Philippines. The list of projects is structured according the phase of the project, and specifies the financing source for each project.\textsuperscript{33}

In Thailand, the PPP Strategic Plan specifies the subsectors in which infrastructure projects should be developed as PPPs and also provides a list of the projects within the PPP pipeline. The pipeline contains 55 projects with a total investment of 1.62 trillion Baht (51.5 billion USD) in 23 subsectors.

\textsuperscript{32}Infrastructure Australia, Australia Infrastructure Priority List, \url{www.infrastructureaustralia.gov.au/infrastucture-priority-list}. (accessed 20 September 2019)

\textsuperscript{33}National Economic and Development Authority, Infrastructure Flagship Projects \url{www.neda.gov.ph/infrastructure-flagship-projects/}. (accessed 20 September 2019)
Establishing domestic project preparation facilities or successful engagement with external facilities such as those provided by MDBs.

Good project preparation processes are crucial for developing bankable infrastructure projects, avoiding costly errors and delays, and even guarding against weak projects being built in the first place. However, the elevated cost of good project preparation can also be an obstacle to delivering projects. Project preparation facilities that provide funding to cover the upfront costs of feasibility and environmental studies, contract drafting, and other advisory services, can assist in overcoming this barrier. APEC economies apply different approaches for funding project preparation including through domestic resources or engaging with facilities provide by MDBs.34

In Chinese Taipei the Ministry of Finance includes in its annual budget a subsidy mechanism to cover the pre-operational costs of PPP projects. The subsidy is aimed at assisting contracting authorities in recruiting professional consultants to conduct feasibility assessments, perform advanced planning, support tendering and contracting operations, and thereby improve the quality of project planning and the success rate in tendering.

Indonesia’s project development facility (PDF) provides assistance for developing the pre-feasibility study, bid documents, and providing support to the contracting authority on the transaction until financial close. The Ministry of Finance performs analysis and applies a set of criteria when deciding on whether to grant support to a project from the facility. Through the PDF, the Ministry of Finance intends to produce infrastructure business cases which are attractive for private investors. The PDF serves as the backbone for project structuring and helps to determine other forms of government support including the provision of viability gap funding guarantees, and the structuring of availability payments. Currently, 18 projects have been developed through the PDF of which 7 project contracts have been signed and 11 projects are in the pipeline. Indonesia also seeks to cooperate with international agencies to ensure project documents and the transaction process are in line with international standards.

The Philippines’ government draws on a number of sources to finance project preparation activities included its own resources as well as Overseas Development Assistance (ODA) (Box 25).

There are a number of seed funds in Russia that contribute to project preparation, namely the Technical Assistance Fund of the Eurasian Development Bank, VEB Infrastructure, Housing and Utilities Reform Facilitation Fund, Russian Venture Company Seed Fund and a new Russian Transport & Infrastructure Fund (RTIF), expected to be launched in 2019 by Sberbank (a Russian public bank and largest national commercial bank) for investment in infrastructure project preparation. The RTIF with a total amount of 12 billion rubles ($190 million) is aimed at investing in preparation, feasibility studies, launching and maintenance of public–private partnership projects. The fund focuses on middle-to-large scale (10-100 billion rubles) projects in transport, social, energy, IT and other infrastructure segments. Each project will be eligible for financing of around 60-150 million rubles for a period of up to 30 months.

34 See for example, the Global Infrastructure Facility (GIF), www.globalinfrafacility.org/
Box 25. The Philippines – Facilities for supporting for project preparation

Project Development and Monitoring Facility (PDMF)

PDMF is a funding mechanism available to government agencies for developing bankable PPP projects and ensuring effective monitoring of project implementation. Formerly known as the Project Development Facility (PDF), the PDMF is established as a revolving fund, and is managed and administered by the PPP Center. The PDMF is used to engage consultants for any or a combination of the following services:

i. Preparation and assistance in the management of the bidding process for solicited projects;

ii. Assistance in the management of the Swiss Challenge process for unsolicited proposals;

iii. Assistance until financial close;

iv. Probity advisory; and,

v. Monitoring.

Project Development and Other Related Studies (PDRS) Fund

To ensure quality at the project preparation stage, the Philippine Government taps into its own resources through the NEDA-administered PDRS Fund to assist implementing agencies in project preparation.

Infrastructure Preparation and Innovation Facility (IPIF)

The Philippine Government also taps into ODA sources to address key constraints and bottlenecks in project preparation. An example of this is the IPIF, which was established with support from the Asian Development Bank (ADB) to provide assistance to the Department of Transportation (DOTr), Department of Public Works and Highways (DPWH) and oversight agencies (DOF, DBM, NEDA) for the conduct of effective pre-investment activities that will help accelerate the approval process and ensure timely, high-quality procurement and implementation of projects. The IPIF is also designed to enable the Philippine Government agencies to incorporate expertise and innovation in project formulation and implementation.

Source: APEC-OECD survey

Singapore has contributed to various project preparation facilities in partnership with multilateral development banks to finance the preparation of a pipeline of bankable infrastructure projects in the region (Box 26). Singapore has also supported the establishment of Infrastructure Asia, an initiative that aims to support Asia’s economic and social growth through infrastructure development.
Box 26. Singapore – Project preparation facilities supported by Singapore

**Partnerships with MDBs**

**Global Infrastructure Facility (GIF),** a US$100 million project preparation fund administered by the World Bank.

**The Green and Inclusive Infrastructure Window,** administered by the Asian Development Bank. This is a US$75 million window under the ASEAN Infrastructure Fund, which will offer blended, concessional financing alongside multilateral donors to catalyse more green projects in Southeast Asia.

**The ASEAN Infrastructure Centre of Excellence (AICOE),** a US$10 million project preparation fund administered by the Asian Development Bank.

**Infrastructure Asia**

Infrastructure Asia (IA) was set up to support Asia’s economic and social growth through infrastructure development. IA will leverage the networks and collective capabilities of public sector agencies and private sector firms, partners and stakeholders across the region to meet Asia’s infrastructure needs. IA facilitates the development of a project pipeline in the region, including APEC economies through:

- **Providing high-level project advisory to improve bankability:** IA works with governments and the private sector to structure specific projects to become more bankable while addressing the needs of the governments.

- **Connecting partners in the ecosystem:** By leveraging networks in the region, IA plays a role in connecting companies, financial institutions and the relevant governments.

- **Building capacity in demand markets:** IA works with relevant economies to strengthen capacities for infrastructure project structuring, financing, implementation and operation, alongside IA partners, such as the World Bank Group.

IA is one of the advisory partners of the GIF. IA provides a sounding board for GIF-supported projects and investment programmes, through early-stage discussions related to the design and use of risk instruments to ensure project bankability.

Source: APEC-OECD survey

**Enhancing information disclosure, data collection and sharing of best practices.**

Governments consider transparency, in particular in the bidding and contract awarding phases, a key element to mobilising private participation in infrastructure financing and take steps to enhance information disclosure, data collection and the sharing of knowledge and best practices. Governments facilitate the participation of private sector investment in infrastructure by establishing publicly accessible online platforms, databases and services providing project information and assistance for investors (both domestic and foreign) and other stakeholders. The involvement of third-parties such as rating agencies and external auditors can also build trust and transparency in domestic infrastructure project pipelines.

For example, the Ministry of Finance in China has established the National PPP Information Platform, which includes a project database, resource database and institution database. The project database collects and publishes PPP project information, thus
enabling financial institutions, consulting agencies, and enterprises to screen and invest in PPP projects. Furthermore, information disclosure requirements for PPP projects in China are set out in regulation.

In Chinese Taipei, the Ministry of Finance established a Promotion of Private Participation unit, and an “Infrastructure Project Investment Platform for Participation of Private Institution” to provide potential investors with a one-stop shop for services and assistance in eliminating investment barriers, play a business opportunity match-making role, integrate private investment cases from various agencies, and provide information on business opportunities to domestic and foreign investors. Information on PPP projects that are assessed, planned and promoted by different levels of government (the central competent authorities, municipalities, counties and/or city governments) is published on the PPP information system of the Ministry of Finance. In addition, the government holds promotional events every year to solicit private investment for PPP projects, and also holds a business matching forum.

Russia maintains a federal platform to support PPP project implementation (www.pppi.ru). The platform provides investors with up-to-date information on recent PPP developments in Russia and supports the implementation of PPP infrastructure projects. The platform is maintained by the PPP Development Center with the support of the Ministry of Economic Development. The database contains 2980 projects in social, transport, housing, energy and other spheres with a total amount of more than 1.5 trillion rubles. For each project information form, current status, amount of investment, public and private partners, date of agreement, execution period and sector is available.

Innovative/Emerging

Institutional arrangements that provide for independent assessment of needs, appraisal and prioritisation of projects.

Governments are creating and facilitating the operation of independent infrastructure agencies or dedicated government infrastructure units to develop expertise for properly managing infrastructure projects across their various stages from project identification, to prioritisation, planning, tendering, awarding, monitoring, construction and maintenance. These agencies/units are considered essential to building credible pipelines of infrastructure projects, and to increasing value to society when delivering infrastructure services. In addition, these agencies/units are often also charged with the collection of project data that is used to monitor and analyse project delivery and performance.

Australia has independent advisory and assessment bodies that support infrastructure project delivery. Infrastructure Australia independently assesses projects and initiatives for inclusion on the Infrastructure Priority List, the authoritative list of nationally significant infrastructure investments Australia needs over the next 15 years. Furthermore, Infrastructure Australia provides proponents of infrastructure projects with a publically available framework for assessment in order to assist them in the development of submissions. The Infrastructure and Project Financing Agency (IPFA) provides independent commercial and financial advisory services on major infrastructure projects to Australian Government ministers and agencies. IPFA also assists the Government identify new financing solutions and provide advice on implementation, including for projects outside the transport sector.
Ensuring that infrastructure pipelines are backed by medium- to long-term funding.

Stable and predictable funding for project pipelines facilitates long-term planning and prioritisation, and provides greater certainty to investors and businesses. For example, the Australian Government is investing $AUS 100 billion over 10 years from 2019-20 in transport infrastructure across Australia through its rolling infrastructure plan, of which a substantial component is under the Infrastructure Investment Program (IIP). IIP funding can be allocated to various projects or sub-programs, facilitating alignment with key infrastructure needs.

V.2 Identification of viable and priority projects

Common

Ensuring that infrastructure pipelines are aligned with economic development plans, policy priorities, and broader strategies for addressing citizen and user needs.

Infrastructure investment is but one of a number of policy tools for meeting long-term development goals. Infrastructure pipelines should therefore be considered in the context of a broader strategy for meeting the needs of users and citizens, and should be aligned with long-term plans and existing policy priorities, and coordinated across levels of government. In New Zealand, for example, the central government in cooperation with the local and city government has introduced the Auckland Transport Alignment Project (ATAP) in order to address challenges caused by shortcomings in transport infrastructure (Figure 2). ATAP considers not only the contribution of physical investments, but other strategic tools for meeting transport needs such as improving the use of existing networks and influencing travel demand by, for example, using smarter transport pricing.

In Papua New Guinea, the Third Medium Term Development Plan (MTDP III) sets out the government’s development priorities for 2018-2022. It provides the direction for everyone with a stake in development, including departments and agencies at all levels of government, the private sector, development partners and other stakeholders. One of the key focus areas of the MTDP III is Quality Infrastructure and Utilities. The MTDP III is subject to monitoring and evaluation at both the policy and project level.

In 2018, Russia announced 12 National Projects in strategic areas totalling 25.7 trillion rubles (USD 400 billion), which outline government priorities up to 2024. In addition to the National Projects, Russia has adopted a Comprehensive Plan for Upgrading and Expanding Core Infrastructure up to 2024, which contains a pipeline of priority infrastructure projects. The Plan includes 11 federal projects; nine of them require the development of transport corridors “West-East” and “North-South” for cargo transportation and increasing the level of economic connectivity in Russia, and two projects are aimed at modernising and expanding energy infrastructure. The priority of the transport part of the Plan is an innovative transformation of infrastructure construction through the expanded use of advanced technologies and best practices, digitisation of the transport industry and logistics processes.
Figure 2: Development and implementation process of the Auckland Transport Alignment Project

<table>
<thead>
<tr>
<th>Preconditions and need for action</th>
<th>ATAP intended value added and responsible parties</th>
<th>ATAP specifications and strategy priorities</th>
<th>ATAP policy evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Jointly funded transportation infrastructure: Central government and City government</td>
<td>Criteria for value evaluation: infrastructure: • Improved access to employment resp. labour as supporting growth and productivity • Improvement of congestion results • Improve public transport’s mode share • Net benefits for users in return for potential additional cost</td>
<td>Strategic implementation of tools: Three key elements: • Improving use of existing networks • Targeting investment to the most significant challenges • Max. new opportunities to influence travel demand incl. smarter transport pricing</td>
<td>• Improvements in alignment between Central and local Government and City government • Agreement on a recommended strategic approach and priorities for investment • Maintaining alignment between the agencies guaranteeing a quick and effective implementation • Guarantee sufficient planning flexibility to deal with changes in parameters assumed for planning</td>
</tr>
<tr>
<td>• Population growth and urbanisation</td>
<td>Set up jointly by governmental bodies from central and local level</td>
<td>Planning horizon: 30 years • Goal: Improve medium and long-term ROI from transport infrastructure • Additional tools needed as changing the investment mix would not deliver satisfactory results</td>
<td></td>
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<tr>
<td>• Recognition of the importance of efficient transportation infrastructure for domestic economy</td>
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<td>• Funding shortfalls in existing infrastructure planning</td>
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<td>• Value for Money criterion for allocation of additional funding</td>
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The **Philippines** 2017-2022 Public Investment Programme (PIP) contains the priority infrastructure programmes and projects (PAP) in transportation, water resources, energy, social, information and communications technology (ICT), and other public infrastructure sectors over a medium-term time horizon. The infrastructure PAPs are intended to support the pursuit of the goals and outcomes outlined in the Philippines Development Plan (PDP) 2017-2022. The PDP is itself a medium-term plan aimed at laying the foundation for inclusive growth, a high-trust and resilient society, and a globally competitive economy to achieve AmBisyon Natin 2040, a long-term national vision representing the collective vision and aspirations of Filipinos.

In **Thailand**, the State Enterprise Policy Office (SEPO) ensures that the new Public Private Partnership Plan (PPP Plan) (required by Section 12 of PPP Act 2019) it is currently preparing is consistent with the Master Plan on infrastructure and social development prepared by the Office of the National Economic and Social Development Council. This PPP Plan will play a significant role in setting out a PPP policy framework that creates clarity for both private and public sectors, and establishes a prioritisation of PPP projects.

**Applying robust systems for project evaluation to ensure that selected projects represent value for money and are aligned with national development goals.**

The credibility of the pipeline depends on the level of scrutiny and analysis applied to the projects within it. Projects should be subject to rigorous technical, economic, financial and environmental assessments. Projects that are most likely to contribute to economic and social development objectives, represent value for money, and are considered viable investments should be prioritised.

In **Chinese Taipei**, for instance, the PPP Act requires that the authority in charge of government-planned projects conduct a feasibility assessment, which takes into account public interests and objectives, evaluates the benefits from private participation, and addresses issues relating to the acquisition of land, environmental impact, risk allocation, government commitments and coordination, among others. The PPP Act also calls for public hearings to be held in order expand the level of public participation in the process.

In **Indonesia**, the Ministry of Planning has developed a methodology for assessing the suitability of a project to use the PPP scheme. Project proposals developed by line ministries are reviewed and assessed by both the Ministry of National Development
Planning (MNDP) and the Ministry of Finance. Furthermore, all project proposals must be accompanied by feasibility and readiness assessments. In addition, standardised “Readiness criteria” are applied to select and prioritise projects, and the MNDP has developed a methodology for project appraisal.

Innovative/Emerging

Identification and promotion of projects with high social content.

Governments explore ways to foster infrastructure investments with high social impact, and establish tools to support infrastructure projects which are socially valuable but financially challenged. Also, governments develop markets for infrastructure investments with high social impacts. Mexico, for example, has developed a set of tools for supporting infrastructure projects with high social content that might otherwise be unattractive to private investors (Box 27).

Box 27. Mexico – Support of infrastructure projects with high social content

The Mexican government has established a set of tools to support infrastructure projects with high social content that are financially challenged, meaning that projects face financial constraints which make them unattractive to commercial banks. Those projects are mostly allocated at municipalities characterised by high levels of poverty.

Municipalities identify the projects with social and development content that are financially challenged and need to be supported.

Financing is provided to these municipalities through federal transfers and enabled through financial vehicles allowing small infrastructure projects to be executed by giving financial profitability to projects that have high social impacts.

Private participation ensures a certain level of quality and availability of public services. PPPs have had significant impact at local levels, while the government takes advantage of the private sector’s expertise and in exchange the private sector receives a payment that covers their costs and generates profits.

Source: APEC-OECD survey response
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