

# Bringing PPPs into *the* **SUNLIGHT**

Synergies Now and Pitfalls Later?

Editor  
Gerardo Reyes-Tagle



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# Summary

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- The perception among many practitioners that public-private partnerships (PPPs) do not carry fiscal consequences is flawed. Bypassing fiscal constraints is not a valid reason to choose a PPP over traditional public investment (TPI). PPPs do not materially reduce fiscal constraints for governments. If they appear to do so in the short term, it is likely due to differing accounting standards or novel finance structures hiding the explicit or implicit burden created by a PPP. As a result, PPPs may create larger fiscal burdens over the long run. PPPs should be treated the same as traditional procurement or public provision from a liabilities perspective.
- Off-budget financing has exacerbated the potential fiscal risks caused by PPPs. Special purpose vehicles, temporary designations of private ownership, and public trust funds may allow PPPs to be classified as off-budget operations or expenditures. Likewise, certain accounting methods may allow upfront private financing to obscure the reality of long-term public funding.
- Additional fiscal risks arising from PPPs may materialize due to their cumulative fiscal burden. The relatively small size of the projects threatens an undesirable “under the radar” effect that hinders proper monitoring and evaluation of the liabilities of the PPP portfolio and underlines the importance of adequate institutional and fiscal frameworks to manage risk. For intensive users, the exposure of public finances to PPPs tends to be cumulative over many small- and medium-sized projects. Multi-billion-dollar megaprojects are rare—the average economic infrastructure PPP project is around US\$350 million—but the distribution is heavily biased toward projects whose total investment does not surpass US\$100 million, which accounts for over 50 percent of recorded projects. Countries should create an institutional framework that applies consistent metrics and procedures across all projects, since risks cannot be systematically monitored on a project-by-project basis. However, even one PPP project can significantly shift the dynamics of public finance for new entrants, especially in small and developing economies.
- PPPs should be fiscally equivalent to traditional procurement when planning budgets and prioritizing multi-year spending. Indeed, the best way to reconcile short-term budgeting practices with the long-term nature of PPP commitments would be to treat PPPs as public debt. Many countries have adopted medium-term fiscal frameworks and other fiscal tools aimed at aligning budget planning across years. However, the novelty and complexity of PPP private-sector financing means that they may be absent from these processes.
- Government financial support should be transparent and disclosed fully in the budget. Thus, it is paramount that governments understand

the big picture of liabilities (contingent and firm) arising from PPPs and promote effective appraisal exercises before the choice of PPP is concluded. Governments should carefully assess whether PPPs deliver value for money (VfM), and this assessment should be adequately integrated with the general project appraisal to ensure that the decision to use a PPP is justified. The main economic justification for the use of PPPs is the capacity to deliver better infrastructure projects. That is, governments should only use PPPs if they offer better net benefits compared to TPI. Governments should not use PPPs to augment spending without proper fiscal control mechanisms, especially regarding long-term and contingent liabilities.

- Achieving better VfM is the only economically justifiable reason to pursue a PPP. The situations in which a PPP will provide better public value than traditional procurement or public provision are relatively narrow and must be rigorously assessed. The rationale is that PPPs can deliver services more efficiently and with higher quality—that is better services with competitive pricing. At a basic level, this rationale is an argument about incremental efficiency in the delivery of public services. However, this argument depends on government institutional capacity to procure the project in a competitive and transparent process, evaluate and monitor fiscal impacts, allocate risks, and assess the economic and financial value added of a PPP versus traditional procurement.
- Unsolicited proposals (USPs) may offer benefits to governments in the form of identifying new PPP projects and generating innovative solutions. Yet, they also introduce challenges for governments to manage the selection, procurement, and implementation of USPs. In reviewing the legal and institutional frameworks in selected countries, USPs do not appear to

have a strong direct impact on the fiscal balance of the governments. However, many of these projects are also in an early stage of development as compared to PPPs overall. Moreover, whether self-funded or using government resources, USPs are subject to the same risks as government-initiated PPPs in terms of selection, procurement, and implementation. For governments to minimize fiscal and other risks, USPs need to be consistent with the country's medium- and long-term national infrastructure plans and use a competitive selection process. Moreover, the governments need access to good technical skills to review and supervise infrastructure projects and ensure fiscal sustainability and development impact.

- Successful institutional frameworks at the national and subnational levels tend to emphasize standardization of processes, clear legal standards, and sound fiscal management. PPP investment should be aligned with the government's medium- to long-term investment strategy and fiscal planning. This is particularly important since fiscal commitments associated with PPPs are locked in for many years. Best practices in budget planning require that all relevant macroeconomic and fiscal indicators are in a medium-term context to ensure a sustainable fiscal path over time. It is also important that PPP laws are consistent with other sector laws and government policies that can affect PPP projects to avoid uncertainties about the legal frameworks and are backed by appropriate policies, procedures, and processes to implement the institutional framework. For institutional frameworks to be successful, the government needs the appropriate human resource capacity and access to expert advice to select, prepare, structure, and implement PPPs successfully.

# Introduction

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The use of public-private partnerships (PPPs) has taken off dramatically since the 1990s, with both developed and developing economies seeking novel ways to expand private participation in major infrastructure projects. This trend has been driven both by the desire to incorporate private-sector experience more closely in the provision of public infrastructure and the increasing pressure on public budgets.

Political, economic, and social factors have contributed to a squeeze on public finance in the advanced economies since the 1970s. Meanwhile, the so-called infrastructure gap—or deficit of crucial public infrastructure—has continued to grow. In this context, PPPs have permitted policymakers to pursue otherwise costly infrastructure programs in a way that could postpone or conceal longer-term costs, leading in some cases to outsized or unexpected liabilities. However, PPPs have also provided an opportunity to inject private-sector capital and efficiency into the provision of infrastructure, creating significant public value when properly managed.

Developing economies have begun to incorporate this strategy into their infrastructure programs as well, with some countries pursuing small or one-off projects and others making PPPs a major part of their infrastructure programs. Emerging economies, including Brazil, China, India, and Turkey, have commissioned major projects under the PPP structure, adding tens of billions of dollars to their infrastructure pipelines.

The motivating proposition behind PPPs is that they have the potential to deliver greater value for money (VfM) than traditional public investment (TPI) alone. This is achieved by bundling project tasks, allowing the private partner to internalize costs and coordinate management of the project across multiple phases, including design, finance, construction, and operation. Likewise, using a competitive bid to assign the right to this bundled process allows for more holistic market-based price discovery and competitive cost savings.

However, VfM may fail in practice for a litany of reasons. In addition to potential delays, renegotiations, demand expectations falling short, and other issues that may show up during the life of the project, PPPs may create major burdens for public finances despite the initial contribution of private capital. Indeed, most PPP projects ultimately require public resources and direct payments through continuous government support and, in many cases, these costs are not properly accounted for in the initial stages. In fact, it is common over time to find that fewer PPP projects stand on their own merits and therefore need government support to make the project bankable or profitable for the private sector.

These burdens can show up in the form of firm or contingent liabilities, whether they are explicit (embedded in the contract) or implicit (materialize down the road). The problem is exacerbated if countries fail to properly, systematically, and transparently account for these expenses. While governments

commit to paying the private-sector partner for the delivery of services in some cases, in others the private-sector partner draws revenue from user fees. The latter case may still entail a contingent obligation for the government; for example, a commitment to make up for any shortfall in expected revenue. Likewise, these obligations may be explicitly laid out in the contract or implicitly incumbent on a government that must maintain crucial services whatever the outcome of private provision.

Following the call to action from the 2015 Addis Ababa Action Agenda, the Sustainable Development Goals, and the Paris Agreement (2015 COP21) to increase private investment in sustainable development, governments, especially in emerging and developing economies, are increasingly ready to leverage PPPs for infrastructure spending. Yet, in some cases, these economies are involving the private sector for the wrong reasons or in the wrong ways. More and more governments are engaging in PPPs due to a lack of fiscal space and mounting pressure to fill the infrastructure gap demanded by society, rather than using the instrument to provide better infrastructure and services to the population in a way that creates VfM.

While there have been successful PPPs that were properly designed, procured, and managed, the model is also contributing to mounting debt burdens and activity that shrouds fiscal impact. The evaluation of success is complicated by the difficulty of establishing a strong counterfactual (a picture of costs, benefits, and outcomes had another financing structure been used) for major infrastructure projects. Counterfactual analytical techniques used to evaluate PPPs at the planning stage tend to be static, one-time measures. These measures are imperfect, and VfM methodologies have been subject to mounting criticism due to the asymmetries of information and the lack of follow-up in the construction and operation phases. The readiness of governments to engage the PPP structure, and the real successes and failures that it has shown, necessitate a careful treatment of the concept, especially as its usage expands in developing economies.

## The Landscape

The term PPP has no single or simple definition. It refers broadly to engagements that distribute or transfer risks and responsibilities for public services between the public and private sectors, rather than keeping them firmly in the hands of the public sector. While private participation in infrastructure through privatizations, concessions, and TPI has a decades-long track record, PPPs only truly emerged in the 1990s with England's Public Finance Initiative (PFI) program. PPPs grew as an intermediate solution to these forms of private-sector involvement. The private sector takes the lead on financing and managing projects while sharing risks with the contracting government. At the end of the contract, the private sector hands the asset back to the government.

The World Bank, the Asian Development Bank, and the Inter-American Development Bank (IDB) broadly define a PPP as “a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance” (World Bank, 2014). The term was coined in the United States to refer to educational and urban renewal programs involving partnership between the public sector and non-profit organizations during the 1950s. However, its close association with infrastructure projects began with an effort by the U.K. government in the 1990s to expand financing options for infrastructure finance under the framework of the country's PFI (World Bank, 2009).<sup>1</sup>

PPP covers several types of public-private interactions, including both economic infrastructure

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<sup>1</sup> Chapter 3 of World Bank (2009) discusses the origins of PPPs. Various terms have been used internationally to refer to public-private interaction in infrastructure projects, including: Private Participation in Infrastructure (PPI) and Private-Sector Participation (PSP), mostly used by International Finance Institutions (IFIs); P3 (Canada and the United States); Privately-Financed Projects (PFP) in Australia; build-operate-transfer (BOT) in the Philippines and Senegal; PFIs in the United Kingdom, Japan, and Malaysia; and PPPs in most of Latin America and the Caribbean. The term public-private agreements (PPA) is also used in various jurisdictions.

(e.g., transportation facilities and utility networks) and social infrastructure (e.g., schools, hospitals, libraries, and prisons). PPPs encompass both new assets (greenfield projects) and existing ones (brownfield projects).<sup>2</sup> PPPs may be employed in any economic sector and at any government level, and their use is especially prevalent at the subnational level. The absence of a standard definition and the many forms of private-sector commitment translate into significant ambiguity regarding what constitutes a PPP and how to evaluate and compare institutional frameworks among countries. The difficulty of precisely defining a PPP reflects the functional diversity in institutional arrangements and PPP frameworks. Our review of more than 30 countries worldwide that use PPPs as a means to finance public infrastructure indicates that differences are not limited to names, but also definitions, focus, and mandates of PPP frameworks.

While seemingly ubiquitous, PPPs are not a universal phenomenon. PPPs are only used intensively by a relatively small number of countries, building on models first pioneered in the United Kingdom and Commonwealth states, Europe, and the United States. Most PPPs in emerging economies are small to medium sized, with an average lifecycle investment of US\$293 million and a median well under US\$100 million.<sup>3</sup> While small by global standards of infrastructure projects, PPPs are fiscally significant for user-intensive countries and even one project can have an outsized impact for early adopters.

PPPs include a range of project finance structures that may significantly impact the public fiscal balance despite the government's delegating responsibility for the financing cycle, project management, and revenue collection. While diverse, the scope of PPPs can be well delineated for the purposes of fiscal analysis. We focus on projects for which the government assumes explicit or implicit financial risk.

## Safely Navigating PPPs

How should developing economies benefit from private involvement without incurring the risks that it has created elsewhere? There are two main

rationales behind engaging a PPP rather than TPI to carry out an infrastructure project. The first is that PPPs unlock fiscal resources that might not otherwise be mobilized. The second rationale is that they generate more efficient outcomes, meaning better service delivery for the same or less cost. We find no support for the first rationale. Governments should not engage in PPPs with a view to creating fiscal space. PPPs provide up front financing, but the funding to pay back that financing is similar if not identical to public projects, with taxpayers and infrastructure users providing the funding. Indeed, PPPs should be considered similar to TPI when analyzing the likely fiscal impact.

Governments seeking to implement a large infrastructure project should only choose a PPP if it provides VfM. This value may be delivered as a result of a more appropriate incentive structure, better technology, more effective project execution, revenue collection, or the benefits of bundled construction and management. This is the only economically sound justification for choosing PPPs. However, governments may well be able to achieve the same or better service delivery at a comparable cost.

PPPs should not be used to bypass fiscal constraints or hide fiscal consequences. PPPs are often seen as a way to boost short-term spending and often fall into a regulatory gray zone that allows governments to avoid immediately reflecting the cost burden on the balance sheet. Institutional frameworks for PPPs and mechanisms to incorporate the process into official budgeting and accounting structures must be sufficient to ensure PPPs are not used to boost infrastructure spending without incurring short-term fiscal consequences. This is

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<sup>2</sup> Greenfield projects are those in which the responsibility to develop the entire asset lies with the private sector. Brownfield projects are those in which the government transfers control of a pre-existing asset to the private sector, which is then responsible for maintenance and rehabilitation. Yellowfield projects are those where the investment is related to significant renewals, refurbishment, or a substantial expansion of existing infrastructure.

<sup>3</sup> We focus on economic infrastructure in emerging economies using the World Bank's PPI Database, adjusted to restrict the data to IDB definitions of PPPs. See Chapter 2.

an especially salient finding given the increasingly global problem of shrinking fiscal space and growing infrastructure gaps.

The mechanisms that theoretically lead to a more efficient or effective outcome from PPPs include incentives generated by competitive bidding, as well as bundling the financing, construction, and management of major infrastructure projects. Likewise, the outcome may benefit from risk sharing arrangements that shift financial and management risks in a way that benefits both parties. However, these factors may turn to the disadvantage of the procuring body if they are allowed to translate into greater power and influence for the private-sector partner, and renegotiations, cost overruns, and material losses often end up on the government's balance sheet. Likewise, the incentive structure is not always clear cut. That is, the only reason to tap on more expensive private capital resources—compared to public capital access—is to gain real efficiency gains in providing services. In practice, many projects have been awarded in less than competitive forms under extraordinary circumstances that rule out efficiency gains.

### Common Pitfalls

Private involvement alone does not ensure VfM; PPPs are subject to a host of incentive problems that private involvement serves to intensify. Time inconsistency (i.e., incentives to deviate from previously agreed parameters) characterizes the incentives of both private and public sectors. Private-sector partners find themselves with more leverage after the bid has closed, while public actors may seek to boost practical spending with less scrutiny once a project has been awarded. Institutional adequacy and contract design are both crucial but insufficient aspects of solving this problem. Accounting procedures may encourage such incentive mismatches as well.

While risk transfer and risk sharing with the private sector is a core justification for PPP in theory, the benefits may be elusory in practice. Indeed, governments are often forced to bear ostensibly private risks in the case of project failure, especially

for critical public infrastructure. Public sector buy-outs leave the government bearing downside risk regardless of the formal risk sharing structure.

Further, information asymmetries may exacerbate incentive problems caused by time inconsistency and risk sharing. Both the government and the private partner carry information advantages in certain stages of the contracting and execution cycles, and explicit and implicit differences in risk allocation intensify the incentive to ply these advantages to the detriment of the other side. Information asymmetries may also cut across government bodies with influence over the procurement and execution process.

### Outline

This publication covers PPPs with a focus on the implications for public finances in developing economies. Chapter 1 seeks to answer the question of whether PPPs are the “genie in the bottle” for governments seeking to plug the infrastructure gap: do they solve more problems than they create? This discussion lays the groundwork for further analysis. Chapter 2 explores the underlying reasons for the expansion of PPPs, the definitions and scope of PPPs in different contexts, and the historical trajectory of PPPs throughout the world, highlighting the common factors that have led to their current popularity. Chapter 3 details the multitude of institutional frameworks built to accommodate PPPs. It highlights the frameworks for national and subnational entities commissioning PPPs and deals with the involvement of state-owned enterprises. It also introduces fiscal frameworks for PPPs. Chapter 4 considers the fiscal and budgetary implications of PPPs from various perspectives. Chapter 5 covers the multiple forms of government financial support extended to PPPs and the practical implications of various countries' experiences with direct, indirect, explicit, and implicit forms of project support. Finally, Chapter 6 discusses unsolicited PPP proposals coming directly from private-sector firms that hope to service them. We conclude with a brief summation of the outlook for PPPs as well as concise policy recommendations.

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# Are PPPs the Genie in the Bottle?

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Public-private partnerships (PPPs) are an alternative mechanism to finance a project, not to fund it. Private finance allows the initial outlay to be made without public capital; however, the government still pays for the service in the long run, and the cost of private finance will increase future payments absent efficiency gains. If the project is funded by user payments, then the government will forego revenue.

Two main justifications have supported the use of PPPs. The first is that PPPs open fiscal space for governments. The second is that they are more efficient than public delivery; in other words, that they deliver the same or better quality service for less money.

The fiscal argument is invalid on economic grounds. It is not straightforward that PPPs create fiscal space and, in many instances, they can be more expensive for the government over the long term. While they may be less expensive in the short term due to private financing and measures that allow initial investment to be kept off the public balance sheet, PPPs are still ultimately funded by public coffers or user fees. Indeed, while PPPs often appear more cost effective for governments in the short term, they carry the potential to create unsustainable long-term obligations.

The only economically grounded justification to choose a PPP over traditional public investment (TPI) is efficiency—the prospect of better service

delivery for the same or less cost. This argument can be summed up by the concept of value for money (VfM). However, the evidence supporting systematic cost savings through private delivery of infrastructure is thin. Likewise, there are numerous factors that structurally increase the cost of PPPs relative to TPI. Standards for evaluation and comparison do not typically stress the need to prove VfM ex post, and the methods used to establish VfM in the first place are imperfect.

Pinpointing the success or failure of a PPP is difficult because of the absence of a counterfactual since the same project cannot be observed under both a PPP and TPI. It is difficult to assess counterfactually whether the quality of service or cost savings of private provision through a PPP are truly superior to public provision or TPI. Comparative techniques such as the Public Sector Comparator (PSC) are limited tools that focus their analysis on the project's cash flow but fail to assess the real gains in efficiency of a PPP project against its TPI proxy. In addition, the static nature of the PSC pales against the dynamic long-term environment of PPPs. A true counterfactual does not exist and experimental evaluations are rare. Likewise, the ex ante counterfactual may not be equivalent to the ex post counterfactual.

Misaligned incentives encourage failure in PPPs. Time inconsistency, non-credible risk sharing, lack of transparency, and principal-agent problems all

contribute to the overarching problem of deadweight loss, defined as the monetary and social loss of value from pursuing an inefficient course of action.

**Time inconsistency**, or the incentive to deviate from an agreement, is particularly relevant for PPPs since they typically award a project to one service provider under a long-term contract. Complex, long-term contracts are likely to be incomplete, likely failing to account for all contingencies. Contractual shortcomings aggravate time inconsistency and incentives to deviate as circumstances change. Likewise, the government may be actively seeking to use the PPP process to boost public spending for political reasons. As a result, both parties have incentives to change their behavior during the negotiating and operations process, or renege on earlier commitments. For example, private-sector partners may have more leverage to renegotiate once the contract is signed. Likewise, government actors may escape scrutiny during a renegotiation process. Renegotiations are especially problematic for PPPs since they eliminate the ostensible benefits stemming from competitive auctions, a key theoretical underpinning of the overall justification for PPPs.

**Risk sharing** with the private sector may not be credible for necessary or highly visible public services. The government may be forced to intervene or bail out PPP projects due to poor risk identification or unsuccessful risk transfer. In most cases, the government will end up paying if the private partner is unable to stay solvent or the project faces collapse.

There is little evidence to suggest that PPPs are systematically more **transparent** than public provision. Indeed, PPPs may be less transparent in practice if budgeting and accounting methods are not properly adapted. Likewise, outsourcing a project to a single private provider may undermine other processes that promote overall transparency in public works by reducing public touch points over the course of the project cycle. Except for the United Kingdom and Australia, there is no consistently centralized open database containing detailed information on key aspects of the

processes surrounding PPP approvals and execution. Importantly, most PPP contracts are not available in the public domain.

Due to their high-stakes subcontracting of critical services to the private sector, PPPs are especially exposed to **principal-agent problems** and moral hazard. The principal (government) and agent (private contractor) have diverging incentives for both project cost and service quality in PPPs. There exists the potential for opportunistic behavior from both private and public sectors as information asymmetries are shared across parties in these arrangements. Both parties have an intrinsic preference for transferring risks and responsibilities disproportionately in their favor. Likewise, monitoring is difficult due to the significant organizational and management role a single private partner (or consortium) plays in project financing and execution.

## Why Do Governments Choose PPPs?

Momentum for PPPs over the last 25 years is evident (see Chapter 2). However, a discussion of the merits and demerits of the instrument itself has been obscured by this momentum. Such a discussion is especially important given the significant differences in adoption across regions and the overwhelming importance of context and institutional strength for the success of PPPs. There remains widespread uncertainty about the macroeconomic conditions that prompt countries to adopt PPPs in lieu of public investment or even whether PPPs behave as a substitute to public investment rather than complementing it.<sup>4</sup> This is especially the case when the microeconomic conditions that drive PPP use are not fully understood.

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<sup>4</sup> There are mainly three broad forms to provide infrastructure: TPI, PPPs, and privatization. Each of these includes many contractual arrangements depending on the level of public-sector control. For example, Guasch (2004) cited some typical contractual arrangements, including public supply and operation, outsourcing, corporatization and performance agreement, management contracts, leasing, franchise, concession, build-operate-transfer, build-own-operate, divestiture by license, divestiture by sale, and private supply and operation.

A variety of theories justify the use of PPPs; however, the major arguments in favor of choosing a PPP over TPI projects boil down to two core claims (APMG, 2016). The first is that PPPs are more efficient—that is more cost effective—than TPI since they can deliver better services with competitive prices. At a basic level, this rationale is an argument about incremental efficiency in the delivery of public services. The second is that, by tapping private capital resources, PPPs create fiscal space for governments to effectively pursue policy-based spending in spite of budget constraints. That is, PPPs allow more investment in public services or an increased quantity of investment. This argument, known as the fiscal argument, is often used in pushing governments toward PPPs in practice, despite the emphasis on the efficiency argument for justification.

The economic argument for involving the private sector in the delivery of public services in the years following the wave of privatizations in OECD countries in the 1990s was based primarily on the availability of private funds for capital investment (Broadbent and Laughlin, 2003; Leitch and Motion, 2003). For example, when the Private Finance Initiative (PFI) framework was initiated in the United Kingdom, it followed a steady decrease of public investment (mainly in the water and sewage, telephone, electricity, gas, and transport sectors) coupled with a political agenda aiming to control public capital expenditures.<sup>5</sup> On one hand, low levels of investment were interfering with the quality of the services delivered as capital spending had been neglected. Capital spending is typically less politically visible than current and social spending and does not have the same immediate political and social impact. However, under-investment in capital stock becomes more visible over time (Broadbent and Laughlin, 2005).

On the other hand, despite the hollowing out of the state caused by the reforms of the previous years that focused on a managerial state,<sup>6</sup> the pressure for fiscal prudence and less government spending remained (Broadbent and Laughlin, 1999). In this context, PPPs were seen as a solution

to meet required levels of investment without violating fiscal responsibility, insofar as PPPs might be able to mobilize private capital and investment that would be unavailable otherwise. In other words, PPPs could promote more investment in public services than would have taken place under TPI.

However, this rationale risks confounding funding and financing for capital projects. Funding refers to paying the cost of a project over time. PPP funding typically comes from user fees or taxpayers (through government's financial support mechanisms). Financing refers to raising the initial capital needed to initiate the investment and fund the design, construction, and early operational phases of an infrastructure asset. Finance is therefore typically restricted to the initial stages of a project and does not fund it over the long term (Poole, Toohey, and Harris, 2014).<sup>7</sup>

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<sup>5</sup> According to Gómez-Ibañez (2003), the British government decided to privatize key sectors of the economy because of the enormous investments needed to bring them up to modern standards. One of those sectors was water and sewage, which had not received important capital investments because of the government's policy of downsizing the state.

<sup>6</sup> The PPP is conceptually aligned with a broader agenda of reform in the way governments deliver public services that took place in the 1980s and 1990s in several OECD countries. In fact, comparative research has been recognizing an international trend that points to a pattern of transition from traditional public administration to what has been called New Public Management, or managerialism, in the public sector (Pollitt, 1993; Hood, 1991; Massey, 1995; Bresser-Pereira, 2003). This shift generated a heterogeneous and complex topography of the state, as opposed to the once monolithic and bureaucratic model of public administration. From an administrative viewpoint, the extent to which proper governmental departments delegate their functions to quasi-autonomous bodies and private contractors has increased considerably in many countries. This delegation invariably produced a change in the level of penetration of private actors in activities once exclusively conducted by governments.

<sup>7</sup> The IPPR (2001) report made the point: "The easiest way to illustrate this difference is to use a private example. In purchasing a car many people will use private financing; that is, they will borrow from a financing company the sum necessary to drive the car away. However, they will have to find the funding for this purchase from their own income, probably paying monthly instalments back to the financing company. That institution does not in the end provide a single penny of actual resource" (pp. 79–80).

In a typical PPP, the financing of the project is private but the funding is public. Public financial support or other public resources—such as an authorization to charge user fees—cover the investment in an economically comparable way to traditional government borrowing. Hence, all else being equal, the final cost to the taxpayer of a PPP will be the same as with TPI, when the government borrows money from capital markets, leaving aside systematic interest rate differentials for public and private borrowing. Furthermore, concern about public borrowing relates to the build-up of a debt burden for future generations (Heald, 2002). However, a PPP generates future obligations that are essentially the same (IPPR, 2001; IMF and World Bank, 2016). Capital costs for investment in public services are borne by the taxpayer or the service user in one way or another, and PPPs do not introduce any meaningful change in availability of public funds over time. Put simply, PPPs represent an alternative mechanism to *finance* a project, not to *fund* it.

Therefore, absent any efficiency gain and holding other factors constant, there is no economic foundation for the argument that a PPP would unlock additional investment capital relative to direct investment or other financing mechanisms. Although the above is true from an economic perspective, the ineffectiveness of many existing mechanisms to identify, measure, and report the fiscal consequences of PPPs might have created conditions under which the structure is considered the only possible route for conducting capital projects. This has contributed to the false argument that PPPs increase the quantity of investment. In other words, if PPP projects are not developed under regulations that enable identifying, valuing, and reporting all fiscal impacts of a project, the model may artificially increase the capacity of governments to deliver capital investment projects without adjusting for long-term fiscal consequences.<sup>8</sup>

Whenever the fiscal consequences of PPPs are not properly monitored, public managers may be able to achieve more project execution through PPPs than would otherwise be the case. These conditions led scholars to point out that, in many

cases, PPPs have become “the only game in town” for specific projects and agencies (Reeves, 2011). The expression refers to the choices public managers face if they wish to implement capital investment projects. It is argued that PPPs may be the only possible instrument to receive the necessary approval of treasury departments, since other financing tools are subject to a much more effective assessment of fiscal consequences and are therefore restrained by financial or budget rules. Under these conditions, the choice of a PPP can be biased. The choice may occur at the expense of other considerations such as efficiency, cost, or quality of the service delivered.

The erroneous guidance provided by the fiscal argument and the incentive structure it produces underline the need for countries to design and implement effective procedures to identify, manage, and report the fiscal impact of PPPs. Opening fiscal space cannot be a justification to pursue PPPs.

## The Case for Efficiency

Since the fiscal argument is invalid on economic grounds, the remaining argument in favor of PPPs is that they are more efficient than TPI. Efficiency means that they should achieve the same or better outcome for a comparable cost. This rests on the assumption that PPPs can resolve inefficiencies or market failures generated by the lack of either public or private-sector involvement in the production of a given category of infrastructure or public service. However, evaluating this assumption in practice is very difficult.

In terms of resolving private-sector limitations, PPPs take advantage of private-sector know-how

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<sup>8</sup> An example of the inadequacy of traditional mechanisms of fiscal supervision is the accounting treatment of PPP projects that might not consider the investment done by the private partner or the amount of direct liabilities assumed by the government in the contract as government debt or other aggregate despite creating long-term commitments associated with the delivery of infrastructure. Another example is valuing and adequately providing for risks assumed under PPPs that might not be identified or quantified.

and financing for infrastructure that might otherwise be too large scale or long term, or too much of a regulated public good, for a private entity to be able to invest in by itself. In terms of resolving public-sector limitations, PPPs use output specifications to incentivize private partners to innovate solutions to meet government requirements. Moreover, PPPs should allow the private-sector partner to internalize cost reductions by bundling the construction and operations phases, achieving cost savings by allowing one managerial unit to balance design and construction costs in the initial stage with ongoing service delivery, maintenance, and refurbishment costs.

The private sector may be able to achieve cost savings as compared to the public sector in certain circumstances. However, it does not follow that these savings are systematically passed onto the public partner. According to Gassner, Popov, and Pushak (2009), the empirical results in sectors characterized as natural monopolies (e.g., electricity distribution and water and sanitation services) are especially unclear. The monopoly character of these sectors, along with their contribution to the social and political fabric of many countries, adds layers of complication to the question of whether private involvement influences efficiency. Vining and Boardman (2008) pointed out that, while public-sector projects had been shown to frequently overrun their budgets, "...the first-order outcome of private-sector cost-superiority [in PPPs] is higher private-sector returns rather than lower public-sector costs" (p.13). Andrews and Entwistle (2010) bolstered this point econometrically. The authors found that PPPs did not improve cost effectiveness in the case of Wales, noting that "contracted agencies may be generating efficiencies but fail to pass on cost savings to their public-sector principals" (p.692). Moreover, the authors found that partnering with the private sector may decrease the quality of services delivered, a conclusion shared by other contributions to the private-sector participation literature.

In a literature review of privatization in the water sector in 1965 and the waste sector in 1976, Bel

and Warner (2008) found no evidence of systematic cost savings generated by private involvement. The authors attributed this to the lack of competition in these sectors, despite the prominent role competition played in justifying privatization in public choice and property rights theory. Their conclusion was that savings were driven more by government regulation of markets and market participants, rather than the characteristics of private partners. Likewise, Chong, Huet, Saussier, and Steiner (2006) found that PPPs decreased efficiency in project delivery and increased prices for consumers in the French water sector.

There is very little evidence regarding quality of service and cost effectiveness on a project-by-project basis, and the lack of rigorous studies means that the evidence that does exist may be anecdotal or mixed. As a result, governments must pay close attention to cost and contracting incentives due to the significant and potentially outsized budgetary impact that PPPs may carry. This is especially important given the strong likelihood that initial projections will claim cost effectiveness, in addition to the convenience of off-budget stimulus.

Additional arguments in favor of the efficiency of PPPs focus on transparency and risk allocation, both of which should drive down the cost of quality. In theory, PPPs should provide better transparency given the public bidding process and ongoing private accountability for outputs and outcomes. They should also allow for a more efficient risk allocation between the public and private partners, transferring a given risk to whichever partner can manage it most efficiently.

However, there is little evidence that PPPs are systematically more transparent than TPI. The relative transparency of PPPs and TPI depends heavily on the legal framework rather than the financing structure. Like most other purported advantages of PPPs, they rely on regulation, legal frameworks, and contract structure rather than the simple fact of private-sector involvement. There is little evidence that the participation of a private partner in and of itself makes these projects more transparent. Indeed, there are indications that involving

## BOX 1.1. Challenges Implementing PPPs: Some Examples

### Lesotho

Lesotho's first and only PPP initiative is notable both for the size relative to the country's overall budget and the critical role it was meant to assume in an otherwise public health system. The project and private-sector involvement were unprecedented for low-income countries, both in terms of the scope of the project and the institutional capacity of the government stakeholders (e.g., Ministry of Finance, Ministry of Health, and the Queen Elizabeth II Hospital). A consortium led by a South African healthcare provider won the 2008 bid for the replacement of Lesotho's aging Queen Elizabeth II national hospital, the center of the country's health system. The bundled, 18-year contract included construction and operation of the replacement, the Queen Mamohato Memorial Hospital, in addition to three primary care clinics. While the bid was competitive, there was only one other contender. The consortium also increased costs after reaching the preferred bidder stage and has since invoiced significant expenses above the baseline annual fee.

In 2014, a deeply critical report by Oxfam claimed the PPP cost three times what the old hospital would have cost, necessitating large increases in the country's health spending and consuming 51 percent of total health outlays. Meanwhile, the private partner was enjoying annual returns as high as 25 percent of the investment, significantly higher than typical healthcare sector PFI projects in the United Kingdom. In its summary of the project, the World Bank acknowledged the tensions between the public and private sector caused by the project, but cited the relatively higher quality of care delivered as a result of the PPP and the corresponding effect on demand for treatment. The higher costs were attributed in part to higher demand due to improved services. The brief acknowledged that better planning and integration into the country's healthcare system may have helped control these costs and defray demand to primary care clinics.

The case of Lesotho highlights the incredible fiscal impact that PPPs can have in low-income and developing countries. While fiscal risks from PPPs tend to stem from the cumulative effect of government commitments across many projects, the Lesotho case shows that a single large, long-term contract can also have a significant effect. The case highlights the importance of institutional frameworks for PPPs in low-income countries, and the possibility that a sufficiently large contract can disrupt institutional control over a particular sector. Finally, the case highlights the crucial difficulty of the counterfactual in evaluating success and failure of PPPs. While the new hospital clearly delivered improvements to important health indicators, these statistics do little to prove that such improvements could not have been achieved more cost effectively.

### Peru

Three months after the 2008 PPP law was approved in Peru, the government passed a new bill instructing the investment agency (ProInversion) to speed up the promotion of certain priority projects under the new law. The new bill meant that priority projects were exempted from certain procedures within the PPP life cycle. Although this measure was justified as a public policy decision to boost investment in the wake of the 2008 global crisis, there have been mixed results with projects not yet fully implemented nor reaching financial closure. In total, 28 different PPP projects were considered priority.

The Chinchero International Airport was declared a priority project. The plan was to locate the airport in the Cusco region of the province of Urubamba. Because of the proximity to Machu-Pichu, the airport was expected to boost economic activity in the region and free air traffic from Lima's international airport. The project was structured as a PPP under a design-build-finance-operate-maintain scheme for a 40-year term with a mix of government payments and fees from the airlines. The estimated total investment was up to US\$537 million.

*(continued on next page)*

### **BOX 1.1. Challenges Implementing PPPs: Some Examples** *(continued)*

Three firms bid for the contract. The project was granted to Kuntur Wasi Consortium, which presented the most convenient bid in terms of reimbursing co-financing and the lowest payment required by the government to the private sponsor. Since Kuntur Wasi won the bid, there has been a series of disagreements regarding financing, which has delayed construction and has led to a contract renegotiation.

Renegotiation has generated conflict between the Ministry of Finance, which supports the renegotiation, arguing that it could bring government's savings to between US\$245 million and US\$350 million, and the Comptroller General, which argues that the amendment could cause economic damage to the government in the order of US\$40 million. According to the Comptroller, the renegotiation changed the financial risks, with the government now assuming 81 percent (previously 29 percent) and the private partner assuming 19 percent (previously 71 percent). The modification makes the government the main funder of the project, at a total of US\$409 million, unlike the original contract, where the government was not expected to deploy resources until the sixth year. After renegotiation, the government was responsible for the first two stages of construction, with the private sponsor only responsible for the third (and last) stage. After months of discussions in the technical and political arena, the contract was rescinded in mid-2017 and the government is now facing international arbitration demanded by Kuntur Wasi.

a private partner may actually make the arrangement less transparent, especially when it comes to accounting, risk evaluation, and disclosure.

Reporting long-term obligations and contingent liabilities is often not required by standard accounting protocols, exacerbating this potential. A study examining PPPs in Sweden and Australia found that PPPs result in less transparency due to the complexity of the underlying arrangements and the involvement of non-public actors (Greve and Hodge, 2011, p.15). Quiggin (2004) pointed out that the bundling process at the core of many PPPs resulted in a built-in lack of transparency by reducing the stages of a project that must be put to tender.

In the case of the European Union, PPPs have been used to plan public spending around the budget restrictions imposed by the Maastricht Treaty. For new EU members, contingent obligations are often obscured by PPPs while incentives are skewed against voluntary disclosure.

Likewise, while some countries make contracts public, many governments do not abide by detailed disclosure standards (Budina, Brixi, and Irwin, 2007). Canada and Australia, for example, have no law specifically requiring disclosure of PPP

contracts or related information. However, these contracts are subject to broader freedom of information laws and financial disclosure requirements. Spain's transparency law requires relatively detailed disclosures for all public contracts, including PPPs. Mexico's laws on transparency and freedom of information apply to PPPs; however, disclosures are only required for PPPs that involve expenditures from the budget, not those that are self-financing. Honduras has detailed disclosure laws, with the PPP body posting contracts online; however, information regarding risk and VfM may not be published.

### **Quality of Investment: Value for Money**

Since private finance schemes do not materially affect resource constraints on public accounts, the alternative argument in favor of PPPs is efficiency gains (Reeves, 2013). VfM can be defined as "the optimum combination of whole-of-life costs and quality (or fitness for purpose) of the good or service to meet the user's requirements" (HM Treasury, 2003). VfM analysis involves: i) the PSC report, which estimates the whole-of-life cost of carrying out the project through a TPI; ii) estimates

of the whole-of-life cost of the PPP alternative either through a proposal of a private bidder or a hypothetical shadow bid at the pre-procurement stage; and iii) a comparison of the costs of the two approaches.<sup>9</sup> Therefore, assessing VfM considers more than just the less expensive option. It includes qualitative factors related to the service delivered as well as factors related to positive and negative externalities delivered by the project (HM Treasury, 2003). Advocates of private financing argue that PPPs achieve better VfM through a number of different channels, which invariably revolve around the private sector having better managerial capacity than the public sector. VfM refers to the belief that private-sector competition induces firms to pursue better results for less money. However, there is considerable controversy regarding the efficiency gains of PPP schemes, even if such managerial capacity is conceded (Reeves, 2013). One of the most important controversies relates to the differences between the costs of capital incurred by the public and private sectors.

Indeed, the cost of capital for the public sector is typically less than for the private sector (i.e., the public sector consistently pays less to borrow than the private sector). In a PPP, the company or consortium that wins the bid finances the project at private-sector interest rates. If the same project were to be conducted by the government and financed through traditional borrowing, the interest rate would be lower. Nevertheless, if the private sector achieves greater efficiency or reduces costs, the increased capital costs could be compensated for. Thus, the question of whether PPPs deliver VfM must be answered on a case-by-case basis.

Fiscal evaluation of PPPs is key to a successful and sustainable program. An effective evaluation must comprise a multidimensional approach. To determine which delivery method offers the best VfM, a quantitative and/or qualitative assessment must be conducted based on a range of technical criteria with subjective evaluations. That assessment must be informed by the preliminary PSC, which gives an understanding of the whole-of-life costs of the project and the potential for risk transfer under PPP

delivery.<sup>10</sup> There is debate about using the PSC as a method to demonstrate affordability and VfM before public partners enter contracts. Criticisms of the PSC include that it is expensive, that it is inaccurate given the long span of the life of the project, that it necessarily omits important risks unique to PPPs, and that the discount rate used in modeling is essentially arbitrary due to a lack of consensus and variability, which is a key factor determining the outcome (Leigland and Shugart, 2006). Despite these criticisms, some countries use the PSC on a regular basis and some have it as a legal or regulatory requirement (e.g., Australia, Canada, Korea, Mexico, and South Africa). Other countries use it informally (Brazil and Chile), while still others (e.g., Peru and Honduras) do not use it at all.

The United Kingdom used a PSC through 2004, at which point it was replaced by a more holistic process combining both quantitative and qualitative criteria (HM Treasury, 2006). Criticisms of the PSC in the U.K.'s case focused on its use as a justification for PFI rather than as a neutral input in the decision-making process (HM Treasury, 2003). The quantitative analysis compares the present value of costs and benefits of the PPP compared to the costs and benefits of traditional procurement. When considering VfM from a qualitative perspective, the United Kingdom uses so-called suitability and unsuitability criteria. Suitability criteria include the long-term, predictable need for the service; the ability to allocate risk effectively (including through performance-related payments and ensuring sufficient private capital at risk); the likely ability of the private-sector party to manage risk and take responsibility for delivery; the presence of stable and

<sup>9</sup> The PSC estimates the hypothetical risk-adjusted cost if a project were to be financed, built, and operated using a TPI procurement approach (USDOT Federal Highway Administration, 2013).

<sup>10</sup> The PSC method is based on a quantitative comparison between a hypothetical PPP and TPI that would deliver the same service. The PSC is a risk-adjusted financial model that analyses the hypothetical public-sector project by estimating the total costs to the government of achieving the targeted outputs if the project is handled under a TPI with reasonably foreseeable efficiency improvements.

adequate policy and institutions; and competitive bidding markets. Unsuitability criteria include an evaluation of the size, complexity, and technical suitability of the project relative to existing or potential alternatives, as well as the ability of the contracting authority to manage the work (World Bank, 2014).

The Australian state of Victoria is another example of a PSC process with multiple stages, including a detailed assessment of risk transfer, that still results in important shortcomings and fails to comprehensively capture the many facets of VfM. Victoria's PSC process starts from the so-called Raw PSC, a calculation of the cost of delivering infrastructure if it were publicly owned. The next three steps adjust the theoretical cost to reflect the particular structure of the PPP contract under consideration. The Competitive Neutrality Adjustment step adjusts for cost savings (or increased costs) resulting solely from public ownership status, and the Transferable Risk and Retained Risk steps account for the notional value of risk as a byproduct of the PPP process.

The last two steps ensure that risk is properly accounted for in the valuation essentially as an asset with variable impact, an important factor that is often neglected in other PPP decision-making processes (Partnerships Victoria, 2001).

A comprehensive 2004 report on Victoria PPPs focused closely on the PSC. In particular, it criticized the lack of empirical rigor in the risk adjustment process, pointing to several factors, including so-called optimism bias, or the tendency of assessors to offer overly optimistic projections, a weakness also identified by reviews of U.K. PPPs. The review suggested using an empirical basis for risk adjustment rather than expert opinion alone, which is subject to inaccuracy and bias. The report also pointed to an excessive discount rate, a fundamental weakness underlying any PSC process. In Victoria's case, the report found that discount rates were typically too high and that there were ambiguous justifications to use a rate more favorable to the cost effectiveness of private involvement. The

## **BOX 1.2. Success in Latin America**

### **Colombia**

In Cartagena, Colombia, a PPP between the municipal public works department and a Spanish private-sector concern achieved expansion in coverage of running water connections to 99 percent of households in 2005 from 70 percent in 1995, and sewage connections to 75 percent in 2005 from 55 percent in 1995. At the same time, to reduce fiscal pressure on city authorities, the new management improved productivity and increased tariffs along with a cross-subsidy for the poor to operate a financially sustainable model. Incentives were also built in to tie the operating partners' revenue to the financial performance of the company. Moreover, the project consulted extensively with the community and as a result enjoys significant community support, according to the United Nations Development Programme. Similarly, in Guatemala an electrification initiative with a Spanish investment group surpassed the baseline electrification targets laid down in the contract within two years and greatly expanded rural access to electricity.

### **Brazil**

The IDB carried out a stakeholders' survey of the performance of Brazil's PPP program that indicated several positives. The top two projects rated by public and private stakeholders were Hospital do Suburbio, Salvador, Bahia, and the Sao Paulo Metro Line 4. The survey identified the main PPP success factors cited by the survey respondents, which included good preparation, management, and monitoring; government guarantee; proper risk sharing between public and private sector; and capable staff, including the PPP units involved and government commitment. Respondents also cited strong demand and an adequate return for the private sector.

United Kingdom had also previously used an excessively high discount rate, and internal reviews cited manipulation of the process to achieve a predetermined outcome. The report ultimately recommended the PSC approach be diversified into a holistic VfM analysis (Fitzgerald, 2004).

## Why Do PPPs Fail?

While PPPs often appear more cost effective for governments in the short term, they carry the potential to create unsustainable long-term obligations. Governments often pursue PPPs in their quest to create fiscal space in the short term, with private financing of public priorities allowing governments to boost public investment while delaying new fiscal pressures. However, despite the typical absence of a large up-front investment, the long-term obligations can be significant (see Chapter 4). This potential burden on government finances requires the careful creation of legislative frameworks, regulatory bodies, and contract structures. This section covers some of the most important explanations for bad outcomes in PPP arrangements.

Pinpointing the success or failure of a PPP is difficult because of the absence of a counterfactual since the same project cannot be observed under both a PPP and TPI. Once one financing method is chosen, the outcome will always be subject to ex post justification. While methods such as the PSC are often used in the project proposal phase, this analysis is not typically carried out after project completion or during operation. Underlining both the analytical difficulty as well as the practical absence of performance analysis in practice, in a 2018 report, the U.K.'s National Audit Office stated: "... we have been unable to identify a robust evaluation of the actual performance of private finance at a project or programme level" (HM Treasury, 2018).

The European Court of Auditors released a scathing PPP audit report in 2018. They examined 12 PPP co-financed projects in France, Greece, Ireland, and Spain in different sectors of the economy. The report assessed whether the audited projects were able to exploit the benefits PPPs were

expected to deliver, whether they were based on sound analyses, and whether the institutional arrangements within the member states were adequate for the successful implementation of PPPs. The report concluded that the PPP alternative was chosen without a rigorous comparative analysis of other options, such as the PSC or a VfM analysis. The report called the results of risk allocation between public and private partners "inappropriate, incoherent, and ineffective" (European Court of Auditors, 2018, p.2). Despite the widespread use of PPPs in Europe, the report concluded that only a small number of EU countries have the required administrative capability, legal frameworks, and institutional arrangements to implement PPPs successfully (European Court of Auditors, 2018).

There are many examples of PPPs that have successfully delivered on contract expectations, providing services or completing projects on schedule and on budget. However, the question of whether they deliver VfM ex post is more complicated, especially since the goals of a PPP may be a moving target. Like TPI, the goals, specifications, and timelines for major projects are liable to change. In developing countries, clear success stories often feature the dramatic extension of previously under-delivered services without creating undue fiscal burden.

However, failure can be particularly costly for PPPs. The nature of PPP contracts often means procuring governments have little recourse to choose a better option even if the current arrangement fails and they are forced to continue within the bounds of the contract. Analytically, identifying failure can be even more difficult than identifying success. The core justification for PPPs rests on cost effectiveness and VfM. However, it is difficult to counterfactually assess whether the quality of service or cost savings of private provision are truly superior to public provision or TPI. Likewise, PPPs may achieve cost savings in one stage of a project while burdening the state with long-term contingent obligations.

It is critical to establish an objective measure of success and failure for PPP projects. This judgment is difficult to make, especially when projects have progressed to the point of delivery. The

### BOX 1.3. Wobbling U.K. Reference Model?

The United Kingdom is the reference model for PPPs because the contract structure originated in earnest with the country's PFI program. However, the model has come under increasing strain. In January 2018, the National Audit Office released a scathing report that concluded that the PFI cost U.K. taxpayers billions more than traditional procurement without evident quality benefits, undermining the key VfM proposition behind PPPs. Meanwhile, major PPP programs and participants have been rocked by scandal.

In parallel, on January 15, 2018, major U.K. government contractor Carillion collapsed. The firm covered functions ranging from managing military bases and providing school meals to building and maintaining roads, rails, government buildings, and hospitals. The company was responsible for £16 billion in contracts, much of that for the U.K. government. Controversially, Carillion won four contracts worth more than £2 billion, including for a high-speed rail, after red flags had been raised about the company's solvency. As the company went into liquidation, its projects were stopped in their tracks, with the government stepping in to take over essential services, employees furloughed, and construction halted. The government also took over a £590 million in pension liabilities through the U.K.'s Pension Protection Fund, on top of the company's £900 million debt.

PPPs represent a relatively minor share of Carillion's revenue; much of Carillion's business is simple contracted outsourcing and not PPP-based. However, the company's involvement in PPPs is substantial. The company's 2016 annual report registered £313 million in PPP revenue as compared to £5.2 billion in overall revenue, mostly from construction and support services. In the U.K. Treasury's PFI database, through 2015, Carillion was associated with 17 contracts that have reached financial closure as either an equity holder or address for the Special Purpose Vehicle. The total capital value of these projects is £2.2 billion of a total £59 billion worth of projects in the dataset.

Carillion's collapse has intensified critiques of PPPs in the United Kingdom. It undermines arguments that the private sector is inherently more efficient at implementing public works, especially as the company awarded executives large bonuses and shielded these bonuses from clawback in the event of collapse just months before issuing profit warnings. The collapse also highlights the limits of risk transfer in cases of poor management. While the company's collapse is a strong indication of the risk it bore, the government is now responsible for both services and debt left in the wake of that collapse, highlighting the importance of considering both explicit and implicit liabilities when assessing the appropriateness of PPPs.

only fully accurate benchmark is a counterfactual, which is not possible because no government can complete the same project through TPI or a different PPP structure. The counterfactual is an essential concept in economics; however, except for well-designed and well-executed randomized experiments, counterfactual evaluation is difficult and remains subject to significant debate.

The only viable reason to adopt a PPP project structure is to achieve greater VfM than the public-sector alternative in the form of real efficiency gains in the delivery of services. Therefore, a naïve definition of success must be defined as a

PPP that can deliver or exceed its intended VfM. Conversely a PPP fails when the project cannot deliver the efficiency gains that justified its commission. Factors affecting this evaluation include the quality and cost of the service delivered and its budgetary impact (APMG, 2016).

This metric must remain naïve since the ex ante counterfactual may not be equivalent to the ex post counterfactual. Costs may change independent of the PPP structure due to expanding scope or external factors like input and energy prices. Likewise, value may drive demand in unpredictable ways, as in the case in Lesotho. However, PPP projects that

are seen through to completion but carry outsized costs, especially those that create an unintended budget impact, must be considered problematic if not outright failures.

There are cases in which VfM is clearly undermined, including the following:

- A project is canceled and redesigned before commercial close, demanding design and planning resources beyond original projections.
- A project goes through the tender process without attracting any bids.
- The private partner goes into bankruptcy.
- Infrastructure is built but availability of service falls below the contractual output specification.
- The private partner is unable to fulfill its obligations, undermining the price established through competitive procurement (APMG, 2016).

Additionally, the number of projects that fail during negotiations and thus before commercial closure is significant, though data on these projects is more difficult to obtain. For example, all projects in the World Bank's PPI Database have reached financial closure. Brazil in 2013 provides a sense of the scale of this type of failure. In that year, 69 PPP projects were initiated by the national and subnational governments. A final request for proposal (RFP) was issued for 28 of these projects by June 2017. In other words, about 60 percent of the projects were abandoned or languishing in the government planning phase four years later. Of the 28 projects that reached this point, only 20 formally entered the tendering and procurement phase with published RFPs. Only six of these projects, or less than 9 percent of the total initiated in 2013, reached financial closure by June 2017.<sup>11</sup>

This record raises the question: Why do PPPs fail?

### **Time Inconsistency, Frequent Renegotiations, and Eroding Competitive Effects**

Time inconsistency refers to the incentives to deviate from a previous commitment at a later point in time. The term “refers to the policymakers’ incentives to

deviate from the [policy] rule when private agents expect it to be followed” (Barro and Gordon, 1983, p.599). This policy problem is laid out in classic papers, including Barro and Gordon (1983) and Kydland and Prescott (1977). In the context of PPPs, the concept of time inconsistency captures incentive problems for both the public contracting agent and the private-sector contractor, since both may have incentives to deviate once a contract is signed. In behavioral economics, time inconsistency is used in a slightly different sense to examine the potential for present behavior to result in suboptimal future outcomes (Berg, Eckel, and Johnson, 2008). This form of time inconsistency is also relevant to PPPs, especially considering a government’s incentives to gratify present budget desires while disregarding long-term burdens.

The problem of time inconsistency is further captured by a concept from the realm of contract theory: incomplete contracts. Even the best contractual arrangement will fail to account for all possible future outcomes that may affect its successful completion. Ensuring continued commitment to a contract is therefore subject to unforeseeable circumstances that are difficult to fully account for during the initial contracting stage, often referred to in the literature as varying states of nature. The contracting party (in this case the government agency) is therefore exposed to the possible consequences of incomplete contracts. This exposure becomes progressively more difficult to control for longer term contracts, a key driver of renegotiation, renegeing, and contract failure.<sup>12</sup> Since PPP contracts tend to be longer term than other forms of public procurement, incomplete contracts are a particularly important consideration.

In a practical sense, it is clear why contracts may fall out of sync with the reality of project completion, especially in health and technology sectors where the state of the art is constantly improving

<sup>11</sup> RadarPPP is an independent consultancy that contributed to this research.

<sup>12</sup> The theory of incomplete contracts is a core concept in modern economics, with extensive applications in firm decision theory. See Aghion and Holden (2011).

#### BOX 1.4. Unsolicited Proposals and Suboptimal Outcomes in the Philippines

The **Casecnan Irrigation and Hydroelectric dam** project was initiated in 1994 on the back of an unsolicited proposal (USP). While the dam is operational and has achieved its objectives, the project's structure may have resulted in negative outcomes for the public. Since there were no competing bids, there was no way of knowing if the original proponent's equipment and construction methodology offered the best value. Moreover, the government's implementing agency, the National Irrigation Authority (NIA), did not have the capacity to evaluate the design.

Inadequate geophysical studies by the proponent led to construction delays due to failure to anticipate the conditions at the project site. This led to the need for the successful bidder to redesign the equipment and partially modify its construction approach. In the contract, the NIA undertook a minimum offtake for the irrigation water at an agreed fee that was intended to be passed on to consumers through fees. However political and social pressure compelled the NIA to set the end user tariffs well below the minimum offtake value. As a result, the NIA has to subsidize the water fees. Unanticipated support from the national government has been estimated at as high as US\$1 billion over the life of the contract.

The lack of competitive tender and the proponent advantages inherent in a USP may have driven up costs relative to public provision. The NIA was not capable of evaluating the new technology and gauge the reasonableness of the cost, especially in a non-competitive tender.

In 1995, **Manila International Airport Terminal 3** was also initiated under a USP. In this case, the contract was awarded to a challenger that offered higher lease payments to the government. However, the Supreme Court struck down the contract in 2003, and the case continued to circulate through the courts and the International Centre for Settlement of Investment Disputes. Issues identified by the court included the challenger not satisfying the minimum financial requirement to qualify as a bidder, a consortium member violating bank regulations by investing more than 15 percent of its total net worth, the concession agreement offered from public bidding differing from the one signed and executed on critical provisions, and the international equity investor's investments in consortium members exceeding the 60 percent investment of the Filipino consortium members. The arbitration processes and court cases are continuing.

(IMF, 2015). Government officials are subject to time pressures during the bidding, contracting, and approval stages and may rush the early stages of the project. Likewise, bidders may rush to submit their proposals without completing proper due diligence or considering alternative cost scenarios. This may exacerbate the disconnect between plan and reality. More fundamentally, the government may not even have a clear idea of its ultimate needs during the bidding process or these needs may change over time. The private-sector partner may be aware of this and behave accordingly.

Further, frequent PPP policy changes may decrease confidence in the stability of the governing framework or induce attempts to undermine

standing policy. While crises can expose shortcomings and spur improvements in the PPP structure, they can also drive significant changes that undermine confidence in the institutional structure or carry outsize fiscal consequences. For example, in the case of Peru after the 2008 financial crisis, a new PPP law was followed immediately by changes, additions, and exceptions. This generated the need for even more legislative attention and decrees. This situation created a confusing regulatory framework with unclear lines of responsibility and constant changes. While the government may have been making these changes with a view to attracting more investors—and Peru succeeded in attracting significant PPP investment

in this period—constant changes in the regulatory framework are more likely to dampen investor confidence. The idea that frequent policy changes in and of themselves can generate adverse market consequences is a core tenet of the concept of time inconsistency.

Further, the very nature of PPPs may play a role in exacerbating time inconsistency, even in a stable regulatory environment. In particular, the shift in relative influence toward the private sector once the contract is awarded opens up a variety of potential incentive problems. For example, bidders may have an incentive to make an artificially lower or higher offer to secure the contract, and plan to renegotiate for their own benefit at a later date with the knowledge that the opportunity cost of finding a new partner may be prohibitively high for the government (Reside, 2009; Flyvberg, Holm, and Buhl, 2002). It has thus been common for governments to request in the contracts that private developers bear the additional cost that might arise from the execution of PPPs. Depending on the type of contract and infrastructure, there may also be incentives for the private partner to under-invest in construction to maximize net returns (Iossa and Martimort, 2015).

Further, the contracting government implicitly assumes risks stemming from corporate management and financial stability, thus the government's exposure to the solvency of the contracting entity is another source of time inconsistency. When contracts become a focus for rent-seeking, these risks increase. For example, between 2012 and 2014, Brazil tendered management concessions for five major airports. The contract to manage Rio de Janeiro's main airport, Galeão International Airport, was the world's largest PPP in 2014, with the US\$8.3 billion winning bid surpassing the Brazilian government's minimum price four-fold and surpassing all previous Brazilian airport concessions to that point. The winning bid for a 51 percent stake in the airport was submitted by a private consortium—with Brazilian construction giant Odebrecht holding 60 percent and Singaporean partner Changi Airport Group holding the rest—and committed

to making various investments and improvements in the airport (Marques de Sá and Anker, 2015). Public concern Infraero holds the remaining 49 percent of the airport.

Shortly after winning the bid, Odebrecht came under investigation for misconduct, leading to a major transnational investigation. The company was barred from seeking further public work in Brazil, further stressing the company's finances. The financial strains led Odebrecht to sell its controlling stake in Rio Galeão, which was ultimately bought by Chinese conglomerate HNA Group in 2017. HNA itself has come under mounting financial pressure, underlining the continued exposure of the government to its partners' financial problems.

Private-sector actors are not the only ones whose incentives make renegotiation more likely. Governments may purposely underestimate the true value of the total investment to avoid budget scrutiny and maximize political gains. Engel, Fisher, and Galetovic (2009) used evidence from Chile to contend that renegotiating PPPs allows governments to spend more during election cycles, increasing their chances of reelection and evading formal budget constraints. This behavior shifts the fiscal burden to future administrations while allowing the current administration to enjoy the political dividends of spending. Importantly, the authors observed that renegotiations often follow shortly after the initial signing, undermining arguments that contract partners are simply responding to changing conditions over the long term. Indeed, the government's desire to shift certain decisions on cost or scope outside the baseline contract negotiations, especially to surpass fiscal or spending rules, is also an important factor driving renegotiations (Engel et al., 2009).

Systematic data on contract renegotiations is unavailable; however, the likely scale of the phenomenon suggests that countries should account for renegotiation as part of an overall PPP framework. Reside (2009) estimated that over 20 percent of all active PPP projects worldwide were renegotiated between 1986 and 2008. The 1997 Asian financial crisis and factors specific to China

bring this percentage to over 70 percent for East Asia. According to Guasch, Benitez, Portabales, and Flor (2014), 68 percent of all concession contracts in Latin America and the Caribbean were renegotiated at least once between 1980 and 2002, including 92 percent of water sector contracts, 78 percent of transport sector contracts, and 41 percent of electricity sector contracts. The authors noted that renegotiations were also common in developed economies, with the United Kingdom renegotiating 55 percent of contracts in all sectors, and the United States renegotiating 40 percent and France renegotiating 50 percent of highway projects. Most of these renegotiations were to the detriment of the end user, with the private partner being the most common direct beneficiary (Guasch, 2004; Guasch et al., 2014).

In Colombia, 25 of the 27 agreements signed between 1994 and 2010 suffered delays and cost overruns. In this period, these concessions were renegotiated a total of 430 times (on average 17 times per contract) (National Council for Economic and Social Policy, 2013). In many of these concessions, projects were not well designed. For example, traffic demand analysis overestimated true traffic conditions by approximately 40 percent for the projects in the transport sector. Although only 5 percent of the renegotiations expanded the initial road length, these expansions accounted for a third of the total cost from renegotiations. The total fiscal transfer due to the renegotiations mounted to US\$5.5 billion, equivalent to 1.4 percent of GDP, which was approximately 280 percent higher than the original cost projections (Tsukada, 2005).

In 2015, the Peruvian Office of the General Comptroller conducted a study to establish the main causes of PPP contract renegotiations. The study considered 10 concession contracts signed in the period 2000–13 that were renegotiated a total of 39 times. The report found that 46 percent of the renegotiations took place in the first three years following the signing of the contract. The main drivers of renegotiation included construction delays (36 percent), financing issues (18 percent), sewerage

and land titling (15 percent), royalties (10 percent), inclusion or exclusion of goods in the concession (10 percent), extensions and changes to the provision of services (8 percent), and others (5 percent) (Comptroller General of Peru, 2015).

Renegotiations are especially problematic for PPPs since they eliminate the ostensible benefits stemming from competitive auctions, a key theoretical underpinning of the overall justification for PPPs. Renegotiations take place in an unequal environment, away from competitive pressures where there are only two participants: the government and the private partner. As such, they distort the original conditions negotiated and the VfM of the partnership, while reducing the welfare of end users. Additionally, the private partner may try to take advantage of the specificity of the infrastructure assets that are provided under the contract. For example, it is difficult for the government to replace the private partner if the assets rely on specific characteristics of that partner, such as trademarks or proprietary technology—a deeply problematic baseline for renegotiations.

Virtually none of the countries studied re-assess the public comparator to validate the results of a renegotiation, whether or not they have a dedicated PPP unit. These renegotiations often carry a fiscal impact given that most of them end up with additional payments or transfers going to the private partners. Importantly, renegotiations may reveal ex post that the winner of the bidding process was not the most efficient operator. These factors undermine the justification for PPPs and may stick contracting governments with less efficient outcomes than TPI or public provision would have.

The origin and part of the solution to this problem lies in contract design. In theory, contracts can be designed to head off time inconsistency. However, contracts must also account for the practical challenges that may necessitate adjustment or renegotiation (OECD, 2013, pp.114–6). Likewise, Davis (2005) pointed out that the optimal contract design depends on the circumstances of the project under consideration, meaning these issues may not be resolved simply by establishing a general

PPP framework. Engel, Fisher, and Galetovic (2007) showed that a revenue guarantee and a revenue cap create the optimal contract structure for a PPP, ensuring adequate risk sharing for lower than expected demand and reward sharing for higher than expected demand. However, this contract structure assumes other incentives are aligned and does not solve the basic problem of time inconsistency or adverse political incentives. Indeed, caps and other contract terms meant to ensure compliance may encourage renegotiation (Guasch, 2004). Engel et al. (2009) accounted for political disincentives and suggested PPP contracts be required to be registered as current expenditures regardless of the negotiation status. Accounting procedures are often significant in encouraging the suboptimal use of PPPs (Engel et al., 2009).

Sound contract design and appropriate institutional frameworks are both necessities to head off the challenge of time inconsistency and unexpected cost burdens. While these are not silver bullets, the involvement of private-sector actors alone is certainly not enough to ensure cost effectiveness.

### **Inappropriate Risk Transfer and Unexpected Buy Out**

While more efficient risk bearing is a key supporting argument for PPPs, it is often difficult in a practical sense to achieve risk transfer in a way that lowers costs for the public sector (Hayford, 2007). Quiggin (2004) detailed the differences in private and public risk management that render certain commonly used assumptions about risk allocation in PPPs invalid. Typically, the public sector is better able to spread risk than the private sector and can typically finance at a lower rate. Indeed, the author contended that the private-sector notion of risk premium is not directly applicable to public-sector financing despite its role in pricing and evaluating PPP risk. Likewise, Alonso-Conde, Brown, and Rojo-Suarez (2007) showed that the act of transferring risk itself creates option value that may transfer more reward to the private sector at the cost of public value creation.

There are many cases in which the government has been forced to intervene or bail out PPP projects due to poor risk identification or unsuccessful risk transfer. The Portuguese government launched many unsustainable PPPs prior to the 2008 financial crisis, characterized by poor risk analysis and control of government commitments (see Box 1.5). As a result of the proliferation of PPP projects, in 2015, the government's gross financial commitment accounted for €2.1 billion, equivalent to 1.5 percent of GDP (UTAP, 2015). In Australia, the government has taken control of PPPs or provided additional financial support because the private sector was ultimately unable to manage the risks it had accepted under the contracts (Hayford, 2013). For example, the Victorian Government bought back its Deer Park women's prison in 2000, ending the contract with the private partner due to extensive problems since its opening in 1996. These problems mostly stemmed from overcrowding and inadequate staffing—the prison had 75 lockdowns in these years, half of which were due to staff shortages (Liu, Love, Davis, Smith, and Regan, 2015). Similarly, in Zagreb, Croatia, the public sector ended up effectively bearing the market risk for a water sector PPP that had opened in two phases between 2004 and 2007. The project experienced delays and cost overruns that were ultimately transferred to the industrial users in the form of higher fees. When these users rejected the higher fees, city authorities opted to use municipal resources to pay the private partner instead.

Box 1.6 summarizes prominent cases of public-sector buyouts of PPP projects. In each case, changes to the existing social or economic situations made the contracts untenable and the public sector was left bearing the downside of this unexpected risk.

### **Asymmetric Information: The Principal-Agent Problem in PPPs**

PPPs are prone to principal-agent problems that can exacerbate under-delivery of results and cost increases for both the private and public sectors.

### BOX 1.5. Portugal Renegotiations

Countries seeking to use PPPs to bypass fiscal constraints risk magnifying those constraints in the future.

Portugal's use of PPPs was so extensive in the run-up to the 2008 financial crisis that it became a factor in the country's overall macroeconomic stability and ability to recover in the wake of the crisis. Portugal's fiscal squeeze was exacerbated by its entry into the European Union, and budget constraints played a major role in decisions to engage PPPs. Portugal's use of PPPs was concentrated in highways, allowing the country to quickly expand its road network. However, this expansion ultimately generated an intolerable burden on public finances and required extensive renegotiations. Portugal's 35 PPPs had to be renegotiated 254 times from 1995 through 2012. These renegotiations were concentrated after the financial crisis, with an overwhelming focus on the roads sector (Sarmiento and Renneboog, 2014).

The IMF notes that Portugal is "...one of the largest PPP programs in the world—cumulative investments exceed 20 percent of GDP..." (IMF, 2012, p.46). Indeed, the €78 billion joint IMF-EU program to bail out Portugal in the wake of the financial crisis focused closely on PPPs, identifying them as a key driver of Portugal's unsustainable fiscal situation. The government agreed to suspend all new PPP agreements as a condition of receiving finance. The program also required Portugal to review its PPP program and renegotiate for lower public payments. It also stressed the need for a more effective ex ante assessment of the fiscal burden posed by PPPs (IMF, 2011).

Subsequent empirical analysis reinforced the negative impact of PPPs in Portugal. Using Portuguese data, Pimentel, St Aubyn, and Ribeiro (2017) concluded that investment in PPPs crowds out both public and private investment, while reducing GDP growth. By contrast, public and private investment have net positive effects on the economy. Their findings suggest that PPPs are inefficient means of financing or that Portugal expanded their use beyond what would be socially optimal. These results are not necessarily applicable to all contexts or countries considering PPPs, but they further detail the negative impact of PPPs on the Portuguese economy.

In the case of PPPs, principal (government) and agent (private contractor) have diverging incentives for both project cost and service quality. This basic problem is compounded by the long duration of PPP contracts and infrastructure-specific issues linked to them (Marty and Voisin, 2008).

An important, related factor to the principal-agent problem is known as moral hazard: the principal making the contract offer cannot systematically observe the agent in action once the contract is granted. There exists the potential for opportunistic behavior from both private and public sectors as information asymmetries are shared across parties in these arrangements. Both parties have an intrinsic preference for transferring risks and responsibilities disproportionately in their favor.

Asymmetric information compounds the difficulty of designing a contract that covers all possible outcomes and ensuring correct behavioral incentives for self-interested agents. De Palma, Prunier, and Leruth (2009) pointed out that, at baseline, public and private partners are not equal in their levels of influence over and ultimate responsibility for a project. The authors contended that the awarding of a contract by the public sector creates a hierarchy that both affects the contractual risk allocation and the credibility of that allocation. Moral hazard emerges due to both the baseline difference in knowledge regarding the ultimate project task (technical or policy) as well as the inability of the government to observe the private partner's actions. Likewise, the delegation itself creates risks that would not otherwise exist

## BOX 1.6. PPP Contract Buyouts

The **Skye Bridge in Scotland** (opened in October 1995) was the first major project financed under a PFI scheme. The bridge, which crosses over Loch Alsh, had an initial estimated cost of £15 million. Financed under a build, transfer, lease arrangement, the private partner was responsible for designing and building the bridge and was granted a license to operate and collect tolls from users until costs were recouped or after the 27-year contract term ended, whichever came first. However, the government cancelled the toll system after a public campaign against the road because the tolls were expensive. The government compensated the private-sector partner with a roughly £27 million termination payment.

In 1999, the authorities of the **Inverness Airport** in Scotland sought to improve the terminal facilities because of the increasing number of passengers at the airport. The government opted for a PFI that would include designing, building, financing, maintaining, and operating a new terminal for a period of 25 years post construction. The private partner owned and maintained the terminal facilities in return for passenger charges and the right to associated operating income. Building the terminal cost £9.5 million. After the deal, the emergence of low cost airlines depressed landing charges. The structure of the PFI was therefore considered to be an active disincentive to the development of new services. The government ultimately agreed to buy out the contract for £27.5 million.

In 1989 the **Mexican government announced a major highway program** of 6,000 kilometers of roads at an estimated capital cost of US\$16 billion to alleviate the traffic conditions on the federal network. The government granted a total of 52 build-operate-transfer contracts between 1990 and 1994 (30 directly awarded to private partners, while the remaining 22 were delegated to the states for further bidding). The selection criteria to award highway contracts followed the shortest period (no more than 15 years) rather than the conventional lowest toll criterion, responding to the interest of the private partners to focus on the construction phase rather than operation and maintenance. The high tolls imposed plus the government decision to maintain the parallel un-tolled roads resulted in less traffic than anticipated on the toll roads and heavily congested un-tolled roads. Another problem was cost overruns; actual costs averaged 50 percent higher than the original estimates. Following the 1994 Mexican financial crisis, many of the private partners went bankrupt and the government was forced to assume all bank liabilities and temporary ownership of 23 of the highways. The rescue cost the government US\$7.8 billion.

under TPI (De Palma et al., 2009). For example, the agent may try to extract returns higher than those allowed by the principal by financial engineering, manipulating regulators, asset sweating,<sup>13</sup> skimping on maintenance and service quality, or transferring additional costs to users.

As is the case with renegotiations, private-sector behavior may change once the contract is signed. For example, the developer may take on excessive levels of debt, especially if debt is backed by the government. On the other hand, the government may try to reap benefits from the private partner in the form of penalties or payment delays. Agency

problems can also crop up within the public sector. For example, line ministries and PPP promotion units can have differing incentives. In some instances, the legal framework is set to allow PPP units extensive control over promoting, designing, approving, and executing the PPP portfolio, undermining line ministries. Even more problematic cases arise when dominant PPP promotion units have financial incentives

<sup>13</sup> Asset sweating is when a company increases the load of an existing plant to avoid building new infrastructure. This strategy was pursued in the 1990s in the power sector and the oil refining and producing sector.

**TABLE 1.1. Some Examples of Information Asymmetries in PPPs**

| Private Sector   | Public Sector   |
|--|---|
| The firm's ability, competence, or skills to carry out the PPP project and the nature of its actions. For example, risk allocation can be influenced by the negotiation skills of the parties involved with unsatisfactory outcomes for the project.   | The true scope of the project. The government may have incentives to expand or modify the project once the execution phase has started. For example, in order to expand the size of the project once approval is granted, also known as the affordability illusion (European Court of Auditors, 2018).  |
| The level of effort made by the firm. The government observes the output of the PPP project, but in the case of low output, it cannot distinguish between a low level due to low effort on the part of the private partner or due to factors outside the private partner's control (moral hazard). | The government may not have incentives to put the overall investment cost in the budget to avoid checks and balances from Congress or external auditing units (moral hazard).   |
| Technical aspects and project feasibility. For example, the land stability, the quality of the inputs used to build the asset, etc.  | Officials may refuse to terminate a project as it may entail political costs that symbolize weakness or lack of management control.   |
| Private developer maximizes its profit, social surplus is not maximized, and therefore the impact of decisions on consumer surplus is ignored. The public entity may be relying on assessments carried out by the private partner whose objectives may not be aligned with the public interest.    | Soft budget constraint is a situation where the relationship between the expenditures and the earnings of a line ministry are relaxed because an excess expenditure will be paid by some other institution, typically the Ministry of Finance. The decision-maker expects such external financial help with a high probability, which is included in his behavior. <sup>a</sup> |
| The operator may have an incentive to strategically default if the benefit from not repaying the loan is larger than the loss of control of the asset.   | Additional requirements likely to lengthen the procurement process, creating delays and offsetting any efficiencies identified in the early stages of the project.  |

Source: Author's elaboration.

<sup>a</sup> The term "soft budget constraint" was first introduced by Janos Kornai in microeconomic theory (Kornai, 1986).

to design and approve projects with no monitoring or supervision. Such a situation prevailed in Honduras prior to the 2014 PPP law reform (Reyes-Tagle and Tejada, 2015). Without effective legislation to

align the incentives of PPP units and line ministries, and effective oversight to ensure PPP unit compliance, these principal-agent problems can generate serious fiscal risks.

### BOX 1.7. Optimistic Projections

In one of Australia's largest PPP collapses, the U.K. engineering firm Arup went into receivership with US\$3 billion in debt after projections for use of a toll road connecting downtown Brisbane, Australia, with the city's airport proved to be overstated by a factor of four. The road was completed in 2012 but the revenue projections were so misstated that the company was left bankrupt and unable to operate within a year. Arup eventually agreed to settle after its receivers brought a multi-billion dollar lawsuit.

The case is one of a number of highway PPPs that have failed in mature infrastructure markets due to overstated revenue projections. Indiana's first toll road operator was forced to restructure US\$6 billion in debt in 2014 after overly optimistic revenue projections, less than a decade into a 75-year lease. Meanwhile, Texas's first highway PPP declared bankruptcy in 2016, less than three years after opening under a 50-year agreement.

While bundling multiple stages of a project may bring certain efficiencies, it also presents opportunities for the operator to skew projections in their interest with limited opportunity for vetting; for example, by bulking out revenue projections during planning and financing. These failures are an example of information asymmetries and the principal-agent problem common to any public project exacerbated by the dynamics of PPPs, especially lack of transparency and lengthy concessions.

## Improper PPP Project Selection and Deadweight Loss

Time inconsistency, non-credible risk sharing, and principal-agent problems all contribute to the overarching problem of deadweight loss, defined as the monetary and social loss of value from pursuing an inefficient course of action. In theory this applies to both TPI and PPPs since choosing a TPI when a PPP would have been more efficient would also produce a deadweight loss.

Theory constrains PPPs to being more efficient than TPI only in very specific situations. The default preference in theory, as in the real world, is TPI unless a PPP can be shown to be more efficient. Asymmetric information and principal-agent problems have greater impact in PPPs due to weaker government oversight of the private partner relative to government contractors under TPI. This is exacerbated by the potential for renegotiation. This confluence of effects relegates any efficiency proof to the realm of theory, leaving a high risk of deadweight loss as a result of choosing a PPP. This phenomenon is compounded by the lack of micro-level data. It is impossible to conduct a comparative study of TPI and PPPs in a manner sufficient to verify whether theory, and by extension the applied decision formulas, are reflected in the real world.

Despite microeconomic limits, the macroeconomic dimension sheds useful light on this question. Reyes-Tagle and Garbacik (2016) found that the primary determinant of a country's choice to use PPPs is its regulatory quality. Sector regulation

plays a key role in the success of PPPs as it has the overall goal of protecting consumers and investors by establishing the rules of engagement for public-private interactions through a transparent and predictable decision-making process. Effective regulatory frameworks can also mitigate deadweight loss through determined oversight and enforcement of contracts; wayward or failing projects can be identified early and repurposed, reassigned, or cancelled before social and monetary costs spiral out of control (Reyes-Tagle and Garbacik, 2016).

## Charting a Path

PPPs are not yet widespread; their use is intensive rather than extensive. Countries beginning to consider the finance structure or seeking to improve on its use can draw on the experiences of other countries and considerable scholarship focused on the issue. Best practices to avoid failure on project-by-project and systemic bases must be considered across institutional and fiscal frameworks, in addition to contract structure and government support mechanisms. Governments must also ensure that shortcomings in these areas are addressed fundamentally rather than superficially. PPPs should only be used in cases where they might encourage efficiency in that context, and not conceal political, organizational, or fiscal weaknesses. To continue consideration of these problems and their solutions, the following chapter looks at the rise of PPPs historically and details their classifications and variations.

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# 2

## The Rise of Public-Private Partnerships

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Closing the infrastructure gap—the difference between the required economic and social infrastructure and the currently available infrastructure—is a policy challenge in both developed and developing economies. Closing the gap requires trillions of dollars of investment annually. Governments seeking to plug the infrastructure gap can opt for a range of procurement options to provide or upgrade infrastructure and services, ranging from retaining all responsibilities and risks for a project (traditional public works contracts) to transferring all responsibilities and risks to the private sector (divestitures or privatizations).

Public-private partnerships (PPPs) have emerged as the most prominent alternative approach because they are perceived as instruments that can open fiscal space in the short term without relinquishing nominal public control. Both high-income and emerging economies face an increasingly tight fiscal situation. Coupled with a large and growing global infrastructure gap, this state of fiscal affairs poses a major challenge for governments. In this context, governments have sought alternative means of infrastructure financing, often seeking to open short-term fiscal space rather than ensure long-term fiscal stability. While this short-term space is illusory and may be more burdensome in the long term, it is

often sufficient to spur spending that might otherwise be difficult to achieve.

The main factors separating PPPs from non-PPPs is the character of potential impact on public finances, which stem from the particulars of project financing, funding, and risk-sharing, as well as the government retaining ultimate legal ownership. These agreements are longer term than traditional public works contracts, and the private sector carries an outsize responsibility throughout the project cycle. Payment is typically linked to performance and outputs, but the government is the ultimate backstop when these arrangements break down.

PPPs are a new phenomenon in emerging markets. The current average PPP project age is only 10 years, dated from financial close. As PPP contracts are typically long term, this sets up a structural data limitation for evaluating the phenomenon ex post in emerging markets.

PPPs are an intensive, rather than extensive, phenomenon. There is a small number of emerging economies that systematically use PPPs to expand their infrastructure stock, but most do not. The project finance structure was essentially born in the United Kingdom, spreading to the Commonwealth, Europe, and North America. It has since been adopted by a relatively small number of emerging economies—only 25 low- and middle-income countries have

consistently used the structure to finance investment projects, meaning they have entered into at least one partnership per year on average. The handful of countries at the top of this group dominate in terms of number of projects and investment amount.

In emerging markets, most PPPs are small- or medium-sized, with well over 50 percent smaller than US\$100 million in lifecycle investment. This could generate an “under-the-radar” effect, rendering project-based supervision difficult. Rather than ad hoc regulatory attention to large projects, this highlights the importance of overarching frameworks to monitor and manage PPPs.

While the conversation around PPPs in developing countries focuses on what we term economic infrastructure—energy, telecoms, transport, and water—PPP in developed economies are often skewed toward social services. Part of this difference may reflect the differing priorities of emerging and advanced economies based on the existing infrastructure stock, as well as distinct constraints unearthed by tightening fiscal conditions. This chapter lays out a brief history of the evolution of PPPs in developed and developing economies to provide context to their current use profile.

## The Infrastructure Gap

Infrastructure plays a decisive role in economic growth, competitiveness, and poverty reduction. Extensive and efficient infrastructure plays a key role in ensuring the effective functioning of a country, and is critical in determining both the location of economic activity and the kinds of activities that can be developed in a local economy.<sup>14</sup> The economic literature on the relationship between economic growth and infrastructure argues that, under the right conditions, infrastructure can play a key role in promoting growth and equity and, consequently, can help reduce poverty.<sup>15</sup> The conclusions of the studies indicate that countries can gain a great deal by improving investment and performance in infrastructure sectors. It is also true that achieving better outcomes requires institutional and organizational reforms that are more

fundamental than simply designing infrastructure projects and spending money on them (Esfahani and Ramirez-Giraldo, 2003).

Traditionally, governments have been the solution to collective action problems and the medium through which citizens benefit from the provision of public goods and services (e.g., roads, bridges, and ports) (WEF, 2017). However, the poor planning that some governments have in terms of the prioritization of public programs, the increase in current spending, or the fragile state of their public finances, have made it hard to provide the necessary infrastructure for the adequate development of economic activity and for the population in general. In that sense, the delays in the provision of infrastructure have had important repercussions on economic growth and social development, especially in low-income countries, who are increasingly widening the gap between their infrastructure standards and the ones from high and medium income countries. For example, while roughly 97 and 88 percent of the population in high- and middle-income countries have access to electricity, only 28 percent do so in low-income countries. Similarly, roughly 95 percent of the population of the upper and middle countries have access to drinking water, while only 54 percent have access in low-income countries (World Bank, 2017).

Meeting infrastructure investment objectives is difficult everywhere. The reasons for poor performance in infrastructure delivery are varied and

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<sup>14</sup> Infrastructure is key to achieve a sustained economic development path. With the vast migration from rural to urban centers, smart cities rely more and more on efficient public transport, clean energy, green buildings, pollution control, etc. While global demand remained subdued in the aftermath of the 2008 global crisis, investing in infrastructure is the right approach to revamp economic growth. In that sense, the demand for infrastructure can only rise around the world. For more information see Schwab (2014) and Raiser, Clarke, Procee, et al. (2017).

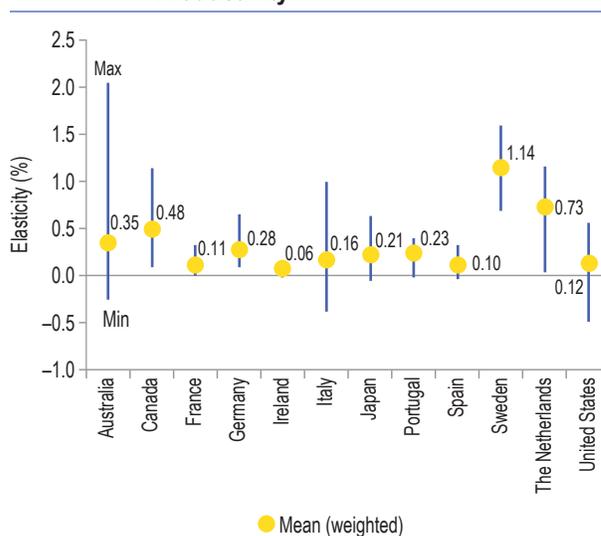
<sup>15</sup> Most of the economic literature recognizes a positive relationship between infrastructure, economic growth, and human development. While it is argued that infrastructure cannot drive growth indefinitely and may be subject to large fluctuations, it seems that there is a growing perception that poor infrastructure has become one of the key barriers to growth and development in the LAC region. For more information, see Calderón and Servén (2010).

context-specific. However, poor governance and weak institutions stand out as crucial obstacles both to successful public infrastructure programs and to drawing in private finance to support public infrastructure. Poor public-sector governance standards and low capacity are major factors in infrastructure projects that fail to meet their deadline, budget, and service delivery objectives.<sup>16</sup>

For almost 30 years since Aschauer's (1989) seminal paper, several studies have analyzed the impact of public infrastructure on productivity and economic growth. Generally, the evidence supports a positive impact of infrastructure development on productivity in advanced economies (e.g., Lighthart and Bom, 2014; Bonaglia and La Ferrara, 2000; Charlot and Schmitt, 1999; Fournier, 2016) as well as developing economies (e.g., Nourzad, 2000; Zhang and Fan, 2004; Calderón and Servén, 2010). However, Figure 2.1 shows that public investment does not have the same effect on productivity between countries, nor even among studies, within the same country. This heterogeneity appears in estimates from both high-income and developing economies. For example, while infrastructure in developed economies could be reaching a point at which a new highway, for instance, adds little to productivity (usually these countries already have extensive highway systems), the potential return of a new highway in a developing country may be very high, but the project may be plagued by rent-seekers or institutional factors that reduce its impact.

Although Nourzad (2010) pointed out that there are no major differences in the productivity of public investment between developed and developing countries, ranging from 0.46 percent to 0.49 percent, the fact that investment in developing countries was almost double the investment in developed countries in the last 40 years (see Figure 2.1) underscores the likelihood that some factors are reducing the productivity impact of new investment in developing countries. Examples may include the level of corruption (Tanzi and Davoodi, 1997; Mauro, 1996), an inadequate project selection process (Dabla-Norris, Brumby, Kyobe, et al., 2012), and weak governance (Keefer and Knack, 2007).

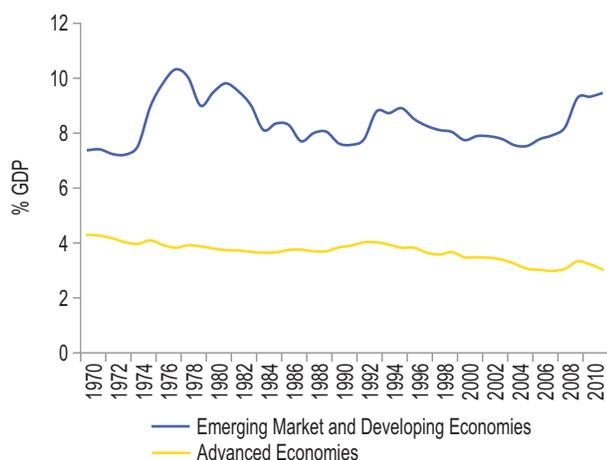
**FIGURE 2.1. The Impact of Public Investment on Productivity**



Source: Authors' elaborations using Lighthart and Bom (2014) related to 578 estimations of elasticity.

To determine how much infrastructure investment is needed, some countries have used international goals or benchmarks (such as the Millennium Development Goals). Others have tried to replicate the investment levels of a developed economy to achieve the same public services ratios. Still others have set investment goals to keep pace with their projection of GDP and population. These techniques reflect a second-best scenario in infrastructure provision. This is because none of the above estimates proceed from a process comparing the social return of infrastructure with the social cost of providing it. Such an estimate would constitute a first best or optimal scenario. In practice, this scenario is difficult to estimate since each sector within each country would require a plausible measure of what the social return of a new bridge is, for instance. Even assuming a credible estimate of social return, subjective assumptions are still required to estimate the social cost. The simplicity in estimation technique has driven the popularity of second-best infrastructure provision estimates, particularly favoring estimates that track GDP and population growth.

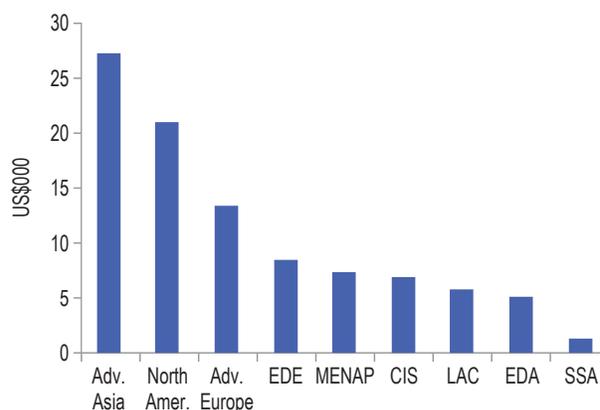
<sup>16</sup> For a full discussion of governance and infrastructure, see OECD (2017).

**FIGURE 2.2. Public Investment**

Source: IMF (2014a).

Annual investment in global infrastructure—transport, energy, telecommunications, water, and sanitation—reached approximately US\$2.5 trillion in 2016, equivalent to 3.3 percent of the world’s GDP (Woetzel, Garemo, Mischke, et al., 2016). However, previous estimates suggest that US\$3.7 trillion in economic infrastructure are needed to keep pace with projected economic growth (WEF, 2013). This figure would inevitably be greater if the increasingly volatile effects of climate change were factored in. Further, the figure does not account for efforts to accelerate development spending under the sustainable development goals in the least-developed countries (see Sundararajan and Suriyagoda, 2016). In both advanced and developing economies, much infrastructure is provided by governments through public investment. Over the past 30 years, this investment has consistently fallen in advanced economies while increasing in developing economies (IMF, 2014a). However, even though developing economies have invested 5 percentage points of GDP more on average than advanced economies annually over the past 40 years (Figure 2.2), the per-capita capital stock of advanced economies is still five times that of developing economies (Figure 2.3), suggesting the seriousness of the problem.

In coming years, global infrastructure investment needs will rise not only to keep pace with

**FIGURE 2.3. Capital Stock (per capita)**

Source: IMF (2014a).

Notes: Adv. Asia: Advanced Asia; North Amer.: North America; Adv. Europe: Advanced Europe; EDE: Emerging and Developing Europe; MENAP: Middle East, North Africa, Afghanistan and Pakistan; CIS: Commonwealth of Independent States; LAC: Latin America and the Caribbean; EDA: Emerging and Developing Asia; SSA: Sub-Saharan Africa.

projected economic growth, but also with increasing global population, projected to be 9 billion by 2040, with an urban population of 5.7 billion. There will be further pressure on required infrastructure investment because of the rise in living standards for middle-income countries, as well as the growing requirements to effectively promote trade, financial services, and technological interaction in a more globalized world. Failing to account for these drivers threatens to produce bottlenecks that hamper economic growth.

Governments have taken various actions to cope with this issue. Examples include improving investment and financial regulations to attract private investment in public infrastructure, creating infrastructure funds to support project structuring and to attract private capital (e.g., Mexico, Argentina, Canada, India, and Bangladesh have used this figure to successfully promote investment), and enabling the flow of institutional resources, such as pension funds or foreign aid, to construct public infrastructure.

The difference between required economic and social infrastructure and currently available infrastructure is known in the literature as the infrastructure gap. That is, the gap is merely the infrastructure

**TABLE 2.1. Investment Needs**

|  | Investment Needs (new capital investments) | Percent of GDP |
|--|--|----------------|
| East Asia and Pacific                    | 177,646,794,140                            | 3.1%           |
| Europe and Central Asia                  | 179,436,643,534                            | 4.7%           |
| High Income                              | 820,879,958,607                            | 1.6%           |
| Latin America and the Caribbean          | 486,764,577,908                            | 5.2%           |
| Middle East and North Africa             | 223,675,136,962                            | 6.2%           |
| South Asia                               | 130,090,974,339                            | 1.1%           |
| Sub-Saharan Africa                       | 435,112,163,509                            | 12.4%          |
| <b>Total</b>                             | <b>2,453,606,248,999</b>                   | <b>2.8%</b>    |
| <b>Total (w/o high-income countries)</b> | <b>1,632,726,290,392</b>                   | <b>4.4%</b>    |

Source: Authors' estimation.

deficit that arises from the imbalance between the infrastructure supply and demand at any given point in time. The concept has been popularized in recent years as governments worldwide have sought to promote infrastructure programs. Different methodologies have been used to estimate this imbalance, using approaches that consider both the supply and demand for infrastructure (see Appendix 1).<sup>17</sup>

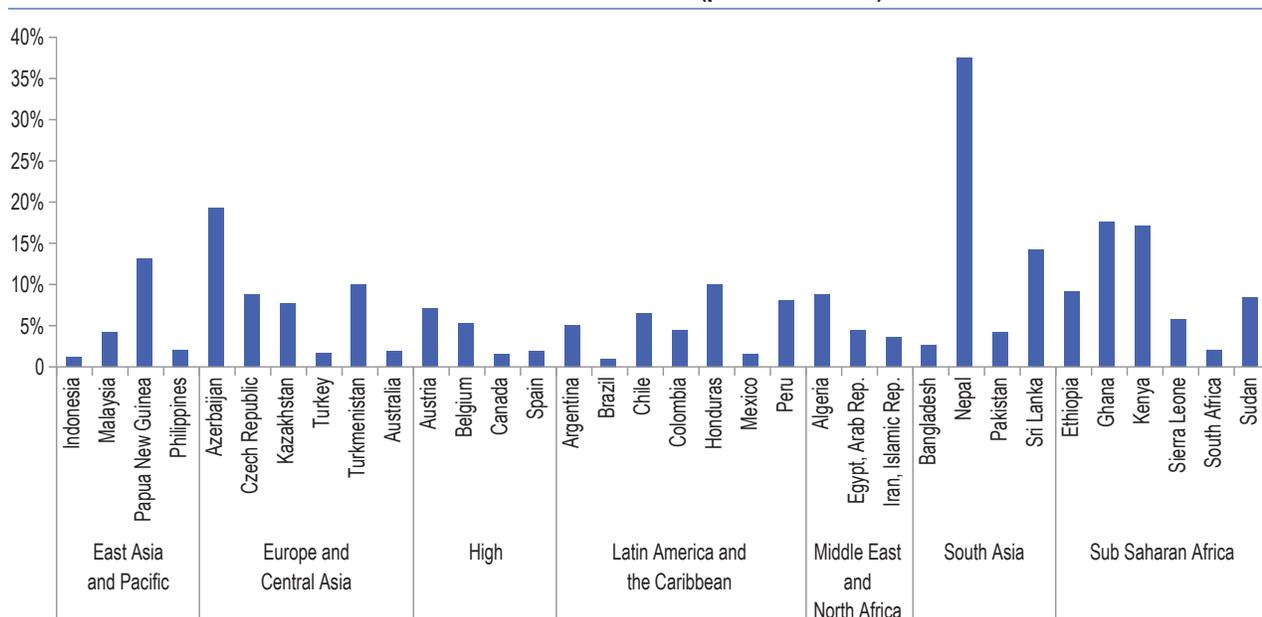
Depending on the methodological approach, the global gap may reach between US\$1 trillion and US\$3.7 trillion in annual infrastructure investment. The gap is not homogeneous among regions. For example, according to Bueno (2017), the average annual infrastructure gap is 4.5 percent of GDP, with South Asia, Sub-Saharan Africa and the Middle East, and North Africa significantly above that average (roughly 11, 10, and 9.7 percent, respectively). These findings are in line with the World Bank's report on infrastructure needs that estimates that over half of the global infrastructure gap is in Asia (China, India, and Japan make up 39 percent of the region's needs). Other countries with a high total infrastructure spending gap include the United States (US\$3.8 trillion), China (US\$1.9 trillion), Brazil (US\$1.1 trillion), and Russia (US\$0.7 trillion) (Heathcote, 2017). The size of the U.S. infrastructure gap in absolute terms underlines the fact that this is far from a developing economies phenomenon; it is a policy challenge faced by advanced and emerging economies alike.

The existence and relevance of the infrastructure gap are clear. However, studies thus far offer only ballpark estimates of the gap. There are reasons to believe the gap may be overestimated or underestimated. For example, many countries underestimate their GDP, especially those with a significant informal economy, meaning in practice the gap could be much larger. Despite shortcomings, estimating the gap is critical to establish a relationship between fiscal constraints and practical needs and to seek infrastructure solutions to bridge the gap.

Using the infrastructure and macroeconomic indicators in the World Bank's Private Participation in Infrastructure (PPI) database to generate estimates of global annual investment needs, we

<sup>17</sup> For instance, the supply-side estimation relies on a base-year equilibrium perpetual inventory equation and an economic (trade) index to represent infrastructure demand. In this venue, the differences between the two indexes are what is called the infrastructure gap (Carciofi and Gaya, 2007; ECLAC, 2014; Moody's, 2014; Perrotti and Sanchez, 2011). Depreciation rates, unit costs, econometric specifications, and other assumptions can make the infrastructure gap estimation very sensitive. No consensus has been reached on these issues, as can be seen from recent estimates on global investment needs (or the global infrastructure gap) in Dobbs et al. (2013), OECD (2006), Ruiz-Núñez and Wei (2015), among others. One of the contributions of this chapter is to present another way to value infrastructure demand using a database of PPP projects and estimating the probabilistic density functions for the unit cost instead of using arbitrary values given by an expert panel, which is the norm in the literature.

**FIGURE 2.4. Annual Investment Needs for Selected Countries (percent of GDP)**



Source: Authors' estimation.

estimated that global infrastructure demand will reach US\$2.45 trillion by 2037 (see Table 2.1). We outline the methodology for this estimate in Appendix 1. Our estimate is between two of the most recent studies that forecast the investment needs for global infrastructure at US\$480 billion annually (Ruiz-Núñez and Wei, 2015) and US\$3.2 trillion annually (Dobbs, Pohl, Lin, et al., 2013).<sup>18</sup> Our figure does not include the maintenance cost (which represented 34 percent of the total investment needs in Kohli and Basil, 2011). Unlike other studies, we used project data to estimate the average unit cost to compute investment needs, which gives an empirical grounding to estimates of unit cost and departs from past studies, which used industry specialists.

Investment needs can be disaggregated as shown in Figure 2.4.

Assessing investment needs by way of the infrastructure gap can be considered a top-down approach<sup>19</sup> and shows how far the investment needs are from the actual level of investment. However, governments have a wide array of bottom-up tools to help them identify sectoral investment needs in practice. The most traditional project identification

method is the budget process. Each year ministries and local governments present their projects to the central government to obtain the financial resources necessary to develop infrastructure. However, if this method of identifying projects is not accompanied by a medium- to long-term strategy for infrastructure development, the provision of infrastructure may be too short term in its outlook and may fall short of potential economic gains.

One way to encourage longer-term strategy formation is through National Infrastructure Plans. These plans are typically developed at the beginning

<sup>18</sup> Serebrisky, Suárez-Alemán, Margot, et al. (2015) highlighted a range of studies and concluded that LAC needs to invest at least 5 percent of GDP in infrastructure for a prolonged period of time. If these estimates are correct, the region requires additional infrastructure investment of 2.0–2.5 percent of GDP or US\$120 billion to US\$150 billion a year (based on the region's 2013 GDP).

<sup>19</sup> According to Inderst and Steward (2014): "There are two basic approaches: top-down and bottom-up. The first is based on the development of macro-statistics such as GDP, capital stock, and investment. The second is based on micro-economic information, such as regional and sectoral case studies, planning documents from local entities, or experts' assessments" (p.2).

of a new government's administration and identify strategic sectors in which investment is needed. The identification process is typically centered on specific campaign promises or projects identified as likely to promote economic growth or social inclusion. This type of planning is good for keeping the administration accountable for developing infrastructure and for its expected results. Countries, including Mexico and the United Kingdom, have recently implemented this type of plan.<sup>20</sup>

Few countries are in a reasonable position to finance this gap. According to the International Monetary Fund's (IMF) World Economic Outlook, the structural public deficit for 192 countries between the 2000 and 2017 averages more than -2.4 percent of potential GDP. Both high-income and emerging economies face this basic financial challenge, with the former group registering a slightly less severe fiscal gap of -1.9 percent and the latter higher at -2.7 percent of potential GDP.<sup>21</sup> Coupled with a large and growing global infrastructure gap, this state of fiscal affairs poses a major challenge for governments. In this context, governments have sought alternative means of infrastructure financing, often seeking to open short-term fiscal space rather than ensure long-term fiscal stability. PPPs have emerged as the most prominent alternative approach, but do they fit the bill?

## Deconstructing PPPs

Governments seeking to plug the infrastructure gap can opt for a range of procurement options to provide or upgrade infrastructure and services, ranging from retaining all responsibilities and risks for a project (traditional public works contracts) to transferring all responsibilities and risks to the private sector (divestitures or privatizations). The *Variations of PPPs* section below illustrates the gamut of possibilities regarding PPI (a broader classification than PPP), including the most common PPP variations.<sup>22</sup> Governments are increasingly turning to PPPs in an effort to leverage private finance and expertise in developing infrastructure and services.

There are numerous PPP definitions across countries (see Box 2.1). For example, in Canada, PPPs are defined as a cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks, and rewards. In Colombia, PPPs are defined as instruments of private capital linkage materialized in a contract between a state entity and a natural person or legal entity for the provision of public goods and their related services, involving the retention and transfer of risks between parties. In Brazil, PPPs refer to investment projects with direct financial support from the federal or local governments—projects fully funded by users are classified as concessions. Under the Spanish public procurement law there is no sole or comprehensive definition of PPP, notwithstanding the three typical contracts whose structures resemble PPP schemes: public service management contracts, public work concession contracts, and public-private collaboration contracts.

In the face of this international diversity, we have identified the core elements for a working definition of PPP as follows:

- PPPs are essentially public investment projects.<sup>23</sup> They deliver public services for or on behalf of the government by constructing social and economic infrastructure.

<sup>20</sup> In Mexico, the *Plan Nacional de Infraestructura* has been in use since 2007; in the United Kingdom, the *National Infrastructure Delivery Plan* has been in use since 2016.

<sup>21</sup> Based on the IMF's World Economic Outlook using World Bank income categories. Some years may be estimates.

<sup>22</sup> Table 2.2 in the *Variations of PPPs* section shows the most common contractual PPP types. Other non-contractual privatization terms include liberalization, asset sale, initial public offering, trade sale, and joint venture.

<sup>23</sup> Public investment is defined as "capital expenditure on physical...and soft...infrastructure with a productive use that extends beyond a year. Public investment comprises direct and indirect investment. Direct investment is defined as gross capital formation and acquisitions less disposals of non-financial non-produced assets during a given period. Indirect investment is defined as capital transfers...made by subnational governments to other institutional units" (OECD, 2014).

## BOX 2.1. PPP Definitions

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**Australia:** Projects in which the private sector provides public infrastructure and any related services, and there is private investment or financing.

**Brazil:** Long-term contracts that involve sharing risk between the private sector and the government, and which assign the private sector the responsibility for various phases of projects including financing, maintenance, and operation.

**Canada:** Long-term, large-scale publicly owned or regulated infrastructure projects with significant private sector involvement, including the transfer of risk to the private sector partner.

**China:** Long-term collaboration between public and private sectors in providing public products and services. The private sector oversees the major work of the infrastructure, including design, construction, operation, and maintenance, and can get a fair return on its investment by receiving payments from users and governments. The government is primarily in charge of monitoring the price and quality of the public services to maximize the public interest.

**Colombia:** An instrument of private capital linkage embodied in a contract between a state entity and a natural or legal person under private law for the provision of public goods and their related services, involving the retention and transfer of risks between parties and payment mechanisms.

**France:** An administrative contract under which the state or a state-run entity entrusts to a third party, for a period related to the construction or conversion, upkeep, maintenance, operation, or management of works, equipment, or intangible assets necessary to public service, as well as to the total or partial financing of the latter, with the exception of any form of equity financing.

**Honduras:** Collaboration scheme or joint effort between the public and private sectors, national and international, adopting multiple models, establishing rights and obligations, determining and distributing risks between the parties.

**Indonesia:** Long-term contract between the government and a private party in the provision of infrastructure or public service, where the private party assumes certain responsibilities and risks.

**Jamaica:** Long-term procurement contract between the public and private sectors, in which the parties jointly design, finance, build, and operate an infrastructure project or provide a service through an appropriate sharing of resources, risks, and rewards. PPPs are limited to high-value assets in areas where the government is both faced with fiscal constraints and obligated to provide the infrastructure service.

**Korea:** Projects in which the private sector invests in infrastructure facilities through legally binding contracts differentiated from traditional methods of government procurement.

**Mexico:** Long-term contractual relationship between the public and private sector, for the provision of services to the public sector or to the end user in which infrastructure is provided in whole or in part by the private sector with the objective of increasing social welfare and overall investment.

**Peru:** Private investment participation modalities to create, develop, improve, operate, or maintain public infrastructure, provide public services or related services required by the state, as well as applied research projects and technological innovation. Risk and reward are distributed between the public sector and the private sector.

**Portugal:** Long-term administrative-law contracts under which the public partner transfers to the private partner or concessionaire the obligation to design, finance, and build public infrastructure and/or to operate

*(continued on next page)*

### BOX 2.1. PPP Definitions (continued)

a public service. The contract may consist of a “public works and public services concession” if the infrastructure is to be built, or simply a “public services concession” if the infrastructure already exists.

**Spain:** There is no legal definition of PPP in Spain, but similar contract types exist.

**United Kingdom:** Arrangements typified by joint working between the public and private sectors... [that] can cover all types of collaboration across the private-public sector interface involving collaborative working together and sharing risk to deliver policies, services, and infrastructure.

**South Africa:** A contract between a government institution and a private party. The private party performs an institutional function and/or uses state property in terms of output specifications with substantial project risk (financial, technical, and/or operational) transferred to the private party. The private party benefits through unitary payments from the government budget and/or user fees.

*Source:* Paraphrased or quoted from respective national PPP policy frameworks and Inter-American Development Bank (IDB) case studies.

- PPPs are long-term agreements in the form of contracts between public and private partners that seek to deliver mutually agreed objectives through an understanding that the most rational division of risks based on the respective comparative advantages of each partner will result in financial, social, and economic value added.
  - PPPs differ from traditional public investment (TPI) schemes since most stages of a project are awarded to a single contractor in what is known as bundling.<sup>24</sup> As such, the private entity is typically responsible for both financing and managing the asset, including associated lifecycle costs and technological solutions, as well as ensuring the effective delivery of service to end users. Agreements may last 20 to 30 years, which is longer than a typical public works contract.
  - While under a TPI scheme the government incurs debt to finance the infrastructure asset, financing under a PPP scheme is provided all or in part by the private sector through equity and debt. This provision is often provided through a Special Purpose Vehicle set up to run the project. A project finance scheme is commonly used to structure debt.
  - Investment is borne mainly by the private sector and funded by either timed installments from the government or by the public through user fees. If the contractor does not deliver the outputs as agreed, the government may withhold all or part of the payment. Repayment is therefore linked to operational conditions of the asset or service.
  - The ultimate legal ownership of the infrastructure facility or asset remains in the public sector, and control reverts to the public sector at the end of the PPP contract. Likewise, if contractual conditions break down or the contractor fails to deliver, the government is often left to step in.
- Identifying all the above characteristics in specific arrangements can be very difficult in practice. However, our main concerns in separating PPPs from non-PPPs is the character of financing, funding, and risk-sharing, as well as the government retaining ultimate legal ownership.
- The debate over whether concessions should be considered PPPs is a good example (OECD/EU, 2011). Concessions are contracts where compensation for the services to be carried out consists of

<sup>24</sup> The advantages of bundling tend to be reflected through lower transaction costs since, rather than dealing with numerous contracts, the public sector need only work with one contractor. On the other hand, supervision costs tend to be higher since, under the contract, performance indicators are required to monitor output and outcomes. See for example Tjan (2010).

## BOX 2.2. Concessions

A concession is a form of partnership between the government and the private sector that is output focused. Risks are shared between the procuring agency and the private contractor in distinct ways from traditional procurement. Under a concession agreement, the concessionaire assumes usage rights and operational responsibility for an asset. A concessionaire typically obtains most of its revenue from user fees during the life of the contract. Ownership of the asset remains in public hands, and the public receives the asset at the end of the agreement. A concession could include both greenfield and brownfield projects (World Bank, n.d.). Therefore, a broad definition of PPP will encompass concessions in general.

Chile is one example of a country that maintains a concessions law rather than a PPP law. The first concession law dates back to 1982 (*Law 591*); however, no project was awarded under this law. The first concession projects were awarded after the law was reformed in 1991 (*Law 19068*) and 1993 (*Law 19252*). The *Concessions Law* entails a precise and extensive transfer of risks to the concessionaire company:

*“...the works will be carried out at the concessionaire’s entire risk, and the concessionaire will provide any necessary disbursements stemming from an unexpected event, force majeure, or any other cause. The Treasury will not be responsible for the consequences derived from the contracts entered into by the concessionaire with contractors or suppliers. However, the Treasury shall pay for damages caused by unexpected events or force majeure if this is established at the procurement stage.”* (Chile, n.d.)

In the period 1994–2015, the committed investment stock of the concessions program in Chile summed up to approximately US\$19 billion (6.2 percent of GDP), of which 88 percent was allocated in the transport sector (highways and airports).

the right to exploit the gains from providing the service (see Box 2.2). Two defining factors of concessions are: i) some or all payments come from a third-party source or sources (e.g., users) and ii) risk lies with the concessionaire. A concessionaire generally accepts the operational and/or financial risk of providing a public service or public work in return for the opportunity to generate income by exploiting that service or work. In addition, concessions require a specific law or legal framework to allow the private sector to collect revenue in the form of user fees for providing a public-sector service. This contrasts with arrangements in countries without a specific PPP law or framework, where PPPs are often treated as concessions. For our purposes, concessions may or may not qualify as PPPs depending on whether they share the above characteristics.

Merchant projects are similarly difficult to categorize, and their status as PPPs is also subject to

debate. For example, a true merchant power plant selling into a competitive market and subject to a relatively light-handed regulatory regime would not sensibly be considered a PPP.<sup>25</sup> For example, in the electricity sector, merchant plants are generally found in markets where there has been sector reform and a regulated wholesale market has

<sup>25</sup> This can be the case even if there is some degree of indirect government support. For example, government commitments to purchase renewable electricity for government buildings on the wholesale market underwriting the development of truly merchant wind or hydro or geothermal projects. The situation is less clear where there is government equity investment, as here the government has decided to invest in the sector and to procure through a partnership with the private sector, albeit not a PPP in the conventional sense. We argue that, if there is a properly privatized and regulated market, there is no reason to have government equity investment in merchant projects. However, in some countries, there are political and other factors that dictate such investment.

been created, and thus government is no longer the investor in the sector, it is merely the regulator. Therefore, the government is no longer making investment decisions and procurement decisions, leaving those decisions to the market, and there is thus no PPP in the sense of common definitions (as described above). However, in other markets there may be some form of government support or government finance, and in these cases similarities to PPPs may be readily apparent. Given that our purpose is to assess the budgetary impact, fiscal risks, and affordability of PPPs, a merchant plant with some form of government support or government equity may raise similar issues. For this reason, we consider merchant projects of interest as PPPs and will be discussing them alongside PPPs.

For comparative evaluations and case studies, we focus on 13 countries, 11 of which have formalized an institutional framework in the form of a PPP law or guidelines.<sup>26</sup> In analyzing data on PPPs, we include concessions or merchant cases that are analytically relevant in terms of the risks borne by governments, without losing sight of the distinctions. Our analytical focus considers the elements described above, with a special emphasis in the following characteristics that rule the public-private interactions in PPPs:

- Project risks are allocated between the private and public sector (including project finance risks).<sup>27</sup>
- Contracts call for constructing and/or rehabilitating an asset and providing a service based on that asset.
- The private sector absorbs the financial risk of the project.
- The public sector retains residual rights over the asset during the life or at the end of the contract.

Note that we did not restrict our definition by revenue mechanism. That is, this publication considers PPPs funded by regular public payments, upfront capital grants, or fully funded by user fees as long as the elements mentioned above are

present and the government bears some risk. This approach is comparable to other fiscal analyses of PPPs and allows a comparative focus on the fiscal implications of relevant forms of infrastructure procurement rather than a rigid definition.

## Variations of PPPs

Even projects that meet our constrained definition of PPPs feature considerable variation and thus require further classification. On one side of the spectrum sit PPPs with a limited scope, in which the private party is only responsible for managing an existing asset or a service contract. Under our definition, this type of service can only be regarded as a PPP if there is private finance at risk; for example, if private capital is invested in equipment or revenue is subject to performance. On the other side sit integrated PPPs, in which the private sector is responsible for designing, constructing, financing, managing, and operating the asset. These are frequently referred to as design-build-finance-operate-maintain (DBFOM) projects. Under these arrangements, the private sector participant assumes responsibility for delivering the service to end users, in addition to fiscally managing the asset.

Many names are used internationally to describe PPP models that fall within this definition of DBFOM, including build-operate-transfer (BOT), build-rehabilitate-operate-transfer (BROT), rehabilitate-operate-transfer (ROT), build-lease-transfer (BLT), and rehabilitate-lease-transfer (RLT).<sup>28</sup> All

<sup>26</sup> The countries in our study are Australia, Brazil, Canada, China, Colombia, Korea, Spain, Philippines, Honduras, Indonesia, Mexico, Peru, and Jamaica. Except for China and Spain, the countries included in our research have either a law or guidelines that rule PPPs.

<sup>27</sup> The private sector puts money upfront to build the asset. The return on the investment is contingent on operational conditions of the asset and service delivery.

<sup>28</sup> Sometimes references are made to build-own-operate (BOO) deals, which entail a private partner building the contracted public infrastructure, operating that infrastructure for the public sector for a specified period, and then owning the infrastructure after this period is complete. The public sector does not retain residual rights over the asset, and thus such contracts do not fall within our definition of PPP.

**TABLE 2.2. Typical Types of PPIs Based on the Degree of Private Sector Commitment**

| <b>Leases and Contracts</b>   | <b>Concessions/Partnerships:<br/>Brownfield</b>  | <b>Concessions/Partnerships:<br/>Greenfield</b>  | <b>Divestitures</b>   |
|---|--|--|---|
| <b>Management Contract</b>  | <b>Rehabilitate-Operate-Transfer (ROT)</b>   | <b>Build-Own-Operate (BOO)</b>   | <b>Partial Privatization</b>  |
| Government pays a private operator to manage the facility. Risk remains with the government.                      | Private operator rehabilitates, operates, and maintains an existing facility.  | Private sponsor builds, owns, and operates the facility. After the concession period, a new agreement may be negotiated or the facility repurchased. | Partial transfer of the equity of the state-owned enterprise to private entity.                 |
| <b>Lease</b>  | <b>Rehabilitate-Lease/Rent-Transfer (RLT)</b>  | <b>Build-Operate-Transfer (BOT)</b>  | <b>Full Privatization</b>   |
| Government leases the assets to a private operator for a fee. The private operator takes on the operational risk. | Private sponsor rehabilitates a facility at its own risk, leases/rents it from government, operates and maintains it, and transfers it back to government at contract termination.                               | The developer finances, builds, operates, and maintains a facility. At the end of the concession, the asset and operation return to the government.* | Government transfers all equity in the state-owned enterprises to private entities.             |
|   | <b>Build-Rehabilitate-Operate-Transfer (BROT)</b>  | <b>Design-Build-Finance-Operate (DBFO)</b>   | <b>Merchant</b>   |
|   | Private developer builds an addition to an existing facility or completes a built one and rehabilitates assets, operates and maintains them, and transfers them back to the government at contract termination.* | Service provider designs, builds, finances, and operates the asset. Operation involves providing some or all services related to the asset's value.* | Private developer designs and builds and assumes all construction, operating, and market risks. |

Source: Adapted from Shediac, Abouchakra, Hammami, et al. (2008).

\* PPPs of this type may feature mechanisms of financial support provided by governments to promote financial feasibility of the project (e.g., guarantees, capital grants, or direct payments to the concessionaire).

these definitions comprise an integrated contract. They differ from one another essentially through legal definitions of asset ownership and control.

BOT, BROT, and ROT all refer to projects where ownership belongs to the private party during the life of the contract. In many countries, legal ownership by the private partner is not possible, except in very specific situations (APMG, 2016). Generally, the private partner is regarded the owner only in economic terms. In other words, the private partner is entitled to the economic use of the infrastructure, but the asset remains under the legal ownership of the government for the duration of the contract. Control and de facto ownership of the project is transferred back to the public sector at the end of the contract. Exactly what is transferred back to the government depends on what was agreed to in the PPP deal.<sup>29</sup> BOT contracts originated in the late 1970s in response to the effects of the economic slump on developing country budgets and international construction firms (Augenblick and Custer, 1990). Over the past three decades, this instrument

has been used extensively by developing countries to finance economic infrastructure,<sup>30</sup> both in terms of number of projects and dollar amount.

In BLT and RLT contracts, the private party does not own the infrastructure and its use of the asset is legally classified as a lease. Equally, the control of the asset is transferred to the government at the end of the PPP agreement.

A key reference point is made in accounting terms by the International Financial Reporting Interpretations Committee (IFRIC).<sup>31</sup> Under the

<sup>29</sup> Either the private sector operator formally owns the land, plant, and equipment for the duration of the contract or it leases it from the government. In the case of a lease, the land reverts to the government while the assets and improvements are transferred (Augenblick and Custer, 1990, p.13).

<sup>30</sup> Roughly 55 percent of the approved PPPs between 1990 and 2017 were BOT, which is equivalent to US\$2.3 trillion.

<sup>31</sup> The IFRIC 12 apply to projects with the following characteristics, closely related to our definition of PPPs:

- The grantor is a public-sector entity, including a governmental body, or a private sector entity to which the responsibility for the service has been devolved.

**TABLE 2.3. Source of Revenue**

|                        | Service PPP   | Design-Build-Finance-Operate-Maintain (DBFOM)   |
|------------------------|---|---|
| <b>Government Pays</b> | The private sector is responsible for managing an existing infrastructure asset during its lifecycle. To meet our definition of PPPs, the project needs to involve providing significant private capital (e.g., buying equipment for an existing hospital). The revenue comes from public payments that are based on performance measurements. Projects falling within this category include hospitals and schools. | The private sector primarily, designs, builds, finances, operates, and maintains the project long enough to pay back the debt and equity investment. After construction, the private sector receives a stream of revenue from direct public payments, typically originated from appropriations of the budget. Government-pays PPPs are very common in social infrastructure, where the opportunities to charge users are less evident or in situations where the government does not want to charge users for the services associated with economic infrastructure, such as a toll-free road. |
| <b>User Pays</b>       | The private sector is responsible for managing an existing asset during its lifecycle. To meet our definition of PPPs, the project must involve providing significant private capital (e.g., buying equipment for an existing hospital). In this case, the revenue comes from users. These types of projects are sometimes called long-term leases.   | The private sector primarily designs, builds, finances, and operates the project long enough to pay back the debt and equity investment. After construction, the private sector receives a stream of revenue from direct public payments, typically originated from user payments. Projects falling within this category include power plants, toll roads, port facilities, transmission lines, and water supply systems.   |

Source: Authors' classification.

IFRIC 12 guidelines for concessions, infrastructure under most PPP arrangements would not be recognized as a direct asset for the private operator, since the entity has access under the contract but no formal control (Deloitte, 2011, p.12). In this context, PPP contracts should be recognized in the balance sheet of the private operator only in terms of an intangible or financial asset, depending primarily on the allocation of demand risk.

A similar case can be made based on PPP accounting rules issued by Eurostat.<sup>32</sup> These rules assign physical assets from PPPs to the government's balance sheet whenever a significant portion of the demand, availability, or construction risk falls on the government contracting agency. Notably, the rules are not based on a BOT or BLT classification. Thus, classification based on the legal nature of control over the asset by the private partner is not useful in many countries and will only be used when the differentiation is relevant for analyzing specific data that includes this nomenclature.

Another relevant classification is based on the source of funds to pay for project costs, including operational expenditures (OPEX) and capital expenditures (CAPEX). If the PPP project relies mainly on user fees during the life of the contract

to compensate the private sector for the CAPEX and OPEX of the asset, the project should be classified as a user-pays PPP. User-pays PPPs are very common and can be found, for example, in toll roads, energy distribution networks, and water and sanitation projects. On the other hand, substantial support from contracting governments may be required for the commercial feasibility of PPPs. Indeed, the government is the sole purchaser for many PPPs. In this case, a project should be classified as a government-pays PPP.

- The operator is responsible for at least some of the management of the infrastructure and related services and does not merely act as an agent on behalf of the grantor.
- The contract sets the initial prices to be levied by the operator and regulates price revisions over the period of the service arrangement.
- The operator is obliged to hand over the infrastructure to the grantor in a specified condition at the end of the period of the arrangement, for little or no incremental consideration irrespective of which party initially financed it.

<sup>32</sup> A comprehensive discussion of the rules regarding accounting treatment of PPP projects issued by the statistical office of the European Commission and the statistical authority of the European Union can be found at: <http://www.eib.org/infocentre/publications/all/epec-a-guide-to-the-statistical-treatment-of-ppps>.

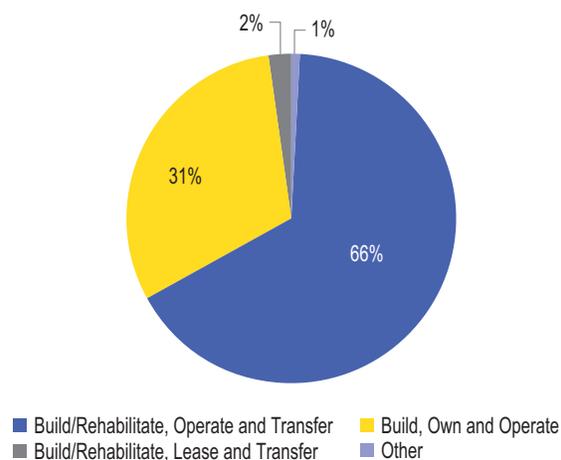
## The Data on PPPs

One major limitation of systematically analyzing PPPs is the lack of data. Available data is often incomplete. For example, it may exclude projects that failed to reach financial closure or cover only projects commissioned by a certain jurisdiction. Likewise, projects may be registered without complete dates or investment values.

The best comprehensive database is the World Bank's publicly available PPI database. However, this only includes observations from low- and middle-income countries, excluding valuable cases from high-income economies. Likewise, it does not include projects in the early phases of development and only covers four sectors: telecommunications, energy, transport, and water. The InfraPPP World database contains valuable information for both developed and developing economies but is not comprehensive and covers a relatively limited timespan.<sup>33</sup> Individual governments maintain public PPP data, with the best example we are aware of being the United Kingdom. Since data is not systematic across emerging and advanced economies, it is not representative of the global PPP market and therefore difficult to draw globally applicable conclusions. Indeed, the observable differences between developing and developed economies is significant, for example in terms of relative focus on economic versus social infrastructure (see below). The data should be considered descriptive overall, and conclusions should only be drawn for smaller subsets that can be considered representative.

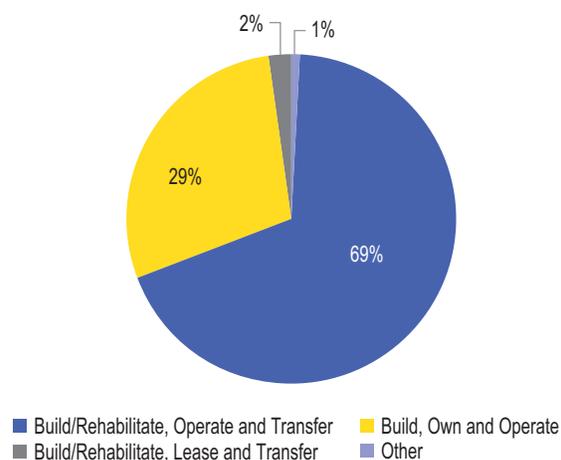
We focus on the World Bank's PPI database, which we consider representative for economic infrastructure in developing economies (Figures 2.5 to 2.10). We draw comparative insight where possible from the InfraPPP World database and project information provided directly by governments. Our sample includes PPP projects that adhere strictly to the IDB's definition of a PPP and those that may have PPP-like effects on government exposure to fiscal risks, which we refer to as quasi-PPPs. For example, we include merchant projects known to be receiving direct or indirect government support

FIGURE 2.5. PPPs by Main Instrument Type



Source: Authors' estimates using the World Bank PPI database.

FIGURE 2.6. PPPs by Size (dollar amount)



Source: Authors' estimates using the World Bank PPI database.

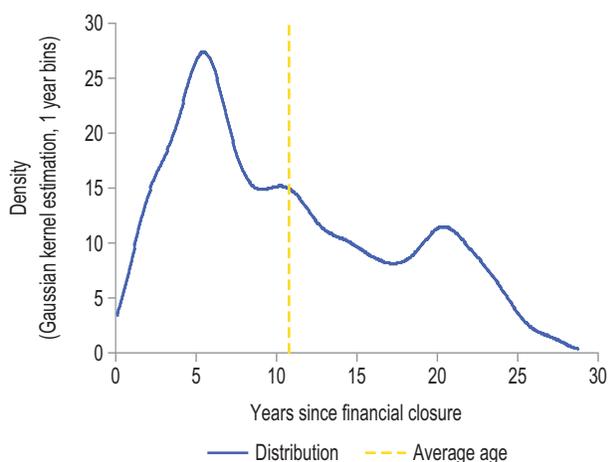
that entail sharing risk between the public and private sector.

Around 73 percent of the approved projects between 1990 and 2017 in the PPI database fall under these four primary conditions.<sup>34</sup> Our sample

<sup>33</sup> The G20 has also made efforts toward consolidating data on infrastructure projects. The Global Infrastructure Hub was launched in 2014 with a mandate to grow the global pipeline of quality, bankable, public and private infrastructure projects. The site does not yet provide global coverage, and it is mostly forward looking. See <https://www.gihub.org/>.

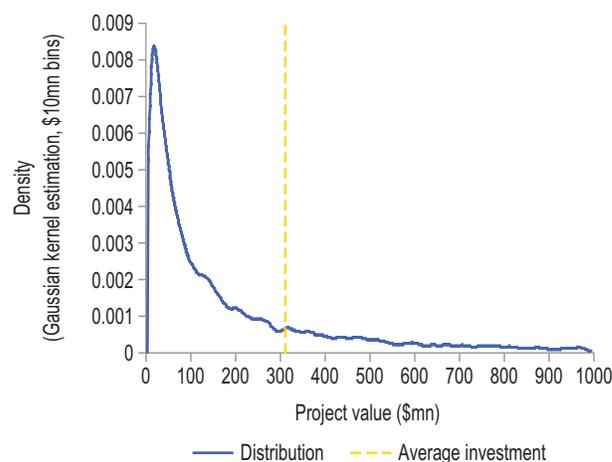
<sup>34</sup> We also exclude cross-border projects to avoid double counting.

**FIGURE 2.7. Distribution of Investment Age**



Source: Authors' estimates using the World Bank PPI database.

**FIGURE 2.8. Dollar Value Distribution (US\$MM)**



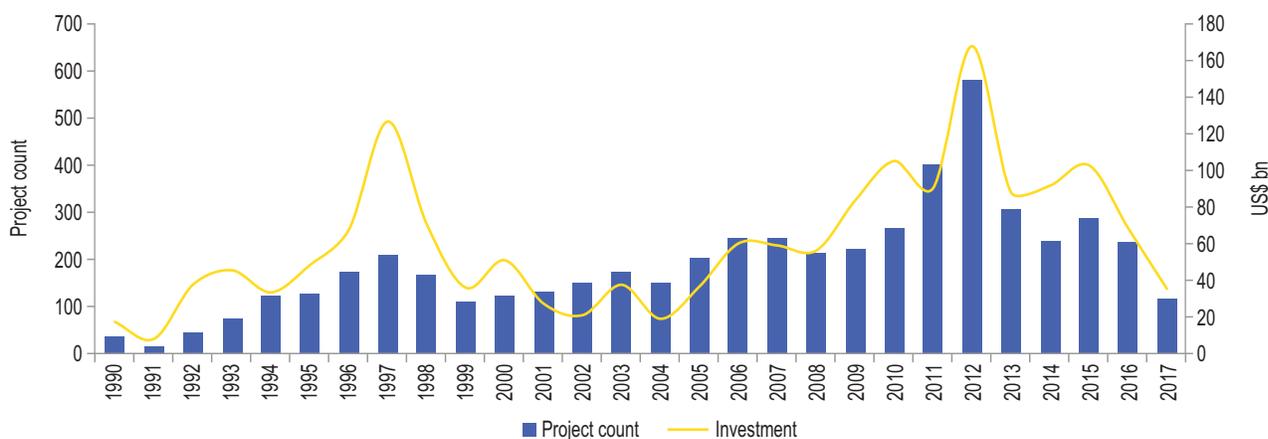
Source: Authors' estimates using the World Bank PPI database.

includes 5,395 economic infrastructure projects financed in 106 developing countries for a total value of US\$1.58 trillion. In the economic infrastructure sector, the most popular PPP instrument is the build/rehabilitate-operate-transfer type, which accounts for 66 percent of the total portfolio.

Likewise, the energy sector is the most PPP user intensive, with 3,051 projects approved for a total dollar amount of US\$860 billion, followed by the transport sector, with 1,490 projects equivalent to US\$607 billion. The PPP portfolio is young,

averaging 10.8 years, and around one-third of the projects were approved five years ago or less (2012-17). Figure 2.7 provides the distribution of the PPP portfolio by age. Another interesting feature is the distribution of the value amount by project. While the average dollar value amount of the approved project is US\$294 million, the project distribution is heavily skewed toward small operations. Over half of the PPP portfolio reports project investment of less than US\$100 million (Figure 2.8).

**FIGURE 2.9. Evolution Over Time**



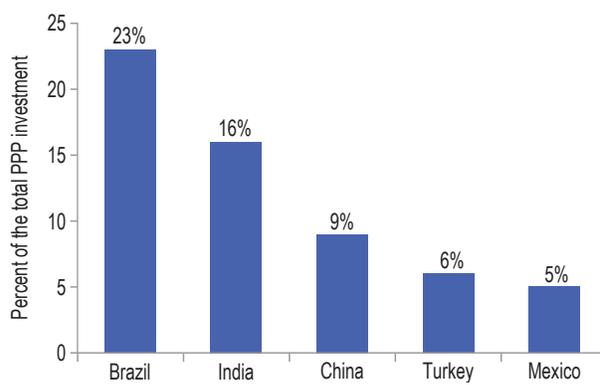
Source: Authors' estimates using the World Bank PPI database.

Information on the social sector PPPs is limited for developing economies and totally absent from the World Bank database. Importantly, it is difficult to conclude that this is due to a systematically lower emphasis on using PPPs to provide social infrastructure in emerging economies, though the available data suggests this may be the case. However, advanced economies tend to make extensive use of PPPs to deliver social infrastructure.

InfraPPP's database has complete information for 225 social and health projects: 203 for high-income countries and 22 for developing economies.<sup>35</sup> This cannot be considered a representative sample and is heavily skewed toward newer projects, but it is worth describing the data to quantify and compare the economic and social sectors. The mean investment value for these projects is similar to the overall mean from the PPI dataset: US\$274 million. The largest developed economy social and health PPP in the database is St. Bartholomew's and Royal London hospitals in the United Kingdom at US\$2.4 billion. Turkey's Bilkent Integrated Healthcare Campus is the largest project in emerging economies, valued in the database at US\$1.2 billion. These projects are well above the average project size in emerging economies but small compared to the largest developed economy project in the database, Australia's New South Wales North West Rail Link at US\$7.8 billion. The overall distribution of the InfraPPP data is also skewed toward small- and medium-sized projects with a median capital value of US\$300 million and a maximum of US\$9.4 billion, yet the skew is not as dramatic as the World Bank database (median of less than US\$100 million with 35 projects topping US\$10 billion in 2016 dollars).

While the conversation around PPPs in developing countries focuses on what we term economic infrastructure—energy, telecoms, transport, and water—PPPs in developed economies are often skewed toward social services. To take two prominent examples, data from the United Kingdom and Australia show social PPPs for hospitals, housing, and other services overwhelming economic infrastructure. The social and health sector counts 535 projects or 75 percent of the U.K. Treasury's PPP database.

**FIGURE 2.10. Top Five by Investment**



Source: Authors' estimates using the World Bank PPI database.

Transport and water fall far behind at 68 and 39 projects, respectively. The social sector is also by far the largest in financial terms, at over £36 billion, with transport at £9 billion and water at £4 billion. The database records only one energy project, which is the leading sector for developing economies.<sup>36</sup> The distribution of the U.K. data is skewed toward smaller projects, with a median capital value of £39 million. The largest project in the database is an emergency services communications network with an initial capital investment of nearly £1.5 billion. In the case of Australia, 55 projects, or nearly 50 percent of a database compiled by Foster Infrastructure, fall under the social heading. However, the country's 25 transportation PPPs reached nearly US\$37 billion, surpassing the US\$16.4 billion spent on the more numerous social and health projects.<sup>37</sup>

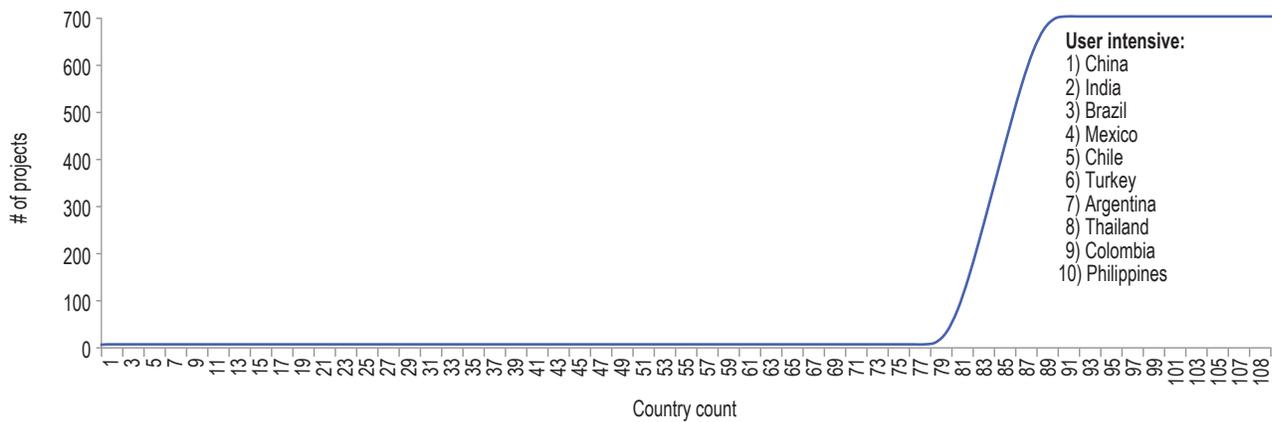
While many developing countries have had some experience in approving and executing PPPs, only a total of 25 low- and middle-income countries have consistently used the structure to finance investment projects. Figure 2.11 depicts the user intensive PPP countries, highlighting the top 10 (China, India, Brazil, Mexico, Chile, Turkey, Argentina, Thailand, Colombia, and Philippines). Together, these countries account for over 50 percent of the

<sup>35</sup> Using World Bank classifications.

<sup>36</sup> U.K. Treasury sector classifications aligned with World Bank by author.

<sup>37</sup> Foster Infrastructure.

**FIGURE 2.11. User Intensive Countries**



Source: Authors' elaboration.  
 Note: User intensive = more than one PPP per year on average.

dollar value of the portfolio. This concentration of usage reinforces the relative novelty of PPPs in developing countries and suggests that many countries do not make full use of the structure, if at all.

### The Rise of Modern PPPs

The so-called New Public Management (NPM) agenda aided the rise of new forms of private participation in public infrastructure. NPM was fostered by the United States, Europe and, especially, the advanced Commonwealth economies in the late 1980s and early 1990s, before moving into developing economies. NPM sought to apply private sector practices to the public sector and constituted a significant departure from traditional concepts of public management (Larbi, 1999, pp.iv-v, 1-5). The term is a loose expression used to refer to several movements aimed at reforming the public-sector structure and processes that shared a focus on the following:

- Decentralizing, including transferring budgeting and financing to state or local authorities.
- Integrating free-market principles in providing public services, especially performance-based concepts and customer choice.
- Using semi-autonomous and flexible bodies as the primary means of delivering goods and

services to tax payers under control mechanisms based on outputs and outcomes instead of inputs and processes (Larbi, 1999, Table 2, p.14).

NPM had a decisive effect on the political discourse in the developing world in the 1990s. According to Larbi (1999), fiscal and financial crises pushed developing economies toward NPM inspired solutions to provide public services, often encouraged by international bodies such as the IMF and the World Bank. For example, many authors have pointed to the dramatic narrowing of fiscal capacity in Latin America following the debt crises of the 1980s to explain the wave of neoliberal policies beginning in the 1990s. These factors contributed to an expansion of PPP programs throughout Latin America and the Caribbean.

PPP's represent a tool to promote infrastructure policy through private sector entities subject to competitive pressures, resulting in new bodies responsible for delivering services. PPP's thus converged with the broader NPM agenda, extending its practical and theoretical foundations to infrastructure policy. In other words, the widespread consensus around NPM prepared the field for the growth of PPP's, helping the procurement method to gain momentum. Under the conceptual guidance of the NPM, PPP's became more than just a financing tool. Rather, policymakers now conceived of PPP's as a

strategy to reform the very institutions responsible for meeting citizens' demands.

## Europe and the Commonwealth

### The United Kingdom

PPPs were born in England under the name Private Finance Initiative (PFI).<sup>38</sup> Like PPPs, PFIs differ from privatization in that the government remains the sole purchaser or ultimate owner of the underlying asset. They also differ from traditional services contracting because the private sector provides financing and has long-term control over public assets (Allen, 2001). PFIs provided a mechanism to expand the traditional concession concept to a whole new set of infrastructure projects.

The first two projects to be completed under the PFI procurement method were the Skye Bridge (£15 million) and the Ferry Field House Hospital (£27 million), both in Scotland. In 1997, the government created a PFI taskforce within Treasury to coordinate the expansion of PFIs and began an aggressive campaign to expand PFIs in England and abroad.<sup>39</sup> In 2000, this taskforce evolved into Partnerships UK (PUK), a central organization to coordinate PFI initiatives throughout the U.K. government (EPEC, 2012a).

PUK itself was a PPP with 51 percent private ownership and acted as a public-private advisory body for both individual PFI contracts and the broader public policy framework. PUK was meant to centralize and coordinate growing PPP activities, while providing consulting and advisory services to public and private sector participants in PFI contracting schemes. In 2010, PUK was replaced by Infrastructure UK (IUK)—now fully publicly owned—to coordinate both PFI and traditional infrastructure projects, without losing its primary purpose of promoting PFIs (EPEC, 2012a). IUK continued to perform these functions until January 2016 when it merged with the Major Projects Authority to form the Infrastructure and Projects Authority.

U.K. authorities signed 739 projects between 1992 and 2014 with an aggregate investment value

of about £58 billion, the majority linked to social infrastructure.<sup>40</sup> However, PFI approvals steadily fell from a high of £7.2 billion in 2006 to a low of £0.7 billion in 2014. This decline provided the impetus for the government to launch a new PFI model in 2012: PF2. The main feature of PF2 is that the public sector takes an equity stake in most projects. Part of that equity is subject to funding competition. In addition, the government promotes greater flexibility by excluding soft services from PFI contracts, making commitments to more transparent disclosure, creating a centralized procurement unit to promote efficiency, and improving value for money (VfM) through more appropriate risk retention by the public sector. Finally, the government uses various measures to increase the credit rating of the projects to encourage institutional investors and pension funds to participate.

### Spain

Since the early 1970s, Spain has had a significant pipeline of public-private investments, mostly in the transport sector. According to Bustillo (2016), authorities saw the need for a formal framework to ensure private participation in toll concessions. In 1972, the government passed legislation regarding concessions for toll highways to improve economic growth and integration among the Spanish regions (Bustillo, 2016). During the early 2000s, the government actively promoted private investment participation in infrastructure through the National Infrastructure Plan, which focused on private

<sup>38</sup> PFI is used by the British Treasury to refer to PPPs with private sector financing. For our purposes PFI and PPP projects are virtually the same concept. See Allen (2001).

<sup>39</sup> *The Private Finance Initiative Watchdog. The history of Private Finance Initiative in the United Kingdom—a timeline.* For example, following the British experience and advice from Partnerships UK, in 2003, Mexico introduced the *Proyectos de Provisión de Servicios* (PPS), which followed a structure similar to the PFI. PPS was abolished with the introduction of the PPP law in 2012.

<sup>40</sup> Economic infrastructure sectors financed under PFIs—mainly transport and waste—have only accounted for 22 percent of the total capital costs of all projects.

financing of road projects. This focus was complemented by the enforcement of *Law 13/2003 of Public Works Concession*, a significant step toward a comprehensive regulatory framework for private investment in the public sector.

Between 2003 and 2014, Spain signed more than 500 projects with an aggregate capital value of about €53.4 billion. The volume of these projects rose from 2003 to 2010, due mostly to the increased involvement of the country's autonomous communities in PPP programs. Public-private investment averaged 17 percent of public procurement from 1992 to 2014, reaching a high of almost 50 percent in 2010. Following the global financial crisis that deeply affected Spain, concessions declined steeply.

Spain's post-crisis fiscal adjustment shifted PPP financing from projects that use state subsidies toward self-financed PPPs. Spain also adopted three EU Directives regulating all aspects of public procurement. These Directives include 2014/23/EU on the award of concession contracts, which seeks to fill discrepancies concerning specific procedures to award concession projects.

## France

In France, PPPs have become fixtures of the public procurement framework since their introduction in 2004 under the general legislation on *contrats de partenariat*. In 2005, the government created a PPP taskforce within the Ministry of Economy, Finance, and Industry known as the *Mission d'appui aux PPP* (MAPPP) to oversee all issues related to PPPs. MAPPP is responsible for preliminary evaluations of project proposals, support for public entities during the negotiation process, and general advisory work (EPEC, 2012b). In 2008, the government passed a new law to improve, extend, and clarify the legal framework for PPPs. PPPs are used across most economic sectors in France, including a large number of projects with limited investment (e.g., administrative buildings, street lighting, and road works). The French PPP market expanded greatly in 2009 and 2010 as PPP projects were

incorporated into an economic stimulus package. Since 2011, France has accounted for more than half of the European PPP market both by volume and number of contracts signed.<sup>41</sup>

## Australia

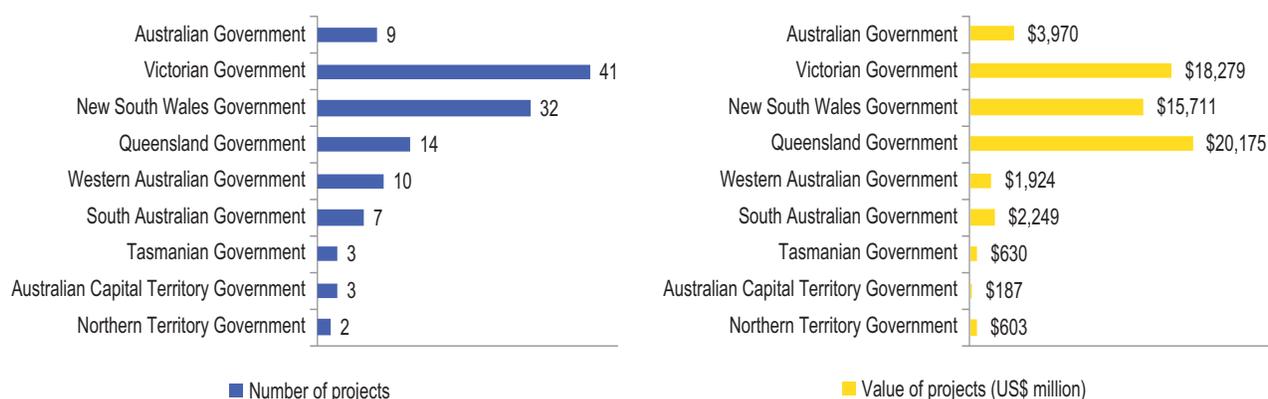
Australia has one of the most advanced regulatory environments for PPPs. The country's legal framework is based on common law, so no specific law or regulation is necessary. Instead, PPP institutional arrangements are defined through a set of official policy papers and guidelines that are commonly followed by both states and the federal government. The current Australian PPP framework is a product of several decades of evolution of policies for private investment in infrastructure. Australia's national government plays a relatively minor role in infrastructure delivery as most of it is delivered by state governments (Figure 2.12). Three states—Victoria, New South Wales, and Queensland—are responsible for the vast majority of Australian PPPs by both number and value. These states have been the leaders in Australia in developing PPP-related policy and guidance, and developing the associated budgetary and risk management frameworks.

The State of Victoria played a key leadership role by developing the Partnerships Victoria Policy and Guidance materials in 1999.<sup>42</sup> Since 2000, Victoria has accounted for approximately 34 percent of the total value of projects (Figure 2.12). With the establishment of Infrastructure Australia in

<sup>41</sup> The French market for PPP projects was severely affected during the global financial crisis (2008–09) and again during the 2011–12 period because of the credit crunch in the financial system. Several large domestic banks withdrew from the PPP market and many of the big infrastructure projects that had been in the pipeline since 2008 were only signed due to special windows provided by the European Investment Bank as well as guarantees provided by the federal and state governments. (EPEC, 2012b).

<sup>42</sup> Victoria's leadership position may have been placed at risk by the state's recent cancellation of the East West Link Project Stage 1, which has raised perceptions of sovereign risk in Australia.

**FIGURE 2.12. PPPs in Australia as of April 2015**



Source: Foster Infrastructure (2015).

2007, the national government began to play a more significant role in PPP matters, leading to the release of the National PPP Policy and Guidelines in 2008.

The Sydney Harbor Tunnel Project, contracted in 1987, is generally considered to be Australia’s first modern PPP. As PPPs emerged as a means of project delivery in Australia, state governments began to develop policies for their use. In 2004, a National PPP Forum was established by ministers from all states, territories, and the Australian government to improve how PPPs are used. In December 2008, to provide a more consistent national framework for PPPs, the national, state, and territory governments agreed to a National PPP Policy. The policy requires jurisdictions to apply the National PPP Guidelines to the procurement of PPP projects and supersedes the previous policies developed by individual jurisdictions. The National PPP Guidelines represent a high level of uniformity across jurisdictions (Australia, 2008). However, specific requirements of individual jurisdictions, where different from the guidelines, are detailed in a set of Jurisdictional Requirements. In theory, individual jurisdictions have unlimited flexibility to alter their own application of the National PPP Guidelines; however, as a practical matter there is a high degree of consistency. This is driven by the fact that Australia has a national PPP market. Most private sector participants in PPPs, and many advisers and consultants to government, operate

in several or all jurisdictions. Governments understand that consistency of process and documentation increases the efficiency of the market, and any government that departs too greatly from the National PPP Guidelines risks compromising project outcomes.

According to an Organisation for Economic Co-operation and Development (OECD) study of Victoria State, PPPs have successfully transferred crucial aspects of risk, including cost overruns. However, challenges remain regarding balancing risk transfer without discouraging private participation and managing political risk for controversial projects. Moreover, the study raises performance evaluation and measurement to be a significant challenge for evaluating results-based PPP contracts tied to results or output (Bounds, 2012).

## Canada

The Canadian PPP market is very active, with over 220 projects completed, under construction, or in procurement, with a total capital cost of C\$70 billion (US\$58 billion). PPPs are frequently used for economic infrastructure projects. Canada’s most advanced and largest PPP programs originated in the provinces of British Columbia, Ontario, and Alberta. The federal government and the province of Saskatchewan subsequently introduced numerous PPP programs that are now maturing.

The market evolved in three distinct phases (Iacobacci, 2010): Phase 1 included only a handful of projects completed before 2004, starting with the federal government's Confederation Bridge project in 1993. This phase was in advance of formal PPP initiatives and policy frameworks and, although important precursors, these early projects bear little resemblance to the PPP approaches in use across the country today. Phase 2 included some 50 projects developed under formal provincial PPP initiatives, including the creation of the various provincial agencies, starting with Partnerships British Columbia in 2002, followed closely by Infrastructure Ontario, Partnerships Quebec, the Alternative Capital Financing Office of the Alberta Government, and a small internal agency in Nova Scotia. Phase 3 is marked by the inception of PPP Canada and the PPP Canada Fund, which accelerated the use of the PPP model more broadly across the provinces and among territories and local governments. In addition, the New Brunswick government created an internal agency in 2010 and the Government of Saskatchewan created SaskBuilds as a corporate delivery agency in 2011.

Policies addressing the criteria and process to select PPP projects vary across provinces. However, as a result of the significant commitment across Canada to the PPP model, there is ongoing communication between delivery agencies and a degree of consistency of approach and documentation. Policy frameworks range from formal Capital Standard PPP screening processes,<sup>43</sup> to informal screening processes, to no policy at all. Federal PPP policy has evolved significantly in recent years to include the PPP Canada Fund and Capital Standard PPPs screening process that applies to applicants to the PPP Canada Fund, other federal infrastructure funds, and also to federal department applicants for federal capital funding.

Corporate-style, major project delivery institutions established by the federal and provincial governments are similar in key attributes in that they consistently provide planning, procurement, and oversight services to government client agencies.

This consistency has allowed for significant knowledge sharing and accelerated public-sector capacity building across jurisdictions. These institutions differ in terms of their inter-relationship with their owner government: how they are paid for services provided, whether they assist with all major capital projects or just PPPs, and whether the service offering includes oversight of design and construction in addition to procurement management. Some provinces have internal PPP agencies and others have a formal organization but rely on the organizations in other jurisdictions. Only three provinces/territories have ruled out PPPs as a procurement approach.

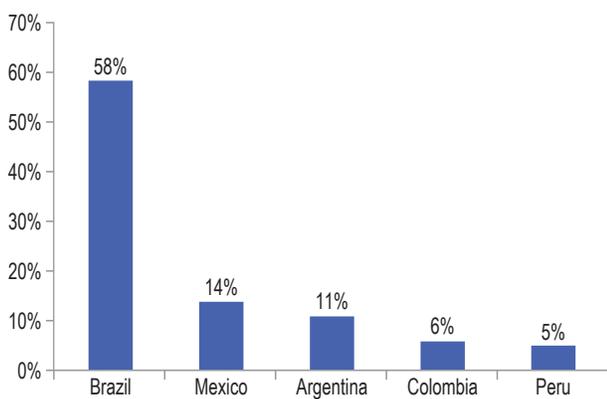
The development of the Canadian market has been characterized by a high degree of diversification of procurement models and economic sectors. Procurement models range from the standard, availability-type DBFM (design-build-finance-maintain) and DBFOM (design-build-finance-operate-maintain) structures to more innovative design-build-finance, wide equity, and other models. All models share important common features: a significant portion of private sector financing, a focus on performance-based outcomes such as availability and service quality, and cost-effective risk transfer to the private partner.

## The Evolution of PPPs in Latin America and the Caribbean

PPPs have not been limited to developed economies. The Latin American and Caribbean (LAC) region accounts for 42 percent of PPPs in developing regions. Projects in Brazil, Mexico, Argentina, Colombia, Chile, and Peru account for 93 percent of the total dollar amount in LAC (Figures 2.13 and 2.14), mostly in the energy and transport sectors.

<sup>43</sup> All federal infrastructure projects creating assets with a life span of at least 20 years and having capital costs of C\$100 million or more are subject to a P3 Screen to determine whether the project could be suitably procured as a P3. Source: <http://www.cpppc.org/u/cms/ppp/201708/311733486smj.pdf>.

**FIGURE 2.13. Market Share of PPPs in LAC**



Source: Authors' estimates, World Bank PPI Database.

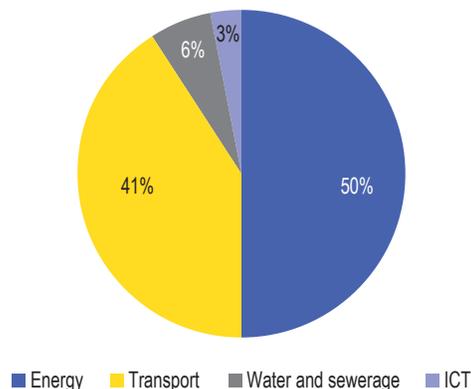
These countries have a long tradition of promoting private sector investment in infrastructure. The region's first PPPs in the form of concessions date back to the end of the 19th century with concession laws, primarily in the transport sector. Yet it was not until the mid-2000s that these countries pursued private participation in public infrastructure in the form of PPP programs. In fact, many countries in LAC that introduced PPP laws during the mid and late 2000s benefited from their experience with transport concessions.<sup>44</sup>

### Colombia

Colombia's current PPP law builds on the experience of road concession contracts during three distinct generations and the development of legal frameworks in specific sectors: the *Public Service Law* (1994), electricity and transport sector laws (1993), and the *Port Development Law* (1991). However, concessions relied on a general law for contracting in Colombia (*Law 80 of 1993*), without a specific framework.<sup>45</sup> In the transport sector, the government pursued four stages or generations of concessions between the mid-1990s and 2010 (Fitch Ratings, 2012). Table 2.4 shows the details of the transition and important characteristics of each of the three stages.

The first generation of concessions in Colombia during the mid-1990s included fixed-term contracts and guarantees awarded by the central

**FIGURE 2.14. PPPs by Sector in LAC**



Source: Authors' estimates, World Bank PPI Database.

government for minimum income and construction cost overruns. Most projects had guarantees against risks, creating significant contingent liabilities for the government. The Government of Colombia guaranteed revenue on projects in transport and energy. These commitments ultimately cost the government US\$2 billion by 2005 (World Bank, 2014). Contract monitoring was not effective in this period and a high volume of contracts were renegotiated. A total of 11 contracts were signed in this period for a total investment of US\$4.6 billion (World Bank, 2012a). The procurement process for seven of these contracts failed and therefore they were sole-sourced. Most of these concessions had a term of no more than 17 years and enjoyed additional benefits from government support in the form of subsidies and guarantees. According to the World Bank, over 50 percent of the investment in the sector was granted government subsidies on top of the investment amount (World Bank, 2012a). Guarantees and subsidies resulted in a significant fiscal burden for the Colombian government in the form of both direct and contingent liabilities.

<sup>44</sup> Mexico introduced PPS in 2003, Brazil introduced its PPP law in 2004, and Colombia established its PPP law in 2012.

<sup>45</sup> *Law 80 of 1993* was used for any acquisition that the public sector needed, from office appliances to infrastructure contracts. In 2005, *Law 80* was modified by *Law 1150*; in 2012, the *PPP Law* was enacted.

**TABLE 2.4. Colombia: Major Changes in PPP Law for the Road Sector**

| Characteristics                                    | First Generation (1993–96)  | Second Generation (1996–2001)  | Third Generation (2001–12)  |
|--|---|--|---|
| Information Quality (independent engineer studies) | Preliminary studies with low level of detail and deficient traffic projections. | High level of accuracy in final studies, improved traffic studies, and the incorporation of socioeconomic studies. | High level of accuracy in final studies, traffic studies based on demand, incorporating socioeconomic studies.                      |
| Concession Term                                    | Fixed term.   | Until expected income is reached.  | Until expected income is reached.   |
| Permits (land acquisition)                         | Land bought at the same time that construction begins.                          | Land bought prior to construction.   | Private sector is responsible for purchasing the land in advance of the transfer of the concession.                                 |
| Ownership and Sponsors                             | No previously defined minimum equity contribution.                              | Minimum required equity contribution defined by contract.  | Minimum required equity contribution defined by contract.   |
| Guarantees   | Minimum income guaranteed, guarantees on construction cost overruns.            | Liquidity and exchange rate guarantees (risk losses not taken by concessionaires).                                 | Liquidity support and exchange rate guarantees for first 5–7 years, period of reduced free cash flow; includes the expected income. |
| Contractual Terms                                  | Undetailed with some judicial voids.  | Clear, transparent contracts that attempted to introduce all possible variables that affect both parties.          | Clear, transparent contracts that attempted to introduce all possible variables that affect both parties.                           |
| Risk Allocation                                    | Major risks assumed by the government.  | More clear risk allocation based on support.   | More clear risk allocation based on support.  |

Source: KECG (2014).

In the late 1990s, the second-generation contracts were designed to move certain risks that had previously been borne by the public sector to the private sector. In this context, the government introduced the concept of “expected income”. Under this framework, concessionaires’ expected internal rate of return on their investment projects were guaranteed, but the government placed limits on the potential for higher investment returns. The government also eliminated most of the original guarantees awarded in the first generation (i.e., traffic and construction, land and environmental permits). This period included two contracts, one that was terminated ahead of time. The remaining contract was valued at US\$88 million with a 20-year concession term and did not feature a construction risk-sharing arrangement. Instead, it provided government subsidies as well as fiscal support for debt service, exchange rate risk, and geology risk.

Significant changes came into effect with the third generation, which started in 2001. In particular, this generation included provisions to measure success and quality of service, and allow project adjustments in accordance with demand. During

this time, 10 projects were awarded, covering 1,772 kilometers of road, with a total investment of US\$3.9 billion, 53 percent of which enjoyed government subsidies. Most of these contracts were awarded to the bidder that required the least present value of expected toll revenue. The National Concessions Institute (INCO) was created to centralize management and supervision of these projects. The contracts continued to allocate risk from land acquisitions to the government, while requiring the concessionaire to undertake additional operational risks (Fitch Ratings, 2012).

In the early 2000s, the government tried to renegotiate contracts awarded under the previous generations’ frameworks to include the main characteristics of this new contract, especially when expanding the scope of previous agreements. This effort to readjust risk-sharing was based on the perception that risk allocation in previous generations had been skewed toward the public sector. However, third-generation contracts fell short of expectations regarding large-scale infrastructure projects that the government’s investment plan had allocated to PPPs. In addition, the government felt the need to maintain a set of well-defined

guidelines that all potential stakeholders of PPPs could follow in a timely and cost-effective manner.

Despite government efforts to address issues raised by each generation, some problems that had previously triggered modifications in the schemes remained. For instance, average actual traffic turned out to be 40 percent less than estimations. Actual construction costs tended to be higher than estimations used as the basis for the concession. These problems led to longer concession terms than those originally envisaged for most road projects and resulted in a greater fiscal burden on the Colombian government. From 1993 through 2010, renegotiations and changes in contracts generated mounting fiscal pressure. During this period, there were 430 contractual changes to 25 road projects, creating a fiscal burden of US\$5.6 billion and adding 131 contracting years. Renegotiations represented 280 percent of the initial contract value (DNP, 2016).

For the fourth generation of concessions, the government worked simultaneously on project structuring and on developing a new regulatory and institutional arrangement. The fourth generation included 45 projects with an estimated total investment of US\$20 billion. This generation featured a substantial improvement in financial modeling as well as technical studies. To improve a project's due diligence, a standard contract was developed by the National Infrastructure Agency (ANI).<sup>46</sup> All public initiatives would now use the same contractual form and the same parameters for risk allocation. Under the new legal framework, the government could divide projects into functional units, allowing it to compensate concessionaires by stand-alone road sections, lowering overall project costs while maintaining the spirit of pay-for-output.

The standard contract and risk allocation mechanisms assigned risks to the partner that had the ability to mitigate the risk at the lowest cost. Many risks previously allocated to the government were transferred to or shared with the private sector, including construction, demand forecast, land acquisition management, and environmental management risks.

Other projects in the transportation sector also leveraged private sector participation. Since the 1990s, Colombia has been delivering airports through PPP, concentrating the projects in main cities such as Bogotá, Barranquilla, and Medellín. Colombia currently has seven PPP contracts to deliver 17 airports. The port sector is regulated by a specific law (*Law 1 of 1997*) that relies heavily on mechanisms like unsolicited proposals and where the government acts as a regulator/manager without any subsidy or public resources provided for the projects. Meanwhile, developing concessions in the railway sector has had a small impact on overall transportation infrastructure. Of 777 kilometers of railways currently in operation, 589 kilometers are operated through concessions and the remaining 188 kilometers are private railways used by the coal extraction business in the northern part of the country.

In 2012, Colombia approved new PPP legislation with special attention to the significant role of PPPs in addressing infrastructure shortages and promoting what the government expects to be expedited development of new infrastructure projects. Some of the key changes include the following:

- The legislation is intended to broaden and facilitate opportunities to build and operate public infrastructure based on lessons learned from the country's previous privately financed initiatives as well as international experiences in the United Kingdom, Chile, and Mexico, among others. The new legislation covered social infrastructure, which was a limit of the previous framework.
- Government payments are triggered by the availability of infrastructure services rather than by construction milestones to cover costs. Payments are based on the quality and the service levels of the infrastructure. The infrastructure becomes officially available when it is in use and complies with the service and quality requirements expressly established by

<sup>46</sup> In 2011, INCO was transformed into the National Infrastructure Agency (ANI) to improve corporate governance, increase technical knowledge, and retain human capital.

the contract. These requirements can be progressive, and proportional deductions from the agreed-upon price may be allowed depending on actual performance of the concessionaire.

- The term of concessions is limited to 30 years, including extensions and additions to the contract, with exceptions only by prior approval. Extensions are limited to 20 percent of the initial concession term and 20 percent of the initial public investment. This limits the ability of the concessionaire to gain upside through renegotiation. Overall public funding for PPP projects is also constrained by an annual limit (Fitch Ratings, 2012).
- The legislation allows unsolicited proposals, meaning the private sector can present project proposals to public authorities to be funded by tariffs or a combination of tariffs and public subsidy. However, the public subsidy cannot exceed 30 percent of total project cost (20 percent for roads). Projects initiated through an unsolicited proposal must go through competitive procurement, but the author of the proposal enjoys benefits such as additional points in the bidding process and the chance to counteroffer the winning bid.
- The legislation requires a VfM evaluation. All PPP procurement proposals need to pass a public comparative analysis between a public-sector alternative, weighting the risks accordingly. This is known as the Public-Private Comparator and helps ensure the public authorities that the choice of the PPP model is economically feasible.
- The new legislation establishes that all projects that require disbursement of public resources, both national and subnational, must have the approval of the Ministry of Finance regarding contingent obligations before initiating a tender process. This increases the number of participants in the tender process and ensures better projects in terms of quality and profitability.

The law also introduced improvements in terms of project financing. For example, it placed all assets and liabilities associated with the project in a

trust, assigned step-in rights for lenders in case of default, and required early termination provisions. These all serve to provide assurances to private lenders (Fitch Ratings, 2012). To provide additional assurances on the public side, the law regulates provisions for cost recovery after projects are completed to ensure they do not exceed 0.4 percent of GDP per year.<sup>47</sup> Standardized PPP contracts serve as an additional control on public fiscal risks (IMF, 2014b).

Over the period 1992–2017, Colombia signed a total of 124 PPP projects (Figure 2.15) for a total investment of US\$37.6 billion. The transport sector accounted for around 63 percent of the total number of projects signed (roughly 83 percent of the total investment amount) based on our strict PPP definition. The peak reported in 1994 corresponds to 10 projects meeting our strict PPP criteria signed following sector liberalizations that proved attractive to the private sector. These include a unique licensing approach that only required registration, which lowered administrative entry barriers. Accounting for merchant projects expands the relative contribution of the energy and telecommunications sectors to 42 percent of total investment compared to only 14 percent under the strict PPP definition.<sup>48</sup>

## Mexico

Mexico has also developed a PPP program mainly in the form of concessions. The country's experience with PPPs has gone through various stages

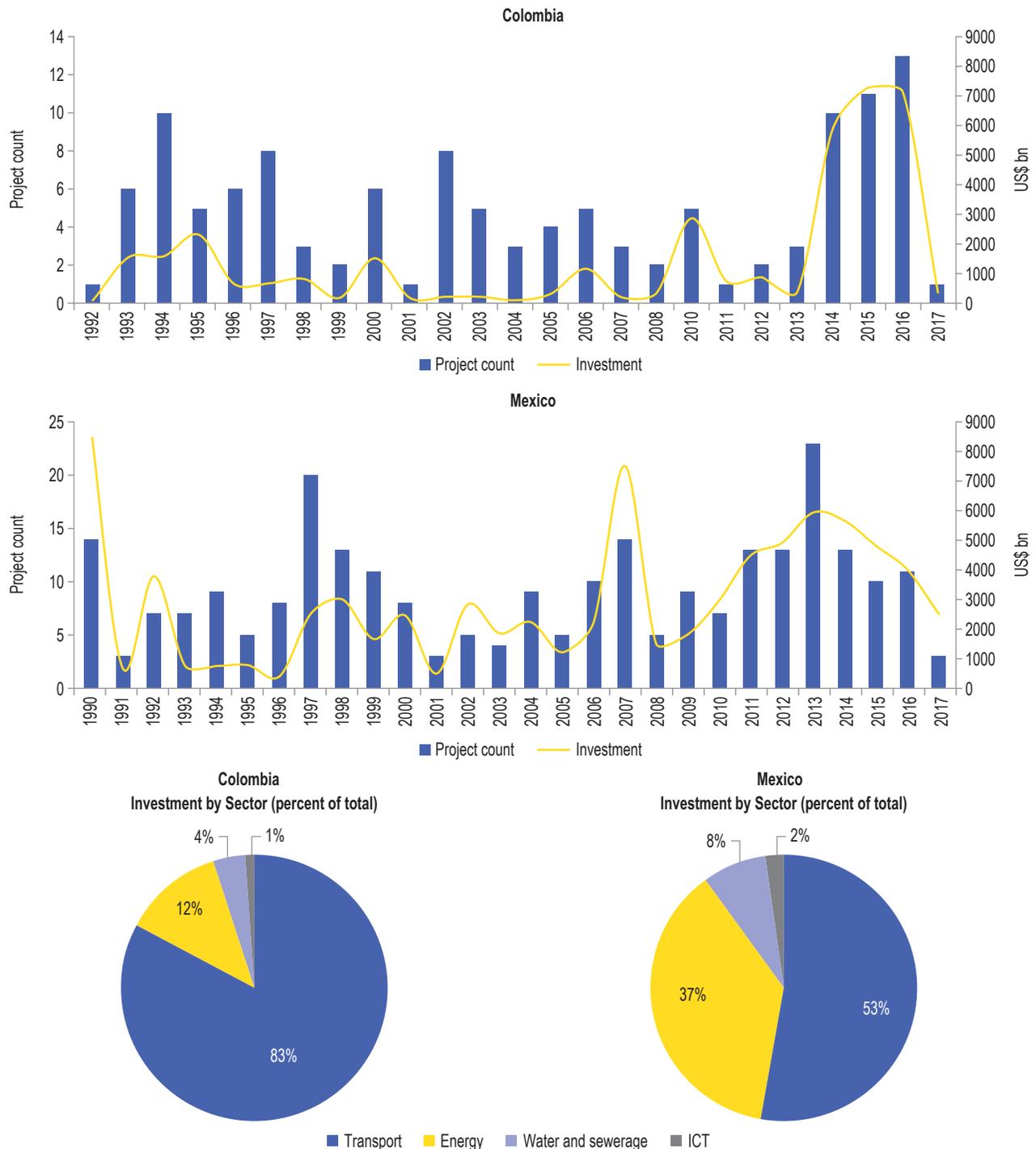
<sup>47</sup> Each year, the National Economic and Social Policy Council (CONPES) defines the amount of the investment budget that will be allocated to future payments of PPP projects for the next 30 years.

<sup>48</sup> During the early 1990s, merchant projects in telecommunications overwhelmingly dominated PPP financing in Colombia. A merchant project involves construction of a new asset, but unlike a traditional greenfield project, there is no ongoing public-private risk-sharing relationship. The private sector assumes the construction, operating, and market risk for the project, but at the same time, no concession fees are paid to the government. Such projects are particularly attractive to private partners in robust, liberalized markets where the government provides no revenue guarantees but also does not regulate prices. The role of government in such projects is usually limited to licensing.

(Figure 2.15). Over recent years, the country has favorably developed its PPP program and is currently one of the most active countries both in

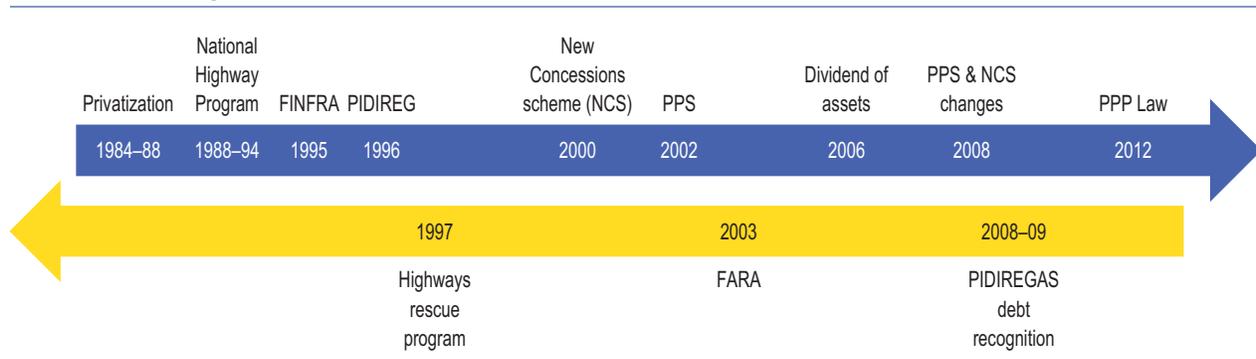
concessions and other type of PPPs. Between 1990 and 2017, Mexico approved 262 projects (telecommunications [6], highway concessions [116], energy

**FIGURE 2.15. PPPs in Colombia (1992–2017) and Mexico (1990–2017)**



Source: Authors' calculations, PPI Database.

**FIGURE 2.16. Progress and Setbacks for PPPs in Mexico**



[89], and water and sewerage [51]) for a total investment amount of US\$83 billion in 2016 dollars. Like Colombia, including merchant projects significantly expands these numbers, yet we do not consider them PPPs in the strict sense.

Until 1987, the Secretariat of Communication and Transport (SCT) was the only entity allowed to design, construct, operate, and maintain the national highway network. In 1989, the government embarked on a large toll motorway concession program under the National Highway Program. Between 1989 and 1994, the government leased out more than 5,000 kilometers of federal highways in 52 toll road contracts. The first wave of concessions suffered from contractual and regulatory problems, which gave rise to several contract renegotiations and even bailouts by the government.

According to the Center for the Study of Public Finance of the Mexican Congress, the economic crisis of 1995 revealed the weaknesses behind Mexico's regulatory framework and the country's lack of experience in designing concession contracts. Problems were driven by the SCT's lack of resources and experience to properly prepare the terms of reference and regulation of draft concessions, including lack of proper preliminary designs, cost/benefit analysis, and demand estimation. Issues stemmed from setting the award criteria as the shortest concession period (12 years maximum), meaning tolls were set too high to recover costs in the short run, diverting demand to alternative public roads. Moreover, the 1994 economic

crisis significantly reduced traffic demand, harming cost recovery and forcing many the concessionaires into bankruptcy (CEFP, 2007).

In this context, the government undertook several actions to improve the situation. It extended the original terms of the concession to a maximum of 30 years, reduced toll rates on 28 strategic highways to increase demand, and launched a financial restructuring program for concessionaires. Despite these measures, financial problems persisted, especially for concessionaires that obtained loans from international banks. These problems culminated in bailouts for 23 of the 52 toll roads under concession in 1997.

In 1995, Mexico introduced a new scheme as part of the private participation program. The *Proyecto de Inversión de Infraestructura Productiva con Registro Diferido en el Gasto Público* (PIDIREGAS) was introduced for long-term productive infrastructure projects in the electricity and oil sectors and allowed the recording of expenditures for investments to be deferred. PIDIREGAS also allowed the debt incurred to construct the asset to be registered, while recognizing post-construction payments to the private contractor. PIDIREGAS was channeled through two state-owned enterprises: the *Comisión Federal de Electricidad* (CFE) and *Petróleos Mexicanos* (PEMEX).<sup>49</sup> This scheme was introduced to

<sup>49</sup> When the projects are operational, payment obligations are paid through the revenues generated by the project and registered on the annual budget under current expenditures.

boost investment in areas otherwise restricted to the private sector at a time when the government was facing constraints on public finance. Presently, the only state-owned enterprise that uses this scheme is CFE. PEMEX stopped using PIDIREGAS after the energy reform in 2009, when all associated debt became public debt.

Mexico initiated the second phase of its private participation program in 2000. The new approach was targeted to certain economic sectors and included three schemes: a new highway concession framework,<sup>50</sup> *Proyectos de Prestación de Servicios* (PPS), and asset utilization. Projects based on the PPS scheme, inspired by Britain's PFI, were used by the Mexican government from 2004 to 2014. They consisted of contracts in which the government paid the private investor for services rendered through the shadow toll system—a function of road use and availability. The Budget and Planning General Director under the Ministry of Finance was responsible for approval and payments were reported as a current expenditure.

The government created the Infrastructure Fund (FONADIN) in 2008 to support projects with private sector involvement. By decree, FONADIN is a public trust fund, serving as the coordination vehicle of the federal public administration for infrastructure investment, mainly in the areas of communications, transport, water and sanitation, environment, and tourism.<sup>51</sup> It is composed of a portfolio of existing toll roads run by the government that provide liquidity to support other projects. The main form of support that FONADIN provides is the equity or subordinated debt needed to complete the financing of PPP projects. For example, the fund provides equity or subordinated debt to greenfield toll road projects with limited access to commercial bank financing or capital markets, thereby decreasing the amount of commercial financing in total project equity. Throughout its existence, the Technical Committee of FONADIN has authorized recoverable and non-recoverable support to infrastructure projects for just over MXP 220 billion (approximately 1.5 percent of 2016 GDP), having disbursed almost half of these commitments.<sup>52</sup>

Since it is a public trust fund, FONADIN does not have a legally defined organic structure. However, since the National Bank of Public Works and Services (BANOBRAS) is FONADIN's fiduciary institution, its structure is located within the Deputy General Directorate of Investment Banking. In this sense, the federal budget and the *Fiscal Responsibility Law* require BANOBRAS to report information about FONADIN in its quarterly reports (income, including financial returns for the period, expenditures, as well as its destination and balance or availability). These quarterly reports must include a report on fulfillment of the mission, goals, and results achieved, as well as the resources exercised by FONADIN.

In 2009, the Mexican government and the IDB, through the Program for the Promotion of Public-Private Partnerships in Mexican States (PIAPPEM) financed by the Multilateral Investment Fund (MIF), provided technical and financial support to Mexican states to create the legal, institutional, and technical conditions needed to develop and strengthen the design and execution of the

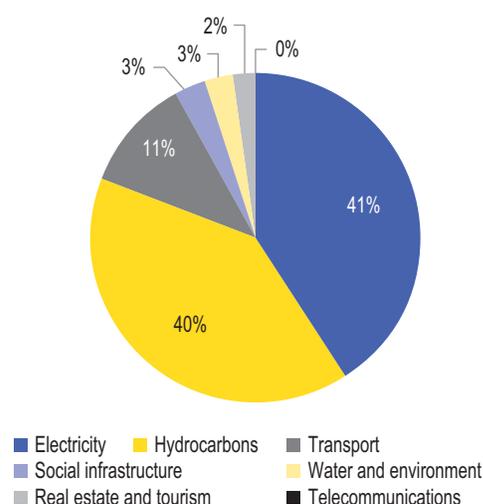
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<sup>50</sup> The main characteristics of the new concession scheme included: i) concession periods of up to 30 years; ii) maximum average toll fees; iii) better project preparation, design, and operational schemes developed by the SCT; and iv) government support to make projects bankable. However, the award criteria continues to be based on which concession requires the least government support, measured as the sum of the initial subsidy and net present value of subordinated requested contribution commitment. If the concessionaire accepts the subordinate contribution commitment and earnings are higher than estimates, the amount exceeding the expected revenue will be shared between the dealer and FONADIN. The concessionaire has no obligation to return to FONADIN the amount requested as an initial contribution, it only returns the equity contribution that is recovered based on the internal rate of return analysis. In addition to the roads sector, the concession model has also been used since 1995 for other transport infrastructure.

<sup>51</sup> The commitments and assets of two public trusts became part of FONADIN: the Trust Fund for the Rescue of Highway Concessions (FARAC) and the Infrastructure Investment Trust Fund (FINFRA). The first was particularly important in rescuing concession highways in 1997, while the second was relevant in promoting the new highway concession schemes initiated in 2003.

<sup>52</sup> The projects' characteristics determine their classification into recoverable or non-recoverable. For more details, go to <http://www.fonadin.gob.mx/>.

**FIGURE 2.17. Projects Under the PPP Law by Sector**



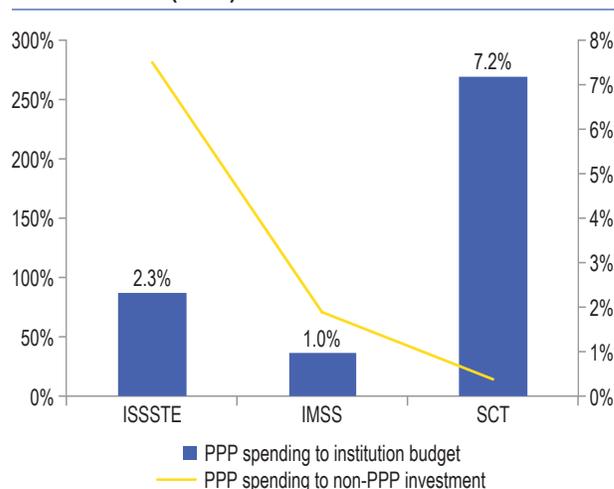
Source: Authors' estimates using Ministry of Finance information on PPPs.

PPP projects. Twelve states participated in this program to initiate and strengthen the legal framework at the state level.

Aside from PIDIREGAS, PPP projects in Mexico have traditionally been developed as highway concessions. During 2007-12, PPPs reported significant growth in the number of projects and in investment amounts. The number of PIDIREGAS grew steadily from 1995 through 2012 and began to decline only after PEMEX discontinued this mechanism in early 2013.

Since 2012, the Mexican PPP portfolio has been one of the most active in the LAC region. The current portfolio (2012-18) includes at least 40 PPP projects under the federal PPP law, all in

**FIGURE 2.18. PPPs as Percent of the Sectoral Budget (2017)**



Source: Authors' estimates using Ministry of Finance information on PPPs.

Notes: ISSSTE: Institute of Social Security at the Service of State Workers; IMSS: Mexican Institute of Social Security; SCT: Secretariat of Communication and Transport

distinct stages of the design and approval process (e.g., bidding, execution, operation, and pre-investment, see Table 2.5). The total amount of these projects is roughly US\$10.85 billion (US\$3.85 billion, excluding one telecommunications contract launched in 2016), with a considerable number of projects in the social sector (Figure 2.17). In some cases, the sectoral portfolio surpasses the overall budget of the entity in charge of the projects (Figure 2.18).

The affordability of a PPP project should be assessed by a budget division, typically within the Ministry of Finance, to ensure that the fiscal burden

**TABLE 2.5. Mexico: Project Status**  
(total investment in US\$MM and number of projects)

| Sector                | Bidding        | Execution         | Pre-investment    | Total              |
|-----------------------|----------------|-------------------|-------------------|--------------------|
| Social Infrastructure | 246 (3)        | 417 (5)           | 759 (8)           | 1,422 (16)         |
| Telecommunications    |                | 7,000 (1)         |                   | 7,000 (1)          |
| Transport             | 698 (4)        | 1,199 (10)        | 230 (3)           | 2,127 (17)         |
| Water and Environment |                |                   | 307 (5)           | 307 (5)            |
| <b>Total</b>          | <b>944 (7)</b> | <b>8,616 (16)</b> | <b>1,296 (17)</b> | <b>10,856 (39)</b> |

Source: Authors' elaboration with data from [www.proyectosmexico.gob.mx](http://www.proyectosmexico.gob.mx).

**TABLE 2.6. Main Laws Relevant to Brazilian PPP Contracts**

| Law    | Date           | Main Features   |
|--------|----------------|---|
| 8.987  | February 1995  | Set the concession regime to provide public services under user fee contracts, creating specific rules regarding contracts and the procurement process.   |
| 9.074  | July 1995      | Established additional rules under the concessions regime specifically directed to the energy and transport sectors.  |
| 9.491  | September 1997 | Defined project approval procedures consistent with the National Privatization Plan.  |
| 11.079 | December 2004  | Established general rules for PPP contracts that require public financial support (public contracts with availability payments).  |
| 12.766 | December 2012  | Amended federal law 11.079 to allow public-sector payments under different modalities of PPP contracts and in different stages of project implementation (including construction grants). It also set the rules under which the Brazilian states could access the federal guarantee fund for PPP projects (provided that the subnational entities back the use of these guarantees against collateral). |

Source: Siqueira and Reyes-Tagle (2017).

of a given project is properly accounted for in the budget of the responsible line ministry. Even if the method used to assess affordability is imperfect, the allocation process is important to align budget constraints with the implementing agency (see World Bank, 2013). In Mexico’s 2017 federal budget, only some projects in health and transport were assigned budget allocations. For example, in the health sector, the two main entities that run public hospitals are the Institute of Social Security at the Service of State Workers (ISSSTE) and the Mexican Institute of Social Security (IMSS). Both entities have benefited from the PPP law to finance additional hospital infrastructure. In 2017, the dollar value of PPP investment budgeted for these two entities was US\$84 million and US\$130 million, respectively, which represented 2.3 and 1 percent of their respective total budgets, or 281 and 72 percent of their total budgeted portfolio investments (see Figure 2.18).

This behavior can be explained by two factors. First, 2017 PPP investment budgeted by the private sector for SCT projects was 3.6 times the ISSSTE’s PPP budget and 2.3 times the IMSS’s PPP budget. Second, even when investment budgeted by the private sector for SCT projects is larger in absolute terms, the proportion of investment to the SCT budget is 86 percent, while this figure represents only 3 and 2 percent for the IMSS and ISSSTE, respectively. This highlights the phenomenon of budget rigidity: private- and public-sector planning is often misaligned as a result.

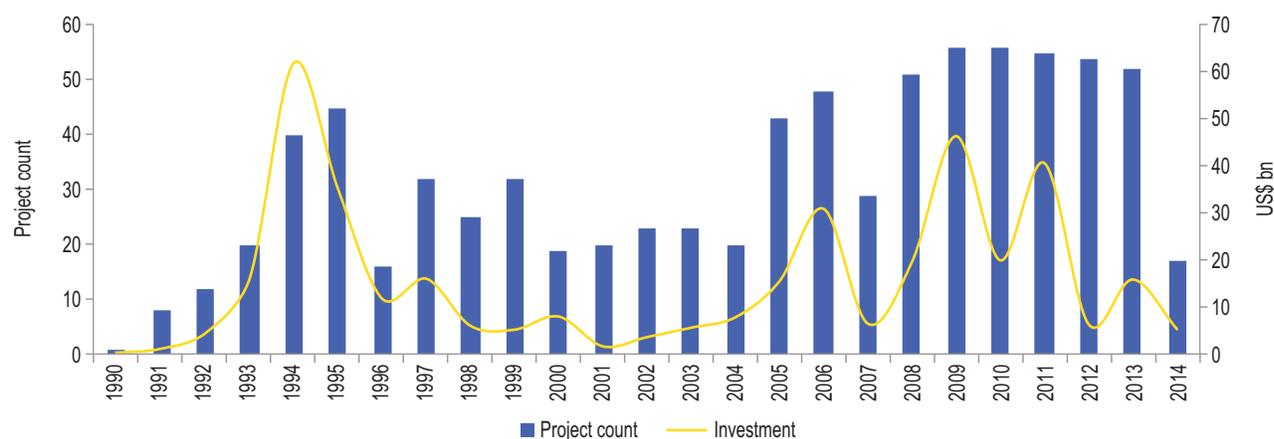
## Brazil

Brazil has used PPPs more intensively and extensively than any other emerging economy, not only in the LAC region, but globally. Between 2004 and 2016, Brazilian states (which are responsible for PPP programs in Brazil) approved 680 projects, enabling capital investment of US\$368.7 billion in sectors such as transport, energy, and telecommunications. The total value represents 60 percent of all LAC projects that reached financial closure in the same period.

In 1995, the government approved a public-sector concession regime that set the framework for private participation in public infrastructure through contracts based primarily on user tariffs (Table 2.6). The concession model improved the legal framework to allow the government to create long-term contracts with private participants, surpass the five-year limit for public contracts, allocate project risks based on legal standards, and use private financing for public CAPEX.

This legal framework created the conditions for a relatively stable pipeline of projects during the 1990s, mostly concentrated in the energy and transport sectors. While this was an important first step, concession contracts could only be user-funded before 2004, and service contracts were limited to a maximum duration of five years. The 2004 *PPP Law* changed this by allowing PPP contracts to include direct financial support mechanisms, expanding the

**FIGURE 2.19. Number of PPPs Approved and Investment Amount for Brazil**



Sources: Authors' estimates using World Bank's database and Siquiera and Reyes-Tagle (2017).

potential for PPPs in sectors like social infrastructure, where private participation would not be feasible without subsidies. Moreover, the law allowed services such as building and managing a penitentiary to be developed using a PPP, which had been vetoed in the past. In practice, this created the conditions for projects in which the revenue model is solely based on government availability of payments. The law also allowed greater freedom to allocate risks without legal restraints.

The law made the Ministry of Planning responsible for program coordination and project approval, while the Ministry of Finance would set exposure limits for the government under PPPs. The 2004 law also allowed upside gains to be shared between the public and private partners, established formal procurement and arbitration processes, as well as regulatory entities, and allowed government compensation for cases in which user fees proved insufficient (Edwards, Grilo, Melhado, et al., 2005). Minas Gerais kicked off the country's first PPP under this new modality in 2007, granting a R\$1 billion concession for a highway project.<sup>53</sup>

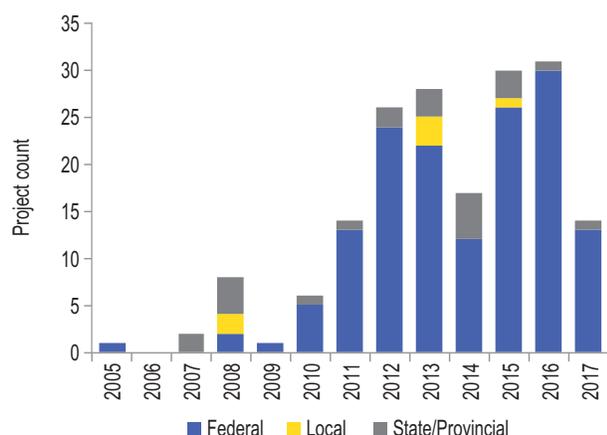
As a result of the 2004 law, a new wave of PPP projects began in the late-2000s led by subnational governments that have since remained active in preparing and procuring PPPs (Figure 2.19). Sao Paulo, Minas Gerais, and Bahia account for

46 percent of the dollar amount of the PPP portfolio. The leading economic sectors for PPPs are water and sanitation, solid waste management, and road projects. In the period 2006-16, the dollar value of 98 contracts signed with government support totaled US\$47 billion.

However, the new government-pays PPP created two novel issues. The first was the low credit rating of subnational governments, which highlighted the risk of government default—not typically a consideration for user-funded contracts. This risk has been mitigated by the creation of an unprecedented system of national-level financial guarantees against political risk, essentially a required condition for PPPs to remain commercially feasible. The second issue was the capacity of the country's governments to identify, report, and manage the fiscal consequences of contracts, which were previously limited in user-pays concessions. Several regulations have been issued that require subnational governments implementing PPPs to map all direct liabilities over a 15-year time span and publish them bimonthly, identify contingent liabilities and report them annually as a part of the medium-term budgetary framework, and

<sup>53</sup> From 2005, the Minas Gerais PPP unit received technical support from the IDB and the MIF.

**FIGURE 2.20. Brazil PPPs with Public Financial Support by Level of Government**



Sources: Authors' estimates using World Bank's database and Siquiera and Reyes-Tagle (2017).

register assets established through PPP contracts on the balance sheet.

Enforcing these rules has been challenging because of the effective independence of subnational governments in implementing PPPs. The growth in PPP use at the subnational level has followed the relaxation of the fiscal constraints that had limited their use. In the original text of the 2004 legislation, subnational governments were limited to a PPP subsidy ceiling of 1 percent of their annual net revenue for each fiscal year. In 2009, that limit was raised to 3 percent and, in 2012, it was raised again to 5 percent. This measure allowed for a larger number of state and local governments to carry out PPP programs.

## Honduras

De facto PPPs have existed in Honduras under the infrastructure concession scheme. Many of these projects were very similar to the PPP framework that emerged in 1999. But since no regulatory framework was in place until this time, there was no concrete evaluation of the concession projects undertaken prior to that date. Even so, the number and size of PPPs was not very high (except for 2003), and it was not until the second round of

reforms to the legal framework that the number of PPPs increased significantly (Figure 2.21).

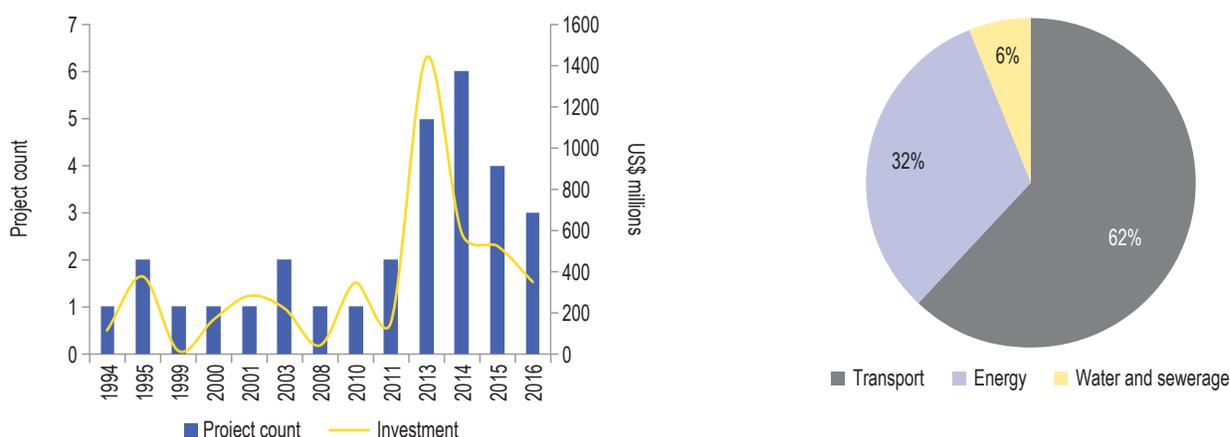
The country's lack of strong public institutions and well-defined policy-making processes, as well as the prevailing sectoral laws, resulted in the lack of a clear, strategic vision for the infrastructure sector, complicating the environment that governed concessions in the country. In 1999, the government established the first PPP law by approving the *Promotion and Development of Public Works and National Infrastructure Law*. The law recognized the country's lack of capacity to program and execute mega-investment projects, justifying the need for a legal framework to allow private participation in public investment. The law established a concessionary regime to provide infrastructure and manage public works, with no budgetary cap on the use of PPPs. However, it excluded municipalities and decentralized public bodies, leaving important mega-projects like those carried out by the National Electric Energy Company outside its scope.<sup>54</sup> As a result, few projects were approved under the PPP law during the period that the law was in effect (1999–2009).<sup>55</sup>

In response to the global economic downturn and mounting fiscal pressure, the government implemented a fiscal program in 2010 aimed at rationalizing fiscal imbalances and improving the composition of public spending to make

<sup>54</sup> The electricity sector in Honduras represents around 3 percent of GDP.

<sup>55</sup> The PPP portfolio includes build-own-operate (BOO), build-rent-operate-transfer (BROT), and build-operate-transfer (BOT) contracts. Under BOO agreements there is no obligation to transfer ownership to the government at the end of the contract. BOOs are also normally used in sectors that have undergone a process of privatization or deregulation. Depending on each case, a BOO may or may not be considered a PPP. However, since governments sometimes provide revenue guarantees through long-term take-or-pay contracts for this kind of project, we include them in this analysis. Among all these projects, only the Airport Network used the legal framework established by the *Promotion and Development of Public Works and National Infrastructure Law* (Aguas de San Pedro de Sula also refers to the law, despite being a local project and therefore outside of its scope).

**FIGURE 2.21. Number of PPPs, Investment Amount by Year, and Sector in Honduras (1994–2016)**



Source: Reyes-Tagle and Tejada (2015) and the World Bank's database.

space for high priority investment. In line with a need to prioritize public investment, the government revamped its PPP program in 2010 by abolishing the first PPP law and substituting it with the *Law to Promote Public-Private Partnerships*. This law sought to introduce a more expeditious process to manage, develop, and execute public works and services through PPP projects rather than concessions. The law is governed by general principles that include public investment security, efficiency in public investment processes, fiscal accountability, optimality in the use of resources, competition, and economic and financial sustainability. However, the law gives preponderant power to a single body created for the promotion of PPPs, making it judge and jury for contract adjudication.

In 2011, the Honduran Congress approved the *Investment Promotion and Protection Law*, which established a special regime for PPPs implementing “mega-projects and investment projects of national priority” and detailed regulation of the trust funds framework. While this law seemed to strengthen the legislative framework of the PPPs and attracted private investment, its implementation has fallen short of establishing adequate institutional arrangements and fiscal oversight mechanisms (IDB, 2014, pp.3,14).

## Peru

Prior to Peru’s 1993 Constitution, various measures had been implemented to offer guarantees for private investment in national projects, including freedom of repatriation and exchange rate convertibility (Decree 662), regulating concessions to private investors (Decree 758), and enabling state-owned companies to enter into investment contracts, joint ventures, and management contracts (Decree 674). The 1996 *Law for the Promotion of Private Investment in Public Infrastructure and Public Services* established a concessions policy with a view to promoting private investment in public infrastructure and services. The government issued a Unified Order Text exclusively dedicated to harmonizing the different regulations for concessions. The *General Law for the Promotion of Decentralized Investment* was issued between 2001 and 2006, generating new contractual options for the participation of private investment, including joint ventures and management contracts.

In 2008, PPPs were formally introduced in Peru, with the publication of Legislative Decree No. 1012 and its regulations (Supreme Decree 146-2008-EF). This new legislation specifically regulated this type of contract, the maximum contract

**TABLE 2.7. Changes to Peru's PPP Framework Following the Financial Crisis**

|                |   |  |
|----------------|---|--|
| The Rule       | Decree 146-2008-EF<br>(Regulation of Law 1012,<br>previous PPP law) | <i>Article 5.1: To adhere to the process of promoting private investment for the provision of infrastructure and public services through PPPs, the Entity will prepare an Evaluation Report for the relevant public bodies that contains at least the following content: ... for cofinanced projects: an assessment of the advantages of developing the project through a PPP, including a quantitative evaluation for projects that cost more than 100,000 UIT and require cofinancing exceeding 30 percent of the cost. This evaluation will be based on the Public-Private Comparator (3.2 the Ministry of Economy and Finance will establish by ministerial resolution the principles, methodology and criteria for the application of this analysis).</i> |
| The Exceptions | Emergency Decree 047-2008   | Declaration of national necessity to allow priority execution of 12 PPP projects by ProInversion (advocacy body for PPPs).<br><br>Grants ProInversion the discretion to determine maximum levels of cofinancing as well as the maximum amount of financial and non-financial guarantees.<br><br>Reduction of legal requirements: grants ProInversion discretion to modify the mechanisms and plan for the promotion of PPPs.   |
|                | Emergency Decree 010-2009   | Declaration of national necessity to allow priority execution of 52 additional projects.<br><br>Declares validity of emergency decrees for fiscal years 2009 and 2010.   |
|                | Emergency Decree 020-2009   | Exempts major projects as well as the projects approved by Emergency Decrees 047-2008 and 010-2009 from applying the Public-Private Comparator.<br><br>Declares measure valid through 31 December 2010.  |
|                | Emergency Decree 121-2009   | Declaration of national necessity to allow priority execution of 20 additional projects.<br><br>Declares validity of projects approved by Emergency Decree 047-2008 that have not been awarded or prioritized for 2010.<br><br>Declares new measures for the execution of prioritized projects (including the cession of land, among others).  |
|                | Emergency Decree 032-2010   | Declaration of national necessity to allow priority execution of one additional project.<br><br>Declares measure valid through 31 December 2012.   |
|                | Emergency Decree 039-2010   | Declaration of national necessity to allow priority execution of two additional projects.  |

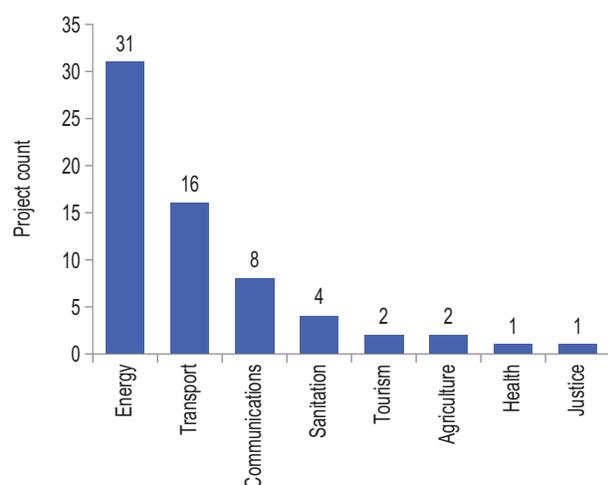
Source: IDB Case Study.

length, and the procedures that allow regional and local governments to use this procurement scheme. Nonetheless, in the year following publication of its legislation, PPPs in Peru faced an adverse environment due the uncertainty caused by the global financial crisis. Given this context, and with a view to using PPPs as a countercyclical policy measure, the government issued a series of emergency decrees to speed up the execution of certain PPP projects. These decrees avoided stipulated requirements such as the VfM estimation.

The government modified the original PPP law several times, and a new PPP law was issued at the end of 2015. A new PPP framework (Legislative Decree No. 1224 and Supreme Decree No. 410-2015) came into effect with the goals of reducing the

infrastructure gap, aligning PPP regulations with international best practices (i.e., OECD), and consolidating PPP-related regulations into one decree. This framework introduced planning tools such as Investment Multiannual Reports and more simplified and efficient processes. The new legislation established the National System of Private Investment Promotion (NSPIP), which is designed for the different ministries that want to implement a PPP project; the state or national specialized unit to promote private investment (*Órgano Promotor de la Inversión Privada*) for local governments and ProInversion for the national government; the Ministry of Finance; and the regulatory bodies. The NSPIP defines duties and responsibilities to make the PPP cycle more efficient. Under the PPP law,

**FIGURE 2.22. PPPs by Sector in Peru**



Source: Authors' elaboration, Peruvian Finance Ministry.

around US\$29 billion has been invested in different sectors.

## PPPs in Asia

### South Korea

In the early 1990s, the Korean economy was faced with a shortage of infrastructure, including roads, railways, ports, and seaports. The government budget was not sufficient to meet the urgent financing needs for infrastructure expansion. In 1994, the government launched its PPP program through the *Promotion of Private Capital into Social Overhead Capital Investment Act*. According to Kim, Kim, Shin, et al. (2011) and Lee (2016), the act provided a legal basis to systematically induce private sector investment in solicited economic infrastructure projects under a build-transfer-operate (BTO) framework. This was seen as an innovative attempt that had never been tested to cope with fiscal budget constraints and benefit from private sector efficiency and innovation (Kim et al., 2011).

As the PPP system developed in the late 1990s, private capital accounted for as much as 20 percent of total infrastructure investment annually. However, the first PPP projects floundered

because of insufficient measures to mitigate risk and adverse political and economic conditions. For several years after the first PPP act took effect, the amount of actual PPP activity was low. After Korea's 1997 financial crisis, a number of agreements failed to reach financial closure. The PPP act was reformed in 1999, with the government taking responsibility for more of the private sector's risks. In particular, the government introduced a minimum revenue guarantee (MRG) and guaranteed 90 percent of estimated revenue for the whole concession period of 30 years. The act clarified the distinction between solicited and unsolicited projects and improved the Korean infrastructure credit guarantee fund system. On the other hand, a much stricter PPP project selection procedure was introduced, including detailed rules to comply with the feasibility studies under the supervision of the Public and Private Infrastructure Investment Management Center (PIMAC) under the Ministry of Strategy and Finance (Kim et al., 2011).

In 2005, the *Act on Private Participation in Infrastructure* was further amended into the *Act on Public-Private Partnerships in Infrastructure* to encourage private participation in a broader set of economic and social infrastructure. The act also established the build-transfer-lease (BTL) framework for social infrastructure. The Korean government started to place more emphasis on efficiency as a rationale for pursuing PPPs. The feasibility analysis process was strengthened, and large-scale unsolicited projects with a total project cost of 200 billion KRW or more would be implemented as PPP projects only after passing a VfM test (Kim et al., 2011). Table 2.8 provides a brief overview of the development of Korea's PPP system and its main characteristics.

The legal framework that regulates PPP projects in Korea consists of the *Act on Public-Private Partnerships in Infrastructure* as the basic law, the *Enforcement Decree of the Act on Public-Private Partnerships in Infrastructure* issued by Presidential Decree, and master plans for public-private infrastructure partnerships (Table 2.9). Detailed guidelines for implementing PPP projects are stipulated in the PIMAC guidelines.

**TABLE 2.8. Evolution of South Korea's PPP Legislation**

| Period (years) | Law   | Characteristics  |
|----------------|---|--|
| 1968~1994      | Separate laws (e.g., <i>Road Act</i> , <i>Port Act</i> )                            | <ul style="list-style-type: none"> <li>Diffuse PPP projects under separate laws.</li> </ul>  |
| 1994~1998      | <i>The Promotion of Private Capital into Social Overhead Capital Investment Act</i> | <ul style="list-style-type: none"> <li>Attempted to solicit private capital under systematic procedural framework.</li> <li>Regulations stipulated two forms of facilities: one for BTO and the other for BOO framework.</li> </ul>  |
| 1999~2004      | <i>The Act on Private Participation in Infrastructure</i>                           | <ul style="list-style-type: none"> <li>Provided strong government support to encourage private investment, including introduction of MRGs and buyout rights.</li> <li>Adopted unsolicited project system.</li> <li>Discontinued two-form approach and diversified project methods.</li> <li>Established Public Infrastructure Investment Center of Korea (PICKO) to support competent authorities with feasibility analysis and negotiations.</li> </ul> |
| 2005~present   | <i>The Act on Public-Private Partnerships in Infrastructure</i>                     | <ul style="list-style-type: none"> <li>Introduced BTL scheme.</li> <li>Expanded facilities subject to PPP to social infrastructure (e.g., schools, waste, sewage, and military).</li> <li>Introduced mandatory feasibility testing for unsolicited projects.</li> <li>Promoted infrastructure fund through public subscription.</li> </ul>   |

Source: Lee (2016).

**TABLE 2.9. Legal and System Framework for PPPs in South Korea**

| System                                | Standards  | Party that Legislates and Prepares Standard                             |
|---------------------------------------|--|---|
| Act on PPPs                           | Definition of infrastructure facilities, related implementation methods, implementation procedures for PPP projects, rights of concessionaires, infrastructure credit guarantee fund, infrastructure facilities fund, conciliation committees to settle disputes, supervision of management, institutional support, and penalties. | National Assembly<br>(The executive branch is also allowed to initiate) |
| Enforcement Decree of the Act on PPPs | Actualization of matters specified in law.   | President   |
| Master Plans for PPP                  | Annual policy directions and investment plans, general guidelines to implement PPP projects, implementation procedures for PPP projects.   | Minister of Strategy and Finance  |
| Detailed Guidelines                   | Specific guidelines to conduct VfM testing, refinancing, evaluating, negotiating, etc.   | Executive Director of PIMAC   |

Source: Lee (2016).

According to the Korean PPP act, PPP procurement methods can largely be divided into two categories: solicited projects, where the competent authority identifies a potential PPP project and recruits investors, and unsolicited projects, where the private sector proposes a potential PPP project to the competent authority. In a solicited project, the competent authority identifies an eligible project and conducts a feasibility analysis, whereas in an unsolicited project, a concessionaire from the private sector identifies a potential project, establishes a project plan by conducting a feasibility analysis, and proposes the project to the relevant authority. BTO, BOT, and BOO can be implemented for both

solicited and unsolicited projects, but BTL may only be applied to solicited projects. If the government carries out the feasibility analysis, a variety of methods, including BLT, ROT, and RLT, may be adopted.

Factors that explain Korea's successful introduction and execution of a PPP system over the past two decades are:

- introduction of a robust legal and institutional framework;
- efforts to maintain a transparent and competitive procurement process;
- provision of conducive policy supports, incentives, and risk-sharing;

- active participation of a strong private sector;
- the will of the government to improve the PPP program;
- reasonable compliance with the fiscal obligation to support the PPP program; and
- systematic efforts to build capacity.

Although it has a successful policy framework and portfolio of projects, Korea's experience with PPPs is not necessarily without challenges. The country's PPP system, for example, was largely built on an MRG mechanism that created perverse incentives, especially with construction companies, which led to the demise of this powerful mechanism in the mid-2000s. After the MRG was eliminated, the level of private sector participation in infrastructure development declined significantly.

### The Philippines

PPPs have long been a cornerstone strategy in Philippine infrastructure development. The program began with some private sector participation in power projects in the late 1980s through the mid-1990s in response to a severe power shortage. The government allowed private investment in power plants through a 1987 Executive Order. However, this action had a limited impact since it lacked legislated public procurement guidelines. The legal basis for PPPs was strengthened with Act 6957 in July 1990, authorizing private financing, construction, operation, and maintenance of public infrastructure. In 1994, the act was amended to expand PPP modalities, improve transparency and flexibility by allowing negotiated contracts, and provide incentives for PPP projects.

This history is reflected in the fact that 70 percent of PPPs reaching financial closure between 1990 and 2014 were power sector projects representing 46 percent of total investment value. The passage of the *Electric Power Reform Act* (EPIRA) in 2001 comprehensively restructured the power sector, including unbundling the generation, transmission, and distribution components of the service. The goal was to gradually privatize power

generation. As a result, power projects implemented after 2001 were no longer governed by the *BOT Law*, but rather by EPIRA.

The PPP scheme resulted in massive project growth from 1990 to 2000, expanding into areas such as water supply and information technology and reaching 15.5 percent of GDP in 1997 (ADB, 2013). Several factors contributed to the growth of the PPP program during the 1990s, notably: i) strong support from the highest political level; ii) a new legal framework with clear policy and implementation guidelines; and iii) the establishment of a BOT Center Unit under the Office of the President to provide technical assistance to develop projects, build capacity, market, and promote PPP projects.

Political and governance issues increasingly affected PPP projects toward the end of the decade, including high-profile projects such as Manila International Airport's Terminal 3. As a result of political problems, few projects outside of the energy sector were implemented from 2001 to 2010. Since then, the government has amended rules and regulations to strengthen the integrity of the bidding guidelines and accountability of implementing agencies, streamline the approval process, and improve the monitoring and evaluation of projects. In addition, the PPP Center established the Project Development and Monitoring Fund (PDMF), a revolving credit fund that agencies can access to prepare projects and seek advisory services to facilitate the deal flow of solicited projects.

A bill is currently pending to amend the *BOT Law* to include joint ventures among PPP modalities, improve the process for unsolicited proposals, institutionalize the PDMF, separate the regulatory and proprietary functions of government-owned and controlled corporations to address conflict of interest, and create a list of projects of national significance.

In parallel, there are ongoing PPP capacity-building initiatives at the national and local levels, and efforts to expand the PDMF for local government projects. VfM analysis has recently been made part of the due diligence, but government is still building the information for public-sector comparators.

**TABLE 2.10. Indonesia's Infrastructure Laws and Revisions**

| Sector  | Old Regulation                    | New Regulation  |
|---|-----------------------------------|---|
| Road  | Act No. 13/1980                   | Act No.28/2004  |
| Toll Road   | Govt. Regulation (GR) No. 15/2005 | GR No.44/2009 and GR No. 43/2013                      |
| Guidelines for Procurement Concession of Toll Road                    | —                                 | Regulation of Minister of Public Works No. 13 of 2010 |
| Energy/Geothermal   | —                                 | Act No.27/2003  |
| Geothermal Business Activities  | —                                 | GR No.59/2007   |
| Waste   | —                                 | Act No. 18/2008                                       |
| Domestic Waste  | —                                 | GR No.81/2012   |
| Guidelines for Waste Management                                       | —                                 | Regulation of Home Affairs Minister No. 33/2010       |
| Electricity   | Act No.15/1985                    | Act No.30/2009  |
| Electric Power Supply Business Activities                             | —                                 | GR No. 14/2012  |
| Oil and Gas   | —                                 | Act No.22/2001  |
| Downstream Oil and Natural Gas Business Activities                    | GR No. 36/2004                    | GR No. 30/2009  |
| Upstream Oil and Natural Gas Business Activities                      | GR No. 35/2004                    | GR No. 55/2009  |
| Telecommunications  | Act No. 36/1999                   | Act No.52/2000  |
| Telecommunications Operation  | —                                 | GR No.52/2000   |
| Airport   | —                                 | Act No.1/2009   |
| Airport Construction and Environment Preservation                     | —                                 | GR No. 40/2012  |
| Railway   | Act No. 13/1992                   | Act No. 23/2007                                       |
| Railway Provision   | —                                 | GR No. 56/2009  |
| Drinking Water  | Act No. 11/1974                   | Act No.7/2004   |
| Development of Drinking Water Supply System                           | —                                 | GR No. 16/2005  |
| Guidelines of Cooperation Development of Drinking Water Supply System | —                                 | Regulation of Minister of Public Works No. 12/2010    |
| Sea Transport and Port  | Act No. 21/1992                   | Act No. 17/2008, GR No. 61/2009                       |

Source: Parikesit and Nindya (2015).

The most critical initiative is the establishment of a fiscal risk management program currently being developed by the Department of Finance. The program will address managing government exposure to PPPs, including contingent liabilities.

## Indonesia

In Indonesia, PPPs were introduced in the early 1990s to develop infrastructure projects, especially for toll roads. The government opted for a PPP to expand a toll road initially built in 1978. The government

leveraged business to accelerate development of transport infrastructure through partnerships with state-owned enterprises. The government enacted *Act Number 13 of 1980* to provide a legal foundation for private sector participation in infrastructure and to attract private sector interest in building roads. The private sector started managing toll roads in 1989 (Strategic Asia, 2012, p.48).

Like other countries in the region, it was not until 1998—after the Asian financial crisis—that the government sought to develop greenfield projects through PPPs. The Ministry of State Development

Planning (BAPPENAS) concluded that the regulatory framework was not sufficiently developed to ensure proper competition. Projects tended to be procured through a non-transparent unsolicited process, giving rise to poor governance issues (World Bank, 2012b).

A new regulatory framework was approved in 1998 to address loopholes in previous regulations, creating a mechanism for unsolicited proposals and increasing government support. Each line ministry published several relevant government regulations alongside the main legislation in order to provide more detailed information to private businesses participating in infrastructure projects. The government also implemented regulatory reform to speed up PPP project implementation and boost private investment in public services (World Bank, 2012b). In the early and mid-2000s,

Indonesia embarked on an ambitious process to revitalize its economy in the wake of the Asian financial crisis. This effort included a framework for comprehensive decentralization, transferring decision-making power from BAPPENAS to the Ministry of Finance, with some responsibilities going to local authorities. Additional units to support PPPs were established between 2005 and 2010, mainly the Committee of Infrastructure Priorities Development Acceleration and the Indonesia Infrastructure Guarantee Fund.

The latest generation of Indonesian PPP is characterized by presidential regulations expanding the scope of PPP projects and providing new incentives to attract developers, mediators, and government contracting agencies. Table 2.10 highlights the features of the most recent PPP regulations.

## Appendix 1. Estimating the Infrastructure Gap

Despite the simplicity of the concept, in practice, estimating the infrastructure gap faces many constraints and limitations, including the following:

- Not all information is recorded properly.
- The classification of investment spending is not always homogeneous between levels of governments.
- In developing economies, it is difficult to find reliable sources recording investment by sector, or the data simply does not exist.
- It is not always possible to obtain sufficiently long series to estimate a country's capital stock.

With respect to the final constraint, efforts to fill the lack of data have been made by Hofman (2000). In his research, he estimates the infrastructure stock in six LAC economies (Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela) using the perpetual inventory method.<sup>56</sup>

In a broad sense, there are two main approaches to estimate the infrastructure gap. The first focuses on assessing demand for infrastructure and the second on assessing supply (Figure A1.1). Since both approaches are essentially partial equilibrium exercises, the lack of interaction with other key real variables of the economy poses questions regarding the accuracy of the results from these estimations. Further, in the context of estimating the

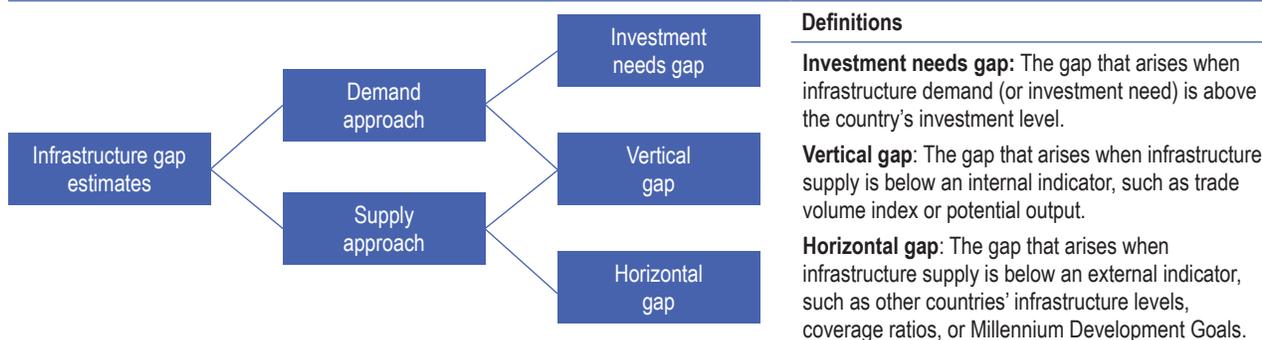
infrastructure gap, assumptions about the other side of the equation (demand or supply depending the approach) are sometimes unrealistic.

Table A1.1 summarizes the investment gap literature, divided into a demand-based and a supply-based approach. Judging by this classification, the academic literature tends to rely on the demand approach. This may be due to the method's application of econometrics and economic foundations. On the other hand, non-specialized literature tends to use the supply approach, possibly due to the comparative simplicity of computation. The two approaches also differ in the data they use for their estimations. While the demand approach uses a very specific set of infrastructure data (e.g., paved roads, rails, and ports), the supply approach uses a mix of data as very broad proxy indicators for infrastructure (e.g., capital stock and gross fixed capital) or a specific set of infrastructure data.

The choice of whether to use a broad indicator or detailed infrastructure data has important implications for the results. The demand approach tends to underestimate investment needs due to the

<sup>56</sup> The perpetual inventory method estimates capital stock as a weighted sum of past investment flows. This involves estimating a base-year capital stock, consisting of the sum of past investment during the assumed lifetimes of the different asset categories. The gross stock is calculated by adding investment during the year and subtracting assets that are scrapped. The net stock is obtained by adding investment during the year and deducting depreciation. For more information, see Hofman (2000).

**FIGURE A1.1. Classification of Infrastructure Gap Estimates**



Source: Authors' elaboration.

**TABLE A.1.1. Estimating the Infrastructure Gap**

|                                 | Dataset   | Projections | Approach                | LAC  | MENA  | EAP                  | SSA   | ECA                   | SAR                  | Notes   |
|---------------------------------|-----------|-------------|-------------------------|--|-------|----------------------|-------|-----------------------|----------------------|---|
| Carciofi and Gaya (2007)        | 1990      | 1990–2006   | Supply (vertical gap)   | 60%  | —     | —                    | —     | —                     | —                    | This figure represents the ratio between projected demand (proxied by a trade index) and the supply dynamic, representing the gap between supply and demand of infrastructure.  |
| Perroti and Sanchez (2011)      | 1990      | 2006–2020   | Supply (vertical gap)   | 15%  | —     | —                    | —     | —                     | —                    | The stock of infrastructure needs to increase at 15% to close the gap; a trade index was used for represent the demand dynamic; the base year was 1990.   |
| Dobbs, Pohl, Lin, et al. (2013) | 1992–2011 | 2012–2030   | Supply (vertical gap)   | \$3.2–3.7 trillion a year globally between 2013 and 2030 | —     | —                    | —     | —                     | —                    | This figure is an extrapolation of historical investment patterns and projected GDP growth.   |
| Perroti and Sanchez (2011)      | —         | 2006–2022   | Supply (horizontal gap) | 7.90%  | —     | —                    | —     | —                     | —                    | This figure represents the additional points of GDP that are needed to close the gap with respect to the infrastructure of the Asian economies in 2020.   |
| Fay (2001)                      | 1965–1995 | 2000–2005   | Demand                  | 2.66%  | —     | —                    | —     | —                     | —                    | This figure does not include rehabilitation (estimated for the road sector at about \$400 million per annum) nor maintenance (approximately US\$35 billion per annum for all sectors). Estimates for ports and airports are not available.              |
| Fay and Yepes (2003)            | 1960–2000 | 2000–2010   | Demand                  | 3.02%  | 4.48% | 6.57%                | 5.55% | 6.92%                 | 6.87%                | This figure represents the investment needs (not the gap) in terms of GDP. It includes maintenance. Sectors such as ports and airports are not included.  |
| Bhattacharyay (2010)            | 1960–2005 | 2010–2020   | Demand                  | —  | —     | \$498 billion a year | —     | \$15.3 billion a year | \$234 billion a year | This figure represents the investment needs (not the gap) in terms of GDP. It includes maintenance. Sectors such as ports and airports are not included.  |
| Perroti and Sanchez (2011)      | 1990–2005 | 2006–2020   | Demand                  | 5.20%  | —     | —                    | —     | —                     | —                    | This figure represents the investment needs (not the gap) in terms of GDP.  |
| Kohli and Basil (2011)          | 1960–2009 | 2011–2040   | Demand                  | 3.8%–4.0%  | —     | —                    | —     | —                     | —                    | This figure represents the investment needs (not the gap) in terms of GDP. It includes maintenance and sectors such as ports and airports. The projections were made assuming two scenarios: low business, as usual growth and high convergence growth. |
| Ruiz-Núñez and Wei (2015)       | 1960–2012 | 2014–2020   | Demand                  | 3.60%  | 3.70% | 3.70%                | 6.20% | 1.90%                 | 14.90%               | This figure represents the investment needs (not the gap) in terms of GDP. It includes maintenance. Sectors such as ports and airports are not included.  |

Source: Authors' elaboration.

incompleteness of the data. For example, information may be altogether unavailable in some sectors or the series length may be too short for effective analysis. On the other hand, the supply approach rests on assumptions for infrastructure depreciation that are too simplistic to be applied equally across sectors and years, raising doubts regarding its effectiveness for dynamic analysis of the gap.

Carciofi and Gaya (2007), Perroti and Sanchez (2011), and Dobbs et al. (2013) can be grouped as supply-vertical gap estimates. In the first case, the authors used a trade volume index as the internal measure to determine the gap. Their conclusion was that the main driver of infrastructure growth in developing countries was trade. Perroti and Sanchez (2011) made a comparative assessment of the infrastructure gap between LAC and East Asia. The authors used per-capita infrastructure indicators for this assessment, determining the relative infrastructure gap by valuing and comparing the indicators for each set of economies.<sup>57</sup> Dobbs et al. (2013) used GDP projections to assess infrastructure investment needs. The approach used a base year for the index where it assumed supply equaled demand and no infrastructure gap existed.<sup>58</sup>

As for the demand approach, Fay (2001) and Fay and Yepes (2003) are the earliest studies that we are aware of to assess physical demand for infrastructure and forecast the corresponding investment needs. Using an econometric model that related infrastructure variables with macroeconomic indicators, Fay (2001) found infrastructure investment needs equivalent to 4.2 percent of GDP for the LAC region. Fay and Yepes (2003) extended the sample of countries and grouped them into two categories: developed and developing countries. Estimates for investment needs for the full sample reached US\$370 billion per year for the period 2005–10, representing 3 percent of GDP for LAC countries, 4.5 percent for the Middle East and North Africa (MENA), 6.6 percent for East Asia and the Pacific (EAP), 5.5 percent for Sub-Saharan Africa (SSA), 6.9 percent for Europe and Central Asia (ECA, excluding high-income countries), and 6.9 percent for the South Asia Region (SAR).

Following the same methodology with innovations in the econometric approach and two GDP projections (business as usual and high convergence), Kohli and Basil (2011) estimated demand for infrastructure for the period 2011–40 in a sample of 21 Latin American countries, resulting in an average annual investment need of 3.8 percent of GDP in the business-as-usual scenario and 4 percent in the high-convergence scenario. Ruiz-Núñez and Wei (2015) used the same methodological framework but proposed a new way to account for maintenance costs.<sup>59</sup> They estimated that the global infrastructure investment needs were equivalent to 2.2 percent of the world's annual GDP. At the regional level, the authors found that the SAR region had the highest infrastructure gap, at 14.9 percent of GDP, followed by the SSA region at 6.2 percent, MENA at 3.7 percent, LAC at 3.6 percent, and ECA at 1.9 percent.

The demand approach to estimating infrastructure gaps has benefited from incremental improvements over time: longer (or more comprehensive) datasets, better econometric strategies, and more realistic assumptions regarding depreciation and maintenance costs. The choice of approach to estimate the infrastructure gap is usually a function of the type of dataset available and the

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<sup>57</sup> In this type of study, the choice of indicator is not trivial and can lead to different conclusions. In a broad sense, there are two indicator types: flow and stock. Flow indicators are related to flow variables, such as investment levels. This type of indicator fails to account for the possibility that an infrastructure gap exists before the base year. Stock indicators, such as per-capita roads and coverage services ratios, are more accurate in determining the investment needed for a country to achieve the same levels of infrastructure services as a comparator country. Stock indicators can also account for the existence of an infrastructure gap at baseline.

<sup>58</sup> The lack of an infrastructure gap baseline is one limitation of this methodology as it assumed that in year zero there was no deficit or infrastructure surplus.

<sup>59</sup> Maintenance cost is usually estimated as a fixed proportion of the depreciation rate applied to the infrastructure stock. This assumption implies that the maintenance cost is the same regardless of the age of the physical asset. Ruiz-Núñez and Wei (2015) sought to account for the age of the asset and used three maintenance categories: routine, periodic, and rehabilitation.

question to be answered. The valuation of investment needs is the same whether the demand or supply approach is applied. This valuation is made through something called *best practices' unit cost*, which refers to the costs as determined by international organizations such as the World Bank or recognized studies or specialists in the related topic (e.g., one kilometer of paved road or of railroad). This element or unit cost has not been properly discussed in the literature. For instance, what kind of data has been used to perform the unit cost assessment (e.g., specialist opinion surveys, multilateral development bank's project data, or national infrastructure project data)? What assumptions underlie this assessment? In that sense, given its importance, we seek to contribute a more realistic approach to this problem using project-level data to approximate the unit cost for each infrastructure sector.

We assess the infrastructure gap using the methodology to estimate physical demand for infrastructure (i.e., kilometer of roads, rails, etc.) proposed by Fay (2001). Our main contribution, however, lies in assessing the infrastructure valuation. Unlike other studies, we use the World Bank's PPI database to estimate the expected value of unit costs for each category of infrastructure.

We use indicators for 145 countries for the period 1960 to 2012 provided by Ruiz-Núñez et al. (2015) to generate parameters that can make good predictions of physical infrastructure demand.<sup>60</sup> The results from the estimations confirmed our expectation of positive inertia by each category in the infrastructure stock. Additionally, infrastructure stock increased with GDP per capita, which was our proxy for income in demand for infrastructure. As is common in this branch of studies, these estimations were not testing for causality. Rather, they sought to find suitable parameters to predict physical investment demand. These results were used to forecast physical demand for infrastructure that was used later to determine investment needs. Due the lack of a complete dataset of all types of infrastructure, our results must be interpreted as a threshold for investment needs, as is common in

other studies on infrastructure gap. We found that the global investment needs in the next 20 years sum up to US\$50 trillion, which is US\$2.5 trillion a year from 2017 to 2037.

## Estimating Unit Costs

As noted above, the reliance on specialist assessments of unit cost has not been discussed adequately in the literature, especially since it is a non-trivial part of the investment needs assessment. As Rothman, Irfan, Hughes, et al. (2014) noted, variations in labor costs, corruption, and project management skills, as well as economies of scale and experience, can make the cost of building a given unit of infrastructure quite different from country to country or in the same country at different points in time. Whether unit costs can be systematically and realistically related to these variations is not clear, especially if there is an attempt to account for all factors. In general, most studies have assumed universal unit costs in order to avoid such complications (Rothman et al., 2014, p.83). Even when such a simplification is reasonable because of a lack of data, the source of the information used for the assessment of unit cost is often unclear.

There are two main considerations regarding using data from PPP projects to estimate unit costs for infrastructure. First, PPPs may exhibit higher costs than a similar project implemented through

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<sup>60</sup> These results do not imply causality. Finding a specification that gives us a high coefficient of determination (r-squared) is important in this type of assessment. Our primary methodology was OLS (ordinary least squares) with fixed effects. We grouped the data by three-year averages, allowing us to use a larger sample for our estimations and still have access to consistent estimators in the medium term. Other studies have grouped the data into five-year averages when seeking long-term estimates on infrastructure demand. However, there is no evidence that five-year averages are better than other options. In our case, the three-year average resulted in estimates with higher coefficients of determination, which was useful for our purposes. We employed the method proposed by Weber (2010) to detect outliers. Even when the number of outliers was low, the improvement in the estimates was considerable.

TPI. The higher costs arise from the bundling of construction and operation in a PPP, creating stronger incentives for the private sector to dedicate more investment at the construction stage to lower overall lifecycle operation costs (Blanc-Brude, Goldsmith, and Vällilä, 2009). Second, contract renegotiations generate cost overruns that can change the estimated and actual construction costs in both PPPs and TPI. Renegotiations are very common in infrastructure projects. Some studies have found that the difference between estimated and actual costs are smaller for PPPs than for TPI, partly because the construction risk is transferred to the private party. For example, Duffield and Raisbeck (2007) found that Australia's average construction delay was 13.2 percent for PPPs and 25.6 percent for TPI. Meanwhile, construction cost overruns were 11.6 percent on average for PPPs and 35.3 percent for TPI.

We projected demand for physical infrastructure using GDP forecasts from the IMF's World Economic Outlook (April 2017) and used the average rate of growth to project the series until 2037. Other equation variables, like agriculture and manufacturing share of GDP, were held constant in our forecast exercise. This is not a point of concern

due to the long period of time needed for economies to change economic structure. We used forecasts from the UN's World Urbanization Prospect Database (2015) of population growth and urbanization rates for the forecast exercise.

Since the PPI database records the actual costs for infrastructure projects, we expected the estimated unit costs for PPPs would be higher on average than if we had a full sample of both PPP and TPI projects. However, we could not affirm that the same would be true if we were to compare those results with actual data because cost overruns in TPI projects could increase the average unit cost. In estimating the unit cost, we approximated the unit cost by the ratio between the *total investment*<sup>61</sup> and the *capacity*<sup>62</sup> of the project. The result was our estimation of average unit cost. Table A1.2 shows that most of our estimates fall within the range of unit cost provided by other studies.

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<sup>61</sup> Sum of investment in physical assets and payments to the government. Investments are recorded in millions of U.S. dollars.

<sup>62</sup> Size of a project measured in the units of the capacity type assigned to the project. For instance, paved roads are recorded in kilometers.

**TABLE A1.2. Infrastructure Unit Costs**

| Regional coverage                     | Year        | Unit cost | Unit cost      |         |           |         |                        |       |                        |       |                             |       |                      |       |   |   |
|---------------------------------------|-------------|-----------|----------------|---------|-----------|---------|------------------------|-------|------------------------|-------|-----------------------------|-------|----------------------|-------|---|---|
|                                       |             |           | Roads          |         | Telephone |         | Electricity generation |       | Water (per connection) |       | Sanitation (per connection) |       | Wastewater treatment |       |   |   |
|                                       |             |           | Paved          | Unpaved | Fixed     | Mobile  | Ports                  | Rails | Unpaved                | Rural | Urban                       | Rural |                      | Urban |   |   |
| Fay (2001)                            | LAC         | 1995      | 200,000        | —       | 1,000     | —       | —                      | —     | —                      | —     | —                           | —     | —                    | —     | — | — |
| Fay and Yepes (2003)                  | Global      | 1995      | US\$ 410,000   | —       | 400       | 700–580 | 1,900                  | —     | —                      | —     | —                           | —     | —                    | —     | — | — |
| Yepes (2005)                          | EAP         | —         | US\$ 417,995   | —       | 451–127   | 280–127 | 1,900                  | —     | —                      | —     | —                           | —     | —                    | —     | — | — |
| Chatterton and Puerto (2011)          | SAR         | —         | US\$ 425,000   | —       | 400–261   | 280–127 | 1,900                  | —     | —                      | —     | —                           | —     | —                    | —     | — | — |
| Yepes (2008)                          | Global      | 2005      | US\$ 410,000   | 50,000  | 127–580   | 127–451 | 2,000                  | 150*  | 80*                    | 150*  | 150*                        | 150*  | 150*                 | 120*  | — | — |
| Hughes, Chinowsky and Strzepek (2009) | Global      | 2005      | US\$ 600,000   | 40,000  | 2,000     | —       | 1,500                  | —     | —                      | —     | —                           | —     | —                    | —     | — | — |
| Bhattacharyay (2010)                  | EAP/SAR/ECA | 2008      | US\$ 425,000   | —       | 280–261   | 185–127 | 1,900                  | —     | —                      | —     | —                           | —     | —                    | —     | — | — |
| Perroti and Sanchez (2011)            | LAC         | 2000      | US\$ 1,600,000 | —       | 381       | 338     | 2,161                  | 135   | 143                    | 91    | 183                         | —     | —                    | —     | — | — |
| Kohli and Basil (2011)                | LAC         | 2009      | US\$ 895,000   | —       | 160       | 111     | 4,000                  | 101*  | —                      | —     | —                           | —     | —                    | —     | — | — |
| Ruiz-Núñez and Wei (2015)             | Global      | 2011      | US\$ 500,000   | 51,000  | 200–300   | 90–130  | 250                    | 150*  | 80*                    | 150*  | 150*                        | 150*  | 150*                 | 150*  | — | — |
| Author's estimations (2017)           | Global      | —         | US\$ 1,596,790 | —       | 160       | 190     | 1,280                  | 64*   | —                      | —     | —                           | —     | —                    | —     | — | — |

Source: Authors' estimations based on information from Rothman et al. (2014).

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# 3

## Institutional Frameworks for Public-Private Partnerships

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An appropriate institutional framework is vital for the success of any public-private partnership (PPP) program as part of a comprehensive infrastructure development program. While there is no universally correct institutional architecture for PPP, there are core responsibilities that are necessary in any well-organized PPP system (World Bank, 2014). These core responsibilities include establishing PPP processes and defining institutional responsibilities, including those of the Finance Ministry to analyze PPP firm (direct) and contingent liabilities, supreme audit agencies, regulators, and the legislative branch of government. Furthermore, the institutional framework should include requirements for disclosure and transparency. Many governments create specialized PPP units to harness the specific knowledge and skills necessary to manage a PPP program.

**One of the key pillars of a successful PPP program is its legislative, regulatory, and policy framework.** The framework itself is neither a necessary nor a sufficient condition to guarantee sustainability. The legislative framework should be clear, fair, predictable, and stable, and it should be complemented by a strong set of government institutions that can support the design and implementation of laws and regulations under the PPP program. Governments differ widely in their

political, economic, and social characteristics as well as the strength of their government institutions to implement the enabling framework. Nevertheless, strong institutional capacity to implement legislative and regulatory frameworks and policies will increase the probabilities of implementing a sustainable PPP program. Globally, there is significant heterogeneity in the institutional architecture to implement PPPs. There are a multiplicity of goals and mandates established under PPP laws, regulations, and policy guidelines. For simplicity and comparison, these mandates can be categorized in three groups: i) involving private finance in public investment, ii) fostering economic growth, and iii) allocating risks between the private and the public sectors more efficiently.

**Differing legal traditions result in variations in the legal framework for PPPs.** Common law countries allow PPPs without an explicit law or regulation. That is, there is no statutory definition of a PPP, either at the federal or provincial levels. Instead, there are common definitions or uses that, in some cases, are described in policy documents. Institutional arrangements for designing and approving PPPs are commonly found through policy guidelines (i.e., Australia, Canada, Malaysia, and Jamaica) or recommendations (China). Civil law countries tend to use a specific law to regulate

PPPs, including permitted contract structures and provisions. In other cases, PPP regulations are contained within public investment laws, such as the concessions laws in Chile, Ireland, and Spain, and the public procurement and contracting law in France. The European Union does not have an overarching PPP law, instead applying EU-wide procurement rules and case law.

PPP frameworks were often set up or amended throughout Latin America and the Caribbean (LAC) in response to the reduction in public-sector investment in infrastructure due to macroeconomic stress and lack of fiscal space to allocate resources to infrastructure projects. Governments facing fiscal constraints often turn to private investment financing as a primary goal of PPP frameworks. A PPP law or policy framework can contribute a degree of legal certainty and incentivize private-sector investment. Nevertheless, constant changes to the legal framework may be counterproductive. Changes in rules and regulations can make individual contracts more prone to renegotiations, loopholes, unclear definitions of jurisdictions or competencies among government entities, delays in the design and execution, and lack of strategic planning or prioritization of projects. Likewise, they undermine the goal of providing clear, stable, and transparent rules to private investors (Akitoby, Hemming, and Schwartz, 2007).

**The complexities and risks of PPPs are even more clear at the subnational level.** Subnational governments provide much infrastructure and many services, especially in federal states. As a result, many countries allow states and municipalities to develop and approve their own PPPs under state PPP laws. Many subnational governments that engage in PPPs have established legal frameworks that allow them to design and implement their own PPPs. However, too many local PPP laws at the state level may have the effect of fragmenting the PPP market and discouraging investment. Subnational government entities often have limited capacity for PPP project development and procurement. To cover this gap, subnational entities often rely on external advisers or

the national government to prepare and structure the projects.

State-owned entities (SOEs) are a pivotal part of economic growth and infrastructure investment in many developing countries and play a role in PPP programs. In recent years, austerity measures by many countries have reduced infrastructure spending by SOEs.<sup>63</sup> For this reason, PPPs have emerged as an alternative instrument for SOEs to finance capital-intensive projects that require significant initial investment. Regulators and oversight agencies must ensure SOEs have an adequate institutional framework to deal with PPPs, and that these finance structures are not being used to circumvent budgetary policies or other SOE regulations.

Successful institutional frameworks at the central and subnational levels tend to emphasize standardization of processes, legal standards, and sound fiscal management. PPP investment should be aligned with the government's medium- to long-term investment strategy and fiscal planning. This is particularly important since fiscal commitments associated with PPPs are locked in for many years. Best practices in budget planning require that all relevant macroeconomic and fiscal indicators are in a medium-term context to ensure a sustainable fiscal path over time. PPP laws should be consistent with other sector laws that can affect PPP projects to avoid uncertainties about the legal framework. It is also important to be backed by appropriate policies, procedures, and processes along with the institutional capacity to implement the institutional framework.

## Institutional Frameworks

An appropriate institutional framework is vital for the success of any PPP program. Poor governance

<sup>63</sup> For example, infrastructure spending by public bodies in Jamaica decreased from 4.2 percent of GDP in 2009/10 to 2.6 percent in 2013/14 following the implementation of the International Monetary Fund (IMF) program to cut public debt to 96 percent of GDP by the end of 2020. In Honduras, infrastructure expenditures were cut from 8.5 percent of GDP in 2011 to 7.5 percent in 2012 (IMF, 2018).

of infrastructure is related to the absence of an appropriate framework or inability to implement the institutional framework and is a major reason why projects fail to meet timeline, budget, and service delivery objectives. A sound institutional framework helps address the key challenges facing institutions responsible for infrastructure. It should cover what projects can be developed as PPPs, as well as a prioritization process. The framework should address how the contract and procurement process will be implemented, including disclosing information about projects before and after approval, what has to be done to prepare and appraise the project before launching (including fiscal, social, and environmental impacts), and who has the power to decide what matters within the decision and approval process and thereafter, during the contract life. This institutional framework should cover best practices for designing, approving, and executing PPPs, including the value for money (VfM), a public sector comparator, proper budget treatment, risk mitigation, and transparent and open bidding.

According to the PPP Reference Guide, there is no universally correct institutional architecture for PPPs, but it is useful to consider core responsibilities that some entity needs to have in any well-organized PPP system (World Bank, 2014). These core responsibilities include establishing PPP processes, defining institutional responsibilities, including those of the Finance Ministry regarding PPP liabilities, supreme audit agencies, regulators, and the legislative branch of government. Institutional architecture should include requirements for disclosure and transparency. Finally, many governments create PPP units to harness the specific knowledge and skills necessary to manage a PPP program. In addition to varying names and definitions, PPP frameworks differ in their structures, objectives, and mandates. There is no one size fits all approach because the contexts, goals, and economic conditions in which PPP frameworks are established differ across countries.

In practice, there is a gap between what is established in PPP regulations and what is implemented. Reyes-Tagle and Garbacik (2016) found

that fiscal and development constraints both played an important role in determining the intensity of PPP investment and that institutional quality very much informed the decision of whether to use PPPs at all. These findings indicate that PPPs can be a useful component of comprehensive infrastructure development projects. Yet, they also raise concerns about the sustainability of PPP programs since their use is often linked to pressures on fiscal space and short-term avoidance of fiscal constraints. Initial private-sector financing allows the government to bypass fiscal limits. However, without proper institutional controls and safeguards, this avoidance can quickly create unsustainable fiscal liabilities that will worsen the country's overall fiscal and development position.

Dedicated PPP institutions increase the probability of countries having active PPP programs but have no effect on the level of expected expenditures on PPPs. The results suggest that governments understand the importance of institutional quality for PPPs but may feel compelled to use their PPP units once they exist even if they do not have the institutional quality to maintain their use. This could have ramifications for the sustainability of PPP programs throughout the world. A country's ministry of finance is the gatekeeper responsible for evaluating and overseeing the entire approval process. One of the key pillars of a successful PPP program is its legislation framework, which should be complemented by a strong set of government institutions that can support designing and implementing laws and regulations under the PPP programs. As mentioned above, the legislative framework should be clear, fair, predictable, and stable. While this is sometimes hard to achieve given the distinct political, social, and economic characteristics of various countries, these conditions are normally set to increase the probabilities of implementing a sustainable PPP program.

These findings motivate this chapter's examination of legal and institutional frameworks for PPPs. Globally, there is significant heterogeneity in institutional forms. Table 3.1 provides information about selected PPP institutional frameworks

**TABLE 3.1. Establishment and Mandates of PPP Frameworks**

| Country             | Institutional Framework   | Defined by Law or Regulation | Approval Year | Times Amended | Goals/Mandates |        |      |
|---------------------|---|------------------------------|---------------|---------------|----------------|--------|------|
|                     |   |                              |               |               | Finance        | Growth | Risk |
| U.K.                | Private Finance Initiative  | ✓                            | 1992          |               |                |        | ✓    |
| Thailand            | <i>Private Participation State Act</i>  | ✓                            | 1992          | 1             |                |        |      |
| Philippines         | BOT Law   | ✓                            | 1994          | 1             | ✓              |        | ✓    |
| S. Korea            | <i>Private Capital Inducement Act</i>   | ✓                            | 1994          | 2             | ✓              |        | ✓    |
| Chile               | Concessions Law   | ✗                            | 1996          | n/a           |                |        |      |
| Indonesia           | Presidential Decree: Cooperation Government – Private Business Entities in Developing / Managing Infrastructure | ✓                            | 1998          | 5             | ✓              |        | ✓    |
| S. Africa           | <i>Public Finance Management Act</i>  | ✗                            | 1999          | n/a           |                |        |      |
| Japan               | <i>Private Finance Initiatives Act</i>  | ✓                            | 1999          | 1             | ✓              |        | ✓    |
| Argentina           | PPP Regime for infrastructure development   | ✓                            | 2000          | 3             |                |        | ✓    |
| Ireland             | Concession Law - <i>State Authorities (PPP Arrangements) Act</i>  | ✓                            | 2002          |               | ✓              |        |      |
| Spain               | Concessions Law   | ✗                            | 2003          | n/a           |                |        |      |
| Portugal            | Decree Law No. 86/2003  | ✓                            | 2003          |               | ✓              |        | ✓    |
| Brazil              | Law 11079 and Law 8987  | ✓                            | 2004          | 3             | ✓              |        | ✓    |
| Senegal             | BOT Law   | ✓                            | 2004          |               | ✓              |        |      |
| France              | Order No. 2004-559 on partnership contracts   | ✓                            | 2004          |               | ✓              |        |      |
| Greece              | <i>PPP Act</i>  | ✓                            | 2005          |               | ✓              |        |      |
| Nigeria             | <i>Infrastructure Concession Regulatory Commission Act</i>  | ✓                            | 2005          |               | ✓              |        |      |
| Australia           | National PPP policy and guidelines  | ✗                            | 2008          | n/a           |                |        |      |
| Peru                | PPP Law   | ✓                            | 2008          | 3             | ✓              |        | ✓    |
| Poland              | <i>PPP Act</i>  | ✓                            | 2008          |               |                |        |      |
| Malaysia            | UKAS guidelines on PPP  | ✗                            | 2009          | n/a           |                |        |      |
| Honduras            | PPPs  | ✓                            | 2010          | 1             | ✓              | ✓      | ✓    |
| Guatemala           | Alliance for the Development of Economic Infrastructure   | ✓                            | 2010          |               |                |        |      |
| Canada              | Guidelines on PPPs  | ✗                            | 2011          | n/a           |                |        |      |
| Mexico              | PPPs  | ✓                            | 2012          | 2             | ✓              | ✓      |      |
| Colombia            | PPPs  | ✓                            | 2012          |               | ✓              |        | ✓    |
| Bulgaria            | <i>PPP Act</i>  | ✓                            | 2012          |               | ✓              |        | ✓    |
| Jamaica             | Policy and Institutional Framework for the Implementation of PPPs   | ✗                            | 2012          | n/a           |                |        |      |
| Trinidad and Tobago | National PPP policy   | ✗                            | 2012          | n/a           |                |        |      |
| Paraguay            | <i>Public Infrastructure Investment Law</i>   | ✓                            | 2013          |               | ✓              |        | ✓    |
| China               | The State Council Guiding Opinions  | ✗                            | 2014          | n/a           |                |        |      |
| Ecuador             | PPP and Foreign Investment Law  | ✓                            | 2015          |               |                |        | ✓    |

Source: Country PPP laws and regulations.

globally. We found a multiplicity of goals and mandates established under these laws, regulations, and policy guidelines. For simplicity and comparison, we categorized these mandates into three groups: i) involving private finance in public investment, ii) fostering economic growth, and iii) allocating risks between the private and the public sectors more efficiently. In some cases, multiple goals lead to uncertainty and difficulties with compliance or to contradictions between existing laws and the PPP law (e.g., Russia and Mozambique).<sup>64</sup> There may also be challenges related to multiple objectives in the sector in which the PPP project takes place (e.g., water and health).<sup>65</sup>

Differing legal traditions are one reason for the observed variation in legal framework for PPPs around the world. This implies that there is no one size that fits all solution for all countries. Some countries allow PPPs without an explicit law or regulation. This is especially true in common law countries.<sup>66</sup> That is, there is no statutory definition of a PPP, either at the federal level or at provincial levels. Instead, there are common definitions or uses that, in some cases, are described in policy documents. Institutional arrangements regarding designing and approving PPPs are commonly found in policy guidelines (i.e., Australia, Canada, Malaysia, and Jamaica) or recommendations (China). Civil law countries tend to use a specific law to regulate PPPs, including permitted contract structure and provisions. In other cases, PPP regulations are contained within public investment laws. For example, the concessions laws in Chile, Ireland, and Spain, and the public procurement and contracting law in France. The European Union does not have an overarching PPP law, instead applying EU-wide procurement rules and case law (Son, 2012).

Where PPPs are ruled under civil law, it may not be legal to insert contract terms that conflict with administrative law. These laws are normally very comprehensive, defining rights and responsibilities, including government rights to early cancellation or unilateral contract change, mandated notice periods for changes, as well as the private participant's right to recoup operating cost overruns

(Son, 2012). They also tend to specify the definition of PPP in the context of public procurement legislation, the public entities responsible for regulation, project preparation, tendering and contracts, risk management, and dispute resolutions. Secondary legislation may include additional provision, for the approval and regulation of a PPP throughout the project life cycle (EPEC, 2014).

In many PPP frameworks, the mandate to seek private resources to finance infrastructure projects is explicitly established. This may be the result of many legal frameworks established or amended in the wake of financial crises. For example, the 1997 East Asian financial crisis originated in Thailand and spread to countries including Indonesia, Malaysia, Singapore, and South Korea. Following the crisis, many of these countries were compelled to ease regulations to attract private investment to help ease the effects of the crisis.

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<sup>64</sup> According to the OECD, the current legal framework in Russia is considered unclear and sometimes presents contradictions to existing federal laws, such as the Land Code or the Federal Law on Competition, "which makes authorities hesitant to use PPPs" (Hawkesworth, 2014). In Mozambique, the PPP program has too many objectives (e.g., attract capital, attain socioeconomic benefits, create revenue for the government, train and employ Mozambican personnel, and create stock market). Due to its discretionary nature, this multiplicity of objectives is "risky and can lead to corruption of the bidding system" (Fischer and Nhabinde, 2012).

<sup>65</sup> For example, in the water and sanitation sector, cooperation between the public and the private sector is difficult because of i) high fixed costs and inelastic demands; ii) organizational issues due to sector complexity given the number of stakeholders and segmentation; (iii) high contractual, foreign-exchange, and sub-sovereign risk, as well as political interference; and vi) complex pricing schemes related to multiple objectives: cost recovery, economic efficiency, equity, and affordability (Zambia, 2007).

<sup>66</sup> Key aspects of the common law system include: "there is not always a written constitution or codified laws... judicial decisions are binding, that is, decisions of the highest court can only be overridden by that same court or through legislation...extensive freedom of contract...[and] generally, everything is permitted that is not expressly prohibited by law." By contrast, civil law systems place more emphasis on legislative codification—notably in defining the permitted scope of contracts—and offer fewer prerogatives for judicial intervention. (PPPIRC, n.d.).

**TABLE 3.2. PPP Frameworks in LAC**

| Year | Country                               | Year | Country                          |
|------|---------------------------------------|------|----------------------------------|
| 2004 | Brazil                                | 2013 | El Salvador, Paraguay            |
| 2008 | Peru                                  | 2014 | Jamaica                          |
| 2010 | Guatemala, Honduras                   | 2015 | Ecuador                          |
| 2011 | Uruguay                               | 2016 | Argentina, Costa Rica, Nicaragua |
| 2012 | Colombia, Mexico, Trinidad and Tobago |      |                                  |

Source: Authors' elaboration.

Note: Brazil approved its PPP law in 2004, prior to the financial crisis.

The South Korean PPP Law was amended through the *Act on Private Participation in Infrastructure* in 1998 to encourage PPPs in the wake of the crisis. Amendments included various private-sector friendly inducements such as the above-mentioned Minimum Revenue Guarantee (Kim, Kim, Shin, et al., 2011). Indonesia was particularly hard hit by the crisis, experiencing a pronounced need for alternative forms of public investment. In response, the country issued its first PPP regulation, Presidential Decree No. 7/1998 concerning Cooperation between Government and Private Business Entities in the Development and/ or Management of Infrastructure. Characteristic of legislation enacted during times of crises, it has since been amended five times (IDB, 2015).

The relationship between crisis and PPP expansion is also clear in LAC. To take an early example, Mexico made important amendments to its institutional framework following the country's 1994 financial crisis. The most important change was the above-mentioned PIDIREGAS (*Proyecto de Inversión de Infraestructura Productiva con Registro Diferido en el Gasto Público*), which is considered the predecessor of PPPs. Created in 1995 by the Mexican government to counter the problem of rising budgetary constraints, the objective of PIDIREGAS was to attract private investment and long-term financing to develop infrastructure projects in the energy sector, specifically electricity and oil and gas.

PPP frameworks were established or amended throughout LAC following the 2008 financial crisis (Table 3.2), most likely in response to macroeconomic stress and lack of fiscal space to allocate

resources to infrastructure projects. The apparent correlation between PPP legislation and fiscal crunch helps explain the mandate to seek private investment financing as a primary goal of PPP frameworks. At the same time, constant changes to the legal framework can be counterproductive. Tumultuous regulation makes fiscal risks more likely, especially in existing partnerships. Changes in rules and regulations can make individual contracts more prone to renegotiations, loopholes, unclear definitions of jurisdictions or competencies among government entities, delays in design and execution, and lack of strategic planning or prioritization of projects. Likewise, changes undermine the goal of providing clear, stable, and transparent rules to private investors (Schwartz, Corbacho, and Funke, 2008). The fiscal implications of regulatory change and crisis are discussed further in Chapter 4.

### PPPs at the Subnational Level

Subnational governments are an important provider of infrastructure and services. In federal countries, the subnational governments are particularly active in PPPs. Prominent examples include Brazil, Mexico, Canada, Australia, and Peru. In RadarPPP's breakdown of PPPs in Brazil by contracting government since the early 2000s, 810 projects were initiated at the state or local level compared to 104 federally.<sup>67</sup> As a result, many countries allow states and municipalities to develop and approve their own PPPs. Most subnational governments that engage in PPPs have

<sup>67</sup> RadarPPP is an independent consultancy.

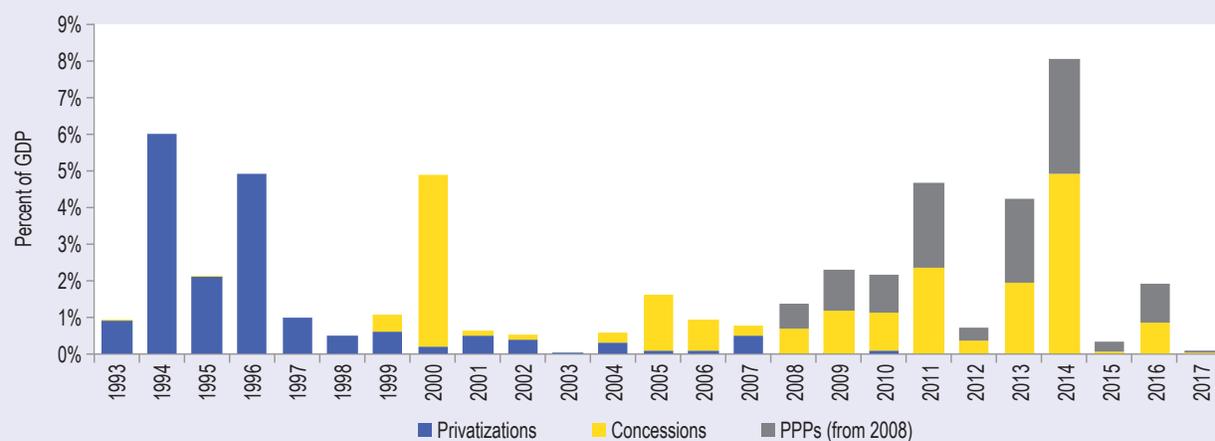
### BOX 3.1. Implications of Constant Legislative Changes: Peru

Peru led an aggressive privatization program in the 1990s (Figure 3.1), starting with the *Promotion of Private Investment in State Enterprises Law* in 1991, followed by a concessions law for the water and sanitation sectors in 1996. The country sought to use PPPs as an extension of its private participation program, formalizing an institutional framework for PPPs based on the British Private Finance Initiative model in 2008.

After the global financial crisis, the institutional framework proved too rigid to ensure investment considering the economic circumstances at the time. Seven months after the PPP law was approved, the government approved extraordinary measures to facilitate PPPs in the context of the financial crisis.

Between 2014 and 2015, the government made additional modifications to expedite the approval process, allow tax incentives, and unify the institutional framework. In 2016, the government carried out new changes in the institutional arrangements. The last modification (November 2016) included 12 article changes and the restructuring of ProInversion, the government entity in charge of promoting PPP projects in Peru.<sup>a</sup>

FIGURE 3.1. Privatizations, Concessions, and PPPs (1993–2017)



Source: ProInversion.

<sup>a</sup> The source for this information is the Infrascopes index, which is a benchmarking tool that evaluates the capacity of countries to implement sustainable and efficient PPPs in key infrastructure sectors, principally transport, electricity, water, and solid waste management. The index is a product of *The Economist Intelligence Unit*.

established legal frameworks that allow them to do so. When federal funding is involved, the federal government generally requires the use of the national law for the design and approval of PPPs. In cases where states and municipalities fund PPPs with their own resources, these entities can use the local laws or regulations. Nevertheless, subnational and local governments find it harder than national governments to access private finance at all, especially in

developing economies. This situation is exacerbated by a trend toward increasing decentralization of powers from central governments to municipalities and local governments. Subnational governments tend not to have the same level of technical expertise as national authorities. These governments should only assume long-term commitments commensurate with their revenue capacity, which tends to be more constrained than at the federal level.

### BOX 3.2. *Financial Discipline Law for Subnational Entities in Mexico*

In 2016, the government of Mexico enacted the *Financial Discipline Law* for subnational entities. The law is the result of subnational entities overcommitting federal resources received as part of the Mexican federal transfer system and is intended to set general principles for responsible public finance management.

PPPs are not recorded as debt at either the state or national level, even when they generate future government commitments. The *PPP Law* sets a ceiling of 10 percent of government revenue for PPP commitments at a national level, but the picture is blurred at the subnational level, even with the *Financial Discipline Law*. The law set a ceiling for the amount of commitments that a subnational entity could acquire and, for the first time, these obligations include those paid for with federal resources and with subnational resources. This registry records the full amount of commitments of a given entity and gives a more comprehensive picture of the real capacity of the subnational entities to contract new commitments.

In the *Financial Discipline Law*, the commitments of PPPs are recorded as debt. As an entity's debt level increases, the Ministry of Finance can impede the acquisition of more debt. There are three alert categories under which an entity may be classified: i) sustainable debt level, ii) debt level under observation, or iii) high debt level. The categorization is linked to the amount of debt that a particular entity is allowed to acquire in a particular year. For instance, for the first category, the net financing ceiling is up to the equivalent of 15 percent of the entity's freely disposable income. For the second, this figure is cut to 5 percent; while for the third category, entities are not allowed to take on any more commitments until they return to the previous category or better.

In Mexico, 27 of the 32 states have their own local PPP framework, many of which have different definitions or scopes. Since the implementation of the *PPP Law* in 2012, many Mexican states have harmonized their local laws and regulations to be in line with the federal law (Boxes 3.2 and 3.3).

In Brazil, the federal government has issued general standards for PPPs that are applicable to all subnational entities. Nevertheless, all Brazilian governments can elaborate their own legislation detailing the federal laws or creating specific rules and procedures that are valid only within the local jurisdiction. The subnational experience in Brazil is quite diverse. Some states have developed institutional frameworks with units dedicated to approving and managing PPP projects; other states have focused only on using traditional public investment because they lack the institutional capacity to carry out PPPs.

Another example is Colombia where subnational entities must meet additional requirements for PPP projects that require national resources. These requirements focus on protecting spending

limits, indebtedness, acquisition of contingent liabilities, and alignment with subnational development plans. The subnational entities must, like any other public entity, register their PPP projects in the Single Registry of Public-Private Partnerships and ask the National Planning Department to approve co-financing resources (Article 27, *PPP Law*).

Although the National Planning Department has a fundamental role in promoting private investment at the national level, there are a number of subnational entities exercising these functions as well. For example, Medellin (Agency for the Management of Landscape, Heritage, and Public-Private Partnerships) and Cali (Project Management and Innovation Department) have established PPP units that promote private participation in infrastructure projects. In Bogota, the new administration created a specialized PPP team to handle a considerable caseload of PPP proposals at various stages.

Meanwhile, Peru grants a degree of independence to local promotion agencies as long as

### BOX 3.3. The Diversity of Mexico's Institutional Framework: Is More Better?

PPPs in Mexico are regulated by at least nine federal laws and 27 state laws, which is seen by some as a major constraint to private investment in the country. In 2012, the *PPP Law* was enacted, extending coverage of a pre-existing framework (*Proyectos de Prestación de Servicios*, PPS). The law covers the following types of PPPs:

- *Availability payments*: Compensation for the services provided by the private partner comes from federal resources, which is the same as the PPS scheme.
- *Mixed*: Compensation is a combination of public resources and other sources such as user fees.
- *Self-financing*: Compensation does not entail contributions from the public sector.

The *PPP Law* has not succeeded in unifying the various laws currently in force. In some cases, compliance remains optional depending on whether there are federal resources involved. At the subnational level, implementation of the *PPP Law* is mandatory if federal resources are involved. However, if the project is self-financing or financed by state revenue, the subnational entity may choose to use its own state legislation. As of today, 27 of Mexico's 32 states have some type of law that regulates PPPs (e.g., public debt, financial codes, laws of leasing, and consideration of services). Table 3.3 shows the definitions and laws used at the federal and state levels. This complex legal framework creates incentives for the strategic use of different legal channels to find the most advantageous set of requirements.

**TABLE 3.3. PPP Definitions and Framework Laws in Mexico**

| PPP Type  | Framework Law                 | Registry in Portfolio | Public-Private Comparator Study | Feasibility Study by Ministry of Finance |
|---|-------------------------------|-----------------------|---------------------------------|--|
| Availability of payments (federal budget)               | PPP                           | Yes                   | Yes                             | Yes                                      |
| Availability of payments (no federal budget funding)    | PPP                           | Yes                   | Yes                             | No                                       |
| FONADIN   | PPP                           | No                    | Yes                             | No                                       |
| Self-financing  | PPP                           | No                    | Yes                             | No                                       |
| Concessions   | Sectoral                      | No                    | No                              | No                                       |
| PIDIREGAS   | Sectoral                      | Yes                   | No                              | No                                       |
| Subnational federal budget                              | PPP (if federal funding >50%) | Yes                   | Yes (if federal funding >50%)   | Yes (if federal funding >50%)            |
| Subnational (FONADIN)                                   | PPP                           | Yes                   | Yes (if federal funding >50%)   | Yes (if federal funding >50%)            |
| Subnational (no federal budget funding or FONADIN loan) | State PPP                     | No                    | No                              | No                                       |

Source: Authors' elaboration.

these projects do not exceed 15,000 UIT (about US\$19 million) and do not require national financial resources. However, greater specialization is needed at the local level, and these entities do not always have the human and technological capacity

to effectively evaluate and efficiently structure and procure PPP projects.

Subnational government entities often have limited capacity to develop and procure PPP projects. The governments of Colombia and Peru are

### BOX 3.4. Decentralization, How Much Is Too Much?

In federal countries, states have a level of autonomy to enact their own rules and regulations. Mexico and Brazil are illustrative. As detailed above, Mexico has multiple legislative schemes under which PPP agreements may coexist (Table 3.4). A proliferation of state laws generates a disincentive for international private investors to pursue local PPP projects. This situation imposes time requirements on associations that would invest in different localities—as opposed to the federal level—while generating ambiguities in legal interpretation that could negatively impact project development.

Brazil has advanced a solution to the issues raised by decentralization by creating state-level PPP units to deal with the specialization of the local laws (Table 3.5). Dedicated PPP units or departments to centralize program coordination are common at the state or local level in Brazil. A good example of the diversity of the institutional architectures within Brazil is the State of São Paulo, which has two institutional entities that evaluate, process, and approve PPPs. The *Companhia Paulista de Parceiras* (CPP) is a state-controlled company under the State Treasury Secretariat. CPP's main responsibilities are to i) prepare terms of reference, ii) contract technical and project feasibility studies, and iii) issue technical decisions on the Governing Board of the State Program of PPPs. The State of São Paulo has an additional PPP unit within its Ministry of Government that serves as an advisory body to the governing board and recommends approval of PPP projects alongside the CPP. Brazil has budget constraint legislation (the *Fiscal Responsibility Law*, 2000) that applies to all levels of government that reinforces a cap on the volume of PPPs for each level of government (federal, state, municipal) based on its expected revenue.

**TABLE 3.4. State Legislation for Different Kinds of Public-Private Agreements in Mexico**

| State  | PPP | PPS | Concession | Leasing |
|--|-----|-----|------------|---------|
| Chiapas, Guerrero and Sonora   | ✓   | ✓   | ✓          | ✓       |
| Campeche, Hidalgo, Michoacán, Morelos, Nayarit, Oaxaca, Querétaro, Sinaloa and Tabasco | ✓   | ✓   | ✗          | ✓       |
| San Luis Potosí and Tamaulipas   | ✓   | ✓   | ✗          | ✗       |
| Baja California, Baja California Sur, Nuevo León and Veracruz                          | ✓   | ✗   | ✗          | ✓       |
| Estado de México   | ✓   | ✗   | ✗          | ✗       |
| Guanajuato   | ✗   | ✓   | ✓          | ✓       |
| Aguascalientes, Coahuila, Durango, Puebla, Quintana Roo and Yucatán                    | ✗   | ✓   | ✗          | ✓       |
| Distrito Federal, Jalisco  | ✗   | ✓   | ✗          | ✗       |
| Chihuahua, Colima, Tlaxcala and Zacatecas  | ✗   | ✗   | ✗          | ✓       |

Source: Authors' elaboration.

**TABLE 3.5. PPP Units at the Local Level in Brazil**

| State            | Name                    | Attached                     | Staff (#) |
|------------------|-------------------------|------------------------------|-----------|
| Minas Gerais     | Central PPP Unit        | State Ministry of Finance    | 7         |
| Bahia            | PPP Executive Secretary | State Ministry of Finance    | 5         |
| São Paulo        | PPP Unit                | State Ministry of Government | 20        |
| Federal District | PPP Executive Secretary | State Ministry of Government | 3         |
| Espirito Santo   | PPP Unit                | State Secretary of Planning  | 5         |

Source: Authors' elaboration.

**TABLE 3.6. Core Services in Australia**

| State/Territory                | Type of Service Allowed in a PPP |          | Definition  |
|--------------------------------|----------------------------------|----------|---|
|                                | Core                             | Non-core |   |
| Australian National Government | No                               | Yes      | The determination of core and non-core services occurs on a case-by-case basis at the early planning stages of each project.  |
| New South Wales                | Yes                              | Yes      | Any related core services contracted to the private sector should be determined on a project-by-project basis at the early planning stage of each infrastructure project.   |
| Victoria                       | Yes                              | Yes      | The extent of services included for delivery in a PPP project should be considered on a case-by-case basis at the early planning stages of the business case. The scope of services will include consideration of publicly delivered services (previously considered core) and a greater package of ancillary services where appropriate to be delivered by the private sector. |
| Queensland                     | No                               | Yes      | The government is responsible for all aspects of a PPP project that involve direct delivery of community services to the public or the exercise of statutory power.   |
| Western Australia              | Yes                              | Yes      | Services to be included in a PPP project will be determined on a project-by-project basis, depending on whether the inclusion of the services can deliver value for money and would be in the public interest.  |
| South Australia                | Yes                              | Yes      | The decision will be made on a project-by-project basis.  |
| Tasmania                       | No                               | Yes      | The determination of core and non-core services will occur on a case-by-case basis at the early planning stages of each infrastructure project.   |
| Northern Territory             | No                               | Yes      | The determination of core and non-core services will occur on a case-by-case basis at the early planning stages of each infrastructure project.   |
| Australian Capital Territory   | No                               | Yes      | The determination of core and non-core services will occur on a case-by-case basis at the early planning stages of each infrastructure project.   |

Source: Authors' elaboration with information from Australia (2014).

currently addressing the lack of capacity to plan and implement PPPs at the subnational level. To cover this gap, subnational entities often rely on external advisers or the national government to prepare and structure the projects.

In many contexts, PPPs are controversial since some public services are considered the exclusive responsibility of the government (e.g., prisons, hospitals, and schools). These are referred to as core services. Australia allows its states to determine core and non-core services on a case-by-case basis at the early planning stages of each project. While most of the states in Australia follow the same definition regarding the scope of services allowed in PPP projects, the law gives them the flexibility to depart from this national definition (Table 3.6). For example, the State of Victoria originally did not allow PPPs to provide core services but changed its policy in 2013 on the recommendation of the Department of Treasury. This change allowed the

first project to include providing core services by a private entity, Ravenhall Prison.

### The Role of State-Owned Enterprises in PPPs

A discussion of the role of PPPs and state-owned enterprises (SOEs) is generally absent from the PPP literature. This is surprising because SOEs are a pivotal part of economic growth and infrastructure investment in many developing countries. Likewise, the financial and budgeting status of these bodies may be distinct, yet their state-backing is often fundamental. This makes an analysis of SOEs a critical part of considering the budget impact of PPPs.

The lack of clear boundaries regarding functions and risk allocation between SOEs and the government in PPP projects can contribute to the accumulation of hidden debts. Implicitly, the government itself is lender of last resort and will bear

**TABLE 3.7. Role of SOEs Under Different PPPs**

| Role of SOE                  |                    |                        | Type 1                       | Type 2-1                     | Type 2-2                   | Type 3                                     |
|------------------------------|--------------------|------------------------|------------------------------|------------------------------|----------------------------|--|
|                              |                    |                        | As a PA (contracting agency) | As an EI (corporate finance) | As an LA (project finance) | As an OP (operating and management agency) |
| PPP Model and its Definition |                    |                        |                              |                              |                            |  |
| Group 1                      | Privately Financed | Build-Operate-Transfer | ✓                            | ✓                            | ✓                          | ✓  |
|                              |                    | Build-Transfer-Operate | ✓                            | ✓                            | ✓                          | ✓  |
| Build-Transfer-Lease         |                    | ✓                      | ✓                            | ✓                            | ✓                          |  |
| Build-Lease-Transfer         |                    | ✓                      | ✓                            | ✓                            | ✓                          |  |
| Group 2                      |                    |                        |                              |                              |                            |  |
| Group 3                      | Publicly Financed  | Institutional PPP      |                              | ✓                            |                            |  |
|                              |                    | PPP                    | ✓                            | ✓                            | ✓                          | ✓  |
|                              |                    | Ad hoc PPP             | ✓                            | ✓                            | ✓                          | ✓  |

Source: Authors' elaboration.

Notes: PA: project authority; EI: equity investor; LA: lender authority; OP: operating partner; NI: not identified.

the consequences of any failed projects or management shortcomings by the SOE. Therefore, the participation of powerful SOEs in PPP projects must be supported by solid monitoring and evaluation systems, both for PPP projects and the management of public companies. Lack of or weak capacity to monitor and evaluate PPPs and SOEs can aggravate government liabilities.

The fiscal implications of the participation of SOEs in PPPs depends on the role performed by the public enterprise in the project cycle. In other words, the degree of the fiscal burden on the government varies according to the project participation stage of the SOE. Although the project risks related to financing and managing of PPPs are handed to the private sector, the public sector cannot be fully isolated from the project's liabilities (direct and contingent) that might result from a project failure. The initial purpose of adding self-financing SOEs as a middle layer to alleviate a government's fiscal burden may cause off-budget expenditure that falls outside normal supervision. Another concern for the public sector is if no real risk is transferred to the private sector because the participation share of the public sector or SOE is larger than the private party, disguising the public investment as private capital. In this case, the debt pressure on the government may be relieved in the short term, but the debt and risk will end up on the

books of another arm of the state, heightening the fiscal burden on the country in the long term.

In recent years, austerity measures in many countries (including cuts in capital expenditures and debt) have reduced infrastructure spending by SOEs. For this reason, PPPs have emerged as an alternative instrument for SOEs to finance capital-intensive projects that require a significant initial amount of investment. The participation of an SOE in a PPP agreement can take many forms. An SOE may appear as the project authority, procurer, equity investor of a PPP project company or special purpose vehicle (SPV), or as a project lender. The role of SOEs in implementing PPP mechanisms is not well defined and varies by country. The three basic ways that SOEs may be involved in PPPs are as follows:

1. **As a project authority or contracting agency**, which is the way most SOEs have participated in PPPs in the past. For example, strategic SOEs adopt PPPs to mobilize private capital for their infrastructure projects (e.g., PEMEX, CFE of Mexico, Sinopec, and CNPC of China). In some countries, this type of PPP would be classified as a concession or availability-payments PPP.
2. **As an equity investor or lender authority**. In this case, the SOE participates as an equity investor

in the project company (or SPV). Otherwise, the SOE may extend loans to finance part of the project. For example, the Korean railway and expressway SOEs have participated as minority or majority shareholders in PPP projects. SOEs playing the role of lender authority typically include state-owned banks, development banks, or infrastructure funds. An SOE may also invest in a joint venture where the contracted party is a company owned by public and private shareholders to jointly develop and operate a new or existing project. It would only be considered a PPP if the private partner retained majority control over key decision making.

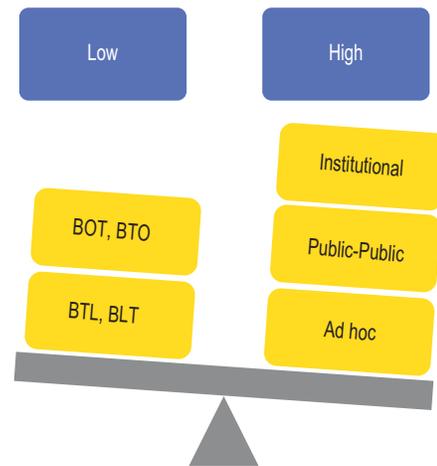
3. **As an operating partner of a project related to the SOE's core function.** For example, a state-owned energy company might participate as the operator of an energy PPP to best ensure the profitability of the project infrastructure.

The scope of the SOE's function differs depending on the contract. Table 3.7 considers the role that SOEs may play under different PPP models with a view to highlighting characteristics shared across various schemes. It includes models not regarded as a true PPPs, such as institutional PPPs (controlled by the procuring authority) and Public-Public Partnerships for the sake of comparison.

SOE's may participate in one of two basic categories of PPP (Figure 3.2) that encompass different scales of cooperation for the respective partners and therefore affect risk allocation and identification. The first category includes PPP contract structures where the role of the private investor is larger than that of the public sector, including BOT, BTO, BTL, BLT.<sup>68</sup> In other words, the project structures that we consider true PPPs. In addition to the potential forms of financial participation discussed above, the government may assign ultimate management of the constructed facility to an SOE on transfer.

The second category includes contract structures where the weight of the public sector may be greater than the private sector. Despite potential participation from the private sector, the PPP

**FIGURE 3.2. PPP Options by Extent of Public-Sector Participation**



Source: Authors' elaboration.

scheme is developed around exclusive benefits to public companies with monopolistic advantages; particularly when the SOE is assigned directly to deliver PPP projects. Under these circumstances, the SOE can carry out the role of a project authority as well as a majority equity investor in the SPV. For the purposes of this study, we did not consider such contracts to be true PPPs since there is no financing risk for the private sector.

In addition, the government may create an ad hoc government-owned company (or SOE) to construct, finance, and manage infrastructure, usually on the basis of revenue generated by the infrastructure or the service provided by the infrastructure. When the government creates a fully owned public corporation to carry out a DBFOM contract or assigns such a contract to an existing SOE, the contract structure may essentially resemble a conventional PPP. An SOE or publicly owned SPV may be regarded in some countries as a private entity subject to civil regulations when it participates in a PPP. However, such an arrangement

<sup>68</sup> These contract structures (build-operate-transfer, build-transfer-operate, build-transfer-lease, and build-lease-transfer) fall under DBFOM (design-build-finance-operate-maintain). See APMG, 2016, p.50.

is not considered a PPP since there is effectively no risk transfer to the private sector (APMG, 2016).

In the case of so-called institutional PPPs, the project authority assigns the project to a public-private joint venture SPV, with the government retaining a majority equity share and control. Alternatively, such an engagement may transform an existing SOE into a joint venture, which requires the government to retain material equity participation and participate actively in management. When government participation is simply a minority equity share with no management rights beyond its shareholding rights, the SPV is typically not a joint venture. Like conventional PPPs, institutional PPPs are distinguished by the extent of private- and public-sector involvement. The majority owner of the SPV assets bears the consequences if a project fails (APMG, 2016, p.40).

Finally, SOEs may adopt their own mechanisms to attract private-sector investment. These mechanisms, depending on the jurisdiction, may be included in the PPP portfolio or may be treated separately, depending on the governing PPP policy. Additionally, PPPs may be ruled under the SOE bylaws—with some benchmarked criteria from the country's PPP law—under SOE management. In this case, the government can evaluate PPPs based on the financial performance of the SOE. These arrangements are mostly found in commercial and self-financing SOEs, which use PPPs as an investment tool to expand their activities off-budget from the government account.

This ad hoc type of PPP within an SOE can be found in sector-specific areas. An example could be in the state's energy sector where a public counterpart (an energy SOE) commits to pay for the power generated by independent power producers and intentionally launches a PPP tender for a plant against the commitment of payment under a long-term offtake contract.

Although in theory the role of SOEs in a given context could be pinpointed according to the PPP model, in practice it is difficult to identify whether SOEs are participating in PPP projects. Most sectors authorized for PPPs are related to services

and infrastructure facilities that are exclusively delivered by SOEs before the adoption of PPPs. Likewise, in many cases, the service arrangement between the government and an SOE does not involve a contract in the strict sense of the word, but rather a general public authorization and assignment of economic rights to the SOE (APMG, 2016, p.40). Overall, no government explicitly restricts the participation of SOEs in PPPs in the strict legal sense. However, the presence of SOEs in the project cycle differs by project and country. Table 3.8 summarizes the participation of SOEs in PPPs for selected countries.

## Case Studies

### China: A Public-Public Partnership?

China has been promoting PPPs since 2015 because debt has soared (Bloomberg News, 2017). According to Fitch Ratings, PPPs will be the main infrastructure financing model used for local governments through 2020, with SOEs playing the leading role (China Daily, 2017). China is an exceptional country in terms of the role its SOEs perform in implementing PPP projects. SOEs can be found performing multiple roles across the PPP cycle, even replacing exclusive private-sector obligations under the PPP framework.

When defining PPP projects, a distinctive characteristic is that China defines PPPs as “government-social-capital cooperation,” where the term “social capital” opens the door for SOEs to participate in PPPs.<sup>69</sup> When an SOE retains majority control over the project SPV, it is sometimes referred to an

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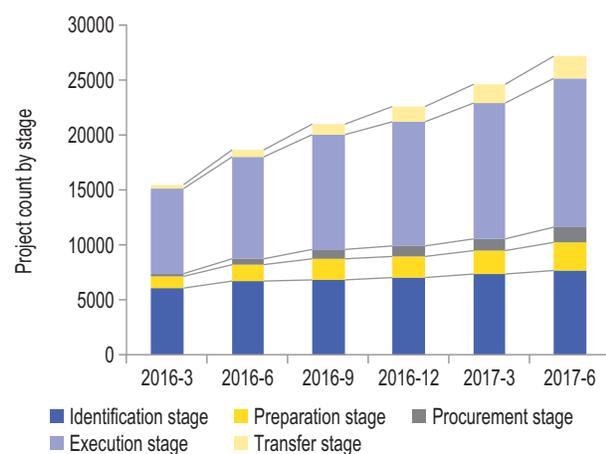
<sup>69</sup> As of the end of June 2017, 495 implemented national demonstration projects included 283 individual social-capital projects and 212 joint projects. There was a total of 785 signed social-capital partners, including 247 wholly state-owned enterprises, 189 state-controlled enterprises, 159 wholly private-invested enterprises, 132 privately controlled enterprises, and 58 foreign or under jurisdiction companies. The percentage of SOEs combined as social-capital partner reached 55 percent during 2016-17 (China PPP Center, 2016).

**TABLE 3.8. Participation and Role of Commercial SOEs in PPPs for Selected Countries**

| Country     | Implementation of PPPs by SOEs (Y/N) | SOE as |    |    |    | Type of PPP                                |
|-------------|--------------------------------------|--------|----|----|----|--|
|             |                                      | PA     | EI | LA | OP |  |
| Australia   | Y                                    | x      | x  | x  | ✓  | NI   |
| Brazil      | Y                                    | ✓      | ✓  | ✓  | ✓  | BOT, BROT, BOO                             |
| Canada      | Y                                    | x      | x  | x  | ✓  | NI   |
| China       | Y                                    | ✓      | ✓  | ✓  | ✓  | BOT, BROT, ROT, BOO, Institutional, Ad hoc |
| Chile       | Y                                    | ✓      | x  | ✓  | x  | BOT, DBOT                                  |
| Colombia    | Y                                    | ✓      | ✓  | x  | x  | BTL, BOT, Ad hoc                           |
| Honduras    | Y                                    | ✓      | x  | x  | x  | Ad hoc                                     |
| India       | Y                                    | ✓      | ✓  | ✓  | ✓  | BOT, Operate and Manage, Turnkey           |
| Indonesia   | Y                                    | ✓      | ✓  | ✓  | ✓  | BOT, BTO                                   |
| Jamaica     | Y                                    | x      | ✓  | x  | ✓  | NI   |
| Mexico      | Y                                    | ✓      | x  | ✓  | ✓  | PIDIREGAS                                  |
| Peru        | Y                                    | ✓      | x  | x  | ✓  | Ad hoc                                     |
| Phillipines | Y                                    | x      | ✓  | x  | ✓  | BOT  |
| South Korea | Y                                    | x      | ✓  | ✓  | ✓  | BTO, BTL                                   |
| Spain       | Y                                    | ✓      | ✓  | x  | ✓  | Ad hoc, Institutional                      |

Source: Authors' elaboration.

Notes: PA: project authority; EI: equity investor; LA: lender authority; OP: operating partner; NI: not identified. B: build; O: own or operate; T: transfer; R: rehabilitate; D: design; L: lease.

**FIGURE 3.3. Number of National PPP Projects in China**

Source: China PPP Center (2017).

institutional PPP. The government implicitly or explicitly retains much of the risks associated with the project (APMG, 2016, p.34,35,48). In China's case, the public sector plays a bigger role than the private sector. While this arrangement is not a PPP in

the strict sense, some countries view these arrangements through the lens of PPPs. Likewise, these arrangements may carry similar implications for fiscal policy.

Chinese SOEs, rather than private investors, have emerged as main partners of Chinese local governments. Frequent defaults and low rates for local government lending may deter private investors. SOEs are also seen as more reliable long-term partners for local governments and banks because they are both a regulator and an implementing actor for PPPs (China Daily, 2017). Another important reason for the massive presence of Chinese SOEs in PPP projects as an equity investor or lender is that almost 58 percent of the commercial SOE portfolio by equity value in China is in the state-centric financial sector. This is followed by the primary sectors at 9 percent, then by the transportation, manufacturing, and electricity and gas sectors, each accounting for over 5 percent of all Chinese SOEs by value (OECD, 2017, p.20).

## Korea: The Need for Clear Regulations for SOEs in PPPs

Korea's legal definition of public sector means that public and private joint corporations with investment from the public sector are considered private-sector actors. As a result, SOEs have a greenlight to participate as equity investors in SPVs under the PPP law, creating PPP projects where there might be zero private-sector investment.

Article 52 of the *PPP Act* stipulates that the total contribution rate by the public sector cannot be more than 50 percent of the SPV equity and will not exercise voting rights. Nonetheless, at the initial phase, the public sector directly participates as a majority equity investor in the SPV and then, during operation, the SOE may purchase more than 50 percent of the equity interest in the SPV. A legal contradiction arises when the public sector participates as an equity investor of over 50 percent in the SPV, which enables the government to categorize the SPV as a public institution subject to SOE law. However, these majority publicly owned SPVs are not recognized as SOEs.<sup>70</sup> If the Ministry of Finance were to designate the relevant public SPV as an SOE, that company would be an ineligible contractor. Therefore, public institutions in Korea can participate as 100 percent equity investors in BTO and BTL projects. In other words, there can be PPP projects without private investment. Table 3.9 shows the potential conflicts in the legal interpretation of both regulations.

### Examples of PPP Projects Involving SOEs in South Korea

#### **Case 1. SPV Wholly Owned by Public Institutions:**

A BTO project to construct 47.17 kilometers of expressway with a term of 30 years (2008-2038)

The Korean Expressway Corporation (SOE) and the National Pension Service invested in equity to create the Busan-Ulsan Co. Ltd. (SPV) with 51 and 49 percent of shares, respectively. The Busan-Ulsan Co. Ltd. was selected as the contractor to operate the expressway. Public-sector

investment is equivalent to 100 percent and this SPV could be designated an SOE. The purpose of Busan-Ulsan Co. Ltd. is to operate, lease, and manage the expressway. The workforce comprises eight full-time employees. Although the SPV was established to operate and manage the expressway, these functions are consigned to the Korean Expressway Corporation (SOE).

#### **Case 2. SPV Majority Financed by the National Pension Service**

1. The National Pension Service owns 59.1 percent of the equity shares of Daegu-Busan Expressway Co. Ltd., an SPV created to develop the Daegu-Busan Expressway PPP project (BTO, 2006-2036).
2. The National Pension Service owns 86 percent of the equity shares of Seoul Expressway Co. Ltd., an SPV created to develop the Seoul Ring Expressway PPP project (BTO, 2007-2036).

#### **Case 3. SOE as a Minority Shareholder of the SPV**

Korea Expressway Corporation (SOE) owns 5 percent of the Suwon-Gwangmyeong Expressway project and 10 percent of the Seoul-Chuncheon Expressway project.

#### **Case 4. Incheon International Airport Railroad PPP Project (from public to the private)**

A BTO project to construct 61 kilometers of railroad with a term of 30 years (2011-2041). At the initial phase of the project, the Korea Railroad Corporation (SOE) owned 88.8 percent and the Ministry of Land, Transport, and Maritime Affairs owned 9.9 percent of the equity shares of KORAIL Co. Ltd., an SPV created to develop the project. In 2015, the Korea Railroad Corporation auctioned its 88.8 percent of shares to a private consortium composed of commercial banks to relieve its debt levels (before the sale debt levels were reaching 410 percent of its assets; after the transfer, they were reduced to 310 percent).

<sup>70</sup> As of February 2018, there are 15 market-type and 20 quasi-market-type public corporations in Korea (Ahn, 2012, p.28).

**TABLE 3.9. Definition of Agents in PPP and SOE Law in South Korea**

| <b>Article 2 (Act on Public-Private Partnerships In Infrastructure, No. 14718/2017), PPP Law</b>   | <b>Article 4 (Act of Management of Public Institutions, No. 14461/2016), SOE Law</b>   |
|--|--|
| <p>(7) "Concessionaire" means a corporation, other than those in the public sector, which is designated as a concessionaire under this Act and which implements a public-private partnership project.</p> <p>(10) "Public sector" means the state, local government, and the following corporations:<br/>           (a) Agencies designated by the Minister of Strategy and Finance from among public agencies under the <i>Act on the Management of Public Institutions</i>;<br/>           (b) Various corporations established pursuant to the special Acts.</p> <p>(11) "Private sector" means corporations (including foreign corporations, and public and private joint corporations incorporated pursuant to subparagraph (12), other than those in the public sector.</p> <p>(12) "Private and public joint corporation" means a corporation incorporated by joint investment from the public and private sectors, which is the concessionaire as referred to in subparagraph (7).</p> | <p>(1) The Minister of Strategy and Finance may designate a legal entity, organization, or institution (hereinafter referred to as "institution") other than the state or a local government as a public institution, from among those falling under any of the following subparagraphs:</p> <ol style="list-style-type: none"> <li>1. An institution established by direct operation of another Act with an investment by the Government.</li> <li>2. An organization to whom the amount of the Government grants (including the revenue from its commissioned affairs or monopoly, if it is an institution to whom some affairs of the Government are commissioned or a monopoly is granted by direct operation under Acts and subordinate statutes; hereinafter the same shall apply) exceeds one-half of the amount of its total revenue.</li> <li>3. An institution which the Government holds at least 50 percent of the outstanding shares in or secures practical control over in making decisions on its policies through the exercise of the power to appoint executives with at least 30 percent of such outstanding shares or otherwise.</li> <li>4. An institution which the Government together with an institution falling under any of subparagraphs 1 through 3 holds at least 50 percent of the outstanding shares in or secures practical control over in making decisions on its policies through the exercise of the power to appoint executives with at least 30 percent of such outstanding shares or otherwise.</li> <li>5. An institution which a single institution or two or more institutions falling under any of subparagraphs 1 through 4 hold at least 50 percent of the outstanding shares in or secure practical control over in making decisions on its policies through the exercise of the power to appoint executives with at least 30 percent of such outstanding shares or otherwise.</li> <li>6. An institution established by an institution falling under any of subparagraph 1 through 4 with an investment by the State or the establishing institution.</li> </ol> |

The guarantees provided by the Ministry were changed from the Minimum Revenue Guarantee method to Standard Cost Support to avoid further misuse of public funds. The current scheme consists of 65.9 percent private and 34.1 percent public ownership.

Source: Ahn (2012)

### India: Fewer SOEs in PPPs than Contemporaries

In India, SOEs can participate in PPPs, however their overall participation remains low. In 2005, the Cabinet Committee on Economic Affairs allowed PPP projects to be sponsored by central government ministries, central public-sector undertakings (CPSUs, with private-sector involvement), and statutory authorities. Central public-sector enterprises (CPSEs, government majority-owned CPSUs) have the power to independently deliver PPPs. The guidelines set by the PPP Appraisal Committee to

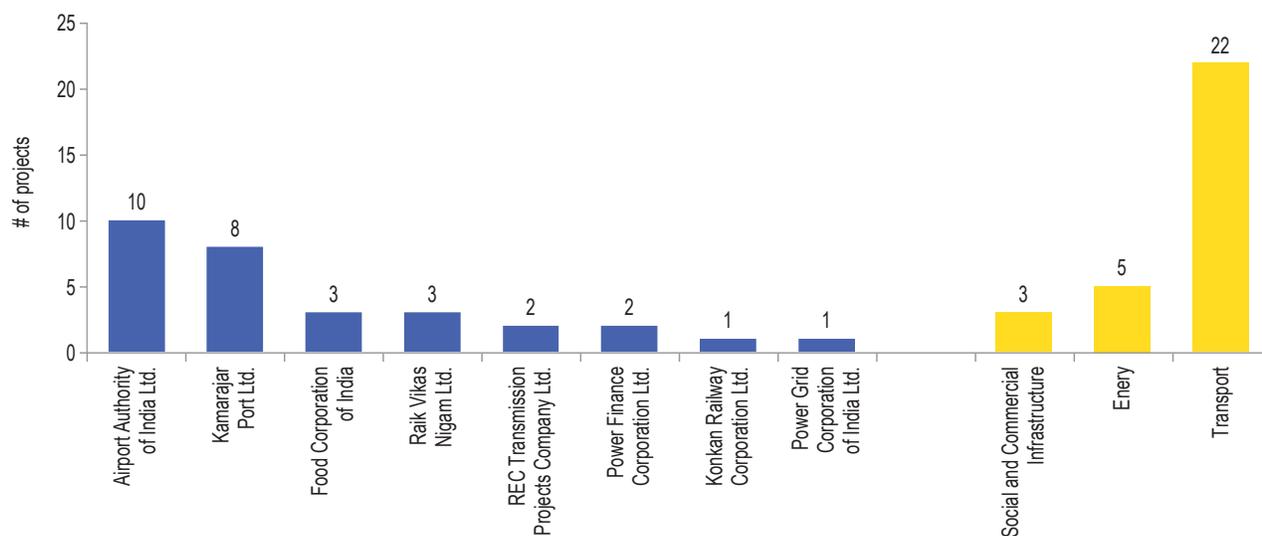
formulate, appraise, and approve projects applies only to proposals that are beyond the delegated powers of CPSEs.

CPSUs have the relevant authority to appraise and approve their own PPP investment projects. A report by the Indian Department of Economic Affairs expressed concerns about CPSUs being allowed to bid on PPPs as private-sector participants. The view of the committee was that a project delivered by a public-sector enterprise cannot be treated as a PPP.

Among a total of 8,726 registered infrastructure projects as of June 2017, government projects accounted for 86 percent, of which PPPs accounted for 21 percent, and 1,572 PPP projects were approved for execution, of which 8 of 320 CPSEs adopted PPP mechanisms across 30 projects.

A joint venture approach is also adopted widely in India to regulate public-sector involvement in a concession agreement. Typically, the public sector participates as a minority shareholder with limited

**FIGURE 3.4. CPSEs as Project Authority and Sector in PPP Projects in India (as of June 2017)**



Source: Authors' elaboration based on PPP Infrastructure India Database.

liability for government officials on the board of the SPVs to enable independence in the functioning of the joint venture as a private-sector entity (India, 2015, p.46). A report of the Committee on Revisiting and Revitalising Public Private Partnership Model of Infrastructure, which was created under the

Ministry of Finance, established the view that SOEs should not be allowed to bid for PPP projects as private sector participants. Further, a project delivered by government contracting a concession with a PSE-counterparty cannot be treated as a PPP (India, 2015).

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# 4

## Fiscal Implications of PPPs

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**B**y passing fiscal constraints is not a valid reason to choose a public-private partnership (PPP) over traditional public investment (TPI). PPPs do not materially reduce fiscal constraints for governments. If they appear to do so in the short term, it is likely due to the nature of the cash flow disbursements of the PPP project and the differing accounting standards or novel finance structures hiding the explicit or implicit burden created by a PPP. As a result, PPPs may create outsize fiscal burdens over the long run.

This misperception has exacerbated the potential fiscal risks caused by PPPs by allowing their pursuit outside the bounds of core budget evaluation and public planning. Special purpose vehicles (SPVs), temporary designations of private ownership, and public trust funds may allow PPPs to be classified as off-budget operations or expenditures. Likewise, certain accounting methods may allow upfront private financing to obscure the reality of long-term public funding.

PPPs should be treated as fiscally equivalent to TPI when planning budgets and prioritizing multi-year spending. Indeed, the best way to reconcile short-term budgeting practices with the long-term nature of PPP commitments would be to treat PPPs as public debt. Many countries have adopted medium-term fiscal frameworks (MTFFs) and other fiscal tools aimed at aligning budget planning across years. However, the novelty

of PPPs and special circumstances surrounding private-sector financing means that they may be absent from these processes.

The role of an independent comptroller is critical; a robust audit and review process can help elucidate shortcomings and guide policy. The comptrollers of a number of intensive PPP users have issued prominent reports criticizing PPPs—including the audit offices for major PPP pioneers like the United Kingdom and the European Union. Emerging PPP users should consider the findings of such reports and ensure that any domestic program is subject to similar audit.

The fiscal risks of PPPs may be exacerbated by the generally small size of individual PPP projects relative to their cumulative fiscal burden. More than 50 percent of recorded projects in the World Bank's PPI database have a total investment of less than US\$100 million. This skewed distribution threatens an undesirable under-the-radar effect that hinders proper monitoring and evaluation of the liabilities of the PPP portfolio and underlines the importance of adequate institutional and fiscal frameworks to manage risk.

Spending caps may be an effective way to contain fiscal risks stemming from PPPs; however, such limits are not necessarily satisfactory. For a government that makes infrastructure investment decisions before deciding on the financing structure, a cap on PPPs might prove redundant or

counterproductive. Likewise, a cap could arbitrarily encourage PPP spending up to a certain limit regardless of the costs and benefits.

While many countries have established institutional mechanisms to evaluate and monitor fiscal risks arising from PPP programs, few countries are correctly identifying, managing, mitigating, and reporting these potential risks in the budget cycle. While some countries have a formal mandate to analyze overall fiscal risks associated with PPPs, many do not carry through with this mandate due to a lack of institutional capacity or budget allocated to monitoring and evaluating these risks. Moreover, very few countries have adopted strategies to mitigate risks or minimize their potential impact.

Financial crises have both shaped PPP policies and unearthed weaknesses in existing frameworks. Indeed, growth of the financing structure has coincided with tightening fiscal space across developed and developing economies. Some countries have adopted PPP programs in the aftermath of crises in a bid to close aggravated infrastructure gaps or spur stimulus spending. Other countries have seen PPP projects languish as financial vulnerabilities took their toll on project spending.

PPPs may form part of a countercyclical fiscal strategy, but they should not be arbitrarily privileged during times of crisis. Countercyclical fiscal policy is a core tenet of modern economic management, and infrastructure spending has played a key role in actualizing countercyclical policies. Governments seeking to spur lending to boost economic activity may rely on PPPs, and government partnerships may be particularly effective at unlocking skittish private capital at these times. However, these policies must be weighed against the same fundamental cost-value tradeoff critical to PPP decision-making. Likewise, crisis must not be allowed to swamp the government's own planning agenda and autonomy over infrastructure development.

## Fiscal Challenges of PPPs

The fiscal implications of PPPs have increasingly come into focus in the wake of the global financial

crisis and expanding liabilities in key markets. The U.K. government's independent fiscal watchdog, the Office for Budget Responsibility, calls financing and accounting arrangements for the country's PPP programs a "fiscal illusion" (HM Treasury, 2018). In a 2018 report, the country's National Audit Office concluded that PPPs allow government bodies to report lower debt levels in the short and medium term, even though they typically cost significantly more over the long term (HM Treasury, 2018). The Office is unable to concretely identify any benefits in terms of quality or efficiency to compensate for these extra costs.

While PPPs create new financing opportunities for public infrastructure, most of this financing comes in the form of long-term debt that is ultimately paid back by public entities. Under specific circumstances, PPPs may expand resources available for infrastructure investment or increase associated income. However, in the absence of a rigorous counterfactual, it is difficult to claim there are systematic advantages of one against the other.

For example, private-sector management might improve the efficiency of fee collection or allow easier access to finance (Thomsen, 2005), possibly because public authorities may feel more vulnerable to political pressures to cut or eliminate tolls than if the project is outsourced by a PPP contract to the private sector. Incentives for efficient revenue collection are more immediate for private-sector organizations, though guarantees may dampen these incentives. And while developing country governments are often able to borrow more readily and at better rates than the private sector, there are certainly instances where government finance is simply too constrained to finance a project effectively. Certain PPPs may readily attract private finance as a result of the fee structure, especially projects that will receive a steady stream of revenue from users (World Bank, 2014a).

However, PPPs do not materially change long-term fiscal space and may be more expensive in the long run. Likewise, there are circumstances where PPPs may create substantial fiscal risks. In particular, private-sector involvement means the spending may not be subject to fiscal rules, or

accounting standards may allow off-balance-sheet spending for what would otherwise be recorded as debt (Schwartz, Corbacho, and Funke, 2008), which can rapidly reduce fiscal space. For example, the EU's 2018 PPP audit report cited the case of Catalonia in Spain. Before the financial crisis, PPP payments comprised a significant but manageable 8.9 percent of the region's transportation infrastructure budget. After the crisis, the transportation budget was slashed and PPPs became the single largest obligation, greatly reducing the region's ability to use its transport budget for anything else (European Court of Auditors, 2018).

According to the International Monetary Fund (IMF), "most countries deviate significantly from international best practices in terms of accountability and transparency of PPPs, limiting a proper and timely assessment of potential fiscal implications of PPP projects" (IMF, 2016). Even when PPPs are reported in the government's budget, the absence of comprehensive monitoring and evaluation of the fiscal framework may allow PPPs to create outsized future burdens as a result of cumulative committed liabilities, which is a schedule of charges payable by the government in the future. These intertemporal effects push up public spending and debt, ultimately disrupting the government's ability to manage macroeconomic policy during times of crisis by reducing fiscal flexibility (Marcel, 2009).

Transparency in reporting fiscal data is a primary driver of sustainable fiscal policy. Following the 2008 financial crisis, the IMF found that 23 percent of the unanticipated increase in debt for 10 European economies plus the United States was due to incomplete information on the fiscal obligations of these governments. The report singled out PPPs as a key contributor to hidden obligations unearthed by the crisis in these countries, stating that these hidden commitments caused obligations to quickly mount as the crisis escalated (Cottarelli, 2012). In a broader analysis, Bova, Ruiz-Arranz, Toscani, et al. (2016) examined historical data for 80 countries to estimate the average fiscal cost of contingent liabilities. While the burden is dominated by paying out contingent liabilities for the financial sector (9.7 percent of GDP

on average), contingent liabilities in PPPs generate an average fiscal burden of 1.2 percent of GDP—a number that is more impressive given the uneven adoption of PPPs across the countries that the authors examined (Bova et al., 2016).

Counterintuitively, this risk is exacerbated by the generally small size of individual PPP projects relative to their overall potential fiscal burden. While the average dollar amount of PPPs tracked by the World Bank and matching our definition is US\$309 million, the distribution of the portfolio value is skewed toward relatively small projects (more than 50 percent of recorded projects have a total investment of less than US\$100 million). This skewed distribution threatens an undesirable under-the-radar effect that hinders proper monitoring and evaluation of the PPP portfolio's liabilities (firm and contingent). In other words, because of their average small size, individual PPP failures tend to create only small costs to the budget; however, considering the overall portfolio, the conclusion is significantly different.

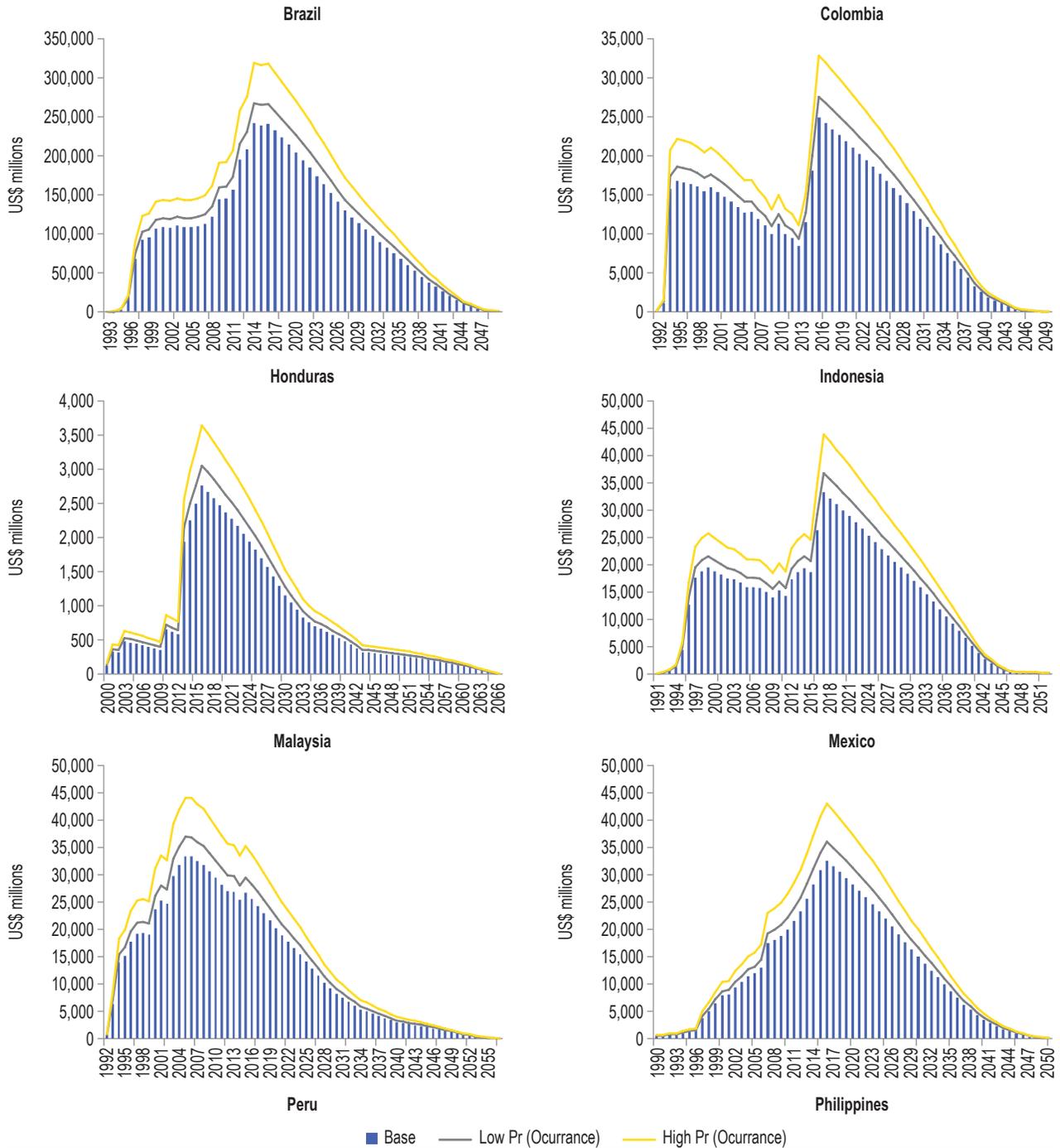
To illustrate the burden, we calculated the potential maximum exposure of the PPP portfolio for selected countries. To do so, we used the total investment value amount (in US dollars) of PPP projects approved between 1990 and 2016 and forecast disbursements related to the investment cost under the project's life span. We then computed two different scenarios:

1. **The baseline scenario:** a projection of the difference between the total investment value of the active portfolio and the required amortizations. We assumed a constant schedule for the remainder of the investment. The baseline scenario is equivalent to a hypothetical situation where the government is forced to recover the entire PPP portfolio at face value.
2. **Alternative scenario:** the sum of the base scenario plus a given proportion of additional costs paid to the private partner (e.g., penalties, guarantees, or other compensation). In these cases, we also computed a hypothetical situation to gauge the fiscal impact of portfolio recovery.

Figure 4.1 depicts the baseline scenario and the portfolio's exposure profile for nine countries. Brazil has the highest base and maximum exposure

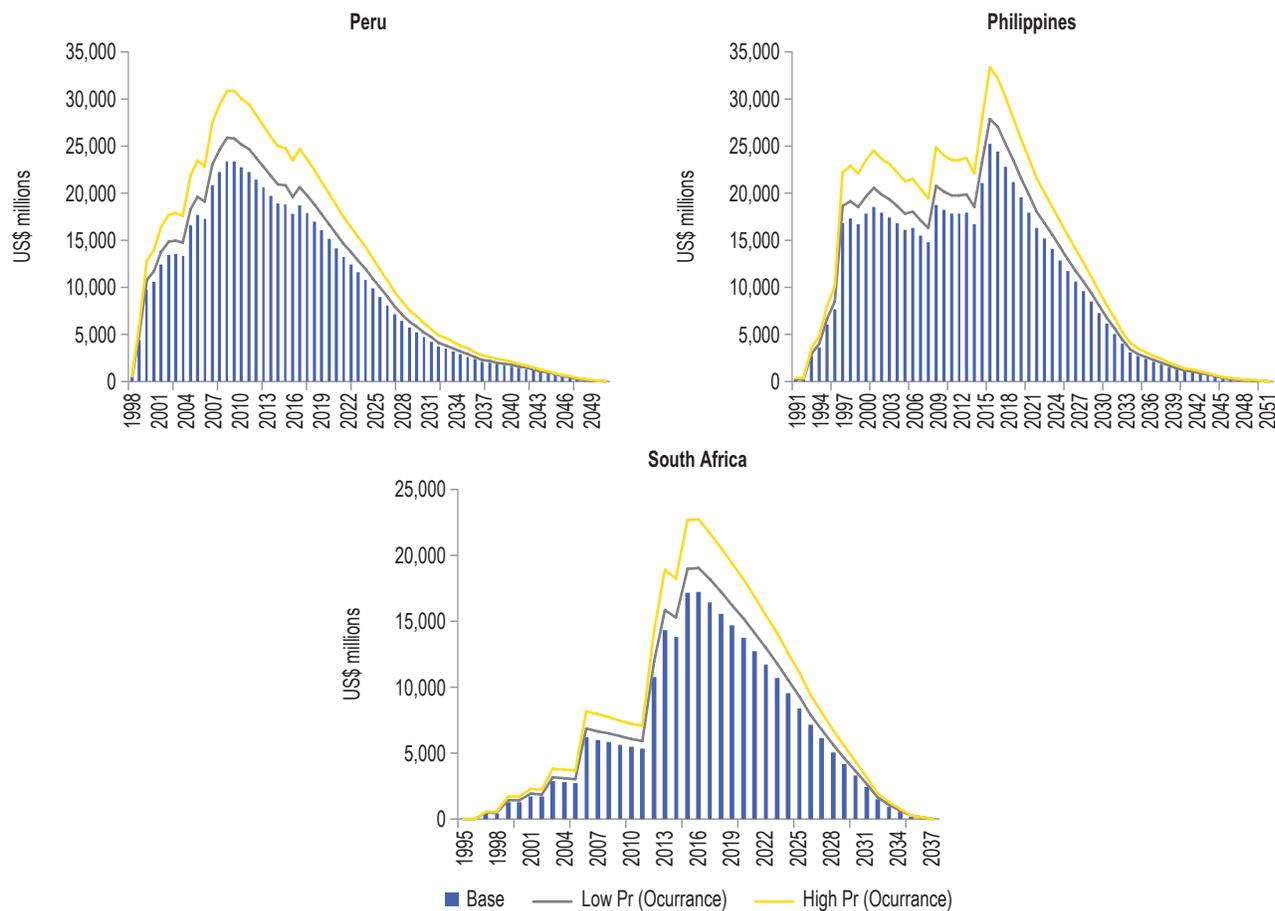
scenarios, followed by Honduras and Peru. For these countries, the overall maximum exposure of their PPP portfolio in the current year ranged between

**FIGURE 4.1. Too Small to Matter?**  
(maximum exposure of PPP portfolio)



(continued on next page)

**FIGURE 4.1. Too Small to Matter?**  
*(maximum exposure of PPP portfolio) (continued)*

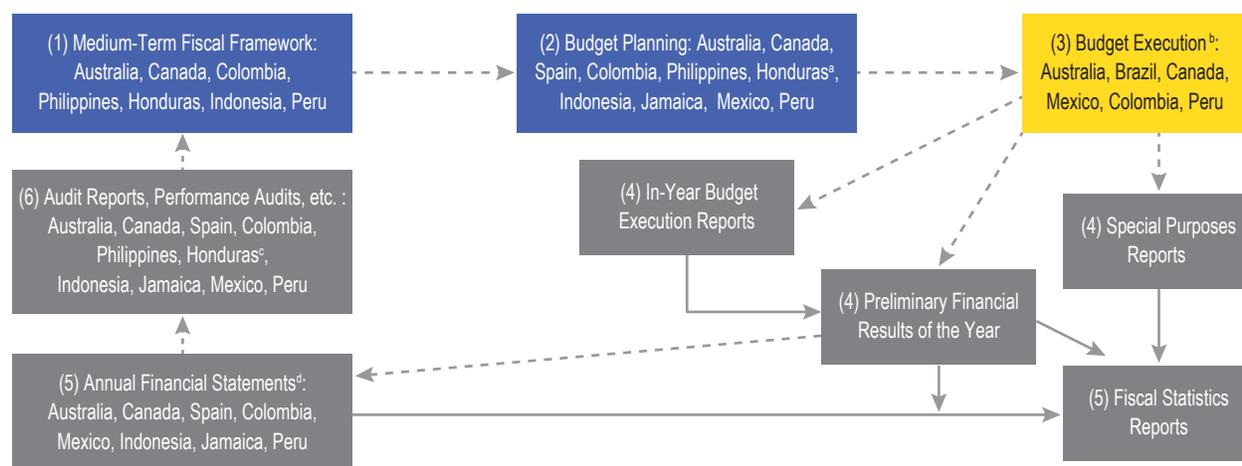


**PORTFOLIO VALUE OF PPPs AS A PERCENT OF GDP**

|              | 2017 |     | 2022 |     |
|--------------|------|-----|------|-----|
|              | Min  | Max | Min  | Max |
| Brazil       | 13%  | 18% | 7%   | 9%  |
| Colombia     | 9%   | 12% | 5%   | 7%  |
| Honduras     | 13%  | 17% | 8%   | 11% |
| Indonesia    | 3%   | 5%  | 2%   | 2%  |
| Malaysia     | 9%   | 11% | 4%   | 5%  |
| Mexico       | 3%   | 6%  | 3%   | 4%  |
| Peru         | 11%  | 15% | 7%   | 9%  |
| Philippines  | 8%   | 11% | 3%   | 4%  |
| South Africa | 6%   | 8%  | 3%   | 4%  |

Source: Authors' elaboration.

**FIGURE 4.2. Reporting of PPPs in the Fiscal Cycle**



Source: Adapted from Fact Sheet: Government Finance Statistics. IMF 2009.

<sup>a</sup> In Honduras, PPPs with government support (e.g. availability payments) are included in the annual budget except for those implemented through trust funds.

<sup>b</sup> Most of the PPPs reported in these countries are those with budgetary support. In few cases the country reports PPPs that do not need government support.

<sup>c</sup> Philippines and Honduras have not implemented accounting rules for PPPs. Some countries follow their own methodology: Australia, Canada; and others the international standards: IPSAS or EUROSTAT.

<sup>d</sup> Honduras is the only country with a specialized Auditor-General for PPP's (SAPP), which is part of the Court of Auditors. Most of the other countries has Auditor-General that review PPP's contracts as part of the Annual Public Account Revision, but only when they suspect some irregularities in the use of resources.

15 and 18 percent of GDP. The exposure profile was similar in Honduras and Peru, with both countries experiencing a steep increase in their portfolios after 2012 that resulted in a peak in maximum exposure by 2016 and 2015, respectively. From there, the rate of PPP approvals decreased in both countries and as such the level of exposure. Following the first wave of PPPs during the early 1990s, Colombia's PPP portfolio decreased during the first part of the 2000s but received a significant push after 2013 with the approval of the fourth generation of PPPs. This swing reversed the exposure profile, which had been declining through the 2000s, with exposure reaching a new peak in 2016. In terms of maximum exposure, toward the end of the 1990s, Indonesia observed a decline in its PPP portfolio through 2013, followed by a revamp of the portfolio and a steep increase in the maximum exposure in 2017.

For the 25 low- and middle-income countries that we define as PPP user intensive—on average, more than one PPP per year—the overall portfolio is growing at an average of 10 percent per year. While these countries have taken steps to improve fiscal

management of PPP liabilities in recent years, the governments need to be fiscally vigilant to avoid the potential of these projects to derail and become a burden to the government's fiscal position. This is especially true given the complexities of the institutional frameworks, the many stakeholders involved in the approval process, the lack of proper instruments to carry out a proper value for money (VfM) analysis, and incomplete information regarding many of these projects in the governments' balance sheets.

Because of this latent issue, we analyzed the fiscal cycle in many countries and determined best practices for ministries of finance to oversee and evaluate PPPs. The key role of these ministries is to be the gatekeeper of the entire investment portfolio.<sup>71</sup> Figure 4.2 depicts the typical fiscal cycle based on the IMF Statistics Department's 2009

<sup>71</sup> The fiscal or budget cycle allows the system to absorb, adjust to, and respond to new information, encouraging government accountability. Usually, the fiscal cycle consists of four phases: i) preparation and submission of the public budget, ii) approval, iii) execution, and iv) audit and evaluation. For more information see Lee, Johnson, and Joyce (2013).

Government Finance Statistics Fact Sheet. The figure has been adapted to reflect a generalization of PPP reporting based on the countries in our study. Figure 4.2 shows that information about PPPs is reported in the early stage of budget planning as well as in the later stages of the budget execution, but rarely is there information about the progress of PPPs during the fiscal year.

## PPPs and Fiscal Frameworks

PPP project selection should be closely aligned with a government's medium- to long-term investment strategy and fiscal planning (Jin and Rial, 2016). This is particularly important since fiscal commitments associated with PPPs are typically locked in for many years and are often delayed for several years after the contract has been signed, encouraging suboptimal budgeting behavior. Best practices in budget planning require that all relevant macroeconomic and fiscal indicators are considered in a medium-term context to ensure a sustainable fiscal path over time. Fiscal policymakers must deploy fiscal indicators and macroeconomic frameworks in a way that permits longer-term contingency planning (Ljungman, 2007).

Nevertheless, many countries need to improve this alignment between PPP projects and longer-term fiscal planning. While PPP laws and fiscal frameworks may be cross-referenced, they are not necessarily bound to each other. In Honduras, the 2004 *Organic Budget Law* established medium-term policy instruments, including the MTF, the multiannual budget, and the debt strategy with a view to strengthening the fiscal policy framework and fiscal sustainability. However, the policy instruments are not bounded in practice, giving rise to different interpretations about mandates and responsibilities under the policy framework. The PPP law repeatedly cites or cross-references policy instruments that have not yet been elaborated, are outdated, or might contradict what has been established by other fiscal laws. For example, the law refers to a multiannual budget provision that has not been updated. Although the

law stipulates budget provisions for fixed commitments or guarantee claims and the debt strategy policy acknowledges these guarantees, provisions have not yet been established for those guarantees that have been issued. While improved regulations and laws are in place, more work needs to be done to adequately reflect these reforms in the budget or other fiscal frameworks. Moreover, PPP commitments are only reported in the cash-basis budget. In other words, budget policy only requires line ministries to report total PPP expenditures in payments, guarantees, or tax contingencies on an annual basis; longer-term obligations are not considered (Reyes-Tagle and Tejada, 2015).

In Colombia, the National Public Investment System (NPIS), established in 1989, is the main programming and execution body for public investment. All projects, including PPPs, are registered in this system. PPPs are considered capital expenditures (CAPEX) and as such are not registered under the national debt stock. Every four years, the new government elaborates a National Development Plan forecasting medium- and long-term investment needs, taking into consideration signed and in-progress PPP commitments. The *Fiscal Transparency Law* establishes rules and regulations for public disclosure, including the MTF, which establishes a 10-year cap on new PPPs. In addition, the MTF provides information on the status of the Contingency Fund and the future PPP commitments over a 30-year span (Box 4.1). Colombia has a comprehensive fiscal rule that promotes fiscal discipline by maintaining a sustainable level of public debt. The law states that “the National Government will follow a decreasing annual path for the structural fiscal deficit, allowing it to reach a structural deficit of 2.3 percent of GDP or less in 2014, 1.9 percent of GDP or less in 2018, and 1 percent of GDP or less in 2022” (IDB, 2016a). The law establishes the need to count future PPP payments toward the deficit objectives of the fiscal rule (IDB, 2016a).

In Canada, there is no federal equivalent to the NPIS or any centralized debt management or budget cycle legislation. Provincial and local government

### BOX 4.1. Contingency Funds for PPPs: Colombia and Paraguay

One of the main features of PPPs is that risks are shared between the private and public sectors through a PPP contract that makes the public sector accountable for the project risks that the government is better able to manage. In this sense, when a risk borne by the government is activated, the government usually makes use of the public budget or debt, generating a scenario that is known in the literature as the fiscal risk of PPPs.

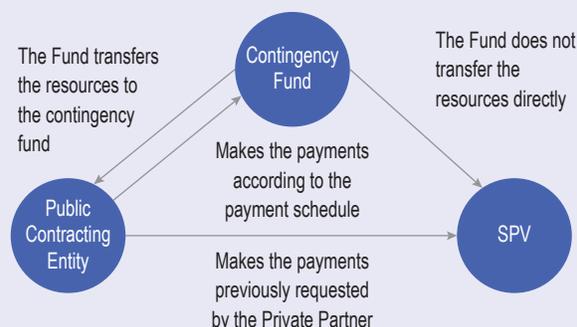
Governments in LAC usually cope with PPP contingency commitments in this way; however, some countries have used contingency funds, which previously were mainly used for social security commitments. This decision addresses the unforeseen circumstances and, at the same time, reduces the fiscal risks generated by the PPPs.

#### Colombia

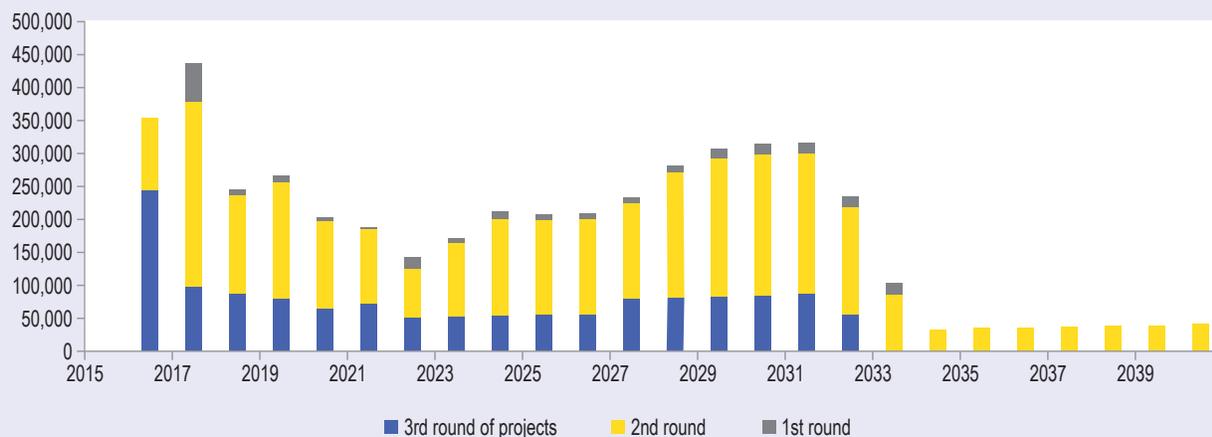
In Colombia, each contracting public entity commits to making periodic payments into a fiduciary contingency fund. The payments are linked to the assessment of risks. The National Council of Economic and Social Policy (CONPES) and the Public Debt Department of the Finance Ministry determine the probability that a specific event, defined in the PPP contract, will occur.

The operation of the contingency fund is straightforward. It receives the resources from the contracting public entity and keeps the funds until the probability disappears. In the event that a risk occurs, the SPV needs to request compensation for the losses directly from the public contracting entity; the SPV cannot directly request the resources from the fund. As projects or risks die, the fund reimburses the resources to the public contracting entity.

The payment schedule that the contracting public entity needs to make to develop each PPP project is reported in the figure to the right. Broadly speaking, the contingency fund has two peaks: one in the first years of a project (when construction



#### COLOMBIA: CONTINGENCY FUND'S PAYMENT SCHEDULE BY GROUP OF PROJECTS



Source: ProInversion.

(continued on next page)

#### BOX 4.1. Contingency Funds for PPPs: Colombia and Paraguay (continued)

risks are most likely) and more or less at the end of a PPP contract (when maintenance risks are more likely). According to the National Planning Department, in 2018, the resources in the fund were COP\$244 billion (US\$85 million).

##### Paraguay

In Paraguay, the PPP law creates a Guarantee and Liquidity Fund that has three main objectives:

1. Receive 100 percent of next year's direct commitments (e.g., availability of payments) made by the contracting public entity in a PPP contract and, according to the schedule of payments, make the respective payments to the private sponsor.
2. Maintain the minimum ratio of 10 percent of contingency commitments to cover the private sponsor losses in case a risk borne by the government occurs.
3. In case of a contract dispute, use the resources from the fund to cover the cost if there is an increase in cost due to a negative resolution.

The fund is a trust managed by the Financial Development Agency of Paraguay. As of mid-2017, Paraguay has only approved one PPP project for a preliminary investment of US\$507 million, so the fund is not yet operating.

initiatives are not formally integrated into a national program. These jurisdictions make significant efforts to communicate and discuss best practices, but there is no agreement to standardize methodology or procurement practices. In British Columbia, the *Financial Administration Act* of 1996 specifies the approvals required for public expenditures, borrowing, and entering long-term financial commitments, including PPPs. While there is no federally legislated debt management system, the current government has set a target debt-to-GDP ratio of 25 percent by 2021. PPPs at the federal level and most state-owned enterprises are consolidated into the federal financial statements, and the implications for revenues and expenditures are incorporated into the annual budget and MTFF. Accordingly, from a debt management perspective, PPPs are treated the same as direct government debt.

At the provincial level, PPPs are consolidated as either taxpayer supported or self-supporting provincial debt. The comptroller general (the internal provincial accounting entity) follows the standards

of the Canadian Public Sector Accounting Board to determine whether debt is accounted for as taxpayer or self-supporting debt. This determination is based on whether projected revenues are deemed sufficient to service and retire the project debt. Some provinces have issued legislation that limits the ability of local governments to issue debt and require voter referenda to issue debt with maturity greater than five years. Local governments are generally subject to provincial oversight. Some provinces have statutory requirements. For example, Alberta has balanced budget legislation (the *Fiscal Management Act*) and, under the Medium-Term Capital Plan, debt issuance is limited by an overall constraint on debt servicing costs in relation to the budget. Saskatchewan has the *Growth and Financial Security Act*, which defines balanced budget requirements and parameters. In provinces without formal debt limits, debt issuance is guided by a priority of maintaining high credit ratings (IDB, 2015a).

In Spain, the *Organic Law* of 2012 requires the government to adopt a multi-year perspective for

annual budgets and pursue medium-term budgetary objectives. In practice, local entities and autonomous communities also budget under this framework. The approach includes revenue estimates as well as minimum expenditures needed to guarantee the provision of public services. The medium-term budget is also aligned with the expenditure rule established in article 12 of the *Organic Law*, which states that the expenditure growth of local corporations shall not exceed the medium-term growth rate of the Spanish economy. In the case of PPPs with public support from the beginning through regular payments, loans, subsidies, or grants, these payments are included in the corresponding budgetary line. Otherwise, PPPs are not specifically contained in the budget framework except as part of the medium-term investment requirement (IDB, 2015b).

### Medium-Term Fiscal Frameworks

PPP project selection should be informed by the government's medium-to-long-term investment strategy and fiscal planning. This is necessary to ensure proper planning and execution as well as transparency and budget sustainability. MTFFs incorporate macroeconomic and fiscal developments over a three-year timeframe with a view to informing the budget, comparing fiscal policies to previous years, and considering short- and medium-term adjustments. An MTFF is essentially a consistent and standardized presentation of key macroeconomic indicators, including revenues, expenditures, and debt projected beyond the upcoming fiscal year, permitting the government to account for possible outcomes outside the annual cycle. The approach helps the government formulate responsive policies and avoid unwanted fiscal developments.<sup>72</sup> Most often, government efforts focus on extending the time horizon for budget management purposes by introducing a medium-term budget framework, where the ministry of finance develops a medium-term macroeconomic forecast that is the base of the multi-year spending ceilings for line ministries, organizations,

or programs.<sup>73</sup> This forward-looking process helps avoid fiscal mistakes or shortcuts and incorporates future liabilities into current planning.

There are several countries that report PPP revenues and expenditures in the MTFF. Colombia's current MTFF includes future payment obligations (FPOs) as well as contingent liabilities.<sup>74</sup> Between 2018 and 2042, the country's direct commitments in PPP contracts are equivalent to 9.5 percent of 2017 GDP, of which 97 percent is CAPEX. In Peru, the government reports explicit contingent liabilities arising from PPPs, which are equivalent to 2.6 percent of GDP for the period 2017–21. This is the maximum debt level if contingent liabilities materialize and future PPP payment obligations in the MTFF separate CAPEX (included in investment expenditure estimates) from OPEX (included in goods and services expenditure estimates). Table 4.1 reports government commitments related to PPP contracts for Peru and Colombia. Peru's PPP commitments from 2017 through 2021 are more than US\$12 billion, distributed among CAPEX (53 percent), OPEX (26 percent), contingencies (6 percent), and other forms of government support (15 percent). At the subnational level, the Peruvian MTFF reports PPPs with government support (both future commitments

<sup>72</sup> See Ljungman (2007) and IDB case studies for Canada and Australia for 2014.

<sup>73</sup> The annual budget preparation gives formal life or status to the out-year estimates. On a rolling basis, the first out-year expenditure estimates serve as the basis to prepare the following year's budget. For more information see Schwartz et al. (2008).

<sup>74</sup> An FPO is a multiannual budgetary allocation mechanism that allows governmental entities to undertake payment commitments that will become due in future fiscal years. This budgetary tool allows the government of Colombia to plan and finance projects under a long-term scope and overcome the limits imposed by the yearly public budget. This mechanism is commonly used in Colombia to fund major infrastructure projects whose investment horizon exceeds the fiscal time frame of a specific administration. By means of the administrative act of assigning an FPO, the executive is bound to include previously committed payments in future budget bills. In short, while the concession is the agreement that binds the governmental entity to pay, the future obligation is the budgetary mechanism to account for such expenses in future budget bills. (IDB, 2016b)

**TABLE 4.1. Government Commitments on PPP Contracts Included in MTFFs**

| Peru*         | 2017  | 2018    | 2019    | 2020    | 2021    | 2017–21 |         |
|---------------|-------|---------|---------|---------|---------|---------|---------|
| Gov. Support  | 199   | 85      | 44      | 59      | —       | 387     |         |
| Contingencies | 109   | 138     | 171     | 189     | 157     | 765     |         |
| CAPEX         | 912   | 1,478   | 1,544   | 1,440   | 1,153   | 6,527   |         |
| OPEX          | 405   | 545     | 673     | 741     | 840     | 3,204   |         |
| Other         | 385   | 390     | 279     | 225     | 107     | 1,386   |         |
| TOTAL         | 2,010 | 2,636   | 2,712   | 2,655   | 2,257   | 12,270  |         |
| Colombia**    | 2018  | 2019–22 | 2023–26 | 2027–30 | 2031–34 | 2035–38 | 2039–42 |
| PPPs          | 954   | 11,406  | 14,132  | 12,977  | 11,750  | 7,374   | 2,032   |
| % of GDP 2017 | 1.4   | 2.4     | 1.9     | 1.4     | 1.3     | 0.8     | 0.2     |

Source: Authors' elaboration using *Marco Macroeconómico Multianual 2018–21* (Peru) and *Marco Fiscal de Mediano Plazo 2017* (Colombia).  
Notes: \*Figures in US\$ millions. \*\*Figures in COL\$ millions.

and investment amounts). Colombia also records approximately US\$12 billion in commitments for the years 2019 through 2022. At the national level, Brazil also has legislation requiring periodic analysis of a MTFF (World Bank, 2014b).

The Philippines prepare a medium-term development plan that includes a fiscal framework, a public investment program, and a comprehensive and integrated infrastructure program. The infrastructure program includes projected infrastructure investment from the public and private sectors through PPP arrangements.

Nevertheless, in some cases the legal obligation to align laws with the medium-term fiscal planning in practice is null. In Honduras, the 2004 *Organic Budget Law* established medium-term policy instruments, including the MTFF, the multiannual budget, and the debt strategy to strengthen fiscal sustainability (Table 4.2). Likewise, the country's MTFF (2018–21) caps the estimated capital expenditure (including PPPs) to no more than 5.7 percent of GDP. However, in practice, the policy

reports do not reflect any link between each other. The PPP law repeatedly cites or cross references policy instruments that have not been elaborated, are outdated, or might contradict what has been established by other fiscal laws. For example, the law refers to a multiannual budget provision that has not been updated. Likewise, the law stipulates budget provisions for fixed commitments or guarantee claims. The debt strategy policy acknowledges these guarantees, but provisions have not yet been established for those guarantees that have been issued. PPPs are not adequately reflected in the budget or other fiscal frameworks. PPP commitments are only reported in the annual cash-basis budget (Reyes-Tagle and Tejada, 2015).

### Budget Planning

Ideally, PPP projects should be integrated with the government's MTFF, investment strategy, the NPIS, and budget cycle in the same manner as traditional capital investment projects. During budget

**TABLE 4.2. Policy Instruments under the Public Financial Management System in Honduras**

|  | MTFF<br>(3 years) | Multiannual Budget<br>(3 years)* | Debt Strategy<br>(4 years)   | Transparency Law | PPP Law    |
|--|-------------------|----------------------------------|------------------------------|------------------|------------|
| <i>Organic Budget Law</i> Policy Instruments Approved or Updated | 2018–21           | 2011–14;<br>2012–15              | 2011–14;<br>2012–15; 2013–16 | 2006             | 1999; 2010 |

Source: Reyes-Tagle and Tejada (2015).

\* The multiannual budget contains information about the expenditure side only and is not sent to parliament for approval.

planning, prioritization among programs and projects must be made to ensure that government policies and priorities are adequately included. The four pillars of every budget planning and formulation are: i) setting up the fiscal targets and their corresponding level of expenditures (this process is normally embedded as part of the government's macroeconomic framework), ii) assessing expenditure policies, iii) allocating resources, and iv) addressing operational efficiency and performance issues (see Dorotinsky, 2004). Countries that have not pursued a rigorous approach to budgeting for PPPs or integrating them into planning processes have faced compounded fiscal problems as a result (see Chapter 1). This section discusses practices countries follow to ensure an integrated process.

Budgeting for PPPs with government support requires securing resources to pay for whatever cost the government has agreed to bear under its PPP program for as long as the projects are contractually active. The budget office, which normally falls under either the ministry of finance or the ministry of planning,<sup>75</sup> is responsible for ensuring the country's fiscal solvency in the short, medium, and long term. The office is responsible for ensuring a balance between the use of PPPs and budget flexibility in the short and medium terms. This responsibility starts by ensuring that PPP projects are fully integrated within the national investment strategy and making sure that procuring agencies make decisions about investments based on principles laid out in the national investment system before the procurement method is decided. There are several approaches to incorporating PPPs in budget planning that can be considered best practices, including commitment budgeting, two-stage budgeting, and caps or limits. In commitment budgeting, the legislature approves project spending for multiple years in the first year of investment. Two-stage budgeting essentially treats all projects as TPI during the budgeting process, and then evaluates whether to pursue a PPP or TPI structure on the merits once approval is secured.

In Colombia, PPPs are incorporated into the budgetary process through FPOs. As part of the budget planning, the Ministry of Finance includes

FPOs to be paid in the next fiscal budget. Once the budget is approved by Congress, the Ministry of Finance issues a decree allocating the budget among each of the agencies and departments that has the budget resources to pay the FPOs. From an operational point of view, the agencies and departments are obliged to budget yearly payments to cover the FPOs. Although funding availability is the responsibility of the Ministry of Finance, FPOs are not discretionary payments and they are approved by multiple government entities, including the High Council on Fiscal Policy (CONFIS). Finally, once the funds have been allocated to the relevant agencies or departments, they execute the payments in accordance with the concession agreement.

Australia and Canada initially budget PPPs as TPI, reflecting their treatment of PPPs as a procurement process for public infrastructure rather than a stand-alone investment scheme. In these countries, PPPs are managed like any other major capital investment project through planning stages. This is partly because early infrastructure project planning progresses in advance of a procurement decision being made. Likewise, CAPEX for PPPs are typically included within the forward estimates when the project receives budget approval.<sup>76</sup> In Brazil, infrastructure planning is a shared responsibility between the federal, state, and municipal governments. As such, no centralized system gathers information on selecting, prioritizing, coordinating, and approving infrastructure projects at the country level. Provincial and local government initiatives are not formally integrated into a national program. These jurisdictions make significant efforts to communicate and discuss best practices, but there is no agreement to standardize methodologies or

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<sup>75</sup> In some countries in Latin America and the Caribbean, the budget planning responsibility falls within the ministry of planning, which sometimes creates tensions with the ministry of finance in terms of who is responsible for structuring the budget.

<sup>76</sup> In Canada, the funding analysis included in the business case for a PPP provides estimates of the impact of the project on consolidated expenditures, revenues, and debt over the life of the PPP contract. These estimates are included in the MTFF.

**TABLE 4.3. Responsibility for Infrastructure Planning in Australia**

| Level of Government | Economic Infrastructure  | Social Infrastructure   |
|---------------------|--|---|
| <b>Commonwealth</b> | <ul style="list-style-type: none"> <li>• Aviation services</li> <li>• Telecommunications</li> <li>• Postal services</li> <li>• National roads (shared)</li> <li>• Local roads (shared)</li> <li>• Railways (shared)</li> </ul>   | <ul style="list-style-type: none"> <li>• Tertiary education</li> <li>• Public housing (shared)</li> <li>• Health facilities (shared)</li> </ul>   |
| <b>State</b>        | <ul style="list-style-type: none"> <li>• Roads (urban, rural, local) (shared)</li> <li>• Railways (shared)</li> <li>• Ports and sea navigation</li> <li>• Aviation (some regional airports)</li> <li>• Electricity supply</li> <li>• Dams, water, and sewerage systems</li> <li>• Public transport (train, bus)</li> </ul> | <ul style="list-style-type: none"> <li>• Educational institutions (primary, secondary and technical) (shared)</li> <li>• Childcare facilities</li> <li>• Community health services (base hospitals, small district hospitals, and nursing homes) (shared)</li> <li>• Public housing (shared)</li> <li>• Libraries</li> <li>• Public order and safety</li> </ul> |
| <b>Local</b>        | <ul style="list-style-type: none"> <li>• Roads (local) (shared)</li> <li>• Sewerage treatment, water, and drainage supply</li> <li>• Aviation (local airports)</li> <li>• Electricity supply</li> <li>• Public transport (bus)</li> </ul>  | <ul style="list-style-type: none"> <li>• Childcare centers</li> <li>• Libraries</li> <li>• Community centers and nursing homes</li> <li>• Recreation facilities, parks, and open spaces</li> </ul>  |

Source: IDB case study.

procurement practices. This lack of coordination, integration, and planning is one of the major criticisms of Brazil's infrastructure policies. However, in recent years, the government has developed some mechanisms to correct for this gap.<sup>77</sup>

In contrast, most of Australia's publicly provided infrastructure is the responsibility of subnational governments and as such most projects are planned and delivered with little or no national government involvement. The country has an inter-linked system of national and subnational public investment systems responsible for both project delivery and budget planning (Table 4.3). At the subnational level, Australian state and territory governments each have their own public investment systems, with their own prioritization lists and strategic plans. Governments differ in the extent to which the key strategic plans adopt a whole-of-government or sector-specific focus, and the extent to which the strategies are public documents representing a point in time view or internal plans that evolve over time.

The national government has established Infrastructure Australia to provide advice to all levels of government as well as private investors on matters relating to infrastructure, including Australia's

infrastructure needs and priorities. Infrastructure Australia's additional functions include reviewing and providing advice on proposals to facilitate the harmonization of policies and laws for infrastructure development. Infrastructure Australia is also a member of the National PPP Working Group, which is the key body in Australia leading the development of PPP policy and process improvement for governments. Infrastructure Australia thus provides a degree of integration between disperse PPP programs and the NPIS.

Importantly, Australian governments make the investment decision prior to determining whether a project should be delivered as a PPP or a TPI. All projects go through the same identification, development, appraisal, and prioritization process before the investment decision is made. Once a PPP contract is signed, the TPI cash flows are re-profiled in the forward estimates to reflect the expected PPP cash flow. This approach to

<sup>77</sup> One of these initiatives is the *Programas de Aceleração do Crescimento* (Growth Acceleration Program), which consists of coherent sets of initiatives in various sectors, organized into a single government planning strategy.

**TABLE 4.4. Limits to the Use of PPPs: Selected Countries**

| Country  | Do the PPP law, debt management, or fiscal rules establish boundaries or ceilings for PPPs at the national and subnational levels?   | What is the factor that the legislative or decreed cap is imposed on? And what is the cap value?   |
|----------|--|--|
| Brazil   | <b>Yes.</b> The cap is on the total amount of investment allowed in PPPs each year as a percent of current expenditures and tax revenues. The federal government may enter into a PPP contract if the sum of the current expenditures from contracts signed in the previous year has not exceeded 1% of the net current revenues of the fiscal year and the annual expenditures of the contracts in effect in the 10 subsequent years do not exceed 1% (5% for state governments) of the net current revenue forecast for the respective fiscal years. | 1% for the federal government and 5% for states.   |
| Canada   | The overall number and capital value of PPPs in any jurisdiction is not limited by any PPP legislation or policy framework, but PPPs consolidate as debt of the owner jurisdiction, and overall debt within each jurisdiction is limited by the high political priority in Canada placed on conservative budgeting and debt issuance and management.   | The current government has a policy that targets a decline in the ratio of debt to GDP to 25 percent by 2021.                            |
| Colombia | <b>Yes.</b> Colombia imposes a limit as a percent of GDP.  | 2017–19: 0.35% of GDP; 2020–47: 0.4% of GDP. The cap can be adjusted yearly.   |
| Korea    | BTO projects are not currently subject to any financial regulations that place a ceiling on the total amount of expenditures. However, since the government began to provide subsidies to PPP projects in 2000, the criticism that PPP projects shift financial burdens from the present to the future has arisen, raising the need for financial regulations for PPP projects.  | BTL expenditures are approved every year by the National Assembly. The BTL expenditure ceiling for 2015 was approximately ₩0.5 trillion. |
| Mexico   | <b>Yes.</b> The cap is on the annual budget associated with PPP contracts.   | PPPs cannot exceed 10% of the average annual expenditures on programmed CAPEX for the next 5 years (excludes PEMEX investments).         |
| Honduras | <b>Yes.</b> The cap is on the total firm and contingent PPP liabilities as a percent of GDP.   | 5% of GDP.*  |
| Hungary  | <b>Yes.</b> Limits the total nominal value of multi-year commitments in PPPs.  | 3% of government revenue in that year.   |
| Peru     | <b>Yes.</b> Total firm and contingent PPP liabilities as a percent of GDP.   | Present value of fiscal commitments to PPPs is 12% of GDP.**   |

Source: Authors' elaboration.

\* According to Honduras's PPP law, the President can request an exceptional increase in this limit.

\*\*According to Peru's Legislative Decree No. 410-2015-EF (PE 2015), the President may revise this limit every three years with the endorsement of the Ministry of the Economy and Finance. See World Bank (2014b).

budgeting for PPPs was introduced in Australia in the early 2000s, together with the public sector comparator, which is essentially the hypothetical risk-adjusted cost of TPI delivery of the scope of the proposed PPP project.

In some cases, countries have opted to cap the resources channeled to PPP projects as an overall restraint on budget planning. A cap simply limits the amount of overall PPP investment that the government can approve either for the current budget or for a medium-term budget framework. Caps normally come in the form of a percent of GDP (stock or flow of resources), a percent of the liabilities created by the PPP program, a percent of GDP,

or a percent of revenues generated in each year (Table 4.4) (OECD, 2013, pp.55–6).

For countries like Brazil, Colombia, Mexico, and Honduras, which have a considerable number of PPP projects, imposing a substantive limit on PPPs and specifically a cap on the maximum permissible volume of outstanding commitments allows the country to keep track of the PPP portfolio and contain the fiscal risks that could arise from the PPP program. Such limits are not necessarily satisfactory, depending on the economy's dynamics, such as the business cycle. In certain circumstances, the government could be under/overutilizing PPPs or spending more on PPPs if harsh macroeconomic

conditions in the country turns bank loans to the private sector more expensive or if there is some internal/external volatility (e.g., high inflation or exchange rate volatility). If PPPs are cost effective and are to replace or complement TPI, then the argument of a cap may play against the cost efficiency. That is, why limit PPPs if they provide a more cost-effective approach to finance infrastructure? On the other hand, if the program solvency and sustainability cast doubts over time, choosing a limit can insure that the PPP program does not grow too big too quickly. In Australia, where no cap is imposed, the argument is that the government makes the investment decision (and hence considers project affordability) prior to determining whether a project should be delivered as a PPP or TPI. That is, PPPs are approved only if the line ministry already has the budget approved to pay for construction using public financing. A limit to the use of PPPs would not serve any material fiscal purpose and could have adverse consequences because the limit may prevent a government from delivering a particular approved project as a PPP, despite PPP delivery likely offering better VfM than TPI.

Colombia's NPIS is the main programming and execution body for PPPs. The CONPES, based on the recommendation of the CONFIS, establishes sectoral budget allocations for PPPs based on the information provided by line ministries and the PPP pipeline. Entities structuring PPP projects request fiscal space from the line ministry for each project, which in turn requests the CONFIS to include future commitments in the annual budget. These commitments are included in the sectoral budget cap and will be part of future budgets for as long as the commitments remain active. These requests are subject to the four-year national development plan as well as the *Fiscal Transparency Law*. The latter includes the MTFF, which establishes a 10-year cap on new PPPs. Finally, PPP planning is subject to Colombia's fiscal rule, which requires counting future PPP payments toward the deficit objectives of the fiscal rule.

In Mexico, PPP project proposals are recorded in the project portfolio of the Investment Unit within the Ministry of Finance.<sup>78</sup> Once technical

approval is granted, projects are included in the expenditure planning proposal (*Proyecto de Egresos de la Federación*, PEF) within Investment Programs and Projects Volume VIII. The information contained in the PEF is not standardized between the three categories. Reporting for PIDIREGAS and PPS includes data on fiscal appropriations over the life of the project, while PPPs only contain the private-sector investment. The Ministry of Finance's programming and budgeting manual establishes that PPPs are regulated by the PPP law. The approval process and reporting requirements are thus different from TPI. PPPs are listed in the appendix of PEF's Volume VIII and do not form part of the budget classifiers (current and capital investment) of the line ministries as is the case for PPS, PIDIREGAS, and TPI (Mexico, 2016).

In many cases, a formal designation of private partner ownership may disrupt the incorporation of PPPs into the budget planning cycle, incidentally or purposefully keeping them off the balance sheet. This may also happen when SPVs are considered private-sector actors. SPVs are often designed with a view to moving the project classification outside of the public sector, which renders effective fiscal oversight more difficult and typically excludes the project from medium-term planning (OECD, 2012a). Another disruption may occur when PPPs are included in off-budget-operations such as public trust funds established by ministries of finance that typically mix government and private monies (Table 4.5). Countries that allow the use of public trust funds for PPP financing rarely disclose financial information about the projects, making it hard to track their status or the guarantees that they entail. In Honduras, it is unclear how PPPs are incorporated into the annual budget planning because projects (unsolicited and government proposals) can be submitted for approval at any given time and as such they are not subject to the same timetable as the public budget.

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<sup>78</sup> Mexico has three categories of PPPs under the 2012 PPP law: PIDIREGAS, PPS, and PPPs under the 2012 PPP law (see Chapter 2). Each is reported differently in the budget framework.

**TABLE 4.5. PPPs and Public Trust Funds**

| Country     | Is there a specific regulation for the PPPs that have been implemented under a public trust?  | Does the government provide guarantees to public trust when they enter PPP's?  |
|-------------|---|--|
| Australia   | There are no separate regulations for public trusts.  | Not applicable, given the absence of PPPs undertaken by public trusts in Australia.  |
| Brazil      | There are no separate regulations for public trusts. However, in some cases the commitment's limits doesn't apply.                                  | Federal Government has not provided guarantees to public companies, whether express or implied.  |
| Canada      | There are no separate regulations for public trusts.  | Does not have public trust PPP projects.   |
| Colombia    | There are no separate regulations for public trusts, only restriction that applies is that government's participation must be more than 50 percent. | Government does not provide explicit guarantees.   |
| Spain       | Government can implement PPP's through public corporations, but there is no public law to regulate it.  | In public consortiums—public trust federal (central) government takes part of the responsibilities of the consortium but is very unusual to provide explicit guarantees. |
| Philippines | There are no public trusts in the Philippines that implement PPPs.  | Not applicable. Public trust companies are excluded by law or their respective charters to contract for or undertake Infrastructure or Development Projects.             |
| Honduras    | The PPP Law.  | Defined in the PPP Law.  |
| Indonesia   | No. In Indonesia, public trusts cannot implement PPPs.  | No   |
| Jamaica     | Yes, guided by policy.  | Yes, same as national.   |
| Mexico      | Different regulations (PPP Law, PIDIREGAS, etc.)  | Defined in the regulations.  |
| Peru        | No  | No   |

Source: Authors' elaboration.

The short-term nature of the budgetary process and many off-budget activities (e.g., trust funds) has contributed to the approval of many PPPs that have not been accurately reported in the budget. In addition, the lack of appropriate affordability controls may result in unrealistic forecasts regarding the actual cost of PPPs and the underestimation of the public commitments for which the government is responsible (Reyes-Tagle and Tejada, 2015).

## Budget Accounting

The temporal mismatch between short-term budget planning and the long-term nature of PPPs, which is most evident in long-term government commitments in the form of availability payments, poses a significant challenge for both the public and private sectors in terms of budgeting, reporting, monitoring, and evaluating PPP disbursements.

Presently, there are no internationally comprehensive accounting and reporting standards

implemented for PPPs. Government budgets and accounting systems often rest on a cash-basis accounting standard, where PPP operations are not shown in fiscal reports during the construction cycle, but only when government commitments are due. By contrast, accrual accounting immediately registers PPP expenses. Initiating years-long commitments like availability payments in an annual budget cycle not only affects intertemporal budget restrictions, the mismatch can also expose the private partner to the risk of overdue or non-payments (APMG, n.d.). Accounting standards can exacerbate this mismatch.

General accounting practices differ from country to country. To list a few examples, Australia's accounting and budgeting are both accrual-based; Brazil's accounting is modified accrual-based, whereas its budgeting is modified cash-based; in Canada, both accounting and budgeting are accrual-based; in Korea, accounting is accrual-based whereas budgeting is cash-based; in Spain, the

accrual-based approach is used for both accounting and budgeting; in the Philippines, accounting and budgeting are both modified accrual-based; Honduras' accounting and budgeting are both modified accrual-based; Mexico uses both cash-based and accrual-based methods for its accounting, whereas only the cash-based approach is used for budgeting; in Peru, accounting is accrual-based and budgeting is modified cash-based. Generally, PPPs may be subject to additional reporting requirements and spending limits or may fall directly under pre-existing budgeting practices. Likewise, there is considerable heterogeneity in the treatment of PPPs during the budgeting process.<sup>79</sup>

Seemingly minor accounting variations can carry significant implications for the ability of the government to pursue PPPs off balance sheet. Cash-basis accounting raises clear incentives to choose PPPs for governments that are focused on short-term gains rather than long-term sustainability. Accrual basis accounting makes up for some of the shortcomings of cash-basis accounting, but on its own may fail to account for contingent liabilities, especially implicit liabilities in PPPs. Loose or inconsistent standards have led to the use of PPPs to circumvent fiscal controls and move public investment off budget and debt off the government balance sheet, instead of an instrument to achieve VfM by providing services more effectively. In parallel, there has been a rise in government guarantees and contractual obligations to a considerable number of contingent and firm liabilities that imply fiscal risks to public finances, but which at the same time are not adequately accounted for or disclosed (Schwartz et al., 2008).

Ideally, public accounting should accurately reflect all PPP activities to prevent a bias toward one form of financing or instrument. The system of government budgeting and accounting should provide a clear and transparent record of all PPP activities. To prevent that bias, the United Kingdom, New Zealand,<sup>80</sup> Norway, France, and Germany provide the most extensive information on the budget process and accounting, and maintain a dedicated reporting system for PPPs (OECD, 2012b).

Weaknesses in monitoring and evaluation systems make it possible for governments to use PPPs to evade fiscal rules and controls (OECD, 2012b; Rendón and Astudillo, 2016). Some countries may inconsistently report PPP operations across fiscal reports by excluding them from budget execution reports but including the related assets and liabilities in the annual financial statements (IMF, 2016). In some cases, countries have double booking systems for PPPs. In Colombia and Peru, in addition to being registered in the NPIS, PPPs are registered in the *Registro Único de APPs* and the *Registro Nacional de Contratos APP*, respectively. Other countries include them within an NPIS, including Mexico and Honduras, but only those who require federal government budgeting. In other countries, there is no mandatory disclosure of PPP information (e.g., Indonesia).

Many countries do not systematically record PPPs in their NPIS because they have no such organization, projects do not require immediate budgetary support (i.e., user fee projects), or they do not classify PPPs as public investment (Ortegón and Dorado, 2006). This is where effectively managing fiscal risks becomes key for any sustainable PPP program. Handling fiscal risks requires a strong institutional framework for public investment (including the PPP framework), incorporating budget planning, accounting, and reporting (monitoring and evaluating). Fiscal risks are more likely to arise when investments (either TPI or PPPs) are of poor quality, frameworks are weak, and accounting and reporting systems are not in place or are not transparent in disclosing fiscal implications of PPPs (Schwartz et al., 2008).

While many countries have established institutional mechanisms to evaluate and monitor fiscal risks arising from PPP programs (Box 4.2), few countries are correctly identifying, managing, mitigating, and reporting these potential risks in

<sup>79</sup> Based on country feedback to IDB questionnaires.

<sup>80</sup> The government of New Zealand has not entered into a PPP project per se; however, line ministries have done contract leases, which raise similar accounting concerns as PPPs. There are two types of leases: financial (where the risk is transferred to the government) and operational (where the risk remains with the private sector).

## BOX 4.2. Risk Management and Reporting

**Australia.** A formal analysis of overall fiscal risks performed by the Ministry of Finance is typically required at two stages: when the business case is prepared and following approval of project investment and procurement. Risks are quantified in the cash flows of the public sector comparator. The impact of systematic risk is accounted for by adjusting the discount rate used for private-sector bids. Risks are divided into transferred risks (to the private sector) and retained risks (by the government). The retained risk valuation provides a detailed assessment of the associated fiscal risks to the government. When a risk is realized, appropriate management strategies are put in place. The specific strategies depend on the nature and impact of the risk. Most of the retained risks in the operational phase of PPPs are not quantifiable and are largely within government's control (e.g., modifications and renegotiations). The primary mitigation tools are robust contract management and government decision-making processes. Should government decide that the PPP contract will have fiscal consequences, any funding requirements are considered as part of the government budget-making process.

**Brazil.** At the state level, the Ministry of Finance conducts a feasibility analysis of PPPs that are considered for approval. According to the PPP law, fiscal risks from contracts need to be reported bi-annually in the budget execution report. In addition, contingent liabilities arising from PPPs are reported in the fiscal risk annex of the annual budget planning. Contingent liabilities are estimated based on the probability of materialization, but the report does not include any mitigation actions or strategies if these liabilities materialize. Normally, the fiscal risk analysis focuses on the impact of specific events on public-sector finances. As such PPP evaluations focus on those risks retained by the government, specifically construction and demand. Traditionally, the contingent liabilities that the government has assumed under its responsibility include: minimum revenue guarantees (MRGs), demand and exchange guarantees, renegotiations, and early contract termination. The latter implies that the government reimburses the private sector for all net unamortized disbursements made on behalf of the project. The government has no specific strategies to mitigate risks.

**Canada.** All risks, unless expressly defined and allocated in the project agreement, are transferred to the private partner. Contracts typically define specific possible events and risks as supervening events. The project agreement lays out the process to be followed and defines specific events that fall under each category. Risk exposures that cannot be mitigated by the private partner are typically shared and/or capped through negotiations or through feedback from collaborative sessions between the Owner and Proponents. Risks are assessed in terms of the probability of occurrence, the distribution and expected timing of the probability, and the cost consequences of the occurrence. The following principles are central to risk mitigation to all jurisdictions in Canada with PPP initiatives: i) the risk is allocated to the party best able to manage the risk, ii) the risk is transferred to the private partner only if it is cost effective to do so, and iii) each risk is assessed for the possibility of a risk mitigation strategy that may eliminate the risk. Another risk mitigation strategy for certain complex risks, such as geotechnical risk, is to allocate the risk on a non-linear basis, where risk is "laddered" such that the private partner takes a bounded, first risk, and the owner takes unbounded residual risk, with careful monitoring of the project through project governance. In several instances, risk sharing becomes a bid issue, where proponents are invited to bid for the share of a specified risk that they will assume. Beyond this, project budgets typically include a contingency or owner's reserve amount that is to be drawn on if certain retained risks occur. This contingency is typically managed by either or both of the project board and government.

*(continued on next page)*

#### BOX 4.2. Risk Management and Reporting (continued)

**Colombia.** In the late 1990s, the country passed a law to regulate budget management of contingent liabilities based on an assessment of the National Directorate of Planning that the nation's contingent liabilities summed up to 155 percent of GDP (KECG, 2013). Presently, the Ministry of Finance is responsible for identifying, handling, and mitigating implicit and explicit risks that can impact public finances. The PPP guidelines call for a risk analysis at the macro and micro levels for each project, including the probability of realization and possible impacts. The methodology used includes simulation and parametric models to value contingent liabilities for those projects with substantial risk or great impact. The contingent liabilities include revenue guarantees (e.g., guaranteed income mechanism or expected income), currency risk, and geological partial guarantees. The evaluation process involves investing in projects on a case-by-case basis, determining whether contingent liabilities exist and whether the project must contribute to the Contingency Fund, which is monitored by the Ministry of Finance.

**Korea.** The fiscal influence of PPPs is monitored regularly. The corresponding authority of each PPP project is responsible for monitoring the project and plays a key role in mitigating risks. The competent authorities receive a quarterly status report from the project company. The progress report covers construction and operation progress, financial status, and fiscal support related to matters such as MRG results, financing, and government subsidy. The *PPP Act* gives the competent authority the right to request a report from the project company about managing and operating the project or to dispatch any public official under its control to visit the site or inspect documents. The reporting procedures are clearly specified in the concession agreement. Based on the status reports submitted by the competent authorities, the Ministry of Finance annually prepares a report about the operation status and performance analysis of PPP projects and submits it to the National Assembly. The Ministry also conducts a comprehensive evaluation of PPP projects every three years through a PPP Review Committee. The evaluation results are fed back into major PPP policy directions. Regarding disclosure of contingent liabilities, Korea reports them in an annex to financial statements for each fiscal year's National Statement of Accounts. The annex includes information about payments in accordance with MRGs and related agreed details over the preceding three years. The project list includes MRGs and the MRG period and level of each project, but does not include information on future estimated amounts. The country does not issue a report on fiscal risks associated with PPPs as a supplementary budget document the way countries such as Chile, Indonesia, the Philippines, and Portugal do (Lee, 2016).

the budget cycle.<sup>81</sup> In other words, we found that, while some countries have a formal mandate to analyze overall fiscal risks associated with PPPs (including macroeconomic, financial, environmental, construction, and political risk), many do not carry through with this mandate due to lack of institutional capacity or budget allocated to monitoring and evaluating these risks. Moreover, very few countries have adopted strategies to mitigate these risks or minimize their potential impact. One exception is Colombia, which has established legal provisions for contingent liabilities and has become an

<sup>81</sup> There is a vast literature exclusively dedicated to risk analysis and management. According to the National Research Council, "The expectation that clear and concise characterizations of existing information about risks, costs, and benefits will lead to informed and acceptable regulatory decisions is attractive; it may, however be naïve. One reason lies in inadequacies of the techniques available for risk analysis. A second is the fundamental and continuing uncertainty in information about risks. Another less well appreciated reason lies in a basic misconception of risk characterization and its relation to the overall process of comprehending and dealing with risk." This conception of risk and its consequences is of interest when designing PPPs and populating the risk matrix. (Stern and Fineberg, 1996)

example for having established standards for budgeting, accountability, and fiscal transparency.<sup>82</sup> From a risk management perspective, Colombia is ahead of other countries in assessing and valuing contingent liabilities (KECG, 2013).

An interesting case has been Portugal's experience with PPPs. Since 1993, the government has embarked on an aggressive PPP program mainly in the transport and health sectors. Over two decades, PPPs allowed the country to close their infrastructure gap and avoid the budget constraints in the short run. But by the early 2000s, questions about the validity of VfM emerged, casting doubts on the entire PPP program. Among the many reasons behind the debacle of the PPP program in Portugal after the 2008 financial crisis was the high number of PPP projects approved over a limited time span without proper government control or an appropriate accounting and reporting system, as well as the incentive to avoid short-term budgetary constraints. Between 1995 and 2014, a total of 35 PPP projects were launched in four sectors for a total of €20 billion with future annual government obligations between 2017 and 2030 accounting for more than 0.5 percent of GDP (Miranda and Renneboog, 2014). As discussed in Chapter 1, these projects required extensive renegotiations to ensure fiscal sustainability.

In Honduras, the Ministry of Finance (SEFIN) and the central bank share responsibility for public debt policy and management. According to the law, all guarantees, deposits, and goods and services that are contracted by the public sector with third parties for a period longer than a fiscal year constitute public debt. In the case of PPPs, SEFIN issues provisions to register in the debt management system all quantifiable firm and contingent commitments and guarantees that may be executed. These provisions are not yet fully implemented, giving the sense that, in practice, there is no clear link between debt strategy, debt management, and the liabilities associated with PPPs. Some progress has been made. For instance, the country's 2018–21 fiscal framework and public finance strategy accounts for PPPs. However, there is no public record of the guarantees and callable options yet, although a

methodology for contingency valuation is expected to be published in the coming years. The lack of a public record reinforces the need for SEFIN to monitor and assess the performance of the guarantee and the risk that could be called to avoid a problem for the government since fiscal costs are deferred over time. Honduras has also created a Superintendency for Public Private Partnerships (SAPP), which is tasked with PPP supervision and fiscal oversight. It is important that public financial management can ensure whether PPPs are affordable and therefore whether they are the best alternative method to finance projects (Reyes-Tagle and Tejada, 2015).

The best way to reconcile short-term budgeting practices with the long-term nature of PPP commitments would be to treat PPPs as public debt. Federal laws in Korea and Jamaica require that future PPP payments are treated as debt obligations, meaning that future commitments are approved at once rather than as payments come due, avoiding repeated legislative approvals (APMG, n.d.). In Canada, there is no federal legislated debt management system, although the current government has prescribed a target debt-to-GDP ratio of 25 percent by 2021. PPPs at the federal departmental level and most SOEs are consolidated into the federal financial statements, and the revenue and expenditure implications are incorporated into the annual budget and MTF. Accordingly, from a debt management perspective, PPPs are treated the same as direct government debt, allowing a clearer picture of their role in fiscal sustainability. Likewise, the Canadian government approves and appropriates departmental expenditures, revenues, and capital budgets on an accrual basis, meaning accounting is based on obligations rather than disbursements. In Chile, the Ministry of

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<sup>82</sup> For example, the National Infrastructure Agency (NIA) serves as a source of funds to cover explicit contingent obligations and is backed by the National Contingency Fund (NCF), which is dedicated to managing budgetary volatility arising from PPP commitments. The NCF is managed by a state-owned trust company and is funded by disbursements from state entities. In terms of contingent liabilities management, the NIA must make quarterly, semi-annual, or annual contributions to the NCF based on actuarial calculations used to assess the risk provisions for each project. (IDB, 2016b)

**TABLE 4.6. Accounting for Government's Contingent Liabilities in PPP Projects**

| Transactions   | Accounting Treatment on Accrual Basis            | Impact on Government Deficit               |  | Impact on Government's Balance Sheet        |  | Accounting Treatment on Cash Basis         | Impact on Government Cash Deficit          |
|--|--|--|--|---|--|--|--|
|  |  | Net Operating Deficit                      | Overall Deficit                            | Gross Debt                                  | Net Worth                                  |  |  |
| <b>Government Guarantees on Private Partner's Debt</b> |  |  |  |   |  |  |  |
| Provides Guarantee                                     | Off-balance sheet                                | None                                       | None                                       | None  | None                                       | None                                       | None                                       |
| Callable Debt  | Assumes the guarantee called and pays cash       | Increases by paying guarantee being called | Increases by paying guarantee being called | Increases by guarantee assumed and not paid | Decreases by paying guarantee being called | Only the part of guarantee called and paid | Increases by paying guarantee being called |
| <b>Government MRG</b>                                  |  |  |  |   |  |  |  |
| Provides MRG   | Off-balance sheet                                | None                                       | None                                       | None  | None                                       | None                                       | None                                       |
| Private revenues fall below MRG threshold              | Assumes the guarantee called and pays it in cash | Increases by paying guarantee being called | Increases by paying guarantee being called | Increases by guarantee assumed and not paid | Decreases by paying guarantee being called | Only the part of guarantee called and paid | Increases by paying guarantee being called |

Source: Jin and Rial (2016).

Planning monitors each project and the Ministry of Finance evaluates the maximum present exposure and payments of the PPP project and portfolio, and maintains a register and annual report of contingent liabilities that includes concessions.

Australia, Mexico, and Peru do not register PPP commitments under debt service payments but rather as investment commitments. In Colombia, federal PPP projects that require public monies are registered as investment commitments. However, at the state and municipal levels, the law treats future PPP commitments within the debt ceiling and as such payments are registered as part of state and municipal debt.

Two accounting standards have sought to address the accounting bias of PPPs through different methodologies: IPSAS 32 and The European System of National and Regional Accounts (ESA95).

**IPSAS 32** covers both user-funded and government-funded PPPs; however, regardless of the PPP funding modality, IPSAS 32 states that an infrastructure asset should be recorded on the government balance sheet and therefore have an impact on government balance and gross debt (control methodology) if:

- The government controls or regulates what services the private partner must provide with the asset, to whom it must provide them, and at what price; and
- The government controls any significant residual interest in the asset at the end of the term of the arrangement (Jin and Rial, 2016).

Table 4.7 exhibits the main characteristics of IPSAS 32 accounting for PPPs.

**The European System of National and Regional Accounts (ESA95).** In the European Union, ESA95 and ESA2010 regulations determine how to record transactions made by the public administration with the private sector in public debt and national accounts. The regulation contains provisions on how to account for PPP and concession contracts. Depending on their financial structure, PPPs can either be recorded as **public debt**, whereby the asset is recorded within the public administration because the contract shows public, rather than private, economic ownership, or **private debt**, whereby the asset is recorded within the account of the contractor because the economic ownership is designated as private rather than public. The latter may include

**TABLE 4.7. Accounting for PPP Projects in Government Accounts**

| Transactions  | Impact on Government Deficit  |  |  | Impact on Government's Balance Sheet                     |  | Accounting Treatment on Cash Basis                | Impact on Government Cash Deficit    |
|---|---|--|--|--|--|---|--------------------------------------|
|   | Accounting Treatment on Accrual Basis   | Net Operating Deficit                          | Overall Deficit                                | Gross Debt   | Net Worth                                      |   |                                      |
| <b>PPP Asset (Construction) Both for Government- and User-Funded PPPs</b> |   |  |  |  |  |   |                                      |
| Recognition of government non-financial asset and liability               | Increase non-financial asset (equal to construction costs)<br>Increase liabilities equal to full value of the asset | None   | Increase by full value of non-financial asset  | Increase by the full value of the liability              | None   | None  | None                                 |
| <b>Contract operation in government-funded PPPs</b>                       |   |  |  |  |  |   |                                      |
| Payments to operator (operational costs)                                  | Expense, purchase of goods and services<br>Decrease in stock of cash  | Increases, due to expense in purchases         | Increases, due to expense in purchases         | None   | Decreases due to lower in stock of cash        | Expense, purchase                                 | Increases due to expense in purchase |
| Payment to operator (financial charges)                                   | Expense, interest, decrease stock of cash   | Increases, due to expense in interest          | Increases, due to expense in interest          | None   | Decreases due to interest expenses             | Expense, interest                                 | Increases due to expense in interest |
| Payment to operator (amortization gov. liability)                         | Decrease in liability and in stock of cash  | None, financing transaction                    | None, financing transaction                    | Decreases due to amortization                            | None   | Decrease in liability and in stock of cash        | None financing transaction           |
| Depreciation of the non-financial asset                                   | Expense, consumption, of fixed capital. Decrease in non-financial assets  | Increases, due to consumption of fixed capital | None, internal transaction                     | None   | Decrease due to consumption of fixed capital   | None, depreciation is not supported in cash based | None                                 |
| <b>Contract operation in user-funded PPPs</b>                             |   |  |  |  |  |   |                                      |
| Revenue recognition and reduction of government liability                 | Decrease in non-financial liability; imputed revenue, capital grant   | Decrease due to imputed revenue                | Decrease, due to imputed revenue               | Decrease, due to amortization of non-financial liability | Increases, due to imputed revenue              | None, imputation not supported in cash based      | None                                 |
| Depreciation of the non-financial asset                                   | Expense, consumption of fixed capital, decrease in non-financial assets   | Increases, due to consumption of fixed capital | None, internal transaction                     | None   | Decreases, due to consumption of fixed capital | None, depreciation is not supported in cash based | None                                 |
| <b>End of contract both for government and user funded PPPs</b>           |   |  |  |  |  |   |                                      |
| End of service provision by the operator                                  | Revenue, capital grant; net acquisition of non-financial asset  | Decrease, due to revenue grant                 | None, due to compensation of both transactions | None   | Increases, due to capital grant                | None  | None                                 |

Source: Jin and Rial (2016).

concessions, where users pay fees directly to the contractor. This classification constrains the procuring of public infrastructure through PPPs because ownership will have an impact on the borrowing and financing capacity of the government. In practice, PPP contracts are so complex that the difference in treatment between one or the other becomes a task that requires a deeper study of the conditions of the contract. According to Schwartz et al. (2008), the decision to classify PPP assets as either public or private based on risk transfer and its corresponding implications for the accounting treatment may create a moral hazard effect as, under ESA95, the incentive for the majority of PPP projects will be that they are reported as a private investment since the private sector bears the construction and availability risk (Schwartz et al., 2008).

## PPPs and Financial Crises

PPPs and financial crises are closely linked. Some countries have sought to leverage the financing technique as a countercyclical spending measure, seeking to encourage private spending on public works when liquidity is otherwise scarce and risk perception is high. Other countries have seen crises uncover hidden weaknesses in their PPP programs or generate fiscal shocks linked to PPP liabilities.

Burger, Tyson, Karpowicz, et al. (2009) identified higher interest rates, tighter liquidity, increased exchange rate risks, and downside revenue shocks as the main channels through which financial crises may affect PPPs. Further, the authors noted that the involvement of private partners meant that projects were exposed to partner viability. The balance sheet of the private partner may be exogenously affected during a crisis, throwing the viability of project finances into question. Revenue shocks to the PPP may affect the partner's solvency or require additional government support. Likewise, we have seen that governments often turn to PPPs to bypass fiscal constraints, generating long-term obligations during a period of relative weakness.

The crisis-time combination of increasing costs of private-sector participation on one hand

and increasing government incentives to avoid fiscal constraints on the other makes considering the impact of financial crises on PPP programs especially important. The implications for PPP policy frameworks are also central to this discussion. Empirically, the same authors showed that PPPs faced delays and cancellations during the 2008 financial crisis, finding that uncertainty over the terms and viability of lending caused most of the delays. These findings highlight the policy consequences of PPPs relying on credit markets, and the fact that policy frameworks crafted under one set of economic circumstances may prove insufficient to cope with unforeseen economic changes.

While PPPs may prove able to unlock skittish private finance during crises, the longer preparation time for PPPs—as well as the potential for even higher costs of private borrowing during crises—call into question their use as a countercyclical measure during downturns. The case for increasing TPI under these circumstances does not translate cleanly to PPPs.

## Indonesia

The 1997 Asian financial crisis hurt the Indonesian government's ability to invest in infrastructure projects, with infrastructure outlays being cut by presidential decree as the crisis unfolded (Sarosa, 2006). Infrastructure investment declined from just below 10 percent of government expenditures to about 4 percent after the crisis (OECD, 2012c). The crisis also acted as a major setback to the progress of mobilizing private investment for infrastructure.

The crisis was followed by significant government action to encourage PPPs, with the Indonesian government initiating reform of its legal and institutional framework to open the door for more private participation in infrastructure. The Indonesian Ministry of State Development Planning reviewed the country's experience with PPPs and concluded that the country needed a national regulatory framework to ensure future PPPs would be transparent and competitive. The process resulted in a so-called Presidential Regulation in 1998 calling

for some of these steps to be implemented (World Bank, 2009).

This new legal framework attempted to establish a stronger basis for private participation in infrastructure, but the crisis resulted in prolonged stagnation in the sector (World Bank, 2009). There was significant legislative and reform activity in the years immediately following the crisis, including the establishment of the Policy Committee for the Acceleration of Infrastructure Provision in 2001. This committee was given broad powers to coordinate and accelerate infrastructure development and pursue dispute resolution. The committee was made up of 12 ministers and heads of government entities, and reported to the president. The committee did not achieve its goals and, though there was an attempt to restart it in 2005, it was eventually made redundant in 2011 (Kannan and Morris, 2014).

The mismatch between demand for infrastructure and the government's ability to supply it persisted and the 1998 guidance was insufficient. Eventually, that guidance was replaced by a 2005 Presidential Regulation in an effort to address similar shortcomings. This law was subsequently revised in 2010 and 2011, forming the legal basis for government guarantees (OECD, 2012c).

The 1997 crisis clearly shaped Indonesia's approach to PPPs. However, its influence on the regulatory environment was inconsistent and took many years to develop. Likewise, the crisis's negative impact on infrastructure investment was prolonged. In this case, we see that crises may uncover shortcomings in previous financing models and push governments toward new models. We also see some of the challenges in ramping up PPPs during crisis, especially for developing countries that have historically relied heavily on government participation in such projects.

## Peru

Peru established a strong record of using strategic privatizations as well as concessions in the years running up to the 2008 financial crisis but did not engage the PPP model until the eve of the crisis itself. Peru saw the potential for PPPs to serve as an instrument

of countercyclical economic policy and therefore moved quickly to implement a PPP framework with a view to mobilizing stimulus capital during the crisis. Peru issued its first PPP law in 2008, just before the collapse of Lehman Brothers. The exigencies of crisis—and a desire to attract more private capital—led the country to issue a number of adjustments using legislation and decrees. These emergency decrees were intended to spur inflow, bypassing cautionary best practices like the public-private comparator and other protections. Some of these decrees allowed specific projects to be expedited, adding to a list of exceptions and extenuations (Table 4.8).

Peru still managed to attract significant private investment in infrastructure and is one of the few countries that appear to have achieved countercyclical PPP spending in reality. However, constant changes mean that the PPP process in Peru has suffered from competing layers of laws and authorities, high levels of uncertainty in the investment processes, and weak standards to analyze VfM, TPI or public-sector alternatives, and risk management. While the goal of most of these changes was to attract investment, the government made changes to the regulatory environment that resulted in a new PPP framework adapted in 2015. This new regulatory and institutional framework for PPPs offers better processes to prioritize, implement, and monitor private investment; however, there will still be challenges in the future (OECD, 2015).

## Korea

Over the past two decades, the Korean government has consciously tried to counter the negative impact on its PPP environment caused by the 1997 Asian financial crisis and the 2008 global financial crisis. The Korean government passed its first PPP law in 1994 in response to an infrastructure shortage. However, progress under this initial law remained below expectations because regulations were driven by concerns about special treatment and excessive private-sector risk, among other reasons.

The 1997 crisis took a serious toll on the Korean economy and worsened conditions for

**TABLE 4.8. Changes to Peru's PPP Framework Following the Financial Crisis**

|                       |  |  |
|-----------------------|--|--|
| <b>The Rule</b>       | <b>Decree 146-2008-EF<br/>(Regulation of Law 1012,<br/>previous PPP law)</b> | <i>Article 5.1: To adhere to the process of promoting private investment for the provision of infrastructure and public services through PPPs, the Entity will prepare an Evaluation Report for the relevant public bodies that contains at least the following content: ... for cofinanced projects: an assessment of the advantages of developing the project through a PPP, including a quantitative evaluation for projects that cost more than 100,000 UIT and require cofinancing exceeding 30 percent of the cost. This evaluation will be based on the Public-Private Comparator (3.2 the Ministry of Economy and Finance will establish by ministerial resolution the principles, methodology and criteria for the application of this analysis).</i> |
| <b>The Exceptions</b> | <b>Emergency Decree 047-2008</b>   | Declaration of national necessity to allow priority execution of 12 PPP projects by ProInversion (advocacy body for PPPs).<br><br>Grants ProInversion the discretion to determine maximum levels of cofinancing as well as the maximum amount of financial and non-financial guarantees.<br><br>Reduction of legal requirements: grants ProInversion discretion to modify the mechanisms and plan for the promotion of PPPs.   |
|                       | <b>Emergency Decree 010-2009</b>   | Declaration of national necessity to allow priority execution of 52 additional projects.<br><br>Declares validity of emergency decrees for fiscal years 2009 and 2010.   |
|                       | <b>Emergency Decree 020-2009</b>   | Exempts major projects as well as the projects approved by Emergency Decrees 047-2008 and 010-2009 from applying the public-private comparator.<br><br>Declares measure valid through December 31, 2010.   |
|                       | <b>Emergency Decree 121-2009</b>   | Declaration of national necessity to allow priority execution of 20 additional projects.<br><br>Declares validity of projects approved by Emergency Decree 047-2008 that have not been awarded or prioritized for 2010.<br><br>Declares new measures for the execution of prioritized projects (including the cession of land, among others).  |
|                       | <b>Emergency Decree 032-2010</b>   | Declaration of national necessity to allow priority execution of one additional project.<br><br>Declares measure valid through December 31, 2012.  |
|                       | <b>Emergency Decree 039-2010</b>   | Declaration of national necessity to allow priority execution of two additional projects.  |

Source: IDB case study.

PPPs. In response to both the fall in demand caused by the crisis and below-expectation results for PPPs, the Korean government sought to make systematic improvements to the PPP framework. In 1998, the *Act on Private Participation in Infrastructure* was passed to amend the previous act. The new legislation sought to provide additional government support, including MRGs and private-sector buyout rights. It also adopted unsolicited projects as a new form of PPP and established a specialized institute for PPP projects called the Public Infrastructure Investment Center of Korea within the Korea Research Institute for Human Settlement to provide technical assistance to the Ministry of Strategy and Finance and procurement authorities.

The 2008 global financial crisis delivered another blow to the Korean economy and its PPP market. The crisis reduced the flow of new PPP projects and interrupted financial closure for already agreed on projects. In an effort to remedy these problems, the government made concerted efforts to resolve the concerns that were driving down PPP activity. Like Peru, Korea saw the potential for PPPs to act as a countercyclical instrument. The government introduced a range of support measures, both financial and non-financial, to reduce risk. As in Indonesia, in Korea, the financial crises exposed shortcomings of the previous PPP regulations. However, the PPP program also provided a space for the Korean government to act to expand economic stimulus through formal policy

changes, an example of the potential for PPPs to be used as one aspect of a fiscal stimulus package (Kim, Kim, Shin, et al., 2011).

## Mexico

Mexico's 1994 financial crisis caused multiple financial complications for infrastructure concessions, especially road projects. Many of these projects faced bankruptcy and subsequent government bailouts. Public revenues fell drastically, and the country's access to international markets was limited. The crisis led to regulatory reforms to counter the problem of rising budgetary constraints and poor availability of public finance, including the creation of PIDIREGAS in 1995 (see Chapter 2). PIDIREGAS is considered the forerunner of Mexico's current PPP program (PIAPPEM, 2010). The purpose of PIDIREGAS was to attract private investment and long-term financing to develop strategic infrastructure projects in areas that had previously been off limits to the private sector.

## Portugal

The 2008 global financial crisis and subsequent Eurozone crisis unearthed significant problems of sustainability for the PPP projects pursued under Portugal's 2003 PPP framework. The country's 2011 Economic Adjustment Program was a condition of financial assistance from the so-called Troika—the European Commission, the European Central Bank, and the IMF. The program stipulated that the Portuguese government undergo various reforms in compliance with the Memorandum of Understanding on Specific Economic Policy Conditionality (EPEC, 2014). The memorandum contained several measures concerning PPPs. It stipulated that Portugal freeze new PPPs, conduct a thorough review of ongoing PPP contracts, and conduct a formal PPP audit using an international accounting firm, in addition to requiring reforms to the legal and institutional framework for risk assessment and monitoring. The memorandum improved on long-standing public-sector weaknesses that

had fed through to the PPP program. For example, planning was poorly coordinated with little regard for long-term fiscal sustainability or cross-sector coordination. Best practices including cost-benefit analysis, the public sector comparator, VfM analysis, fiscal impact analysis, and medium-term fiscal frameworks were also neglected by the PPP framework. Portugal's motorway PPPs were also a source of dangerous contingent liabilities (UTAP, 2015).

The Portuguese Ministry of Finance and the IMF conducted a joint study on reforming the legal and institutional frameworks for PPPs, leading to the identification of weaknesses and the implementation of new measures and reforms. In accordance with the memorandum of understanding, Ernst & Young was hired to assess the PPP sector. The enactment of a new 2012 PPP law overhauled the country's PPP regime to reflect these post-crisis lessons and analyses. The new law sought to gain control over the immense fiscal burdens that developed under the previous regime and prevent them from reemerging. The new law established a dedicated PPP unit to oversee the project cycle within the Ministry of Finance, UTAP (*Unidade Técnica de Acompanhamento de Projetos*), reaffirming the Ministry of Finance's management of the PPP process. The law focused on fiscal sustainability and transparency, implemented the best practices mentioned above, and led to renegotiations of motorway projects that had provided an undue fiscal burden (UTAP, 2015).

## Cyclical Spending Patterns and PPPs

Countercyclical fiscal policy—the idea that governments should spend when the economy is doing poorly and save when the economy is doing well—is widely advocated as best practice in academic economics. However, empirical studies suggest that developing economies often fail to achieve countercyclical policies, instead pursuing procyclical policies—spending when the economy booms and cutting back during busts (Kaminsky, Reinhart, and Vegh, 2004; Alesina, Campante, and Tabelli, 2008; Frankel, Vegh, and Vuletin, 2013).

The increasingly central role of PPPs in public spending agendas raises the question of how their use fits into the business cycle, and whether decisions to engage in PPPs are coherent in terms of fiscal policy. Some countries have sought to deploy PPPs as a method of countercyclical spending. Indeed, the theorized causal mechanisms for the observed procyclical tendency in developing economies would seem to reinforce the potential utility of unlocking private participation in publicly directed spending projects during crises.

In order to boost the economy during crisis, countries may seek to invest in public infrastructure projects countercyclically. Applied to PPPs, this would involve increasing the use of private participation when economic activity is faltering. Ideally, this could both stimulate the economy and provide incentives for private-sector participants to invest at times when confidence is low. Indeed, the potential utility of PPPs as a countercyclical policy choice is underlined by the role that PPPs played in the crisis recovery plans for countries such as Korea after the 2008 financial crisis (Burger et al., 2009, pp.3,18,20).

However, while countercyclical fiscal policy is widely prescribed, it is difficult to put into practice. There are similar factors at play for PPPs. Negative economic shocks may decrease a country's capacity to engage and sustain PPPs due to constraints on access to private finance, while positive economic shocks may reinforce it (Burger et al., 2009, pp.14). Therefore, we might expect the same dynamics that drive procyclicality in fiscal policy to drive procyclicality in PPPs. Likewise, crises also drive up the cost of private finance, while complex PPP contracts may take more time to unlock than TPI. The utility of PPPs as a countercyclical mechanism is therefore open to question—in addition to the baseline challenge of achieving a countercyclical policy.

Kaminsky et al. (2004, pp.11-2) highlighted Gavin and Perotti's (1997) contention that procyclicality is partly due to developing economies' inability to borrow during crises, thus sealing their inability to pursue countercyclical spending. The inability of middle- and low-income countries to reliably access capital markets during times of

crisis is borne out in the paper's findings. Alesina et al. (2008, pp.1025-7,1032-3) contended that the credit constraint was compelling but insufficient and proposed a theory of political rent-seeking during upcycles and voter distrust of governments to account for procyclicality during booms as well as busts. Frankel et al. (2013, pp.35-42) empirically reinforced a political theory of procyclicality by showing that better institutional capacity was causally associated with countercyclical policies.

Analyzing the cyclicity of PPP investments is methodologically challenging: the modern PPP is a relatively new phenomenon even in the most user-intensive countries, there is an inconsistent gap between opening the bidding process and financial closure due to idiosyncratic negotiation processes (our data is organized primarily by date of financial closure), and PPP investment is significantly more volatile than overall government spending. These difficulties suggest that a detrended correlation analysis along the lines of Kaminsky et al. (2004) or Frankel et al. (2013) might obscure important conclusions. For that reason, we instead present below a graphic analysis of the respective patterns of interest.

To examine this question empirically, we selected countries in the World Bank's PPI database with at least 100 non-merchant PPP projects since 1990. We then charted PPP expenditures as a proportion of annual total investment (gross fixed capital formation), including two lags to account for the time between bidding and financial closure. If a country's PPP use is procyclical, we would expect to see GDP growth trends align closely with trends in PPP investment approvals. In other words, we would expect PPP expenditures to increase during upcycles in economic activity and vice versa. On the contrary, if a country's investment patterns are countercyclical, we would expect to see PPP spending ratios rise as GDP falls and vice versa.

Kaminsky et al. (2004, pp.16-20) used government spending and the inflation tax rate to analyze fiscal cyclicity and highlighted the shortcomings of using a ratio of these statistic to GDP due to the overbearing denominator effect of GDP itself. To

analyze good and bad times, they compared the cyclical component of these key indicator series and the cyclical component of GDP (as determined by the Hodrick- Prescott filter), along with other correlation exercises and robustness checks (Kaminsky et al., 2004, pp.25–6). A similar approach is used in Frankel et al. (2013).

We observed similar shortcomings with the GDP ratio for PPP usage, especially in countries that have experienced significant economic growth over the past 20 years. However, as noted above, PPPs have unique characteristics that render these cyclical analysis techniques ineffective, especially the irregular contracting process and surges due to major one-off multi-year projects.

To correct for these shortcomings, we focused on the trend component of PPP investment as a proportion of both public expenditures and total investment—with one being a proxy for government fiscal policy and the other being a proxy for economic activity—and analyzed these in comparison to the trend component of real GDP growth. We detrended the series using the Hodrick- Prescott filter with a lambda value of 6.25 for annual data, in some cases using post-filter mean imputation for missing intermediate years (Ravn and Uhlig, 2002). We found the two exercises presented similar outcomes, so we focused on PPPs as a proportion of total investment for clarity.

The countries presented in Figure 4.3 exhibit procyclical or ambiguous cyclical patterns. In India’s case, the fluctuations in economic growth trends closely reflect the ups and downs of PPP investment as a proportion of total investment. Likewise, in Malaysia, the PPP ratio drops as the growth trend declines in the late 1990s before rebounding in unison. The country experiences a decline in PPP spending ratio after 2003 despite a relatively steady growth trend. In both Thailand and Indonesia, large declines in the PPP-to-investment ratio trend can be observed in the late 1990s, contemporaneous with the East Asian financial crisis. Thailand’s PPP decline follows the decline in economic growth closely while Indonesia’s follows behind. Indonesia’s ratio

slowly recovers toward the end of the series while Thailand’s does not.

Figure 4.4 examines some more compelling cases for countercyclical. The analysis shows that some countries do indeed appear to have pursued countercyclical PPP investment policies, though others have failed to do so consistently. Chile is the most visually compelling case, with periods of low-trend GDP growth corresponding with a peaking PPP-to-investment ratio. This relationship is fairly consistent throughout the series. The relationship between the series is also compelling in Peru’s case, with closely aligned peaks in the PPP-to-investment trend aligning with troughs in the GDP growth trend.

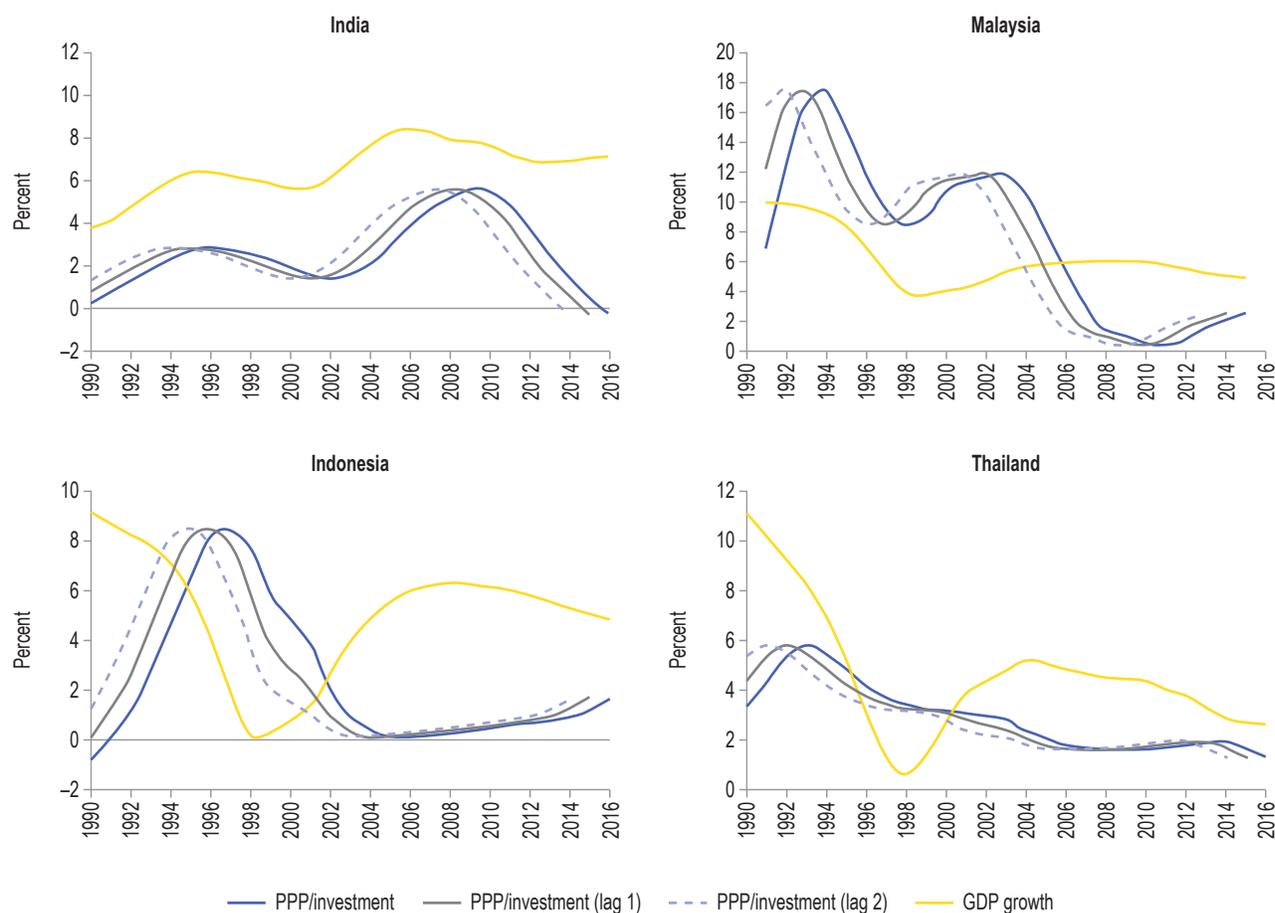
In Colombia, the relationship is ambiguous until growth begins to fall off after 2007, at which point there is a significant increase in the PPP-to-investment ratio. In Brazil, the relationship begins as potentially countercyclical and then appears to converge toward procyclical by the mid to late 2000s.

### Is Countercyclical PPP Investment Desirable?

PPPs may form part of a countercyclical strategy but should not be privileged over faster and cheaper public finance per se. The literature on fiscal cyclical patterns suggests that institutional capacity is a critical factor in achieving countercyclical spending patterns. Frankel et al. (2013) showed that developed economies tended to succeed in countercyclical policies, while developing economies more often failed. The authors also examined which factors may have allowed some developing economies to “graduate” to countercyclical, stressing the importance of institutional quality. Similarly, Reyes-Tagle and Garbacik (2016) found that institutional quality was an important factor in determining whether countries used PPPs.

We can intuitively posit a similar hypothesis for PPPs: a strong institutional framework—especially strong central supervision—is necessary if countries are to safely and productively leverage PPPs countercyclically. A countercyclical policy applied only to PPPs is not necessarily a desirable

**FIGURE 4.3. Procyclical or Ambiguous PPP Investment Patterns**



Source: Authors' elaboration using IMF WEO and World Bank databases.

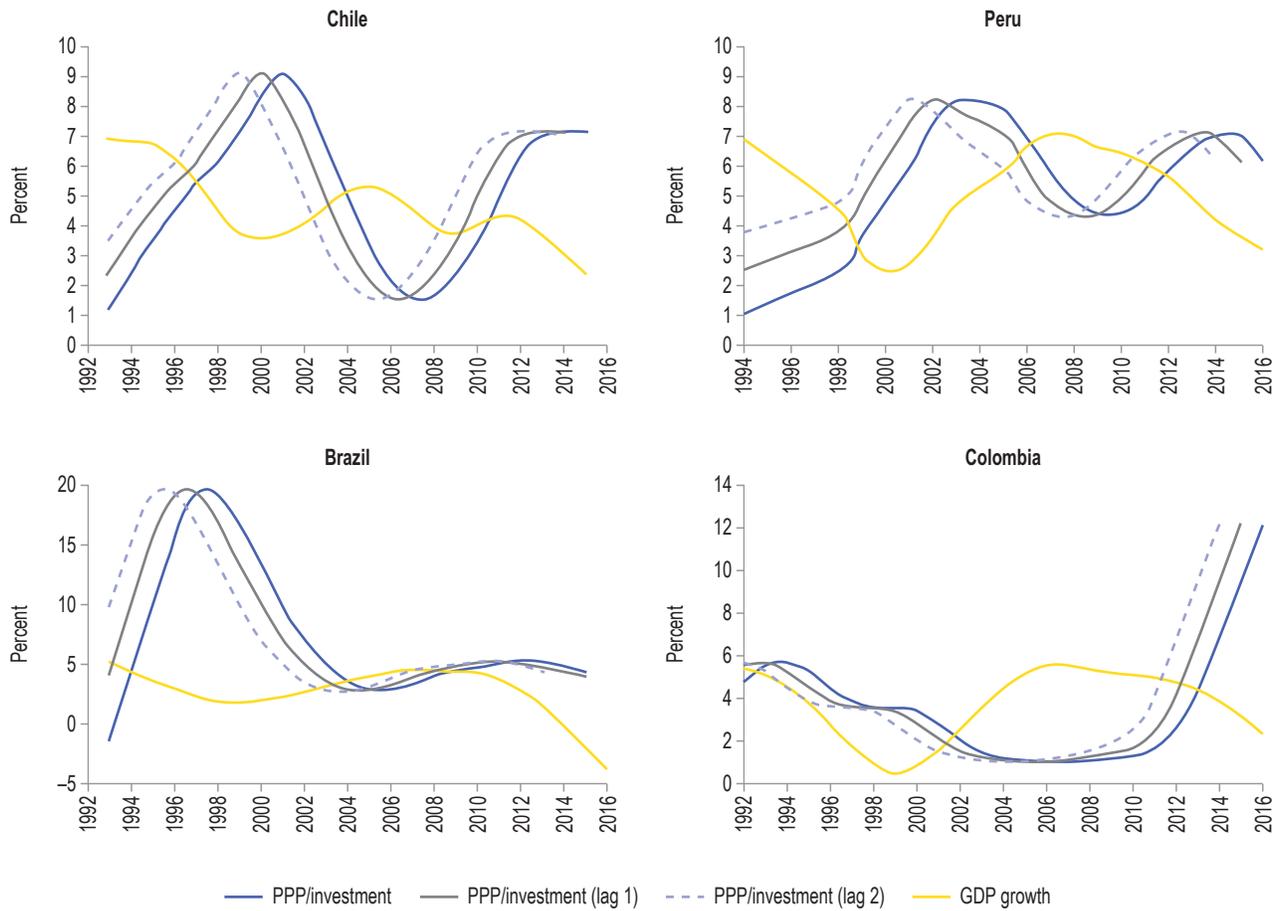
approach. Institutional weakness could be taken advantage of to increase concessional involvement of the private sector during times of fiscal stress, which is a factor exacerbated for developing economies facing unique difficulties in implementing any sort of countercyclical fiscal policy. As a result, the question of what sort of institutional mechanisms might encourage countercyclical PPP policies is important and may be distinct from fiscal answers.

Some countries have responded to the threat of unmanageable fiscal pressures from PPPs by capping the maximum size of the PPP portfolio. For example, Peru limits public exposure to PPPs to 12 percent of GDP. Public exposure includes both explicit and contingent public obligations

making up the entire stock of public liabilities related to PPPs, calculated in net present value. This evaluation is undertaken within the Ministry of Finance by the Department of Risk Evaluation. Honduras maintains a similar legal limit of 5 percent of GDP, in accordance with the 2010 *Law to Promote Public-Private Partnerships* (Reyes-Tagle and Tejada, 2015).

Irwin (2007, pp.121-2) noted that caps are a simple and often effective tool, yet they may prevent needed flexibility. From a cyclical perspective, the shortcomings of an inflexible GDP cap are readily apparent. To achieve PPP countercyclicality, countries need to boost spending when GDP growth is stagnating or reversing and reign it in while it is increasing. The numerator (PPP investment) would

**FIGURE 4.4. Approaching Countercyclicality?**



Source: Authors' elaboration using IMF WEO and World Bank databases.

therefore increase at the same time the denominator (GDP) falls, potentially running up against an arbitrarily tight limit. Likewise, in situations like commodity-driven booms, a runaway denominator effect might allow reckless spending relative to long-term equilibrium.

Frankel (2011, p.5-9) highlighted Chile's budgetary framework as a particularly successful innovation that led the country toward countercyclical budgetary behavior. Chile's budgetary methodology established a structural target for the budget deficit, allowing it to vary year by year to ensure flexibility. Chile's method uses broad-based independent panels of experts to estimate the output gap and the long-run equilibrium price of copper (a major export). The implications of these decisions are legally

binding, serving to encourage budget surpluses in booms and allow sufficient stimulus in busts.

An analog to such a flexible target in the case of PPPs could incorporate an independent assessment of the infrastructure gap (addressed in detail in Chapter 1) as well as an independent assessment of potential (rather than actual) output or a long-term GDP target, for example. Constantly assessing the infrastructure gap would allow structural increases or decreases in both the total and relative amount of PPP investment. Likewise, measuring investment limits against potential output or a GDP target would ensure these limits are relatively more generous during busts and stricter during booms, avoiding the denominator problems that caps might otherwise cause.

## Not So Fast

While a similar cyclical logic should apply between fiscal spending and PPPs, both budgetary and political dynamics differ markedly between TPI and PPPs. As a result, the conclusions for PPP management often differ from analogous conclusions and recommendations for general public spending.

In a best-case scenario, PPPs may provide a tool to boost the economic impact of fiscal policies while freeing private capital by dampening prevailing market uncertainty with public guarantees or support during periods of risk aversion on the part of business and private capital. However, the question of the ultimate fiscal impact of PPPs is considerably more complex than TPI, especially given the potential for adverse selection and moral hazard in the negotiating process. As a result, the question of countercyclical utility of PPPs is not necessarily straightforward, especially in developing economies.

While the dynamics for patterns in spending and PPP use intensity may seem similar, there are important factors that could be driving divergence. For example, the ability of the private sector to secure financing during a true crisis or sustained downturn may be just as constrained as the government, if not more (Burger et al., 2009). As discussed above, the main arguments in favor of PPPs are that they may be more cost effective or deliver better quality service for the same cost. However, in crisis or downturn situations, the private sector may face particularly high prevailing interest rates, especially in countries that rely heavily on foreign borrowing. This in turn could drive more private-sector demands for guarantees and support in terms of subsidies, fees, MRGs, or concessionary terms, in addition to the higher baseline financing cost.

There remains an additional analytical question of why we observe countercyclical PPP spending patterns in the data. It is possible that such a pattern could be observed when regulatory frameworks are weak. For example, the increase in PPP

projects during a time of crisis may be due to government strategy or private-sector opportunism driven by fiscal need and institutional weakness exacerbated by crisis. Similarly, applicable moral hazard issues have been raised in the literature on PPPs (see Chapter 1).

This suggests that actively seeking to encourage PPP activity during downturns may be pumping higher-cost projects onto the government balance sheet or undermining the core VfM propositions underpinning the use of PPPs in the first place. This could have an adverse budgetary impact, straitening the government's room for fiscal maneuver or ability to respond to crises in the longer term. Putting cost and value considerations aside, the practical implications of such agent-based problems during economic downturns is to reinforce the importance of a strong regulatory and planning function if PPPs are to be productively deployed countercyclically.

Fiscal risks are latent in PPPs as they represent long-term agreements in the form of debt between the private and public sector, with the singularity that the financial capital at risk is borne by the private party. However, the infrastructure asset that is used to provide the services to the government and/or the taxpayers (e.g., power plant or hospital) is a public asset. In other words, the government, the taxpayers, or a mix of both pay the private sector over time for a service and an asset that will be transferred back to the government at any given moment in time. If things go wrong over the lifetime of the project cycle, the government may be forced to reacquire the asset ahead of time, which may imply a fiscal burden not originally planned for. Undesirable results from PPP programs in the form of additional fiscal burdens have arisen in both developed and developing countries, either because of a faulty design or a lack of clear monitoring and evaluation schemes. Therefore, a top priority for all countries that are undergoing PPP programs should be having all institutional arrangements in line to make the programs sustainable.

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# 5

## Government Financial Support

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**G**overnment financial support (GFS) is a broad concept that includes any mechanism used by the government to channel public-sector financial resources to a private party responsible for financing, operating, or maintaining public infrastructure. GFS can take many forms, ranging from firm support like direct payments from public budgets to contingent support mechanisms such as guarantees that would not typically show up in the annual budget unless a specific event occurs to trigger a guarantee. GFS is as widespread as public-private partnerships (PPPs) themselves. Throughout the world, most PPPs incorporate some governmental financial responsibility, either firm or contingent.

For the private sector, GFS can make projects commercially viable. For governments, GFS represents a seemingly low-cost way to encourage private sector solutions to infrastructure challenges that may not be financially feasible otherwise. PPP projects need to be commercially attractive (bankable) if they are to succeed. That is, private sector investors and lenders—while doing the project’s assessment—need to believe a project meets their business objectives before they enter a long-term relationship with the procuring authority. GFS can help ensure public-sector projects are attractive to the private sector. However, GFS carries a significant potential fiscal impact over time that must be assessed and monitored by the government. While

direct commitments are usually straightforward, contingent commitments may appear low cost but may carry outsize long-term burdens. Both direct obligations and contingent liabilities must be properly accounted for in budgeting and managing PPPs with GFS.

Excessive or poorly planned GFS can undermine the core value proposition of PPPs: creating value for money (VfM) through private provision. GFS should not be used to prop up projects that do not make sense for private provision. Likewise, if a project requires extensive GFS to be feasible, then it may be a sign that the process through which a PPP has been chosen as the finance structure is flawed. GFS creates both short- and long-term strains on the government’s balance sheet. The extent of GFS across countries and projects shows that PPPs are not typically sustainable for private partners on their own merits. The extension of guarantees suggests that these projects are not profitable, or are too risky, for the private sector. These guarantees distort VfM, undermining the core argument in support of PPPs.

Different forms of GFS will have significantly different impacts. Some mechanisms may act as strong incentives or support structures for viable projects, while other mechanisms will be counterproductive. Likewise, the country and industry contexts are central to the potential for GFS to result in successful outcomes—the extent of financial sector

development, market competitiveness, government capacity, and other factors are critical in determining the likely effects of GFS. GFS should be assessed on a case-by-case basis, with particular attention to the incentivizing and distorting aspects of the particular form of support offered in the specific context. In addition to market distortions and implications on the private sector side, different forms of GFS will have varying implications for both fiscal risks and revenue generation. This should be a carefully considered part of the PPP contracting process.

GFS is a major source of contingent obligations, the long-term costs of which are not always well understood. Firm or direct obligations will arise in any event and are therefore certain, even when poorly incorporated into budgeting or accounting. On the other hand, contingent liabilities are triggered by a specific event that may or may not occur. A critical related concept is whether a commitment is explicit or implicit. Explicit liabilities may be firm or contingent, but are typically specified in a PPP law or contract. On the other hand, implicit liabilities are obligations for which the government would likely bear ultimate practical responsibility despite that obligation not being contractually assigned to the government. GFS does not guarantee against implicit liabilities, and poorly executed government support mechanisms may encourage such events, especially if they create incentive problems.

## Commercial Feasibility and GFS Mechanisms

The trend toward private provision of infrastructure has been buttressed by the premise that the private sector can provide public services more effectively and reinforced by the mounting fiscal pressures on governments and shrinking fiscal space for public investment, particularly since the 1970s. Meanwhile, PPPs have increasingly been seen as a way to reduce the impact of infrastructure spending on government budgets and minimize direct government borrowing. In this context, around the world PPPs have risen as an alternative method to deliver public services.

However, as we have seen, the question of efficiency and cost effectiveness is complicated and most PPPs require taxpayer resources to make them commercially feasible.<sup>83</sup> Financial aid to privately developed projects in the form of direct subsidies, capital grants, and subsidized loans is a central aspect of many PPP programs. GFS is a broad concept that includes any mechanism used by the government to channel public-sector financial resources to a private party responsible for financing, operating, and maintaining public infrastructure.

GFS can take many forms, ranging from firm support like direct payments from public budgets to much subtler contingent support mechanisms. Indeed, contingent support might or might not be explicitly described in the contracts. Revolving support may include equity participation by the government or debt provided by a government-owned bank at concessional interest rates. For the private sector, GFS can make projects more commercially viable. For governments, GFS may be a low-cost way to encourage solutions to social policy problems. However, it is important not to lose sight that GFS has a fiscal impact over time that must be assessed and monitored by the government. Likewise, contingent commitments may appear low cost, but they can carry outsized long-term burdens.

If PPPs are not able to increase the resources required to fund infrastructure above what public coffers might obtain, the only economically sound justification to use the scheme is its capacity to deliver better VfM for infrastructure projects. Therefore, governments should only use PPPs if they offer better VfM when compared to traditional public investment. Governments should not use PPPs to augment spending without proper control mechanisms, especially regarding long-term liabilities.

This discussion leads to two important general recommendations:

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<sup>83</sup> While there is a debate on whether infrastructure itself is becoming more commercially oriented (moving away from taxpayer supported to a user pay system), most projects still require government support to make them commercially feasible.

1. PPPs should not be used to hide fiscal consequences. Thus, it is paramount that governments understand the big picture of liabilities arising from PPPs and promote effective appraisal exercises before the choice of PPP is concluded.
2. Governments should carefully assess whether PPPs deliver VfM, and this assessment should be adequately integrated with the general project appraisal to ensure that the decision to use a PPP is justified.

This line of reasoning does not imply that there should be any blanket restriction on the use of taxpayers' resources as a source of funding for PPPs. Indeed, as long as the recommendations above are observed, PPPs can be an effective mechanism to direct resources to infrastructure policies.

### Why Do Governments Support PPPs?

PPP projects need to be commercially attractive if they are to succeed. That is, private sector investors and lenders need to believe a project meets their business objectives before they enter a long-term relationship with the procuring authority. Those objectives can often be translated into financial aspects of the deal represented by the project such as the internal rate of return or cash available to cover debt services. For this reason, commercial feasibility is often translated into the financial feasibility of deals.

Government support policies can take several forms with different implications. These policies may be used alone or in combination on a project-by-project basis, depending on the specific context and requirements (World Bank, 2016a). Importantly, budget reporting typically differs based on the type of GFS. For example, GFS is typically reported in the annual fiscal budget in the cases of a viability gap financing, shadow tolls, lending, and equity contributions. This is not the case for guarantees, these would not typically show up in the annual budget unless a specific treatment of guarantees is called for. Availability payments are usually provided as a budget line

from government unless these costs are recovered from tariffs or user fees, in which case they are not necessarily accounted for in the government budget or as a public liability. Inconsistent reporting requirements raise important fiscal risks and increase the risk that PPPs will be used to hide fiscal consequences of spending. The most common types of government support for PPPs are:

- **Concessional loans or equity participation:** Low interest rate loans or equity stakes.
- **Construction support:** Government support of part of the construction of the asset, with the operator taking over fully during operation.
- **Availability payments:** Payment for minimum volume of output or feasibility of usage.
- **Shadow tolls:** User fees, tariffs, or tolls paid by government in lieu of the users themselves.
- **Viability gap funding:** Government subsidies for projects that might not be commercially viable otherwise.
- **Minimum revenue guarantees (MRGs):** Government agreements to compensate the private partner if project revenue falls below a specified threshold agreed to in the contract, thus mitigating the revenue risk taken by the private sector (World Bank, 2016a).
- **Exchange rate guarantees:** For concessionaires whose financing is in a foreign currency, government will make up the difference when the exchange rate falls below a threshold. The concessionaire, who receives revenue in the local currency, can then meet the debt service that is denominated in a foreign currency. In some cases, if the exchange rate is above a certain level, the concessionaire may pay the government for additional profits earned (from lower debt service in the local currency) (World Bank, 2012).

Several countries officially identify and enforce specific commercial feasibility check points during the project preparation process, in what is considered the appraisal phase. This occurs during other feasibility and planning exercises, before the formal procurement process even begins. Governments

### BOX 5.1. GFS in Korea

The Korean government has introduced a range of government support policies as part of its effort to promote PPPs. These range from subsidies and direct compensation to guarantee mechanisms and risk-sharing systems. The following are illustrative examples.

**Construction subsidies:** The government provides the private partner with a direct subsidy for construction. The availability and amount of this subsidy is subject to guidelines of the PPP act.

**Tax benefits and exemptions:** The national and local governments provide benefits, including tax reduction or exemption as allowed by the PPP act. Reductions and exemptions vary by project type and may fall under other relevant acts and subordinate statutes.

**Risk-sharing structure:** The global financial crisis had a significant impact on Korean private investment. After ongoing projects failed to raise sufficient funds, the government introduced a new risk-sharing structure to incentivize investment. The system replaced MRGs. Rather than guarantee a minimum revenue, the structure discounts the investor's share of risk while maintaining the profit motive.

**BTO-rs:** Build-transfer-operate, risk sharing is a method that specifies a risk-sharing ratio between the government and the private sector. The ratio essentially allows intermediary solutions to build-transfer-lease (BTL) and build-operate-transfer (BOT) by sharing rather than shifting risk.

**BTO-a:** Build-transfer-operate, adjusted is a structure where the government covers up to 70 percent of the total private investment, while the private sector is responsible for losses up to 30 percent of investment value. Likewise, excess profits are split between the government and the private sector by the same ratio.

**Credit guarantees:** The Infrastructure Credit Guarantee Fund provides loan guarantees for private borrowing for public infrastructure projects. The private partner pays a fee of no more than 1.5 percent of the covered total, and the fund reimburses for covered loan obligations if necessary. It also offers an operating revenue guarantee. The credit guarantee limit for each project is ₩100 billion, with a discretionary limit of ₩300 billion.

**Termination compensation and buyout rights:** These rights allow the private partner to request a public-sector buyout under certain circumstances and provide compensation for early contract termination. Early termination or buyout may stem from the inability of the partner to continue with the project due to private or public default on payments or loans, or unavoidable circumstances such as natural disasters or force majeure.

*Source:* Kim, Kim, Shin, et al. (2011).

are typically aware of the need to ensure commercial feasibility from an early stage and, if necessary, to foster the project with GFS schemes.<sup>84</sup> However, as we have seen previously, the most robust project assessment frameworks tend to assess project structure based on VfM because PPPs should not

be treated as a foregone conclusion. If a PPP structure is credibly found to deliver VfM, GFS may be justified to help the government realize this value.

<sup>84</sup> For a detailed presentation of typical phases of the PPP project cycle see APMG (2016), Chapter 1, Session 10.

Otherwise, tailoring GFS to artificially ensure commercial feasibility as a PPP may undermine VfM.

GFS can help ensure multiple bidders participate in the tendering process, thus contributing positively to VfM. Importantly, multiple bidders contending for a PPP deal in a transparent procurement process is crucial to the government's ability to achieve better efficiency and VfM as opposed to traditional public investment or public provision (World Bank, 2016a, 2017). In a sole bidder situation without realistic competitive pressures, the government has less recourse in determining counterfactuals for the value delivered by the bid winner. However, we have also seen that VfM in PPPs can be undermined after the bidding process, with renegotiations and other anti-competitive tactics threatening to negate the benefit of competitive pressures once the bid is won. To ensure a positive effect on VfM, GFS should be considered after the fiscal burden has been internalized by the government and credible, structure-neutral value evaluations have been conducted.

A second reason commercial viability tests are so common at an early stage is to avoid procurement processes without bidders. Attracting few or no bidders can be catastrophic from a political and technical perspective. Politically, PPP projects are often very high profile and aim to solve important social and economic problems. A botched bidding process can undermine public trust or reinforce perceptions of public giveaways. In a technical sense, a procurement process with an insufficient number of bidders makes it difficult to ensure competitive price discovery and ultimately VfM.

Public payments may be the only source of revenue for the project company during the life of the contract. Government-pays is a relatively common revenue model for social infrastructure such as prisons, hospitals, and schools—sectors where services are delivered without user fees—but may also be used for economic infrastructure such as roads (APMG, 2016). Indeed, for PPPs that are fully funded by governments, the circularity of the revenue calculations are even clearer because modeling exercises typically allow for direct adjustments in revenue until commercially viable cash flow

is achieved. The interactions are repeated many times during the commercial feasibility exercises. Therefore, the fiscal consequences of PPPs rely heavily on the methods used to assess commercial viability, and the calculations themselves may be tailored to fit a predetermined outcome rather than offering an unbiased estimate.

## Different Models of Financial Support

The relative role of public-sector support ranges from PPP projects in which the only source of revenue is public-sector payments (government pays) to PPPs that are fully funded by user tariffs (user pays). Between these two extremes, PPPs may be funded with different combinations of user and government resources. The typical criteria for classification is the predominance of each specific source of funding. That is, a project primarily funded by government payments is classified as a government-pays PPP even if the private sector collects tariffs, and a project primarily funded by user fees is classified as a user-pays PPP even if the government contributes directly. Table 5.1 breaks down the most common types of government support by region.

Government support can be classified according to two important criteria: the predictability of government payments and the timing of the government payments.<sup>85</sup> The predictability of government payments is arguably the most important criteria by which to classify the liabilities assumed by governments in PPP contracts as firm (sometimes called direct) or contingent. Timing also affects the classification, with upfront commitments typically comprising direct commitments; however, they could also be contingent, such as guarantees against construction cost overruns. As the

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<sup>85</sup> This chapter focuses on non-revolving financial support. That is, support mechanisms that represent a direct transfer of resources from the government to the private sector, usually from the public budget. Revolving support mechanisms involve the participation of the government or government-controlled agencies in the capital structure of the project company. Since they do not represent a direct transfer of resources, revolving mechanisms will not be detailed in this chapter.

**TABLE 5.1. Government Support for PPPs**

| Region                       | Guarantees         |             |               |               |              |                 |             |             | Tax Incentives and Deductions | Total (%)   |
|------------------------------|--------------------|-------------|---------------|---------------|--------------|-----------------|-------------|-------------|-------------------------------|-------------|
|                              | Construction Costs | Debt        | Exchange Rate | Interest Rate | Payments     | Minimum Revenue | Tariffs     | Other       |                               |             |
| East Asia and Pacific        | 0.00%              | 0.00%       | 0.13%         | 0.13%         | 24.14%       | 3.03%           | 4.49%       | 0.00%       | 0.13%                         | 32%         |
| Central Europe and Asia      | 0.00%              | 0.26%       | 0.13%         | 0.00%         | 8.58%        | 1.06%           | 0.00%       | 0.26%       | 0.00%                         | 10%         |
| Latin America and Caribbean  | 0.13%              | 0.40%       | 0.13%         | 0.00%         | 17.02%       | 1.45%           | 0.00%       | 0.00%       | 5.15%                         | 24%         |
| Middle East and North Africa | 0.00%              | 0.00%       | 0.00%         | 0.00%         | 2.24%        | 1.19%           | 0.00%       | 0.26%       | 0.00%                         | 4%          |
| South Asia                   | 0.00%              | 0.13%       | 0.00%         | 0.00%         | 21.50%       | 0.92%           | 0.00%       | 0.13%       | 0.13%                         | 23%         |
| Sub-Saharan Africa           | 0.00%              | 0.13%       | 0.00%         | 0.00%         | 6.46%        | 0.13%           | 0.26%       | 0.00%       | 0.00%                         | 7%          |
| <b>Total</b>                 | <b>0.1%</b>        | <b>0.9%</b> | <b>0.4%</b>   | <b>0.1%</b>   | <b>79.9%</b> | <b>7.8%</b>     | <b>4.8%</b> | <b>0.7%</b> | <b>5.4%</b>                   | <b>100%</b> |

Source: Reyes-Tagle and Leon (2017).

operation develops, financial support may take the form of both firm and contingent obligations.

Firm or direct obligations can be defined as “obligations that will arise in any event and are therefore certain. They are predictable based on some specific underlying factors; they do not depend (are not contingent) on any discrete event” (Polackova, 1998). According to the PPP Reference Guide 2.0, firm liabilities “are payment commitments that are not dependent on the occurrence of an uncertain future event (although there may be some uncertainty regarding the value)” (World Bank, 2014). In other words, firm liabilities are defined either by the legal framework or the contractual arrangement, can be quantified, and are predictable events in time. The typical example is a contractually established availability payment made monthly by the government to the private party of a PPP contract.

On the other hand, contingent liabilities are “obligations triggered by a discrete event that may or may not occur. The probability of the contingency occurring and the magnitude of the government

outlay required to settle the ensuing obligation are difficult to forecast. Probability and magnitude depend on some exogenous conditions, such as the occurrence of a particular event...and some endogenous conditions, such as the design of government programs...” (Polackova, 1998). A typical example of contingent GFS is compensation for specific risk events such as force majeure. MRG is also an example of contingent support.

#### *Capital Grants*

Capital grants are payments made directly by the government to the private sector partner responsible for implementing a project. Construction support is an example of a capital grant contribution paid during construction, prior to delivering the asset. In countries such as Brazil, Chile, India, and Korea, the construction grant is a key element of PPP project structuring. Commonly, in countries such as India and Brazil, the disbursement of construction grants is linked to progress milestones. The triggers for these payments are established in the PPP agreement

**TABLE 5.2. GFS Mechanisms**

|                     | Firm Support    | Contingent Support                      |
|---------------------|-----------------|---|
| During Construction | Capital grants  | Contingent payments during construction |
| During Operation    | Direct payments | Contingent payments during operation    |

Source: Author's elaboration.

**TABLE 5.3. Effects of Different Financial Support Mechanisms**

|                           |                     | Effect on Feasibility for Equity Investor   | Effect on Feasibility for Creditor   |
|---------------------------|---------------------|---|--|
| <b>Firm Support</b>       | During Construction | <ul style="list-style-type: none"> <li>Reduces the need for equity contributions, preserving project's revenues.</li> <li>Directly increases equity return.</li> <li>Offsets higher costs of debt imposed by Basel III requirements.</li> </ul> | <ul style="list-style-type: none"> <li>Reduces volume of nominal debt and conversely the debt service without changing the project's revenues.</li> <li>Increases debt service coverage ratio during life of the project.</li> <li>Compensates the debt cover ratio (DCR) level in face of shorter-term loans in response to the liquidity requirements of Basel III.</li> </ul> |
|                           | During Operation    | <ul style="list-style-type: none"> <li>Increases project revenues.</li> <li>Directly increases equity return.</li> <li>Offsets higher costs of debt imposed by Basel III requirements.</li> </ul>   | <ul style="list-style-type: none"> <li>Increases cash flow available for debt service.</li> <li>Increases debt service coverage ratio during life of the project.</li> <li>Compensates the DCR level in face of shorter-term loans in response to the liquidity requirements of Basel III.</li> </ul>  |
| <b>Contingent Support</b> | During Construction | <ul style="list-style-type: none"> <li>Caps (or mitigates) the construction risk from the investors perspective.</li> <li>Reduces equity provider's requirements for rentability.</li> </ul>  | <ul style="list-style-type: none"> <li>Reduces volatility of cash flows.</li> <li>Reduces lender's requirements because of less risky cash flow.</li> </ul>  |
|                           | During Operation    | <ul style="list-style-type: none"> <li>Reduces operational risk, keeping the project cash flow at more stable levels.</li> <li>Reduces equity provider's requirements for rentability.</li> </ul>   |  |

Source: Author's elaboration.

(Moraes and Reyes-Tagle, 2017). In India, payments are made against agreed-upon financial and performance milestones such as disbursement of debt, which are considered good indicators of physical progress of the asset (World Bank, 2016b).

Construction grants can also be called construction subsidies because they comprise cash contributions that reduce capital requirements. Ultimately, capital grants can neutralize private the capital requirements of a PPP project, reducing the need for loans and equity subscription, with a net positive impact on capital costs and lowering the costs to provide the service. Nevertheless, payment timing means grants are not conditional on operational aspects of service delivery, and thus weaken the incentives designed in the contract.

### *Direct Payments*

Direct payment during operation is arguably the most common form of GFS and is the mechanism around which entire PPP programs have been established, including the Private Finance Initiative scheme in the United Kingdom. Direct payments, as opposed to capital grants, are payments made

from the public authority to the special purpose vehicle or private partner during operation. These payments contribute directly to life-cycle costs of the asset or service, as well as private investors' return from participation. They can be the sole source of revenue or additional revenue to subsidize the tariff collected from users. The contract's payment mechanism defines the calculation and disbursement of direct payments. This mechanism also defines the trigger or condition for payment. Most direct payments are triggered based on one of two conditions:

1. **Infrastructure availability:** The government pays as long as the infrastructure is available. Contract-specific availability criteria typically determine the payment threshold. An example is hospital PPPs, in which the operator receives a payment per available bed regardless of the number of beds occupied.
2. **Demand or volume:** The government pays in proportion to the level of effective usage of the service or infrastructure based on a regular evaluation. An example is shadow toll roads, in which the number of cars is counted and a bill based on a toll per car is sent to government.

## *Contingent Liabilities*

Contingent liabilities are defined as “payment commitments whose occurrence, timing, and magnitude depend on some uncertain future event, outside the control of government” (World Bank, 2014). Prominent forms of contingent support include compensation clauses, where the government commits in advance to compensate private losses as a result of uninsurable force majeure events, and termination payment commitments, where the government commits in advance to compensate the private partner for early termination of the contract (World Bank, 2014).

Guarantees offered by the government are a major source of contingent obligations. Guarantees essentially seek to allocate risks away from the private sector by limiting the potential financial impact of changes in costs, revenues, or other financial assumptions. Guarantees may include debt guarantees, where the government commits to cover default on private sector debt, or revenue guarantees, where the government commits to providing direct revenue to the private operator or subsidizing tariffs to ensure a minimum level of compensation (e.g., MRG). The government may also offer guarantees for specific risk variables like exchange rates, interest rates, tariffs, or construction cost overruns. The government may also offer tax incentives or credits specific to the PPP (World Bank, 2014). These guarantees are generally backed by budgetary resources. In other words, the public agency carries a fiscal risk that typically lasts for the duration of the contract.

Another crucial consideration when deciding the extent of government support is whether the commitment is explicit or implicit. Explicit liabilities may be defined as “specific obligations of the government established by a particular law or contract. The government is legally mandated to settle the obligation when it comes due. Common examples are the repayment of sovereign debt and repayment of nonperforming loans the state has guaranteed” (Polackova, 1998). Implicit liabilities may be defined as “a moral obligation or expected responsibility of

the government that is not established by law or contract but instead is based on public expectations, political pressures, and the overall role of the state as society understands it. Examples of implicit liabilities are future public pension benefits that are not specified by law, disaster relief for uninsured victims, and default of a large bank on nonguaranteed obligations” (Polackova, 1998).

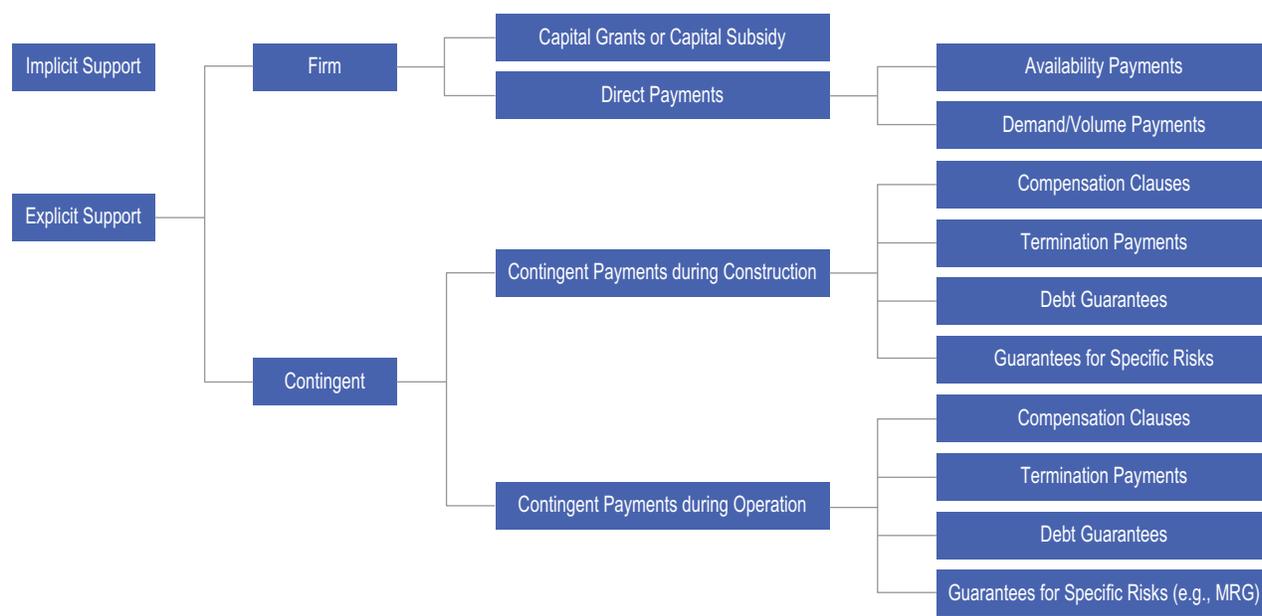
It is important to distinguish between implicit and explicit liabilities on one hand, and direct and contingent liabilities on the other. Explicit liabilities can be both direct and contingent, while implicit liabilities have a more problematic risk profile than contingent liabilities. This chapter has focused primarily on explicit liabilities, both firm and contingent support mechanisms established by PPP contracts. Nevertheless, PPPs are also especially vulnerable to creating implicit liabilities, and this factor must be understood as a core aspect of the long-term fiscal obligations created by PPPs. Implicit liabilities undermine effective public-to-private risk transfer and therefore undermine VfM.

The logic underpinning VfM through risk transfer in PPPs is that the private sector manages some risks better than the public sector, charging a risk premium that is not as large as the value this risk management provides to the public. Nevertheless, the risks are often improperly transferred or the transfer mechanism is later undermined, after the premium has been paid (Lonsdale, 2005). Political factors may underline the ineffectiveness of risk transfer in PPP arrangements. Due to the political sensitivity, visibility, and social importance of many PPPs, governments have little choice but to step in and subsidize them if they are in danger of failing (Gaffney, Pollock, Price, et al., 1999; Flinders, 2005). This dynamic creates a high risk of implicit liabilities and affects private sector incentives.

## **Project Financing**

PPP are typically financed through project financing schemes. Lenders rely on future project cash flows like user fees or availability payments to service loans. The project finance structure is typically

**FIGURE 5.1. Types of Public-Sector Financial Support**



Source: Author's elaboration.

cash flow rather than asset based, and primary lenders hold rights mainly in terms of project revenues. The effect of this finance technique is essentially to ringfence the private participant from the debt contracted to implement the project. Furthermore, this structure theoretically separates the operational performance of the project vehicle from the private partner's core business. Another theoretical advantage is conferred by the extra layers of due diligence conducted by banks and other lenders to determine likely project revenues and costs. Increased scrutiny should reduce risks and improve the quality of the information available about the project. In short, project financing is meant to mobilize debt more effectively. In its turn, debt is important to promote financial efficiency because debt is generally cheaper than equity as a source of financing and, thus, the more debt contracted the less expensive the overall project becomes. However, many of the theoretical benefits of this financing structure rely on adequate regulatory and incentive schemes.

Assessing commercial feasibility requires a determination of whether debt and equity requirements

can be met by the projected project cash flow. Government support mechanisms therefore play a key role in determining the requirements of lenders and sponsors.

### Equity Providers and GFS

A project or contract is financially feasible when expected revenues meet or exceed all expected costs. That is, inflows match outflows plus the required rate of return (APMG, 2016). Thus, from the point of view of the private sector sponsor, a project is commercially feasible if the projected equity cash flow available to project shareholders provides a return comparable to alternative investments.<sup>86</sup> GFS mechanisms can improve the risk/return tradeoff and thus materially impact financial feasibility from the perspective of the equity

<sup>86</sup> The two most common techniques used to assess the commercial feasibility of equity cash flow are net present value and internal return rate. Both techniques are based on a simple assumption: the investment should yield at least as much as an alternative, comparable investment to be considered viable.

provider in two ways. First, GFS can subsidize the return on the invested equity. Second, it can reduce the threshold for comparison of return on a similar investment by changing the project's risk profile.

Firm payments during operation are one mechanism to improve the profitability of the equity investment. This can take the form of payment mechanisms like availability and volume-based payments, which directly increase the project company's revenues. Another way to improve profitability is to reduce the project company's capital requirements, leaving the revenues unchanged. This can be done by introducing firm capital payments like construction grants. GFS can also reduce the return requirements for equity investors without changing the financial base case of the project by improving a project's risk profile. This can be done through contingent commitments. For example, guarantees can serve to cap equity risk exposure during the construction phase or to reduce volatility of equity cash flow during operations.

### Lenders Requirements and GFS

The fact that a project meets equity sponsors requirements is not enough to ensure that a PPP is commercially feasible. Lenders are also important stakeholders whose concerns must be accommodated if a project is to effectively attract bidders. Importantly, the incentives of the lenders themselves are critical. While the most common PPP creditors are commercial banks, institutional investors are more stable. Institutional investors, including state-owned banks, multilateral development organizations, pension funds, and insurance companies, may also extend debt. Typically, the overall objectives and return horizon are longer term and more development oriented. Additionally, the special purpose vehicle may issue project bonds whose various purchasers become creditors. The requirements of these lenders vary significantly, with implications for GFS.

Criteria used by lenders to determine project feasibility may include revenue stability, which is the ability of shareholders to provide collateral, especially in the early phases when the project has no

natural collateral asset. A particularly relevant metric is known as the minimum debt cover ratio (DCR), also known as the annual DCR or debt service ratio. The DCR represents the relationship between estimated total of debt repaid and the free cash flow available for debt repayment. In other words, the DCR quantifies the resources available to service project debt (APMG, 2016).

Similar to equity requirements, governments can help projects pass the DCR test in two ways. First, they can improve the DCR directly by augmenting the revenues of a PPP. By including direct payments during operation in the PPP contract, governments can increase project cash flow, directly improving the DCR. Alternatively, governments can use capital grants to reduce the project company's capital requirements. The project would thereby shoulder less debt for the same cash flow, similarly increasing the DCR. Second, governments can use guarantees to remove private-sector risk from the project and therefore reduce lender requirements for minimum DCR. Another strategy governments can assume is to introduce contingent support either during construction or during operation. In both situations, the resulting cash flow is less volatile and more stable. These steps all create potential or actual public liabilities, but they lead to much more flexible requirements of DCR by lenders.

### The Basel III Accord and the Commercial Feasibility of PPPs

Given the predominance of project financing methods in structuring PPPs, PPP financing has changed considerably because of the post-financial crisis banking sector regulations laid down in the third Basel Accord (Basel III). Basel III is the third set of regulations issued by the Basel Committee on Banking Supervision, under the Bank for International Settlements, named after the bank's headquarters in the city of Basel, Switzerland. Basel III is an agreement among regulators that institute new requirements for the banking sector based on shortcomings that emerged in the previous Basel Accord after the 2008 global financial crisis (Ma, 2016).

Basel III essentially determined that risk-weighted capital requirements were insufficient. Many banks had sufficient capital but insufficient liquidity. Likewise, the definition of capital was not strict enough to prevent inadequate assets being counted toward the overall requirements. As a result, Basel III initiated two requirements that are particularly relevant for this chapter: quality requirements for bank capital and liquidity requirements (Ma, 2016, p.112).

Basel III strengthened previous requirements that commercial banks maintain a certain proportion of risk-weighted capital by setting out more detailed definitions of what assets could and could not be dedicated to a baseline 8 percent capital ratio. It also imposed an additional capital requirement of 2.5 percent as a buffer and gave the Basel Committee the strength to impose an additional 2.5 percent requirement when the banking sector overheats. Basel III also requires banks to possess enough liquidity (or assets that can quickly become liquid) to endure a 30-day stress scenario. Assets that qualify for bank capital may be insufficient to meet sudden, short-term liquidity requirements. The outcome is that banks have a more difficult time of extending long-term financing on the back of short-term funding. In this context, the tenure of bank loans will have to match. These requirements have increased the cost of long-term loans and discouraged banks from extending long-term loans under project financing schemes, while decreasing the availability of such funding overall (Ma, 2016, pp.113-8).

Shorter-term and more expensive loans impose important challenges on the commercial feasibility of PPPs. The higher costs of financing drains cash from the equity providers and reduces the rates of return for lenders. Likewise, shorter terms increase the nominal debt service per period, compromising the minimum DCR of the project. However, both problems can be addressed by GFS.

Higher financing costs can be neutralized by direct payments during operation that increase a project's revenues. Capital grants can also reduce a project's total nominal value of debt required. GFS

can address the consequences of the shorter-term bank loans on DCR by two different routes. First, if firm payments during construction are introduced, the total debt service is also reduced, positively impacting feasibility from the perspective of the lenders. The impact of the increased debt service, per period, in the DCR calculations are also offset by the cash available to debt service enlarged by public payments during operation.

## The Global Use of GFS

The use of GFS to boost PPP programs is as widespread as PPPs themselves. In Latin America, for example, government support is inherently built into PPP models and most projects incorporate some type of governmental financial responsibility, either firm or contingent. Likewise, direct payments and government payment for service provision are nearly universal in PPP programs, even systems that involve user fees. However, many governments have adopted extensive and diverse commitments to support project financing and crisis resolution.

Brazil, regional leader in number of projects and value of investment according to the World Bank's PPI database, has recently announced a large pipeline of 35 major PPPs in transport and energy.<sup>87</sup> Every single project announced includes some type of government assistance, such as free or below-cost use of existing infrastructure or the allocation of demand risk to the government contracting agency. A prominent form of GFS in the Brazilian PPP program is the extensive use of publicly owned banks to offer debt to enable the government's large-scale investment programs, frequently under subsidized interest rates.<sup>88</sup> Brazil's National Bank for Economic and Social Development is the primary instrument to pass on below-market financing supported ultimately by the Brazilian treasury. Indeed, the commercial feasibility of the entire Brazilian

<sup>87</sup> <http://www.projetcrescer.gov.br/>.

<sup>88</sup> The data on the role played by publicly owned banks can be found at <http://www.projetcrescer.gov.br/index.php/content/view/5152.html>.

program still heavily depends on the public banks providing massive debt for projects.

China also extensively uses PPPs, with the government providing subsidized financing through state-owned banks. As part of its efforts to promote PPPs, China Development Bank provides discounted interest rates to PPP projects. Likewise, China's national development body and the country's banking regulatory commission encourages other financial institutions to provide credit assistance and innovative financial products for PPPs. Additionally, the government may act to provide financing support on a project-by-project basis, especially for large projects.

Chile amended its capital markets law in the mid-1990s to encourage PPP investment, creating infrastructure bonds with terms meant to benefit the private partner and incentivize financial participation. Further, the country's PPP framework increases the limit for bank lending to a single entity laid down in the country's banking law, provided that the financing is provided for a PPP.

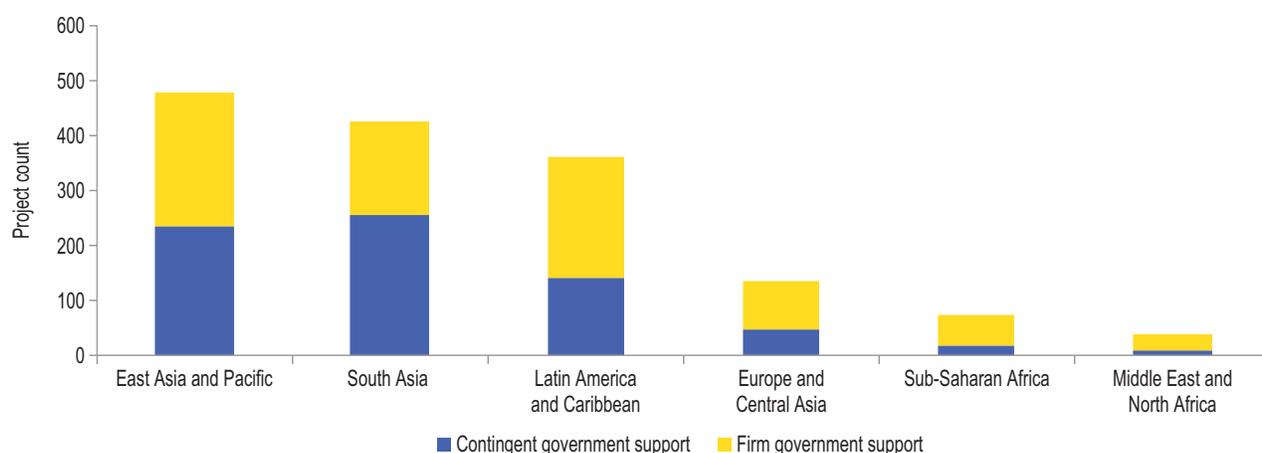
Peru allows direct government guarantees of private investment in strategic projects, but guarantees are capped by the country's indebtedness law and the use of guarantees is rare; only three projects have a sovereign guarantee, and one is partially underwritten by the Inter-American Development Bank.

Government support is equally relevant in more mature markets like Korea. A cross-sector financial support scheme has played a central role in the rapid expansion of the country's PPP pipeline. Since the inception of the Korean program, the most common PPP models have been BTO and BTL. Both models expanded by relying heavily on public-sector support. The BTO contract model, mostly used for transport infrastructure such as roads and ports, prescribed a public capital grant of around 20 percent of the capital costs of the project company. On top of this, demand risk has been shared through MRG clauses. The BTL contract model has been used predominantly for social infrastructure. The revenue scheme is based almost exclusively on government payments.

Australia's subnational governments have provided a range of capital contributions or debt guarantees to support the financing phase of PPP projects. Likewise, the country's governments often commit to comprehensive compensation payments in the event of termination as long as the reasons for termination meet a certain set of guidelines. These contingencies are typically spelled out in the PPP contract.

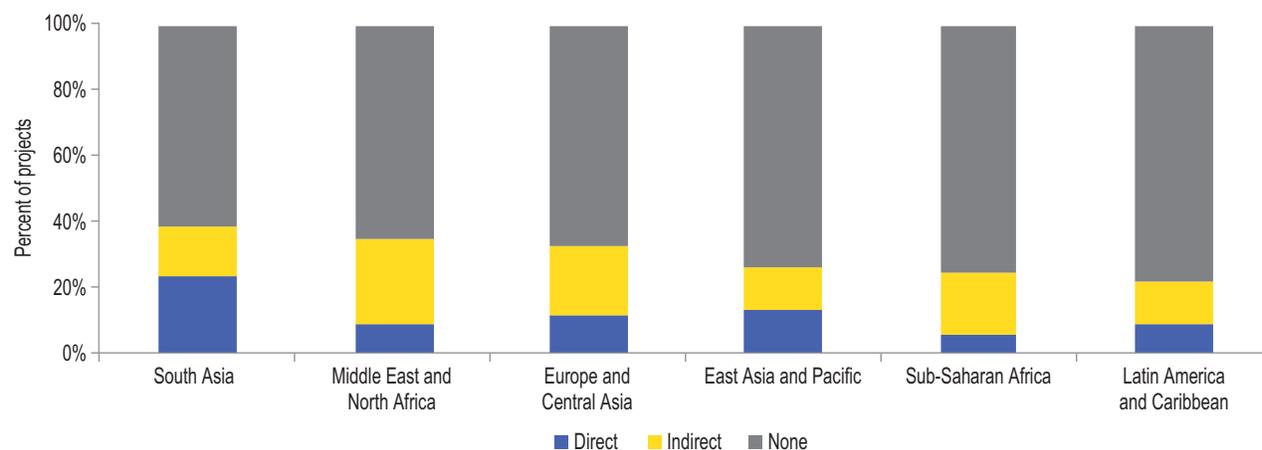
The PPI database reveals significant differences in the use of GFS around the world. However, it is equally clear from the data that these mechanisms are a structural part of PPP programs. Figure 5.2

**FIGURE 5.2. Absolute Number of Projects with Firm GFS, by Region**



Source: Author's elaboration.

**FIGURE 5.3. Percent of Projects with GFS, by Region**



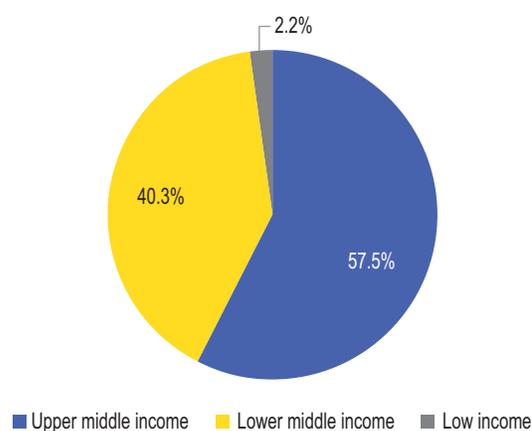
Source: Author's elaboration.

indicates the total number of projects closed between 1993 and 2016 that incorporate firm or contingent forms of support in developing countries. Since the PPI database only incorporates economic infrastructure (energy, telecommunications, water, and transport sectors), the numbers do not address the wide use of PPPs in social infrastructure (Prats, Demaestri, and Chiara, 2018), where the possibility to generate direct revenue is much narrower and thus the use of GFS is correspondingly more frequent. Nevertheless, the data shows that the use of GFS, even for economic infrastructure, is very frequent.

In the sectors covered by the database, East Asia and Pacific and South Asia use GFS significantly more frequently than the rest of the developing world. Sub-Saharan African countries, on the other hand, use government support mechanisms with less intensity. This mismatch can likely be explained by weaker fiscal conditions. This point is reinforced by the fact that the low-income group of countries rely relatively less on GFS, both contingent and firm, than the other income groupings (Figure 5.4). In all three income groups, however, the contingent support mechanisms are slightly more widespread than the firm support schemes.

There also exists noticeable differences among the types of GFS by sector. The energy sector seems to rely much more on contingent support solutions

**FIGURE 5.4. Percent of Projects with GFS, by Income Level**



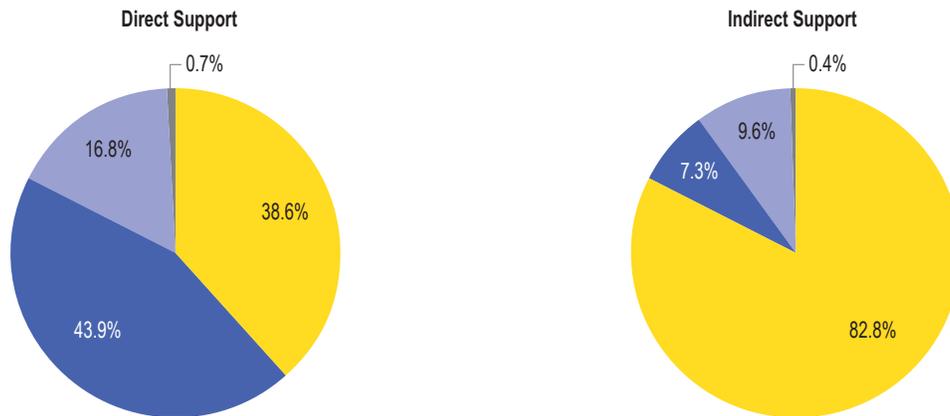
Source: Author's elaboration.

than the transport and water sectors (which rely more on firm payments from governments).

Perhaps the most relevant trend, however, is the dramatic increase of the use of financial support mechanisms following the financial crisis of 2008 and 2009 (Figure 5.6).

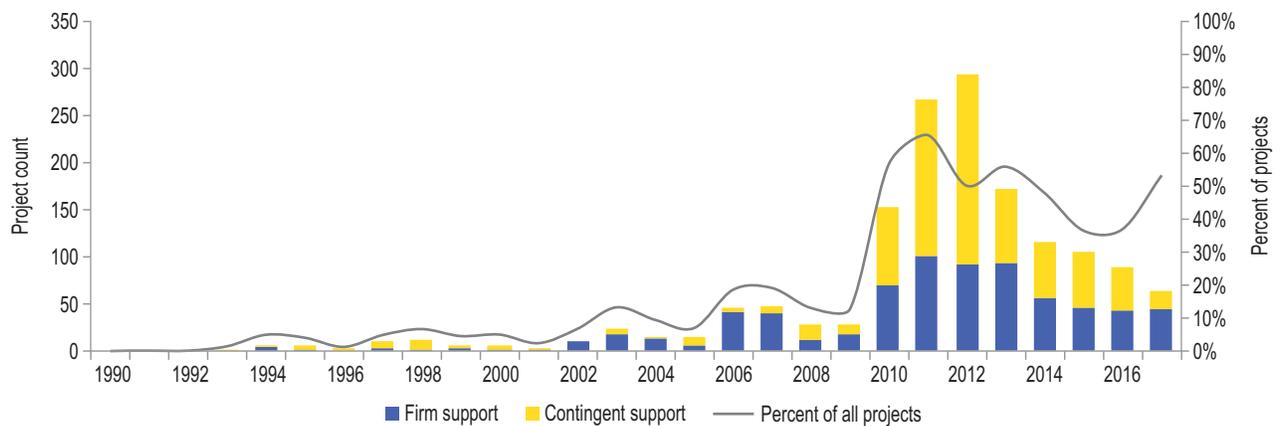
There is a sharp increase in the absolute number of projects that included some type of GFS, both firm and contingent, after 2010. Simultaneously, the database shows a relevant decrease in the total number of projects that reached financial close during this time period. This leads to a notable

**FIGURE 5.5. Percent of Projects with GFS, by Sector**



Source: Author's elaboration.

**FIGURE 5.6. Projects with GFS that Reached Financial Close, by Year**



Source: Author's elaboration.

increase in the relative share of PPPs with GFS since 2010 (Figure 5.6). This might be explained by a more constrained financial environment after the crisis, which imposed harsher conditions on commercial feasibility of projects, both in terms of equity partners demanding higher returns and

more rigid loan conditions from banks. In other words, facing the need to meet higher expected returns by equity providers and more strict conditions demanded by lenders, governments may have turned to GFS mechanisms to fill the feasibility gap.

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# 6

## Unsolicited Proposals

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Unsolicited proposals (USPs) are public-private partnership (PPP) proposals prepared by a potential private investor and presented on an unsolicited basis to the relevant public entity. They differ from the traditional model of PPP procurement in which the government presents a project and solicits bids from private-sector companies.

USPs are controversial because of concerns about whose interests are most influential during the planning process and whether they undermine public value. Partly as a result, the use of USPs is mixed. Some advanced economies and intensive PPP users such as Australia and South Korea allow USPs; however, the United Kingdom, known for being one of the early adopters of modern PPPs, does not allow USPs. Canada, another country at the forefront of PPP development, also limits its PPP planning process to public initiatives. Based on a sample of 17 developing economies selected by the 2014 Public-Private Infrastructure Advisory Facility (PPIAF) report, 73 percent had a dedicated regulatory framework for USPs and 64 percent had formulated a general policy for the scheme.<sup>89</sup> In Latin America, countries such as Chile, Colombia, and Peru have experienced a strong wave of private investors initiating project proposals since 2009.

USPs are subject to the same risks as government-initiated PPPs. Under poorly structured regulatory frameworks, USPs may exacerbate these

risks. USPs may allow governments to better identify and prioritize PPP projects or generate innovative solutions to infrastructure supply and design challenges. However, they may also create uncompetitive conditions or a misalignment between public and private interests, especially if they are managed in a non-transparent manner. Likewise, evaluating, preparing, procuring, and implementing USPs may strain government capacity. To minimize risk, USPs must be consistent with the country's medium- and long-term national infrastructure plans and use a competitive selection process. Moreover, governments need access to good technical skills to review and supervise project proposals and ensure fiscal sustainability, while also securing development results from USPs.

USPs may reduce upfront costs to the public sector during project appraisal and construction. However, they are prone to creating contingent liabilities and implicit commitments in the same way as PPPs originated by the public sector, even when restricted against the use of public resources. Like other PPPs, USPs generate both explicit and implicit liabilities throughout the project life. USPs may complicate fiscal planning if they are not part

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<sup>89</sup> Countries were selected by the PPIAF, World Bank, Asian Development Bank (ADB), African Development Bank, and the Inter-American Development Bank (IDB) as a generally representative sample for developing economies with private participation in infrastructure (PPIAF, 2014).

of the regular infrastructure budgeting process. Restrictions on the amount of public resources that projects can draw on may serve to reduce the relative fiscal risks of USPs in comparison to publicly initiated PPPs or traditional public investment (TPI). However, fiscal risks stemming from implicit liabilities are even more critical to manage than direct fiscal obligations because the magnitude is unpredictable.

USPs are typically subject to a bidding process despite being prepared by one potential private-sector participant. However, USPs tend to limit competition among bidders as these projects necessarily generate an information asymmetry during the project design and selection phases. The originator has an informational advantage over both the public sector and other potential bidders and may even have a close link to the company that is currently operating the infrastructure where the USP is being proposed. If the USP process requires a competitive bid, this information asymmetry might discourage other private investors from participating in the selection process and contribute to a perception of corruption, fraud, and lack of transparency. Other competitors have only limited time to prepare proposals that must compete with the originator's proposal. Most countries also give an advantage or premium to the USP originator at the time of bidding. Under these circumstances, the proponent's advantage may be too great to ensure a competitive bidding process.

## Trends in USPs

Private participation in developing infrastructure has been supported under the concept that the private sector optimizes resources and provides better service than the public sector when it shares in project risks and long-term obligations. Private-sector involvement should also bring technical and managerial experience to the entire lifecycle of public infrastructure development (Hodges and Dellacha, 2007). The limits, shortcomings, and exceptions to this logic are apparent in the previous chapters of this publication; however, this broadly shared conceptual foundation

has served as one key motivation for governments to develop and employ PPPs.

Until recent years, private involvement in infrastructure (through TPI) typically began at the delivery stage of the project. That is, the government would prepare a detailed project proposal and private-sector involvement would begin after the bidding stage. As the use of PPPs has risen since the late 1990s, alternative approaches to the development and planning phases have evolved as well. USPs have been at the forefront of this evolution. With USPs, the proposal is made by a private partner, which then leads the planning, appraisal, and structuring phases of a project. This involvement precedes the bidding process and involves a self-motivated private-sector partner taking on a previously government-dominated stage in the project cycle.

USPs are a relatively small phenomenon overall, comprising just 3.15 percent of the projects in the IDB-adjusted PPI database. However, they are a major part of the PPP portfolio in economic infrastructure for some of the most user-intense developing economies, as shown in Table 6.1. There are also countries with smaller PPP portfolios where USPs make up a significant proportion: 2 of 7 in Iraq, 1 of 3 in Namibia and Tajikistan, and 1 of 2 in Mali and Belize.

**TABLE 6.1. USPs as a Percentage of PPP Portfolio**

| Country            | % of Total PPP Portfolio |
|--------------------|--------------------------|
| Panama             | 17                       |
| Dominican Republic | 14                       |
| Brazil             | 10                       |
| China              | 9                        |
| Ecuador            | 9                        |
| Nicaragua          | 8                        |
| Peru               | 7                        |
| Guatemala          | 7                        |
| Indonesia          | 5                        |
| Honduras           | 3                        |
| Turkey             | 3                        |

Source: Author's elaboration.

Like PPPs in general, USPs are not necessarily a widespread phenomenon; however, they are a major characteristic of private participation in public infrastructure for user-intense developing countries. Likewise, the number of proposals being made far outnumber USPs ultimately implemented, meaning it can be a significant draw on planning resources for countries that allow them. For example, over 90 percent of Colombia's projects under consideration were USPs as of December 2017, a major draw on the public capacity to review and prioritize if only a minority of these projects are ultimately implemented.<sup>90</sup> The policy incentives that may lead countries to encourage USPs align in important ways with the overall PPP policy infrastructure, and the topic deserves special consideration.

USPs are generally considered complementary to publicly initiated PPPs since the private sector contributes to advance studies, analysis, and planning. The public sector acts as a project validator for USPs and therefore benefits from these stages being conducted by an outside actor with significant resources. Country policies for USPs may involve additional benefits for the private-sector project originator to encourage proposals, such as reimbursement for the studies, extra points in the subsequent bidding and selection process, or other preferential treatment. These specific characteristics differ across countries and sometimes by project type, leading to different levels of transparency and competition among countries.<sup>91</sup>

The United Kingdom, known for being one of the initial developers of modern PPPs, does not allow USPs. Canada, another successful country at the forefront of PPP development, also limits its PPP planning process to public initiatives. Countries that do not allow USPs argue that the public sector is the appropriate entity to identify public needs and develop the best solutions for these needs. Private-sector incentives can be aligned with publicly identified needs in the design, construction, and operation phases of projects, but project selection, public agenda, and social return must be considered before an investor's financial needs.

On the other hand, some advanced economies and intensive PPP users, such as Australia and South Korea, allow USPs. Several emerging economies have also adopted frameworks to allow USPs, encouraging private investors to present projects that the government has been unable to develop. Although there are some positive results in project delivery, there is not yet enough evidence to evaluate the comparative effectiveness of the scheme. In Latin America, countries such as Chile, Colombia, and Peru have experienced a strong wave of private investors presenting projects since early 2000s, reducing resources needed for project structuring but increasing the appraisal time. In addition, evidence from the mechanism to award projects suggests that there has not been enough competition in relation to USPs, which casts doubts on the structure and viability of USP frameworks.

A considerable number of developing countries have adopted USP frameworks to improve infrastructure delivery. Based on a sample of 17 developing economies selected by the 2014 PPIAF report, 73 percent had a dedicated regulatory framework for USPs and 64 percent had formulated general policy around the scheme. This chapter reviews USP frameworks around the world, including their multiple definitions and implementation schemes. It goes through the main USP procedures in Latin America and the Caribbean (LAC) and developed countries. It highlights the advantages and disadvantages that the schemes bring to government planning exercises, transparency, competition, and fiscal management in the long run. Policy recommendations are provided for the main characteristics that USP frameworks should have to ensure effective use.

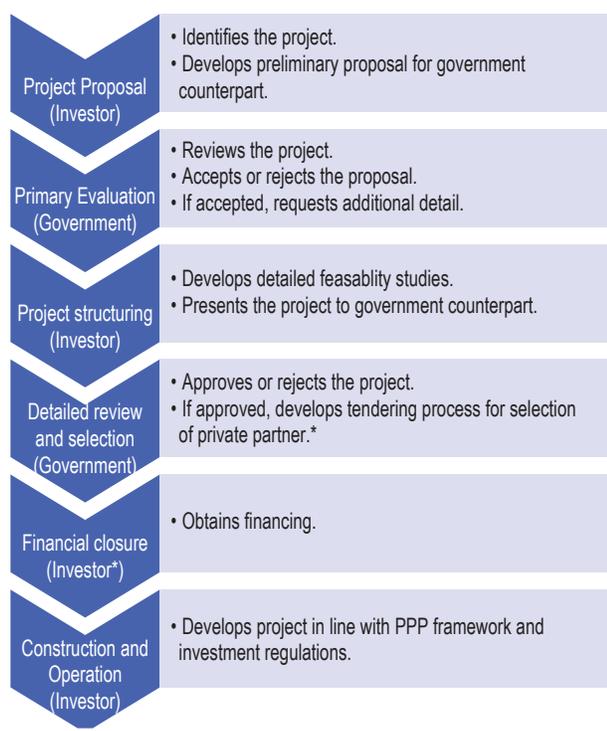
## What, Why, and Why Not

A typical USP project flow begins with a project proposal prepared by the private investor to be

<sup>90</sup> Source: Departamento Nacional de Planeación. Registro Único de Asociaciones Público Privadas (RUAPP) 2017T4.

<sup>91</sup> For example, in Colombia, USPs that require a public subsidy use a different selection process than those that are fully financed by user fees.

**FIGURE 6.1. Unsolicited Proposals, Step by Step**



Source: Author's adaption from PPIAF (2014).

\*The private investor who wins the project may be different from the one that prepared the proposal, although in most cases there is a compensation mechanism for the project originator.

presented to the relevant public entity. The government reviews the proposal and determines whether the project is in the public interest and in accordance with the applicable USP framework. The public sector then informs the private partner of the conditions for presentation of the project, including the types of studies and documents required for a detailed proposal submission. The private investor then prepares and presents the fully structured project to the public agency. Subject to public-sector approval, the bidding and procurement process begins. The bidding process may involve rules or incentives specific to procuring USPs. After the project is awarded, project implementation begins in line with the general processes and frameworks for PPPs.

The data that exists on USPs is insufficient to evaluate the success or failure of the scheme in general terms. For example, in LAC, the most advanced USP projects remain in the construction

phase, while the majority are still in the structuring and appraisal stages. Our analysis of the frameworks for and execution of USPs leads us to conclude that the success of a USP program depends on the ability of the government to develop a fair and transparent framework that will ensure both investors and government authorities that the USP delivery method is conceived as a strategy to incorporate the expertise and knowledge of the private sector in the initial stages of a project and not a source of corruption and inefficiency.

USP schemes are associated with a lack of transparency or competition in the tendering process, which may lead to suboptimal outcomes or forced renegotiations if the framework is not well specified. However, the structure also requires that private-sector actors are sufficiently incentivized to present proposals (Hodges and Dellacha, 2007). This balance between incentives and fairness is important not just to ensure public value, but also to ensure private investors retain an interest in independently preparing and presenting USPs, with explicit benefits to proposing fully structured projects. Most successful USP legal frameworks with open bidding incorporate these benefits, such as reimbursement for the studies delivered if the project is not awarded or additional points in the bidding process (Takano, 2017).

Despite a lack of comprehensive data, the advantages and disadvantages of USPs have been hotly debated. From better and faster project delivery to lack of transparency and competition, the discussion of how to develop a set of principles or rules to create a viable USP framework remains open.

### Advantages

USPs reduce the pressure on the public sector's financial and human resources by providing the government with prepared and structured projects. Many countries, especially developing economies, lack the resources or technical capacity to develop effective infrastructure plans. USPs can reduce the burden on the public sector in the identification and planning phases by allowing a self-incentivized

private investor to conduct the feasibility, technical, financial, and legal studies. The burden on the public sector is then only to review the project and determine whether it is of interest and what changes it will require to be accepted. The costs of reviewing projects are lower than those of structuring projects.

South Korea's PPP framework demonstrates that public-sector capacity is less relevant to the success of USPs than for public initiative PPPs. A comparison of public initiative PPPs and USPs in Korea showed that the government's project implementation capability was the most important factor for project success for public initiatives while only the third most important factor for USPs (Yun, Jung, Han, et al., 2015). Government leadership and cooperation was the least important factor for USPs and had no statistical significance in relation to project success. However, inter-organizational coordination was relatively more important for USPs, suggesting a slightly different emphasis on what aspects of government capacity matter.

The results suggest that giving more responsibility to the private sector in the PPP process makes public-sector capacity less important for project success. One explanation the authors provided was that USPs were usually promoted and led by the private sector, so issues like risk sharing and inter-organizational coordination had more relevance. However, these results did not necessarily show that USPs were more suitable for governments with particularly weak technical capacity or resources. Established institutional capacity is necessary for USPs because the public sector must be able to effectively review, critique, coordinate with other stakeholders, and change any USP it receives. This suggests that beyond a certain threshold, USPs may complement government capacity. Once this capacity is established, as for South Korea, other issues become more relevant for project success. However, these findings are unlikely to translate well to countries with lower institutional capacity.

Competition is integral to many USP frameworks. The legal framework in countries such as Chile, Colombia, Korea, Honduras, Mexico, and

**TABLE 6.2. Most Important Factors for the Success of South Korean PPPs**

| Independent Variables (Underlying Factors)      | Standardized Coefficient |
|---|--------------------------|
| <b>Solicited Projects</b>                       |                          |
| Factor 1: Project Implementation Capability     | 0.461                    |
| Factor 2: Inter-organizational Coordination     | 0.336                    |
| Factor 4: Risk Sharing and Mitigation Strategy  | 0.284                    |
| Factor 5: Government Financial Support          | 0.204                    |
| Factor 3: Government Leadership and Cooperation | 0.199                    |
| Size of sample adopted = 75                     |                          |
| <b>Unsolicited Projects</b>                     |                          |
| Factor 4: Risk Sharing and Mitigation Strategy  | 0.549                    |
| Factor 2: Inter-organizational Coordination     | 0.407                    |
| Factor 1: Project Implementation Capability     | 0.263                    |
| Factor 5: Government Financial Support          | 0.168                    |
| Size of sample adopted = 66                     |                          |

Source: Yun et al. (2015).

Brazil, among others, prohibits the government from directly negotiating USP contracts with the project originator. The projects must be awarded following a competitive tender open to participants other than the author of the USP. However, there are several exceptions to the rule, including Australia, where a PPP project can be awarded directly to a USP originator without a previous competitive procurement process (Australia, 2008).

USPs can increase the capacity of the project pipeline. Government capacity to structure and deliver infrastructure projects is often constrained, making it challenging to keep infrastructure planning on pace with need. In this case, USPs can generate structured projects, increasing the speed of infrastructure implementation and thus helping to reduce the infrastructure gap. Acting alongside public initiative PPPs and TPI, USPs provide a parallel path to develop infrastructure projects, allowing more projects to enter the infrastructure pipeline at the same time. In addition, USPs can generate socially beneficial projects that the government did not consider within the context of its infrastructure development plan.

Bogota, Colombia has pursued a fully passive PPP strategy. Instead of developing public initiative PPPs, the 2012 PPP law relies on a USP framework that invites the private sector to propose and structure infrastructure projects. Since the law was passed, 28 projects have been presented to the city government. Ten of these projects are now at an advanced stage of planning, development, or review and two have been awarded.

The USP frameworks in most LAC countries require that the private sector seek operational revenue sources to contribute to developing public infrastructure. Such revenue sources include income-generating mechanisms like tolls on highways or commercial space in airports. Countries such as Chile and Honduras prohibit USPs from receiving public subsidies. Other countries are more flexible but still place restrictions on USP access to public resources. For example, Colombia allows only 30 percent of the total investment budgeted for the project to be drawn from public sources, with a maximum subsidy of 20 percent in the roads sector.<sup>92</sup>

## Disadvantages

USPs suffer from perceptions of corruption, fraud, and lack of transparency. PPIAF surveys show that USPs are sometimes perceived as channels for corruption and patronage (PPIAF, 2014). There are structural reasons why USPs may be less transparent than publicly initiated projects. For example, a private-sector partner may disclose its intellectual property to provide public services and therefore may be concerned that open disclosure of proposals could lead to disclosure of the intellectual property. Likewise, the process allows the private sector greater flexibility in approaching government bodies and therefore obscures the process. Also, many USPs are not subject to competitive bidding.

USPs tend to limit competition among bidders as these projects necessarily generate an information asymmetry during the project design and selection phases. The private originator has information on the project cost, risk valuation, and characteristics that the public sector does not have.

As such, the originator will have an informational advantage over both the public sector and other potential bidders. If the USP process requires a competitive bid, this information asymmetry might discourage other private investors from participating in the selection process. With no third parties interested, the price and contract are unlikely to be optimal for the public sector. A similar problem occurs if the framework allows USPs without a competitive selection process. The lack of a bidding process means the public sector has few opportunities to discover the true cost or technical requirements of the project, resulting in high costs, high probability of renegotiations, or both.

For example, since implementation of Colombia's new PPP law in 2012, the country's experience with USPs has shown a lack of competition in the tendering process, which could be associated with the advantage given to the originator. Of 11 projects awarded through USP in the road sector since 2013, 10 were awarded to the initial private originator. In nine projects, the selection process included no other bidders, leading to the contract being awarded directly.<sup>93</sup>

Another factor contributing to information asymmetries is that private originators sometimes have a close link to, or are, the current operator of the infrastructure for which the USP is being proposed. This provides direct operational knowledge to the originator that other bidders may not be able to match.

Although the private sector is responsible for project structuring in a USP—reducing the upfront public-sector costs—USPs still generate a fiscal burden during project review and operation. If the USP structure undermines value in other ways, like uncompetitive bids, the fiscal burden may even be worse. Like other PPPs, USPs are liable to generate explicit or implicit liabilities throughout the project life. Indeed, PPIAF found that USPs may be more prone to generating contingent liabilities than publicly initiated PPPs (PPIAF, 2014).

<sup>92</sup> Colombia *Law 1508* of 2012.

<sup>93</sup> Source: Colombian National Infrastructure Agency.

USPs may reduce the capacity of the public sector to identify, prioritize, plan, and structure projects through public initiative PPPs or TPI. USPs substitute for public-sector capacity, requiring only a review of proposed projects. While this complements public-sector capacity for planning, it does so arbitrarily. Project review still reduces the public sector's bandwidth for autonomous public-sector planning and reduces opportunities to develop the capacity to plan and develop projects. Indeed, USPs may take resources away from the public sector's infrastructure development plans.

The incentives of private investors are not aligned with government interests and thus a project may be the most profitable solution to a public problem, rather than the best solution. Although the public sector may take a broader view of the public interest and infrastructure deficit, the private originator will typically present the solution that generates the highest return given its expertise. By accepting a USP, the public sector effectively rules out other alternatives for solving the infrastructure need.

With clear pitfalls despite potential benefits, the ultimate balance depends on how a government structures its USP framework, whether the framework is applied fairly and transparently, and whether the government has the institutional arrangements and capacity to effectively review projects without sacrificing planning capacity. USPs must provide a complementary path to develop and deliver public infrastructure rather than purely substituting for public channels. Likewise, governments employing USPs must have sufficient technical capacity and ensure transparency in the process. Without these factors at a minimum, governments are unlikely to find value in USPs.

## Fiscal Implications of USPs in LAC

USP frameworks differ significantly by country. In LAC, most legal frameworks for USPs require different processes than publicly initiated projects. Typically, a private-sector organization presents a bid that is evaluated by the corresponding line

ministry or subnational authority. If the proposal is deemed desirable, a call for bids from interested parties is launched. However, the originator typically enjoys a considerable advantage. They have access to privileged information having prepared the project. Other competitors have only limited time (usually three to six months) to prepare proposals that must compete with the originator's proposal. Most countries also give an advantage or premium to the proponent at the time of bidding through various mechanisms. These advantages may deter or undermine competition during the bidding process.

USPs can offer potential benefits to governments in the form of better identifying and prioritizing PPP projects or generating innovative infrastructure solutions or certain design challenges. Yet, they also introduce issues that can pose real challenges to technical capacity such as evaluation, preparation, procurement, and implementation of PPPs. USPs may also create difficulties with fiscal planning if they are not part of the regular infrastructure budgeting processes (World Bank, 2015). In addition, they can create uncompetitive conditions and misalignment between public and private interest if they are not identified, prepared, and implemented transparently. Restrictions on the amount of public resources that projects can require may serve to reduce the relative fiscal risks of USPs in comparison to publicly initiated PPPs or TPI. This can lead to a USP being self-funded projects, yet the fiscal risks remain high if not properly addressed. In that sense, USPs are prone to creating contingent liabilities and implicit commitments in the same way as PPPs originated by the public sector.

In reviewing the legal and institutional frameworks in selected LAC countries, USPs do not appear to have a strong direct impact on the fiscal balance of the governments. However, these projects are also in an early stage of development compared to PPPs overall. In general, the public resources that legal frameworks allow for USP funding are a fraction of total infrastructure investment costs, as in Colombia. Chile and Honduras do not allow any public resources or subsidies for USPs. These legal prohibitions reduce the future impact

of USPs on fiscal accounts considerably. In Peru, there is no limit on the number of public resources a USP may receive, but there are many filters and approval stages that help establish that the project satisfies a public need and ensure a competitive tendering process.

Besides the direct fiscal impact of USPs on public resources, risk sharing in USPs can also generate a fiscal impact. Although USPs cannot draw on public resources in many countries, USPs can generate implicit liabilities that lead the public sector to end up paying for risks. This type of fiscal risk is even more critical to manage than direct fiscal draws because the magnitude is unpredictable. Likewise, a USP that is not well executed or experiences cost overruns or shortfalls in demand may result in renegotiation or contract liquidation. In many cases this transfers responsibility to the government. In these cases, the unpredictable implications of the risk-sharing agreement may result in significant public resources being used to save the project.

### Colombia: Limits on Public Resources

Under Colombia's PPP law, a USP can be presented at any time by a private investor subject to sector-specific regulations. The initial proposal requires feasibility studies with enough information for the public authority to determine if the project is viable and of interest. If the proposal is presented to a municipality, the project must be present in the municipal development plan. If the proposal is presented to the central government, it must aim to develop a public policy stated by the government, but the specific project does not need to be a part of Colombia's national development plan.<sup>94</sup>

One of the most distinctive characteristics of USPs in Colombia is the restriction on what public resources the project can demand during its life cycle. Colombia's legal framework distinguishes between USPs and publicly initiated PPPs by limiting public resources that can be applied to USPs. These limits in turn reduce potential fiscal risks. The most recent regulatory changes specify that a USP can receive up to 30 percent of the total investment (including

capital and operational expenditures) in public subsidies during the operational phase, with roads limited to 20 percent. In addition, Colombia prohibits contract additions that result in public resources surpassing 30 percent of the project value or 20 percent of the initially projected project time span.<sup>95</sup> This restriction generates incentives for the private investors to develop and present projects that avoid future renegotiations or additional public resources.

However, USPs create an implicit liability by returning the project to the government if not delivered properly. In these cases, the public sector needs to assume additional costs to continue with the project. All projects that have been awarded as USPs through mid-2016 are projects that do not require public resources. None of these have required government intervention or rescue, but they remain in early stages. Since the adoption of the PPP law in 2012, 432 USPs have been proposed, 179 rejected, and 50 percent remain in the feasibility stage (Colombia, 2017). Projects presented without meeting all documentation requirements are rejected. Other projects are rejected by the judgment of the public authority or because they demand more public resources than the legal framework would allow. In some cases the publicly initiated procurement of a similar project is already underway.

CONPES (Colombia's National Council for Economic and Social Policy) policy documents set forward risk allocation recommendations, although projects can use specific risk allocation proposals. The public entity decides whether to accept or reject the risk-sharing proposal. If the project as stated does not demand public resources, a risk assumed by the public sector can only be compensated by adding time to the contract period; no cash can be paid to the private investor during the contract duration. If the project demands public resources, the compensation paid by the government cannot surpass the 30 percent limit (20 percent in road projects) stated in the legal framework.<sup>96</sup>

<sup>94</sup> Colombia *Law 1508* of 2012.

<sup>95</sup> Colombia *Law 1508* of 2012.

<sup>96</sup> For more information, see CONPES (2001a,b,c).

## Peru and Mexico: High Fiscal Risk Exposure Through USPs

Peru and Mexico potentially have high exposure to fiscal risks from USPs since they can be designed to require public resources. Peru's Legislative Decree No. 410-2015-EF (PE 2015) imposes a limit of 12 percent of GDP for the present value of the total fiscal commitments to PPPs, allowing the president to revise this limit every three years with approval from the Ministry of Economy and Finance (World Bank, 2014, p.87). However, there is no public policy regarding risk allocation in USPs, leading to projects in which the public sector retains risks such as construction or demand. These are also subject to re-negotiations with potential fiscal impact.

Despite having higher potential exposure to fiscal risk, no USP projects have passed the construction phase. Therefore, the USP policy framework has yet to be tested. This makes it difficult to evaluate whether the revisions and procedures are enough to reduce the evident risks to government finance.

## Chile and Honduras: Low Fiscal Risk Exposure Through USPs

USPs in Chile and Honduras cannot demand any public resources. In contrast to Colombia, Peru, and Mexico, USPs will have no direct fiscal impact as a result. However, implicit fiscal obligations may arise depending on the project risk distribution or project failure. Risk allocation is not stated in the legal framework and in many cases depends on the nature of each project.

Though the USP frameworks in these countries reduce fiscal risks by disallowing the future demand of public resources, risk can still be over-allocated to the public sector, especially since the government must take control over any project that fails or becomes distressed. Likewise, the government would typically continue the project based on the premise that it is of public interest and needed to improve public services. In these cases, the government must assume the cost of development, which could result in negative fiscal shocks.

Honduras's legal framework permits the development of infrastructure projects in any sector and allows USPs. The General Regulation in Honduras's PPP law establishes the ability of local or foreign investors to present USPs to the public sector at any time through COALIANZA, the commission for the promotion of PPP projects. These proposals are not subject to the same timetable as the public budget (Reyes-Tagle and Tejada, 2015). The private investor must also include a sustainability guarantee of 10 percent of the investment for medium projects and 5 percent for large projects. The government holds the guarantee until the selection process is completed or the project has been rejected. The guarantee is intended to incentivize the submission of only well-developed projects with serious commitment from the originator.

Only one project has been awarded as a USP in Honduras since 2010, demonstrating a strict review process. The *Proyecto Siglo XXI* consists of 24 road and urban projects to improve vehicle transportation in San Pedro de Sula, the biggest city in Honduras. The total investment is US\$88 million.<sup>97</sup>

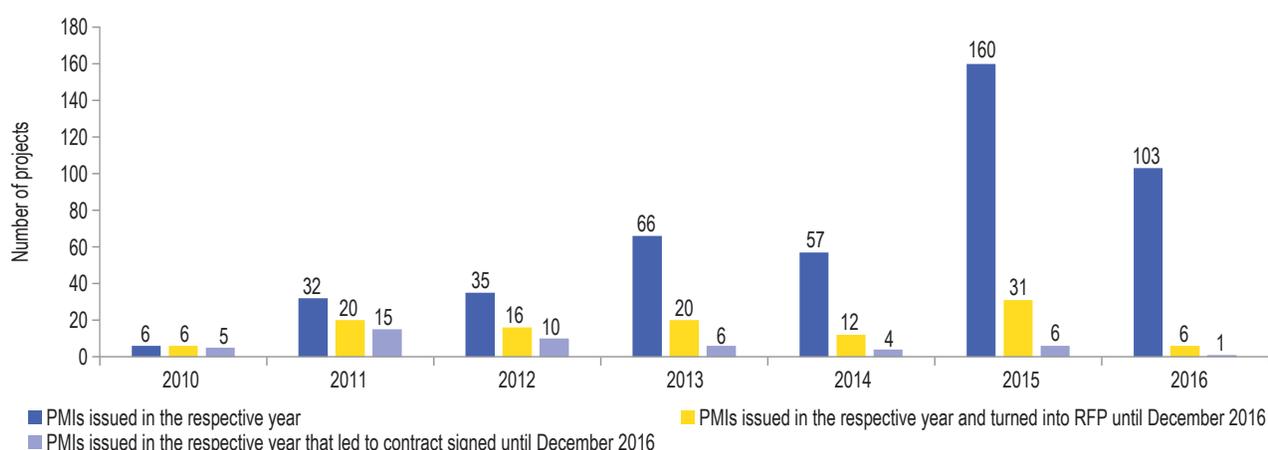
In Chile, the ministry must declare a USP is in the public interest to proceed. However, a declaration of public interest is not a guarantee that the project will be developed, it only guarantees that the project will be considered in the agenda and that the government will devote efforts to review and evaluate the submitted studies. Only six USPs were declared to be of public interest in Chile in 2015.

## Brazil: Capacity and Mortality

Brazil's federal regulations do not explicitly incorporate USPs into the general PPP framework. However, a rule in the country's broader investment regulatory system enables active private-sector participation in the PPP process prior to tendering and procurement. The rule that enables this participation is called the Procedure for Expressions

<sup>97</sup> For more information, see: <http://coalianza.gob.hn/es/cartera-de-proyectos/cartera-app-nacional/infraestructura/proyecto-siglo-xxi>.

**FIGURE 6.2. Projects by Sector and Government Level in Brazil**



Source: Author's elaboration.

of Interest (*Procedimento de Manifestação de Interesse*, or PMI).

The PMI is a mechanism used by the government at both the national and subnational levels to obtain feasibility studies developed and prepared by the private sector or by consultants working for private companies. These proposals typically come from organizations interested in developing the project in the future. PMIs have become a central aspect of the PPP market in Brazil recently and have grown steadily in the country.

Despite its popularity as a project preparation tool, the PMI faces criticisms similar to USPs. A common critique is that PMIs reduce competition because the companies enrolled in the preparation studies tend to introduce tender mechanisms that benefit themselves, creating a skewed competitive process. A related issue is the compromised value for money (VfM) in PMI projects, since the private sector will tend to define risk allocation schemes that benefit the investor to the detriment of the public agency and the public interest. Another critique is that the recurrent use of PMIs may hinder the development of capacity within the public service, since complex appraisal and structuring exercises are done outside the government in these cases. In other words, the PMI is presented as a solution to the

lack of capacity for structuring projects within government, when in reality it may contribute to that lack of capacity. Moreover, Brazilian states tend to have their own laws and procedures for PMIs. The effective implementation of this process requires well-developed legal, financial, and technical skills, which are not always present in subnational governments. A consequence is dependency on the private sector and poorly structured contracts (e.g., see PPIAF, 2014).

Another important criticism refers to the ineffectiveness of PMIs as a project preparation mechanism. In fact, projects prepared through PMIs have a high mortality rate. Of 66 PMIs issued in 2013, only six were signed contracts by December 2016 (Figure 6.2). Indeed, most PMIs do not lead to effective PPP contracting, arguably because the private sector fails to translate the public interest into the contracting documentation. Despite these critiques, the use of PMIs persists at the national and subnational level as one of the most relevant instruments for preparing PPPs in Brazil.

### Case Study: USPs Awarded in Colombia

More than 400 USPs have been presented to Colombian authorities since the PPP law was passed in 2012. Of those, 45 percent are in the road

sector and 34 percent have been presented to the national government. USPs gained interest rapidly among public entities with limited knowledge or understanding of the legal framework. These entities essentially mistook USPs as a substitute for public initiative projects rather than as a complement.

Around 36 percent of these USPs were rejected in the prefeasibility stage, usually based on the argument that the project was not in the public interest or that it required more public resources than those established in the PPP law. Though 10 percent passed to the feasibility stage, 70 percent of these were then rejected. Up to mid-2016, 12 projects had been awarded, 11 by the national government and one by the city of Bogota. Only one project has reached financial closure (Colombia, 2017).

Proposing USPs for projects with established concessionaires, the reduced time for third parties to express interest, and the Swiss Challenge mechanism are all detrimental to competition in USP schemes. Of the 11 projects awarded as USPs in Colombia, only two have had third-party interest. In addition, six were part of a public initiative project in which the National Infrastructure Agency received the USP and decided that the private proposal was more suitable and had better VfM than a public sector-developed project proposal.<sup>98</sup>

Since these projects have not required public resources, the approval process went through an agreement publication process in which there was an opportunity for a third party to express interest and present their bid. The originator then received the opportunity to match the best option. On average, 60 days were provided for third parties to express an interest, the minimum time allowed by the legal framework. In addition, in 6 of the 11 projects, the originator had participated as the current concessionaire and thereby had better information about traffic and development costs than a possible competitor.<sup>99</sup>

The only consistent advantage for USPs is the promise of foregoing using public resources to prepare the proposal. Only two projects reached competition and only four increased the overall

capacity of the project pipeline. Colombia has the highest number of USP projects in the region, but more research is needed to determine the extent to which this has added value in terms of competition or innovation.

## USPs in Developed Economies

USPs are not as popular in developed economies as in emerging markets. Neither the United Kingdom nor Canada—two of the countries that most use PPPs—regularly employ USPs. This rejection of USPs is justified by the notion that the public sector must be strong and capable enough to deliver projects through competitive processes and that the government must retain the power to prioritize and plan projects. USPs also tend to reduce competition in the selection process, a downside from the perspective of developed economies.

### Canada

USPs are not expressly forbidden in Canada, which allows the provinces significant leeway in managing their own PPP frameworks. Most provinces have no formal policies with regard to USPs, with the exception of British Columbia and Nova Scotia. British Columbia's Capital Asset Management Framework requires that USPs demonstrate VfM as determined by the relevant ministry, which must then sponsor the USP. However, as yet there are no major PPP projects in Canada that have been initiated as a USP.

### Australia

USPs are uncommon in Australia due partly to a comprehensive infrastructure planning process. However, they are allowed by law and the country's provincial-level governments have begun to encourage them to some extent. Until recent years, Australia managed PPPs through the public

<sup>98</sup> Source: Colombian National Infrastructure Agency.

<sup>99</sup> Source: Colombian National Infrastructure Agency.

initiative project. In 2008, the government published the National PPP Guidelines as the main set of guidelines for the Australian jurisdictions to use to develop infrastructure through PPPs, though these guidelines are not legally binding. From these guidelines, each jurisdiction has established a detailed process to develop PPPs. In the National PPP Guidelines, USPs must demonstrate unique value in terms of fiscal or financial benefits, the overall benefits to the community, and consistency with the government plans and priorities. New South Wales established a framework for USPs in PPP projects in 2012. Afterwards, the governments of Victoria, Queensland, the Northern Territory, the Capital Territory, South Australia, and Tasmania established that USPs would be accepted in specific circumstances and developed guidelines for this process.

USPs in Australia have had a slow start, but the scheme has complemented rather than substituted for public-initiated PPP development or traditional procurement. Australia's focus on the uniqueness of a project is a key distinguishing factor in its justification for USPs. The main argument behind USPs is that some projects are very specific in how they must be developed, and thus a private company may have unique access to the best way to develop the project such that no benefit would be gained from a tendering process. In addition, the VfM analysis gains more relevance due to the single mechanism that supports the project process decision.

## Spain

USPs are permitted in Spain, but they are rare. Although there is no dedicated PPP law in Spain, there are multiple laws and regulations that allow PPPs to be developed in different sectors. Spanish Royal Decree 3/2011, the *Public-Sector Procurement Act* approves specific norms for public procurement. Spain's legal framework allows USPs for public infrastructure. The process is similar to the public development of a PPP project. A private investor can present a project proposal by submitting feasibility studies. The responsible

public administration must then review the project. If the project is accepted, the public authority is responsible for developing further studies and carrying out a competitive selection process. As in LAC, the cost of the studies are reimbursed to the originator after the project is awarded.

No projects have been delivered through the Spanish USP mechanism since its inception. There are a couple possible reasons for this lack of activity. First, the legal incentives do not compensate the originator for time spent on the project proposal. In the end, a private developer may not be willing to structure projects without compensation for the study if the chances of winning the project are the same as for other competitors. In this situation, publicly developed projects may be more profitable for the private partner. Another explanation is that the project pipeline established by the public sector generates enough projects that there is no need for USPs. From the mid-1990s until the early 2000s, PPPs helped Spain make significant progress in aligning their infrastructure stock with other Western European countries. However, since the global financial crisis, Spain's fiscal situation has slowed infrastructure development.

## An Evaluation of USPs, What Is Missing in LAC, and Policy Recommendations

Latin America has embarked on delivering infrastructure through PPPs to complement public investment and reduce the infrastructure gap. Despite the ability to deliver projects through public initiatives, the private sector has demanded more options to propose and develop infrastructure projects. USPs may generate new project opportunities for infrastructure development in some countries, though results are mixed. Based on both regional USP schemes and international frameworks, USPs should be an exception to infrastructure delivery and not the rule.

For USPs to provide benefits to the public sector and the community, the process must have the characteristics discussed below. Some of these

characteristics are stated based on successful cases among countries with USP schemes. However, due to the different objectives countries are attempting to solve with USPs—for example, innovation and uniqueness on one hand and increasing project pipeline on the other—no one policy can be implemented in two countries in the same way. Policymakers should understand their local objectives in using USPs and implement the appropriate characteristics that accord with that strategy.

**USPs need to be consistent with the country's medium- and long-term national infrastructure plans.** PPIAF (2014) found that many countries bar projects that are already part of the country's formal infrastructure program or project priority list and likely to be implemented within a reasonable period of time. If a project is part of such a list or program, it is by definition considered not to be complementary and therefore not eligible for consideration as a USP. However, in LAC this approach is different, and we believe well suited to the context. Brazil, Chile, Colombia, Honduras, Peru, and other countries allow USPs for projects already on their priority list. Not narrowing the projects that can be presented as USPs could lead to a presentation of unwanted or low-priority projects, generating an overflow of project presentations. The approach followed by numerous LAC governments requires the project be part of the long-term development plan, with controls for duplication. By narrowing the scope for project presentation, governments ensure that the projects presented are aligned with national development plans and that resources are not being spent twice in pursuit of the same public objective.

This approach should reduce the number of project presentations by private investors in low-priority areas. The private sector will only invest time in a short list of projects that, if they solve public problems and align with the legal framework, will increase the chances of success. Meanwhile the public sector will devote limited institutional capacity to the review of the projects that are a priority in the infrastructure agenda.

Although most country frameworks demand that projects should be consistent with long-term plans, Colombia's private sector has provided so many USPs that the government's capacity to review them has been strained. The fact that government officials are personally held liable may also prevent them from making decisions. These circumstances can lead to serious delays, which in turn cause a decrease in private-sector interest.

**The mechanism of rolling USP submissions, evaluated as they come in—first come, first served—should be avoided.** Instead an annual date (or up to a maximum two dates annually) should be set, with USP proposal submissions allowed up to that date and evaluated at the same time in order to account for the opportunity costs and complementarities between projects. During project appraisal, the public sector can evaluate all the different alternatives and choose the best solution for the public need. Companies and governments will also have a more predictable project pipeline schedule, allowing more efficiency in allocating the necessary resources for preparation and appraisal.

**There should be a proposal credibility guarantee.** There must be multiple strategies to ensure that projects presented to public authorities are backed with strong capacity and a willingness to develop the project. In the public sector, technical resources for project review are scarce, especially in LAC. Therefore, a guarantee is an effective way to eliminate weak projects. This policy is followed in Honduras and Chile, for example. By demanding guarantees, private originators are more likely to present mature projects that have undergone the proper due diligence.

**Hiring qualified and experienced transaction advisors is crucial to overcome the lack of capacity.** In emerging and nascent PPP programs, as well as in countries that have mature programs, such as Brazil or Korea, there is still a need to have experienced and well-qualified advisors to help the public sector prepare projects. PPPs, whether solicited

or unsolicited, are more complex than TPI and require different financial, legal, and technical skill sets to ensure VfM for the government.

**Ensure competition in the selection process.** This is the most relevant and difficult policy to implement in the context of USPs. This policy must find an equilibrium between the benefits that the originator will receive and the level of competition available to third-party bidders. As seen in Colombia's USP scheme, it is often probable that the private originator will be awarded the project without competition. On the other hand, if no incentive is given to the originator, then no projects will be presented, such as in Spain. Possible methods for achieving this balance are as follows:

- **Modified Swiss Challenge:** Under the Swiss Challenge, the originator has the option to match the winning bid and receive the contract. The Swiss Challenge option is used in Colombia and Honduras when a project does not require public resources.<sup>100</sup> However, a straightforward Swiss Challenge may undermine competition (PPIAF, 2014). Third parties are at a strong disadvantage against the originator and have a high chance of losing the resources invested in the bid. One policy proposal to tackle this issue is that if the originator matches the proposal and wins the project, it must pay the cost of the studies to that bidder. In such a case, third parties may be more willing to participate in the selection process. If they put forward the best offer and are matched, they will not lose the cost of participation. This procedure has not been implemented in any country but could create better incentives to promote competition.
- **Bid bonus:** Additional points are given to the originator in the tendering process. The percentage points awarded must be enough to give the originator an advantage but not the security of winning the project. If a bid bonus is used, a Swiss Challenge must not be applied

to the same process. Bid bonuses can be used in Colombia and Chile; however, they have not been used in Colombia because no project with a public subsidy requirement has yet been awarded. In Chile, the bid bonus has not significantly reduced competition, as seen in Box 6.1.

- **Time for third parties to express interest must be enough for competitors to prepare:** Third parties typically have two to three months to present interest in a USP. However, this could be one of the reasons for low participation by third parties. Additional time must be given to allow third-party bidders the time to develop their studies and be part of the selection process.
- **Risk-sharing mechanism:** USPs are based on the ability of the private sector to identify projects that will generate VfM for society. In this sense, the private partner must credibly retain risk, especially construction and demand risk. If the demand risk is assumed by the public sector, the private originator has the incentive to overestimate demand. If the private proponent is confident in project success—as it should be if it is the one proposing the project—then it must bear these risks. In complex projects where risks are difficult to transfer to the private sector, a publicly initiated PPP, or even a TPI, could be a better option. Risk allocation is one of the most important stages. If private originators have advantages in the selection process, they should also bear most of the risk that might affect the country's fiscal position. There must be a clear message to private originators regarding USP risk transfer and risk-sharing policies.

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<sup>100</sup> During the selection process of the third lane Bogotá-Girardot project, a third party made a better proposal. However, the private originator could not equal the third-party proposal because the legal framework establishes that the Swiss Challenge will not be accepted if the originator proposal is below 80 percent of winning score.

### BOX 6.1. The Swiss Challenge

Compensation mechanisms such as the Swiss Challenge, bonus system, recovering costs, automatic short-listing, and regular procurement have an effect on competition for USPs. PPIAF (2014) indicated that the Swiss Challenge and the bonus system are artificial and distort competition. Another question is whether awarding bonus points to the USP originator or allowing the Swiss Challenge discourages other bidders from participation. Country experiences have proven that the Swiss Challenge distorts competition and therefore might not be the most desirable instrument to reward the originators as a result.

In countries that allow the Swiss Challenge, the average number of bidders has been about 1.3 and the USP originator won the project in 95 percent of cases. By contrast, countries without the Swiss Challenge have had about 2.3 bidders on average, and in only about 50 percent of cases was the project won by the originator. The implication is that Swiss Challenge is a very poor instrument to reward proponents if governments care about competition. On its own, it should not be used. The experience in Chile, for example, shows that the difference between the USP proponent and the winning bidder is almost always bigger than the bonus points, leading to the conclusion that a bonus system does not influence competition. The most salient lesson is that, short of reimbursing the costs of preparing the project to both originators and bidders, it might not be desirable or necessary to compensate the original proponent in any other way. However, by implementing the above recommendation, the number of projects developed under USPs could be reduced due to lower benefits for project originators.

**TABLE 6.3. Projects With and Without the Swiss Challenge (2005–15)**

| Country     | Swiss Challenge Allowed | Average Number of Competing Bidders | Bonus Points Government Financial Support | Time Given for Third Parties to Express Interest | Winning Bidder      |
|-------------|-------------------------|-------------------------------------|---|--|---------------------|
| Colombia    | Yes                     | 0                                   | Yes                                       | Two months                                       | 100% USP proponent  |
| Korea       | No                      | 1.4                                 | No  | Two months                                       | 75% USP proponent   |
| India       | Yes                     | 1.5                                 | No  | Two months                                       | 90% USP proponent   |
| Peru        | Yes                     | 0.8                                 | No  | Two months                                       | 97.5% USP proponent |
| Italy       | Yes                     | 1.5                                 | No  | Two months                                       | 85% USP proponent   |
| Chile       | No                      | 2.6                                 | Yes                                       | Two months                                       | 36% USP proponent   |
| Philippines | Yes                     | 0.3                                 | No  | Two months                                       | 90% USP proponent   |

Source: Andrés, Guasch, Haven, et al. (2008).

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# Conclusions and Recommendations

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**P**ublic-private partnerships (PPPs) can be a viable and valuable mode of project financing and infrastructure management. However, managing the process requires tailored institutional and accounting measures. Importantly, PPPs do not meaningfully reduce the public financial burden in providing for infrastructure projects. PPPs should be treated as public-sector liabilities for the purposes of planning, budgeting, and accounting. PPPs do not increase financial capacity of the public sector, and availability of finance is not a sufficient reason to pursue a PPP. A PPP will not be a viable structure for many projects.

The only economically and fiscally justified reasoning for pursuing PPPs is to achieve better value for money (VfM) than a purely public investment option. This means that a PPP must reasonably promise better quality services for the same price as public provision or similar quality for less. This cost-quality advantage must be reflected in the relative fiscal burden of the project, and in some cases the fees charged directly to users. The arguments underlying this concept rely on the relative efficiency of private-sector execution and the advantages of bundling for cost incentives and price discovery. However, sufficient public-sector capacity and the right regulatory framework are crucial to achieving such an outcome.

## PPPs and the Infrastructure Gap

Our estimates suggest that annual investment needs amount to US\$2.4 trillion, below the US\$3.1 trillion estimated by other studies. Although, on a practical level, governments use alternative investment planning methods (e.g., surveys or infrastructure plans), the estimation methods shown in this section are useful for quantifying, in aggregate terms, the trend in demand for infrastructure. The accuracy of various quantitative methods of estimating the infrastructure gap is certainly open to questions; however, these estimates are critical in drawing the contours around a critical area of public developmental and economic need. Our main contribution to the various estimates of the investment gap was to use a database of actual PPP projects to obtain unit costs by type of infrastructure. This helps account for novel methods of infrastructure provision and grounds the estimate in empirical reality.

A survey of the World Bank's PPI database and other sources presents a valuable set of initial conclusions. First and foremost, the modern PPP is a new phenomenon, especially for developing economies. Projects tend to be young, with very few projects meeting our definition of PPP before 1990. Similarly, PPPs are only used intensively in a relatively small number of emerging economies. Indeed, most countries pursue few if any PPP projects annually, with just 25 emerging economies

averaging more than one project per year. The concentrated distribution of more than 5,000 projects between just 25 countries—the top 5 accounting for over 50 percent of the cohort’s total PPP spending and the top 3 accounting for over half of the project count—raises a very different set of analytical questions than if these projects had been evenly distributed among 109 countries in the dataset.

Importantly, on average, PPPs tend to be small- to medium-sized projects. Most projects are far from the multi-billion-dollar outliers like the airports and motorways in rapidly transforming Turkey and Brazil. Individually, small projects may not pose a significant fiscal threat. However, when added up, the impact can be significant, especially if individual projects are small enough to escape adequate regulatory scrutiny. This is especially true given the arms-length operational distance between the government and private sector during the life of the project, despite the often direct fiscal burdens that these projects place on contracting governments. These facts preview the need for a strong institutional framework for PPPs and underline the scope and complexity of public oversight and transparency needed for initiation, due diligence, fiscal management, and integration of services and assets into the public sphere.

Moreover, it is important to recognize the limitations of the available PPP data. We can only draw rigorous conclusions for developing countries. Also, the total investment value may be under-reported even in the best data because reporting is inconsistent and project costs change.

## Institutional Frameworks

The lack of an adequate institutional framework is a major factor in countries that have faced systemic problems with their PPP programs. Often, only crisis has proven sufficient to reveal policy shortcomings. In countries like Portugal and Mexico, it took a major financial crisis to display the true fiscal burden of the country’s PPP program and edge it toward reform. However, the lack of a sufficient PPP framework can also encourage hasty changes in

the regulatory framework during crisis, worsening the potential budget impact of a crisis and requiring significant policy changes down the line.

While countries have seen successful PPP programs managed from both the central and sub-national level, successful institutional frameworks tend to emphasize centralization and standardization of processes, legal standards, and especially fiscal management. An adequate budgeting framework that takes into account the idiosyncrasies of PPPs—without losing sight of their similarity to full public procurement in terms of fiscal impact—are the most successful. Specifically, any successful institutional framework must incorporate both promotion of private participation in public investment as well as risk and fiscal burden management. Indeed, the primary focus of an institutional framework for PPPs should ensure fiscal sustainability.

## Fiscal Management

PPPs often fall between the cracks of government accounting standards, enabling governments to take on commitments in a way they would not otherwise be able to do. PPPs often seem like they save governments money, opening valuable fiscal space for critical programs. This is an illusion; PPPs can create significant public finance commitments, in the worst cases generating commitments that may surpass traditional public procurement methods. Moral hazard and adverse incentives are a problem for both the politically minded procuring side of a PPP deal and the profit-minded private partner. Governments must ensure that PPPs are used to create VfM, not to circumvent fiscal rules or bend budget constraints.

Successful fiscal management frameworks for PPPs immediately account for the potential long-term fiscal impact of future commitments—both implicit and explicit. Some of the most vigorous frameworks account for PPPs as public debt. In addition to ensuring a proper accounting framework, governments must incorporate PPPs seamlessly into budgeting processes and ensure all aspects of these commitments are visible and applicable in

the year of their procurement. Medium-term fiscal frameworks and budget planning standards crafted to account for PPPs can prevent fiscal surprises. Complicating the fiscal puzzle are the myriad forms of government financial support (GFS) extended to PPPs. GFS is a significant source of fiscal risk; however, well-crafted GFS is often crucial to the success of PPPs.

## **Commercial Viability and Government Support**

The use of GFS mechanisms is a direct response to the challenges of achieving commercial feasibility in PPP projects. Government support, in fact, offers the key ingredients required to promote feasibility of projects in light of the challenges investors face in generating free cash flow or attracting affordable long-term financing. These difficulties may be both inherent and imposed by policy. In this respect, public-sector financial support mechanisms are not an aspect of PPPs that primarily serve to meet private-sector interests. On the contrary, the private sector will seek to ensure a project generates a reliable source of revenue and return on investment relative to other alternatives. If used correctly, GFS should fill the viability gap only to the point at which it matches the profitability of alternative investment. In other words, the private sector should not benefit from the support as it serves only to the channeling of the resources from other possible investment to the PPP project.

Likewise, promoting commercial viability of PPPs means the government enables projects to be implemented that would otherwise not be viable or would not meet the conditions imposed by public policy. However, at the same time, this support may open new areas of investment that were off limits due to policy or political considerations. This poses a risk when the binding constraint is fiscal but can create public value when it surpasses an organizational or capacity constraint.

We have also seen that theory and practice diverge dramatically in many PPPs. The potential incentives for both the government and the

private-sector partner to undermine contractually established limits are significant. GFS must be carefully incorporated into the institutional framework and fiscal management and contractual provisions for risk allocation in order to ensure it is not a consistent source of hidden fiscal outlays or outsized public commitments.

Governments should use financial support to promote PPP initiatives as long as two absolutely irrevocable conditions are met. First, liabilities should be identified and measured in the context of long-term public-sector commitments, so PPPs do not serve as a mechanism to hide fiscal consequences of infrastructure projects. Second, the VfM assessment must credibly indicate that a PPP represents the most efficient way to channel public-sector resources for the project. In other words, similar factors that make PPPs an efficient mechanism to deliver infrastructure projects apply when determining how GFS mechanisms should be applied. If applied smartly, GFS can be the key to unleashing the benefits of this contracting form.

## **Unsolicited Proposals**

Unsolicited proposals (USPs) can be a valuable component of a PPP program. However, USP framework design is more complex than publicly initiated PPPs, and their propensity to create value will only be relevant in very specific and carefully controlled circumstances. USPs add value only when designed properly. The systemic lack of capacity and resources that governments face, and the urgent need to improve infrastructure services and close the infrastructure gaps in most countries, may suggest that USPs are a lesser evil than inertia. However, countries should approach USPs cautiously until government capacity and policy adequacy are assured.

USPs are one of the most controversial and difficult mechanisms to develop within the scope of public infrastructure due to the inverse relationship between private project presentation and competition. USPs may undermine the competitive value promised by well-designed PPPs, especially

in thin or monopolized markets. In practice, USPs have shown mixed results due to poor design and incentive problems. Many countries, such as Peru, Colombia, and even the United Kingdom are constantly revising their USP design to align with frameworks that balance benefits, transparency, and competition. If this balance can be achieved, USPs might be leveraged to create significant social welfare gains. This concept should provide a constant goal to motivate the changes necessary to iteratively improve on a country's framework and use the private sector to help reduce the infrastructure gap in a transparent and competitive environment.

## Policy Recommendations

- PPPs should not be used to hide fiscal consequences. It is paramount that governments understand the big picture of liabilities arising from PPPs and promote effective appraisal exercises before the choice of PPP over traditional public investment is concluded.
- PPPs may create public value in specific circumstances, but they do not create fiscal space. PPPs should only be considered for circumstances where they would unquestionably provide VfM (i.e., cost savings or efficiency gains relative to public provision). They should not be used to bypass a lack of fiscal space or to circumvent mandated procurement processes.
- PPPs should be treated as public debt regardless of their source of financing. PPPs are an alternate form of financing public works, not funding them. Regardless of the contract specifics in PPPs, the contracting government ultimately owes the money back—short-run savings or accounting advantages are deceiving. This repayment may come via direct government payments funded by taxpayers or foregone revenue funded by direct users.
- For budgeting and accounting, appropriate accounting standards are critical to ensure that PPPs are not used as an off-balance-sheet instrument to fund infrastructure spending.
- Transparency is critical to ensuring PPPs are used to create public value rather than postpone and hide fiscal consequences. Treating PPPs as debt helps ensure explicit and implicit liabilities are given equal footing. Risk sharing can be a powerful aspect of PPPs, but governments should transparently account for who foots the bill in the case of project collapse.
- PPPs may escape traditional budgeting and accounting measures due to their novelty and contractual structure. Likewise, different contracting governments within one country may treat PPPs differently. All PPPs should be registered in a centralized registry of projects, even if subnational governments are responsible for the contracts.
- Governments should consider a centralized PPP unit to coordinate, analyze, and provide advice. While subnational management has worked well in some countries, central coordination is essential for transparency and budget management, especially when the national government underwrites the subnational entity. Countries should also ensure expertise and perspective is applied across the process.
- Clear, consistent policy frameworks and institutional arrangements are at the center of successful PPPs and PPP programs that are resilient to failure. PPPs should be defined accurately in legal terms and treated accordingly for definitions of long-term debt and fiscal liabilities.
- Governments should use a consistent and dynamic process to assess whether PPPs deliver VfM, and this assessment should be adequately integrated with general project appraisal to ensure that the decision to use a PPP is justified. This assessment should rigorously consider traditional public alternatives through instruments like the Public Sector Comparator.
- Governments should experiment with PPP frameworks that best fit their circumstances. However, policymakers should ensure that no regulatory loopholes exist to allow fiscal evasion by politically motivated public-sector actors or opportunistic behavior by private-sector actors.

