

# How Do Countries Measure, Manage, and Monitor Fiscal Risks Generated by Public-Private Partnerships?

Chile, Peru, South Africa, Turkey

*Cigdem Aslan*

*David Duarte*



**WORLD BANK GROUP**

Financial Advisory and Banking Department  
Government Debt and Risk Management Unit  
September 2014

## Abstract

The topic of managing fiscal risks arising from public-private partnerships is receiving increased attention as more governments turn toward this type of financing for large infrastructure projects. Governments can manage balance sheet exposure to public-private partnerships by quantifying and capturing direct obligations and provisions for potential calls on government guarantees associated with public-private partnership projects in the preparation of the medium term fiscal framework and annual budget. This working paper examines how four countries with active public-private partnership projects manage the costs and risks of financial obligations generated by these investments throughout the lifetime of the contracts. The paper seeks to complement the existing literature with a practitioner's point of view while exploring if and how these countries monitor and evaluate the fiscal risks generated by the portfolio of public-private partnerships (as well

as individual projects). The countries covered are Chile, Peru, South Africa, and Turkey, all of which have experience implementing public-private partnership projects. The research finds that countries have tailored fiscal risk management and monitoring frameworks to fit their circumstances and respective budgeting, accounting, and reporting practices. All four countries assess the overall or partial credit exposure to monitor and manage their fiscal commitments from public-private partnerships in a consolidated way. All countries have developed evaluation models to help assess fiscal risks and assess project and portfolio level credit exposure. Further scrutiny could be focused on budgeting and accounting practices, which could be strengthened and brought in line with international standards. Similarly, sharing and standardizing information would improve transparency and accountability.

---

This paper is a product of the Government Debt and Risk Management Unit, Financial Advisory and Banking Department. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The authors may be contacted at [caslan@worldbank.org](mailto:caslan@worldbank.org) and [DDuarte@DIPRES.gob.cl](mailto:DDuarte@DIPRES.gob.cl).

*The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.*

# How Do Countries Measure, Manage, and Monitor Fiscal Risks Generated by Public-Private Partnerships?

Chile, Peru, South Africa, Turkey

Cigdem Aslan<sup>1</sup> and David Duarte<sup>2</sup>

JEL Classification: H63, H81, G17, G32

Key words: PPP Contingent Liabilities, PPP Fiscal Risk Management, PPP Accounting and Reporting, PPP Disclosure and Transparency, PPP Monitoring

---

<sup>1</sup> Cigdem Aslan is Senior Financial Officer at the Financial and Advisory Department, World Bank.

<sup>2</sup> David Duarte is Chief of Contingent Liabilities and PPPs, Ministry of Finance, Chile

<b>Acknowledgements .....</b>	<b>3</b>
<b>Acronyms .....</b>	<b>4</b>
<b>Introduction.....</b>	<b>5</b>
<b>1 Framework.....</b>	<b>6</b>
1.1 Introduction:.....	6
1.2 Fiscal Risks Allocated to the Public Sector from PPP Contracts.....	6
1.3 Overview of Direct Long Term Fiscal Commitments Created by PPP Projects .....	8
1.4 Governance and Institutional Frameworks .....	9
1.5 Managing and Monitoring Direct and Contingent Liabilities.....	11
1.6 Budgeting, Accounting and Reporting for PPPs.....	12
<b>2 Country Experiences .....</b>	<b>16</b>
2.1 Chile.....	16
2.1.1 Governance and Institutional Framework.....	16
2.1.2 Management of Explicit Contingent Liabilities .....	16
2.1.3 Evaluation Methodologies .....	17
2.1.4 Budgeting and Accounting for the Contingent Liabilities.....	18
2.1.5 Reporting and Disclosure Policy .....	19
2.2 Peru.....	19
2.2.1 Governance and Institutional Framework.....	19
2.2.2 Management of Explicit Contingent Liabilities .....	20
2.2.1 Evaluation Methodologies .....	21
2.2.2 Budgeting and Accounting for Contingent Liabilities .....	22
2.2.3 Reporting and Disclosure Policy .....	22
2.3 South Africa.....	23
2.3.1 Governance and Institutional Framework.....	23
2.3.2 Management of Explicit Contingent Liabilities .....	23
2.3.3 Evaluation Methodologies .....	24
2.3.4 Budgeting and Accounting for Contingent Liabilities .....	25
2.3.5 Reporting and Disclosure Policy.....	26
2.4 Turkey.....	26
2.4.1 Governance and Institutional Framework.....	26
2.4.2 Management of Explicit Contingent Liabilities .....	27
2.4.3 Evaluation Methodologies .....	29
2.4.4 Budgeting and Accounting for Contingent Liabilities .....	30
2.4.5 Reporting and Disclosure Policy.....	30
<b>3 Conclusion.....</b>	<b>31</b>
<b>Annex 1: Summary tables of the Country Practices.....</b>	<b>33</b>
Table A : Summary of the Governance and Institutional Framework.....	33
Table B: Summary of the Management of the Fiscal Commitments.....	34
Table C: Summary of the Evaluation Models.....	35
Table D: Summary of the Budgeting and Accounting / Reporting .....	36
<b>List of references .....</b>	<b>37</b>

## **Acknowledgements**

This working paper was prepared by Cigdem Aslan (Senior Financial Officer, WB Treasury) and David Duarte (Director Chief of Contingent Liabilities, Ministry of Finance, Chile). It was financed by the Macroeconomics and Fiscal Management Global Practice and the WB Treasury.

The team would like to thank the Debt Group in the Macroeconomic and Fiscal Management Global Practice (formerly PRMET) at the World Bank, especially Sudarshan Gooptu (Practice Manager, World Bank) and Elliot Joseph Riordan (Senior Economist, World Bank) for their appreciated support. A big thank you to the peer reviewers Fernando L. Hernandez, (Lead Economist, World Bank), Lars, Jessen (Lead Financial Officer, World Bank), Rui Monteiro (Senior Public Private Partners, WBI), Signe Zeikate, (Economist, World Bank) and Timothy Irwin (International Monetary Fund) for their extremely valuable comments and helpful guidance which greatly improved the paper. Feedback from Xavier Cledan Mandri-Perrott (Lead Financial Officer, WB) was very beneficial and Helen Mary Martin's (Consultant, WB) input was equally useful. The team would also like to acknowledge contributions and comments from Chilean, Peruvian, South African and Turkish Government representatives.

The reviewing and editing as well as some sections of the document including the abstract were done by Susan Wilder whom we cannot thank enough for her support, availability and patience. Jean Paule Blardony (Junior Professional Associate) greatly contributed to the finalization of the paper while Audrey Maignan (Junior Professional Associate) worked on the initial research for which we are thankful.

## Acronyms

PFMA	Public Finance Management Act (South Africa)
BOT	Build Operate and Transfer
BO	Build Operate
BLT	Build–Lease-Transfer
CRM	Credit Rating Model (Turkey)
GFSM	Government Finance Statistics Manual
GoP	Government of Portugal
IPSAS	International Public Sector Accounting Standards
MRG	Minimum Revenue Guarantees (Chile)
HPC	High Planning Committee (Turkey)
MEF	Ministry of Economy and Finance (Peru)
MFMA	Municipal Finance Management Act (South Africa)
MoU	Memorandum of Understanding
MoF	Ministry of Finance
MoP	Ministry of Public Works (Chile)
PSDS	Public Sector Debt Statistics
Proinversión	Agency for the Promotion of Private Investment (Chile)
SOE	State Owned Entity
SPV	Special Purpose Vehicle
TETAS	Turkish wholesale electricity company
TIG	Treasury Investment Guarantees (Turkey)
TOOR	Transfer of Operating Rights

## Introduction

The topic of managing fiscal risks arising from public-private partnerships (PPPs) is receiving increased attention as more governments turn toward this type of financing to fund large infrastructure projects. Many countries face growing infrastructure needs in the coming years against a backdrop of severely constrained government finance, and are looking for greater levels of financing from the private sector.

To ensure that viable infrastructure projects are designed and implemented successfully, governments are advised to carefully evaluate different risk sharing mechanisms, financing schemes and governance frameworks for PPPs. Additionally, governments can manage balance sheet exposure to PPPs by quantifying and capturing direct obligations and provisions for potential call on government guarantees associated with PPP projects in the preparation of the medium term fiscal framework and annual budget. This can be facilitated by regularly evaluating and monitoring the costs and risks of the direct and contingent financial obligations imposed during the implementation of the projects. Continuous monitoring of the PPP portfolio can also provide the opportunity to foresee potential defaults and other adverse events--such as early terminations or alterations of contracts--and allow governments to take measures as needed to avoid or mitigate the impact of potential project failures.

In general, the task of evaluating and monitoring of PPP commitments (direct and contingent) from the angle of fiscal policy and fiscal risks is assigned to PPP units, Treasuries or Ministries of Finance (usually the financial authority that manages public debt), and contracting agencies for individual projects. These entities often house the skills and knowledge to manage different kinds of fiscal risks arising from PPPs since they often play a role in managing the government's contingent liabilities and long-term direct commitments create annual obligations similar to public debt.

A wealth of literature exists on PPP frameworks that are currently in use, including examples of efficient risk sharing mechanisms that have led to successful PPP programs<sup>3</sup>. The practices of countries that are active in this domain, such as the United Kingdom (UK), Australia, Chile and South Africa are frequently described in the literature. The experiences of countries such as Tanzania and Ghana, which are currently establishing or have recently established PPP frameworks, have yet to be explored. Much of the literature on the practical application of the frameworks is related to the selection and procurement phase of PPP projects, including some coverage of fiscal risk management, accounting and reporting practices.

This working paper aims to complement the existing literature from a practitioner's point of view and seeks to explore if and how countries monitor and evaluate the fiscal risks generated by their portfolio of PPPs (as well as individual projects) during the project implementation stage.<sup>4</sup> The countries covered in this paper include Chile, Peru, South Africa and Turkey, all of which have experience implementing PPP projects. Chile's practices have been cited by practitioners as among the best in the emerging world. Peru is another country which promotes the use of PPPs with a fiscal rule on commitments. South Africa has a well-established framework in place, and Turkey has been implementing PPP projects for many years and is embarking on a new wave of investments.

The first section of the paper sets out a framework for presenting key areas for identification of fiscal risks with suggestions on main principles for evaluating, monitoring and managing them. The paper then explores for each country, i) the existing framework and governance structure for project approval and implementation, ii) framework for managing the explicit contingent liabilities, iii) methodologies

---

<sup>3</sup> Managing Contingent Liabilities in Public-Private Partnerships: Practice in Australia, Chile, and South Africa, Timothy Irwin and Tanya Mokdad; Public-Private Partnerships in Europe and Central Asia: Designing Crisis-Resilient Strategies and Bankable Projects, Vickram Cuttaree and Cledan Mandri-Perrott; Revision of state of the art contingent liability management: Bibliography, Miguel Almeyda and Sergio Hinojosa.

<sup>4</sup> Fiscal risks covered by the paper are the direct and explicit contingent liabilities.

developed to evaluate the direct and contingent liabilities, iv) budgeting and accounting practices, and v) reporting of information on direct and contingent liabilities.<sup>5</sup>

## **1 Framework**

### **1.1 Introduction:**

Public-private partnership describes a government service that is funded and operated through a partnership of government and one or more private sector entities. Public-private partnerships involve a contract between a public sector authority and a private party, in which the private party provides a public asset or service and assumes substantial financial, technical and construction and/or operational risk in the project. The private party is represented by a special purpose vehicle (SPV) which is typically fully or partially responsible for developing, building, maintaining and operating the asset for a contracted period. The SPV seeks the financing, signs the contract with the government and with subcontractors to build the facility and then maintains it. PPP schemes help:

- Improve the design and delivery of services as well as the operation of the asset by tapping the expertise and efficiency of the private sector, which may make use of innovative technologies
- Enable more efficient use of resources by improving the identification and allocation of long-term risks, thus imposing budgetary certainty
- Mobilize private capital to speed up the delivery of the asset and services and eliminate subsidies
- Assure good maintenance of the asset as a result of having a whole-life approach.

The cost of using the asset and/or the service produced by the PPP project can be recovered in different ways. In some sectors, and depending on the model selected (for example highways), the cost is borne exclusively by the users of the service (end user, for example vehicles using the highway).<sup>6</sup> In other cases (in the health sector, for example), capital investment is made by the private sector on the basis of a contract with the government to make available the agreed services and the cost of providing the service is borne wholly or in part by the government. Government contributions may be in kind, and can be in the form of a transfer of existing assets. In social infrastructure projects (e.g., schools, hospitals, prisons), the government may provide a capital subsidy in the form of a one-time grant, so as to make the project more attractive to private investors. In other cases, the government may support the project by providing revenue subsidies, such as tax breaks.

### **1.2 Fiscal Risks Allocated to the Public Sector from PPP Contracts**

Public-private partnership contracts have financial implications and always pose fiscal risks for governments that need to be monitored and managed effectively.<sup>7</sup> The financial implications can be in the form of direct liabilities where the timing and approximate amount of the payment commitments are known. Alternatively, the fiscal commitment can be contingent upon an uncertain future event so the value and timing of the payment may be unknown.

One of the objectives of writing a PPP contract is to make risk allocation, and hence liabilities, explicit. The prevailing approach to risk allocation in PPPs is that risk is borne by the party best placed to manage it, that is the party that can best understand, control and minimize (mitigate) the cost of the risk. A principle to complement this conventional definition is that each risk should be allocated, along with rights to make related decisions, so as to maximize total project value, taking account of each party's ability to:<sup>8</sup>

---

<sup>5</sup> In each country, PPP units were contacted to collect the information provided in this paper.

<sup>6</sup> Several types of structures are commonly used, including: Build-Operate-Transfer (BOT), Build-Operate (BO), Transfer of Operating Rights (TOOR), and Build-Lease-Transfer (BLT). This information is especially relevant in Turkey's case, as will be seen later.

<sup>7</sup> Implementing a Framework for Managing Fiscal Commitments from PPPs, Operational Note, 2013.

<sup>8</sup> Government Guarantees, Allocating and Valuing Risk in Privately Financed Infrastructure Projects. Timothy Irwin, 2007.

- i) Influence the corresponding risk factor.
- ii) Influence the sensitivity of total project value to the corresponding risk factor—for example, by anticipating or responding to the risk factor.
- iii) Absorb the risk.

**Table 1: Types of Fiscal Commitments**

<i>Fiscal commitment</i>	<i>Description</i>
<i>Direct fiscal commitments</i>	
<b>Up front</b>	
Up-front viability payment	The government provides an up-front capital subsidy to the PPP contractor (which may be phased over construction or against equity investments, but only over the first years—that is, the construction phase—of the project lifetime).
Associated works	The government undertakes works that will contribute to the project, such as feeder roads (for a toll road) or dredging (for a port)—again, this type of support typically does not give rise to an ongoing commitment.
<b>Ongoing</b>	
Annuity or availability payments	The government provides a fixed, ongoing subsidy, paid (typically annually) over the lifetime of the project, and often not starting until the construction phase is complete. This payment may be conditional on the availability of the service or asset at a contractually specified quality (called an availability payment). The value of the payments is usually a key financial bid criterion in the tender process to select the private contractor.
Shadow tolls or output-based subsidies	The government provides a subsidy per unit or user of a service—for example, per kilometer driven on a toll road. Again, the unit value of such a subsidy would typically be the financial bid criterion.
<i>Contingent liabilities</i>	
“Guarantees” on particular risk variables	The government commits to compensate the private party for loss in revenue should a particular risk variable deviate from a contractually specified level. The associated risk is thereby shared between the government and the private party. For example, this could include guarantees on the following: <ul style="list-style-type: none"> <li>• Demand remaining above a specified level, or within a specified range</li> <li>• Exchange rates remaining within a specified range</li> <li>• Tariffs being allowed to follow a specified formula (where tariffs are set or approved by a government entity)</li> </ul>
<i>Force majeure</i> compensation clauses	The government commits to compensate the private party for damage or loss due to certain specified <i>force majeure</i> events. These are typically limited to those events for which insurance is not commercially available, which may include certain natural disasters.
Termination payment commitments	The government commits to pay an agreed amount should the contract be terminated due to default either by the private party or by the government on their obligations under the contract, and to take control of the project assets. Typically, the defined payment is lower in case of private party default.
Credit guarantees	The government guarantees repayment of some or all of the debt taken on by the project company if the project company itself defaults on the debt, regardless of the reason for the default.

Source: Table 2.1. *An Operational Framework for Managing Fiscal Commitments from Public-Private-Partnerships: The Case of Ghana*, World Bank 2013.

The private sector is often in a better position than the public sector to handle and mitigate some project risks (e.g. completing construction on time and on budget) while the public sector might be in a better position to mitigate other risks such as policy risk. Over time, “standard risk allocation” practice has evolved which assigns risks such as construction, availability, and technology to the private sector

whereas the government mainly undertakes policy and macroeconomic risks.<sup>9</sup> In some cases, especially for social purpose projects which do not generate much profit or when the project revenues are deemed too risky, sovereign guarantees may be offered to attract private sector investors.

Depending on the allocation of the risks, PPP projects create direct and contingent liabilities for the public sector. Contingent liabilities arise when the commitments are triggered by an uncertain event such as forecasted number of users not being realized, certain revenue level not reached, a force majeure event happening or in the event of default of the SPV. These are the fiscal risks borne by the public sector.

The following table from “An Operational Framework for Managing Fiscal Commitments from PPPs: The Case of Ghana” (Riham Shendy, Helen Martin, Peter Mousley, WB, 2013) shows the types of fiscal commitments the public sector faces in PPP projects.

### **1.3 Overview of Direct Long Term Fiscal Commitments Created by PPP Projects**

While this report focuses on the management of contingent liabilities, almost without exception management systems covering PPP commitments include both contingent and direct liabilities. Cash payments made by the government to the SPV are considered an explicit, direct commitment. When evaluating projects, individually and at the consolidated level, it is useful to take into account both direct and contingent commitments. Direct liabilities may arise in the following circumstances:

- Projects that have high social returns but where the potential revenue to be collected through user fees does not generate enough profitability to make the project an attractive investment for the private sector. In this case, the government can attract financing through unitary payments, i.e. cash payments corresponding to the gap, instead of a guarantee on the number of users.
- Social infrastructure and economic infrastructure where the government buys the goods and services produced by the project company.<sup>10</sup> Some of these unitary or availability payments would be fixed and not dependent on the level of demand.
- Renegotiation of the contract in order to generate explicit payments. In this case, the government can offset all or part of the losses of the project by making payments to the SPV.<sup>11</sup>
- Payments which might be imposed by a court order as a result of a dispute between the government and the SPV.
- Tax incentives.

These fiscal commitments are usually spread over a long period of time, up to the term of the contract (e.g., 20 years), and have the following characteristics:

- These commitments are not normally recognized as public debt (at least in countries that follow cash-based accounting). One argument for this is that the commitment exists only as long as the contract

---

<sup>9</sup> EPEC, State Guarantees in PPPs: A Guide to Better Evaluation, Design, Implementation and Management, May 2011.

<sup>10</sup> These are projects that satisfy a public service in which it is not possible to charge users and where the state maintains a significant role in the operation. For example, hospitals, prisons and schools.

<sup>11</sup> According to some authors, payments generated by a contract or renegotiation of a contract are considered contingent. However, such commitments are generated by a decision of the government to assume the cost of the contract modification as any other expenditure decision and therefore do not meet the criteria described above for a contingent liability.

exists.<sup>12</sup> Another is that in some countries a commitment can only be considered debt if it is approved by the congress or a government decree is issued.

- Given the long-term nature of the commitments, decisions made by a government to carry out a project might have minimal implications for the resources of the current government. When it comes to large projects, the time between project inception and commissioning may exceed the tenure of the government that initiated the project. This means that commitments made over the long-term could reduce the fiscal space for initiatives by future governments.

#### **1.4 Governance and Institutional Frameworks**

Sound management of PPP risks includes the use of both ex-ante and ex-post measures. Prior to committing to a sovereign guarantee or during the renegotiation of a contract, the government is advised to ensure that clear governance rules are adopted in terms of the approval mechanisms as well as the relationship and coordination between the related entities. A government can issue guarantees or renegotiate only when it has the necessary resources and skills to manage them and to monitor the project during its lifetime. The following are the broad issues to be taken into account:

- Role of the entity that will be the grantor to the PPP project will affect the type of guarantee that is offered
- Financial authority needs to have strong and clearly delineated decision making points, but limited to those aspects that create direct or indirect fiscal commitments
- Use of PPP units poses challenges to decision making and therefore adequate governance mechanisms need to be put in place
- Financial authority has an important role to play in order to ensure that the incentives to underestimate project costs or risks are mitigated
- Need for continuity of staff is key in such complex projects and financial structures

A public entity's role in a PPP project could influence the type of guarantee it offers, and how it might budget and account for the related liabilities. First, there are the public entities (grantors) involved from project inception, such as the implementing agencies of line ministries (ministry of transportation, health, education, etc.), sub-national governments (municipalities, municipal companies) or state-owned entities (electricity production and distribution, airports authority, etc.). These entities can commit to various guarantee-like commitments and/or unitary payments for the various risks. The second layer of authority is the financial institution in charge of financing the central government budget and managing the debt portfolio risks (e.g. the Ministry of Finance, National Treasury). These institutions can provide full or partial sovereign guarantees to support the first level of commitments or can provide additional guarantees for specific and general risks.

Contingent liabilities typically arise from the guarantees provided by these two layers of the public sector (See Figure 1).<sup>13</sup> The first layer of institutions includes the main beneficiary of the services to be delivered by the investments. These institutions might be more focused on promoting the projects and less conscious of the impact of the risks arising from project commitments. The second layer might have a stronger motivation to manage the exposure from project commitments and the sovereign guarantees if any, in a coordinated and consolidated manner, so as to reduce the impact on the government's budget. Therefore, it is important to structure the relationship between these two levels of the public sector (sometimes mediated by the specialized PPP units) to best monitor the commitments and provision for risks undertaken throughout the life of the project. In addition, depending on which layer of the public

---

<sup>12</sup> An argument to consider is that after commissioning the work, the associated payments would come from the profits of the investment. However, in some projects, it is difficult to identify the fraction of the profits that would be linked to payments. .

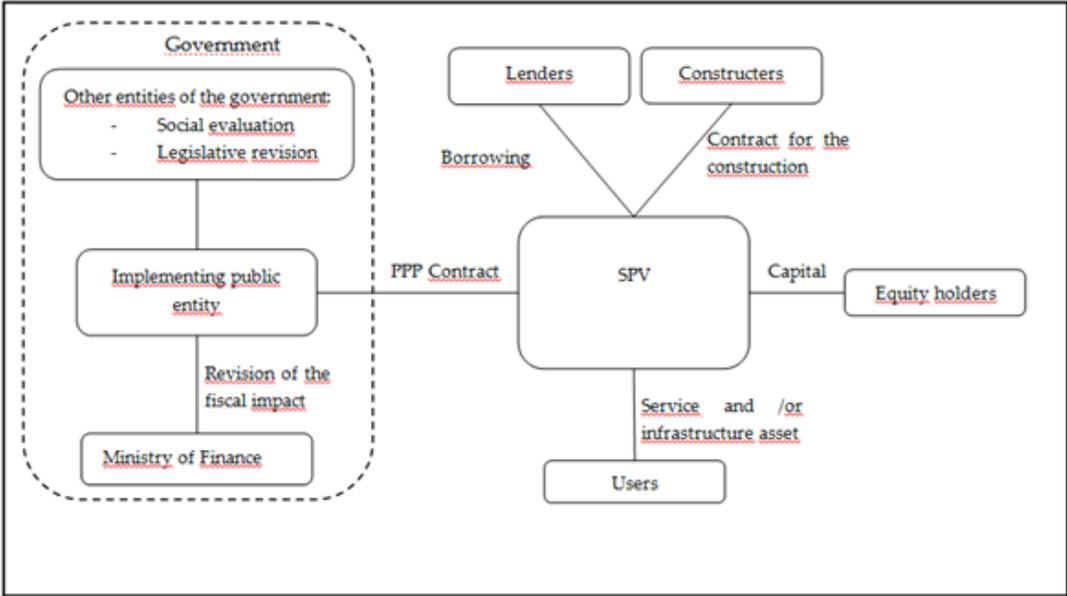
<sup>13</sup> We refer to the explicit contingent liabilities, that is the ones which are subject to a contractual engagement

sector is expected to honor the guarantee, budget and accounting treatment might be subject to different rules. For instance, SOEs and central government might have different appropriation (if any) approach and the way payments are accounted for. This may make it hard for the country to have a consolidated view of the PPP commitments and realizations.

Strong involvement of the financial authority in the decision-making process for initiation of guarantees or tax incentives can improve the likelihood that the government will take on only the risks it has the capacity to manage or mitigate. Financial authority is able to focus on the overall picture thanks to its unique perspective on the government’s fiscal policy and the budget.

In some countries, the unit structuring the PPP contracts is located within a line ministry, so the early focus of project development may be on technical aspects rather than development of a financing mechanism (which is the case in Chile, Colombia). In other countries, PPP units are often under the control of a council of ministers or other political authority which may not have the direct financial authority or the incentives to maintain fiscal discipline (as in Peru, the UK and Australia).

**Figure 1: General Scheme of the PPPs**



Source: Paper by David Duarte

The PPP unit is sometimes located within the financial authority. To centralize the responsibility for project selection in the PPP unit may create conflicts of interest if the Minister is responsible for both approving the project and the management of project commitments.

There is a need to ensure that the implication of PPP mechanisms are well understood and that the incentives well designed so that entities promoting PPP projects not be tempted to underestimate the disadvantages of the PPP mechanism and overestimate their benefits. It is less likely that a team which spends two years working on feasibility studies and cost-benefit analysis of a PPP would conclude that it is not the best model to carry out the project. The entity is more likely to modify some aspects of the project so that it fits within the PPP scheme.

A way to mitigate incentives to underestimate project costs or risks could be to involve the financial authority at various approval stages of the project (see Box 1 for analyses which might be conducted by

financial authority prior to these approvals). This would introduce a system of institutional checks which balance the interests of the entity in charge of the investment and those of the entity responsible for the sustainability of fiscal accounts.

In response to the challenges associated with decision making, the financial authority might need to develop capacity to evaluate the technical aspects of the project to be able to challenge the information provided by the managing unit or the line ministry. To do so, staff continuity is critical in order to form teams to develop and retain staff with the required skills. This can be achieved by the participation of financial authority officials in meetings with the consultants who carry out the studies. This would be beneficial even if they must rely on the advice of the consultants for key elements in the evaluation of projects such as traffic or passenger demand.

## **1.5 Managing and Monitoring Direct and Contingent Liabilities**

In view of the different risks mentioned above, even the projects carefully selected and suitable for PPP scheme can accumulate risk exposure quickly if not monitored in a consolidated way. These risks are rarely reflected on the government's balance sheet and the contingent nature of the risk exposes governments to the possibility of sudden and substantial obligations over a short period of time, which could lead to severe fiscal problems. A solution to this problem is to regularly evaluate the contingent and direct liabilities, where the estimates for both the stock (over the life of the project) and cash flows (annual estimates) take both types of commitments into consideration.

Adopting this approach can help detect a systematic problem which might affect more than one project in the PPP portfolio. Proper valuation, monitoring and mitigation of these risks (for example according to Eurostat or IPSAS 32, as explained in the following section) are especially important if there are no mitigation methods such as exposure limits. Some countries use a ceiling for the stock of contingent liabilities to which the PPPs can be included. Some countries have created a maximum present value of commitments (e.g. Peru, UK) while others have set a maximum annual payment amount for PPPs (Brazil).

Unlike direct liabilities which are well defined with amounts and timing known, contingent liabilities are more complicated to evaluate since they depend on uncertain future events. This is largely due to the difficulty of estimating the exposure and probability of defaults related to these liabilities, which in turn relates to data availability, modeling, and complexity of PPP contracts.

The literature highlights different methods for evaluating contingent liabilities arising from individual projects. These can be summarized under i) actuarial or statistical techniques, ii) econometric models, and iii) contingent claims analysis.<sup>14</sup> The choice of method depends generally on the availability of data and the cost of the method proposed.<sup>15</sup> However, throughout the literature and in reviewing the experiences of the countries explored in this paper, we have not come across a methodology consolidating the exposure from individual PPP projects into a portfolio approach which assesses the systemic risk. This may be due to concentration of PPPs in one sector. The correlation between the expected losses from projects is not captured when guarantee risks are simulated individually. This implies that the models currently used by

---

<sup>14</sup> See section 7.6 of "Public Private Partnerships in the Water Sector: Innovation and Financial Sustainability" by Cledean Mandri-Perrott and David Stiggers, 2013.

<sup>15</sup> Aliona Cebotari, p. 6. Valuations based on market data are used when the borrower issues debt quoted in the market or when it is relatively easy to find comparable companies that do so. If these are difficult to find, Monte Carlo simulation methods are frequently used instead, but these may be time consuming and expensive to develop, and hence may be cost effective only if the guaranteed amounts are large (Hagelin, 2003). In cases where data are so limited that neither method is feasible, a simple classification of guarantees into high, medium, low, or very low default risks—based on available information or educated guesses—could be employed to assess expected losses. Any reasonable approach will produce better estimates of the cost of loan guarantees than the cash-based approach that will always assume zero cost in the budget year.

most developing countries might undervalue the risk scenarios as most guarantees tend to be activated at the same time during an economic cycle downturn especially when projects are concentrated in a sector. Therefore, the lack of an overall portfolio management approach may impede the assessment of overall risk exposure.

**Box 1: Analysis of PPP Contracts by the Financial Authority**

A financial authority with an experienced PPP team may conduct the following functions:

- Check whether the assets and financial capacity of the bidder are aligned to the project requirements
- Ensure that the direct and contingent commitments fit within the government's fiscal space (for example through a debt sustainability analysis)
- Check whether the financing terms of the project (interest rates, fees etc.) are fair, depending on the objective, risk and duration of the repayments
- Assess whether the direct and contingent liabilities undertaken for the project are reasonable compared to traditional financing
- Ensure that appropriate risk allocation is achieved, in order to minimize the fiscal costs to the government.

Depending on the expertise and capacity of the team in charge of the analysis, the extent of the analyses may go beyond financial analysis and the following can also be considered:

- Confirm the feasibility of the technical requirements
- Review the time periods allocated to each stage of the project (for engineering, construction, etc.) to ensure that they are consistent and realistic
- Ensure the plausibility of the demand and revenue projections
- Assess whether the government obligations (e.g. delivery of land) can be achieved within the specified times and costs
- Check the effect of the new project on any existing projects
- Review the land cost estimates, the costs of changes in services linked to the project and ensure that environmental mitigation measures are backed by quality studies
- Ensure that the fines and discounts, as well as other aspects of risk allocation specified in the contracts create the right incentives for the project's success.
- Check clauses for continuity of service provisions in the case of contract termination.

## 1.6 Budgeting, Accounting and Reporting for PPPs

Budget formulation and accounting processes play critical roles in determining the impact that PPPs will have on fiscal policy, resource allocation and public management; also greatly contributing to the overall transparency and accountability.<sup>16</sup> Additionally, proper budgeting, accounting and reporting help governments complement the overall assessment of the exposure to fiscal commitments and capture the potential and actual impact of the PPPs on the government balance sheet.

### Budgeting

Countries with budgeting practices which keep the PPPs off-budget may be faced with hidden infrastructure financing costs and risks in the form of guarantees. This could occur, for example, when governments offer generous minimum revenue guarantees or intentionally underestimate construction costs if cost overruns are guaranteed.

---

<sup>16</sup> This section has quotes from "Public-Private Partnerships: The Relevance of Budgeting" by Paul Posner, Shin Kue Ryu and Ann Tkachenko, OECD Journal on Budgeting, Volume 2009/1

Specific public sector costs that have a bearing on current and future budgets include:

- Annual payments for the life of PPP projects
- Capital contributions to establish PPPs
- Revenue losses from forgoing user fees
- Contingent liabilities such as guarantees
- Tax expenditures such as accelerated depreciation taken for private investment

Provisioning for the related direct and contingent liabilities within a medium-term budget framework, either among the implementing ministry's budget items or the financial authority's, helps ensure that the PPPs are treated in the same way as publicly financed projects.

Under a cash-based budgeting environment, provisioning in the annual budget for either the yearly full commitment or the amount expected to be undertaken for each project would ensure accountability and transparency with global outlook of the costs and risks undertaken. It would also help the government prepare for materialization of any contingent liabilities.

In particular, special attention should be paid to planning for the fiscal commitments that arise during the design and construction phase of projects but that will be realized during later phases of project implementation. This is especially important for projects with contracts that are longer than the horizon commonly used by fiscal planning tools.

According to country experiences such as Chile, the UK, and Portugal, management of direct fiscal commitments and contingent liabilities generally follows these practices:

- In the public sector where a PPP is an important part of government expenditure, planning is done for at least 20 years or the length of the project.
- The stock of commitments is estimated and published in government reports.
- The project (and additional related works) is subjected to an assessment of cost-benefit analysis to assess the social impact.

### **Accounting**

In cases where PPP transactions are accounted for and reported in the government's accounts based on pure cash accounting and reporting, governments may have a preference for the PPP schemes. In these cases, the main fiscal aggregates—fiscal deficit and debt—do not fairly portray the level of risk undertaken by the government, particularly during the construction of the PPP project. On the other hand, more advanced accounting practices may lead governments to treat PPP projects as public investment and require recording of the PPP asset on their own balance sheet, along with a corresponding liability.

There are a number of schemes being used to account for and report on PPPs such as International Public Sector Accounting Standard 32 (IPSAS 32), which is similar to International Financial Reporting Standards (IFRS) but are adapted for the public sector. For reporting purposes, governments often follow the IMF's Government Finance Statistics Manual (GFSM) 2001 and the 2011 Guide on Public Sector Debt Statistics (PSDS 2011).<sup>17</sup>

---

<sup>17</sup> This section has quotations and draws information from a paper by Katja Funke, Tim Irwin, and Isabel Rial (2013), "Budgeting and Reporting for PPPs," OECD/ITF Joint Transport Research Centre Discussion Paper 2013/07.

Under IPSAS 32, the assets and liabilities of most PPPs are expected to be regarded as belonging to the government. If IPSAS 32 conditions are met, both the overall deficit and debt would be affected during the construction of a PPP asset, as in the case of a publicly financed project. But most governments do not currently recognize PPPs on their balance sheets or treat investments in PPPs as public investments in fiscal data.

The IMF's Updated GFSM 2001 and the 2011 Guide on PSDS state that assets should be recorded in a manner that keeps the asset with its economic owner, which can be either the private or public sector, and not necessarily the legal owner of the assets. This means that PPP assets are accounted for in the government's balance sheet if the government bears most of the project's risks (such as demand risk as defined by Eurostat) and rewards. This approach includes both direct and contingent liabilities in the fiscal balance. The depreciation of the assets and the payments for the direct and contingent liabilities implicated in the PPP contract should appear as an operational expense of the government.

There are a number of requirements and challenges associated with implementing this form of accounting:

- i) Project assets are normally not expected to depreciate as quickly as other public assets, since agreements usually specify that the SPV must keep them well maintained.
- ii) Recording the payments (or a fraction of the payments) as accrued debt requires the use of estimates since the real cost of the investment is only known by the SPV.

An additional problem is that it is not clear if PPPs that constitute an extension or renewal of an existing asset should be recorded as the total value of the asset or the difference between the investment and the existing infrastructure.

In contrast, Eurostat states that the PPP assets must be accounted for in the balance sheet of the private entity if the private party undertakes the construction or at least one of the availability or demand risks. This may lead to consideration of the risk allocation from an accounting perspective and not from an economic efficiency perspective. The Eurostat approach based on risk allocation, as specified in the contract, creates incentives for parties to adjust the risk allocation in order to meet some accounting goals, not using efficiency-based criteria.

### **Fiscal Reporting and Disclosure Policy**

In countries where cash accounting is used for the government's budget, additional reporting is needed to adequately assess the fiscal implications of PPPs. To avoid any bias toward PPPs, fiscal analysis should be complemented by other reports where the medium and long-term implications of PPPs are clearly acknowledged. Countries with integrated financial accounting systems can ensure that government operations, and in particular PPPs, are reported consistently across fiscal reports (i.e., budget execution reports, financial reports, annual financial statements, statistics, headline fiscal indicators).

Compiling and sharing regular information on PPP projects facilitates transparency and monitoring the PPP portfolio. Regular sharing of information is also important from the point of view of fiscal policy to understand the true financial position of a government.

In terms of the type of information to be disclosed, as a first step, PPP contracts could be published. Given that these contracts are often extensive and filled with conditionality clauses or may have gone through multiple renegotiations, it may be necessary to prepare and publish regular reports providing the following information:

- Payment and revenue projections with a horizon covering the length of the contract

- Description and estimate of the expected fiscal cost of PPPs (direct and contingent liabilities)
- Risks associated with PPP contracts to give the government and the public a better sense of their long-term implications
- List of contracts and amendments in the pipeline
- Portfolio of projects under consideration.

Data sources, assumptions and ideally the methodology of the models used should also be available to provide a full picture. To further enhance transparency, PPP contracts can be disclosed on government websites. All governments can benefit from disclosing supplementary information—regardless of the complexity of their budgetary, accounting, and statistical standards—to raise awareness of the long-term fiscal impact of PPPs. The following is a summary of the suggested approaches to the disclosure of information on PPP projects and contracts from the WB publication entitled “Disclosure of Project and Contract Information”.

**Table 2: Summary of Suggested Approaches to the Disclosure of Information on PPPs**

<b>Documents and reports disclosed</b>	
Contract and associated agreements	Current contract and amendments including annexes and schedules with minimal redactions based on strict definitions of commercial confidentiality and national interest. The current version should include renegotiations and significant adjustments to contract parameters.
Summary of contract and project	Concise and plain language document providing relevant summary information on the project.
Reports on implementation	Performance reports from contract management authority. Audit reports from Supreme Audit Authority
<b>Information on project including rationale and procurement information</b>	
Project description	Project name, location, sector and department. Project value and technical description of the physical infrastructure the project will provide. High level description of the services to be provided and approximate demand.
Rationale for project and for PPP option	The rationale for the project in terms of the balance of costs and benefits. Reason for selection of PPP mode and for rejection of alternate modes considered.
Description of tender process or other selection process	Dates of milestones during the tender process: RFQ, Pre-qualification, FRP, announcement of short-listed bidders, final announcement of winning bidder. Assessment criteria: Brief description of each assessment criterion and its weights. Bid evaluation reports (minus confidential information contained in them), as well as brief information on the constitution of the technical and financial assessment committee. If award was non-competitive, explain why and present the award process.
Contract milestones	Date of signing of contract, date of financial close; date of commencement of construction/development; date of commissioning; date of contract expiry. Dates of contract renegotiation and significant adjustment to key contract parameters (e.g. level of government support).
Project structure and parties to the contract	Information on the structure of the project and the main parties, structure of project company, main financiers (shareholders and lenders) and sub-contractors.
<b>Information on project performance</b>	
Expected and actual levels of performance	Key performance indicators (KPIs) here with target performance levels expected against each (and timeline for achievement). Actual performance against these KPIs, main areas of failure in performance and associated penalties/abatements.
Tariffs and pricing	User charges, methodology for tariff setting/pricing, scope for its reviews.
<b>Information on financial transfers and risk allocation</b>	
Payments between government and private partners	Contractually agreed and actual transfers including capital subsidies, operating subsidies, service payments and transfer or share of project revenues between the government and the concessionaire.
Other asset transfers	Land transferred on lease or other basis by government.
Guarantees and other arrangements that affect financing/costs	Detail the guarantees provided, such as minimum revenue guarantees, exchange rate guarantees, debt-repayment guarantees and other guarantees including minimum rate of return guarantees, Non-complete clause. Provision for revenue shortfall loans; arrangements for sharing gains of refinancing between public authority and private provider.
Risk allocation matrix	Listing of risks with information on who bears the risk.
Events of default and termination payments	Describe main events of default (concessionaire’s events of default, public authorities’ events of default) and the contractual provisions for termination payments.

Source: Table 2, from “Disclosure of project and Contract Information in PPPs, WBI, January 2013

## 2 Country Experiences

### 2.1 Chile

Chilean management of PPP contingent liabilities and direct commitments is often referred to as best practice<sup>18, 19</sup>. In 1991, the Chilean congress passed the Concessions Law that allows the government to concession most public works. By the end of 2012, all main highways, most airports and several other projects were concessioned. The total cumulative investment in 59 concessions awarded by the Ministry of Public Works (MoP) was roughly US\$13 billion at the end of 2012. Fifteen out of the 34 highways have been awarded with subsidies and minimum revenue guarantees (MRG). Twenty-two highway contracts include revenue sharing between the state and the concessionaire.<sup>20</sup> According to information from the Budget Directorate of the Ministry of Finance (MoF) the maximum present value of guarantees issued in concession projects up to 2013 was just over 2.67% of GDP, with an expected net value of government payments of 0.14% of GDP.

So far, just three projects have activated the minimum revenue guarantee -two highway projects and an airport. The total payment made by the government for these defaults over the last four years is around \$20 million per year (0.01% of GDP).

#### 2.1.1 Governance and Institutional Framework

The authority to award concessions is delegated to the MoP. The law is very flexible and can be used for a wide array of projects. In practice, most projects are roads, seaports, airports, reservoirs, hospitals and jails.

The MoP requires the approval of the MoF at different stages of contract preparation; including bidding terms the tender process, contract modifications and contract termination<sup>21</sup>. This involvement gives the MoF the opportunity to understand and evaluate the contingent liabilities undertaken by the government as a result of concessions.

Concessions must be awarded in competitive bid processes open to any firm, national or foreign, and contracts can be adapted to each project. For example, the tendering parameters can include user fees, a subsidy from the state, bidding criteria, amount of revenues to be guaranteed by the government, and the amount to be paid by the SPV to the government for pre-existing infrastructure. Special purpose vehicles finance the concession with corporate bonds, bank loans and revenue backed bonds.

#### 2.1.2 Management of Explicit Contingent Liabilities

In Chile, most of the project risks are borne by an SPV or transferred to third parties through insurance. However, the government provides minimum revenue guarantee (MRG) to mitigate the demand risk. In the initial days of the PPP framework, the first PPP projects included an exchange rate guarantee for projects which were funded in foreign currency.<sup>22</sup>

---

<sup>18</sup> This chapter benefitted to a great extent from Managing Contingent Liabilities in Public-Private Partnerships: Practice in Australia, Chile, and South Africa, Tim Irwin, Tanya Mokhdad, 2010.

<sup>19</sup> Constance 2004, IMF 2005.

<sup>20</sup> In Chile, PPPs are referred to as “concessions” and “the concessionaire” is the SPV. The terminology was developed when most projects were fully concessioned/guaranteed highways.

<sup>21</sup> Guarantees are included in the bidding terms, so at this stage the MoF reviews the guarantees, risk allocation, fiscal payments and evaluates the fiscal sustainability of the project.

<sup>22</sup> Since the local financial market can finance all PPP projects, this guarantee is not included in the contracts anymore.

The main explicit contingent liability in the PPP system is generated by MRG.<sup>23</sup> The MoP provides to the SPV a minimum income level guarantee for a number of years of operation. The level of guarantee and the number of years are computed taking into account a minimum equity requirement for the SPV and the cash flows necessary for servicing the debt of the SPV company. Ex-post evaluation showed that the concessionaire ends up receiving revenue with a present value equal to about 70 percent of the expected present cost of the project.<sup>24</sup> If the annual income is less than the guaranteed minimum income for that year, the MoP must pay the income gap in the next calendar year. Chilean government charges a fee to award the guarantee to a concession.

MRG allows the public and private sector to share the risks arising from uncertain revenues associated with a flow, for example, the traffic on a highway or the number of passengers through an airport. The revenue sharing scheme enters into force when a certain threshold is passed. MRG aims to give confidence to the concessionaire and ensure the stability of the project revenues. This is important for the private sector, as the government still has a relevant role in the development and operation of public infrastructure and could undermine the performance of the PPP project through, for example, building an alternative route to the PPP road with no toll payment or forcing the SPV to reduce the toll fees. These guarantees often cover part of the commercial risk as well, as it may be difficult to assess whether the potential decline in revenues would be caused by systematic (e.g. from the existence of an alternative free road) or commercial reasons (e.g. incompetent management). One way of reducing the government's exposure would be to limit MRG payments to cases where the government has built competing infrastructure.

The MoP is responsible for monitoring the concessions, playing a key role in mitigating the risks where possible and providing early warnings of upcoming fiscal expenditures. While supervising the projects, the MoP relies solely on data (e.g. traffic flow) provided by PPP companies and does not have an independent procedure to collect this data. This gives the concessionaires the incentive to underreport, since the government guarantees are triggered by low traffic flows. However, there are measures in place to prevent this incentive: misreporting of data would result in immediate termination of the contract and MoP collects sample traffic data once in a while and compares it to the information provided by the SPV to check the consistency. SPV companies are supervised by the Chilean Securities Exchange Commission, therefore subject to regular audit.

### **2.1.3 Evaluation Methodologies**

The value of the MRG depends on the expected revenues from tolls or fees to be collected by the concessionaires. To value those guarantees, an Excel-based model is used by the Budget Directorate of the MoF to forecast the revenues of the SPV.<sup>25</sup> The model used in Chile is relatively simple and requires limited input.

The main outcomes of the valuation model are:

- Estimate of the probability distribution<sup>26</sup> of future payments that the government may have to make to the SPV or receive from the SPV each year
- Market value of the guarantee, that is, an estimate of the value the guarantee would have if it was traded in financial markets.<sup>27</sup>

<sup>23</sup> The biggest source of implicit contingent liability arises from the renegotiation of concession contracts according PPIAF 2010.

<sup>24</sup> Timothy Irwin and Tanya Mokhdad, 2010.

<sup>25</sup> See, Tim Irwin, Tanya Mokhdad, 2010, appendix 1 for details of the methodology.

<sup>26</sup> The probability distribution is computed with a stochastic process for the variables at risk (demand and/or revenue) combined with a Monte Carlo simulation. The innovation is that the risky variables have the correspondent correlation, adjusted by risk (because the cost of money is higher when the guarantee is activated) and simulated simultaneously (to avoid underestimation of bad scenarios).

The main steps of the model include the following:

- Estimation for each project of the government's payment obligations if the guarantee were to be activated (e.g. by lower than expected traffic revenue). This is modeled by using "if-then" functions to analyze the impact of alternative traffic levels compared to the guaranteed level).
- Formulation for each project of the stochastic model (a model with trend and a random element) to estimate the variable that activates the guarantee (e.g. traffic revenue). The starting point is the realized traffic revenues from the previous year. Future revenues are estimated taking into account all recent data. Geometric Brownian (random walk with drift) provides randomness. A rough estimate of the correlations among the revenues on different roads is incorporated in the model.
- Combination of these two models in a Monte Carlo simulation to obtain the probability distribution of the future payments. The probability distribution would allow for computation of the amount expected to be paid on average (expected loss) or the Value at Risk (maximum probable loss under a certain confidence level).
- Computation of the estimated payments in present value terms, with appropriate adjustments to the discount rate reflecting the timing of the payments and their risk characteristics.

The Chilean evaluation model incorporates roads and airports, which constitute the bulk of the concession contracts. Since it requires significant modeling and maintenance capacity, this model could be developed in countries with a considerable number of projects already in operation.

#### **2.1.4 Budgeting and Accounting for the Contingent Liabilities**

There are no appropriations in the Chilean budget covering the full period of the contingent liabilities or any special contingency reserve fund to withstand a fiscal default generated by the PPP portfolio. However, an annual appropriation in the MoP budget is allocated to cover the potential loss from the contingent liabilities created by the PPP portfolio. In theory, having a single account for the appropriation allows the government to have an overall view of the PPP payments in a given year. In practice, this appropriation represents a small fraction of the fiscal budget (less than 0.01% of the total expenditures) because the payment would be made in the next fiscal year if the guarantee is activated. This delay in the payment has the benefit of converting the contingent liabilities arising from the MRG into direct liabilities, and removing the time uncertainty.

Nevertheless, the Chilean government created a long-term planning system for the whole PPP system.<sup>28</sup> This includes all the PPP commitments, contingent or not, an estimation of the commitments for PPPs in the tendering process or under study, and provisions for future contract modifications based on sector specific historic negotiation rates for each type of contracts. Provisions for disputes that are in the conflict resolution system and any other payment associated with a specific project are also included in this system. Combining this with an expected long term rate of growth of the budget of the MoP (which is the expected GDP growth rate), it is possible to see how much room there is for new projects, and more importantly, whether the system is fiscally sustainable.

---

<sup>27</sup> This is important from the point of view of the guarantee fee since the bidders must declare whether they accept the guarantee or not based on the market value of the guarantee which defines the fee.

<sup>28</sup> 20 years.

## 2.1.5 Reporting and Disclosure Policy

All of the PPP contracts are available on the website of the Concession Unit at the MOP ([www.concesiones.cl](http://www.concesiones.cl)), including contract renegotiations. Projects that are constructed, operating, or that have been renegotiated are included, as well as those in the tendering process. There is a description of the main features of projects under consideration.

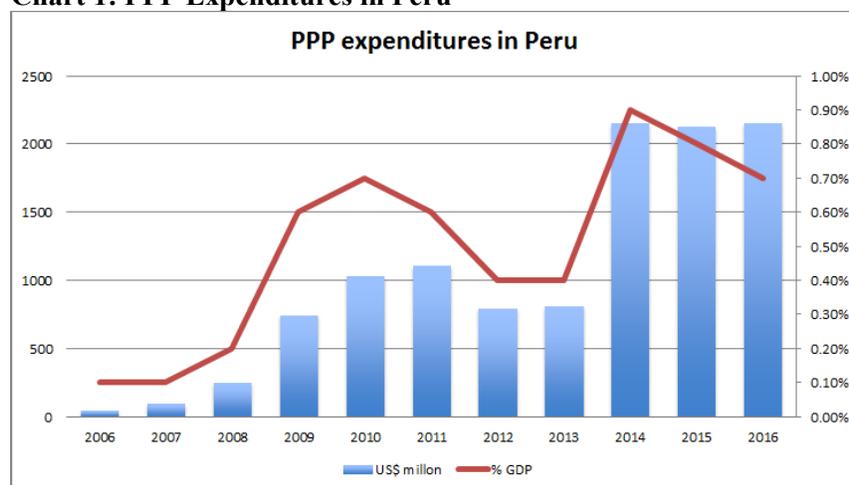
The Budget Directorate of the MoF prepares a yearly Contingent Liabilities Report where the estimations of the present value of guarantees awarded to PPP projects are published, along with some Value at Risk information and partial information of the probability distribution of the payments.<sup>29</sup> This report, which also includes contingent liabilities not related to PPP, is sent to the Congress, universities, think tanks, financial authorities, Central Bank, specialist and academics and is available on the web site of the Budget Directorate.<sup>30</sup>

## 2.2 Peru

The Peruvian PPP system has awarded 19 projects as of the end of 2013, most of them in the transportation and energy sectors. Other projects include sanitation and irrigation works, ports airports, railways and hospitals. Investments made to date amount to approximately \$10.5 billion.<sup>31</sup> The contracts are funded with contributions from users and other investors, including government guarantees associated with project investment or maintenance.

The chart below shows the total estimated fiscal expenditure of PPPs in Peru, including expenditures on investment, operation and maintenance.

**Chart 1: PPP Expenditures in Peru**



Source: Ministry of Economy and Finance, Peru, 2013

### 2.2.1 Governance and Institutional Framework

The Peruvian PPP legal framework is driven mainly by Decree No. 1012, otherwise known as the “PPP Law” approved in May 2008. The decree defines PPPs as “modalities of participation of the private sector

<sup>29</sup> Contingent Liabilities Report: Informe de Pasivos Contingentes, <http://www.dipres.gob.cl/594/w3-propertyvalue-16136.html>

<sup>30</sup> Public Finance Reports: Informe de Finanzas Publicas 2013, [http://www.dipres.gob.cl/594/articles-89713\\_IFP\\_2013.pdf](http://www.dipres.gob.cl/594/articles-89713_IFP_2013.pdf)

<sup>31</sup> Proinversion website.

wherein experience, knowledge, equipment and technology are incorporated, with risks and resources well distributed, resources coming preferably from private sector; with the purpose of creating, developing, improving, operating or maintaining public infrastructure, or providing public services."

Decree No. 1012 classifies the PPPs as either "self-sustaining" or "co-financed". The first category "self-sustaining" requires PPPs to fulfill the following conditions:

- i) "Minimum or no request" for financial guarantees. A "minimum or no request" for government guarantees is defined as one whose value is less than 5% of the value of the investment and probability of being called is less than 10%.
- ii) Requested non-financial guarantees with zero or minimum probability of being called.

Co-financed PPPs are those that require co-financing from public resources as well as financial and non-financial guarantees which have a significant probability of being called. In a co-financed project, the institution responsible for the PPP commits to certain payments which are in turn further supported by a partial government guarantee provided by the Ministry of Economy and Finance (MEF).

Guarantees can be financial or non-financial. Financial guarantees are contractual commitments that ensure timely payment of the debt (loans or bonds) raised by the private sector or public entities (line ministries or SOEs) to finance PPP projects. Non-financial guarantees aim to mitigate risks associated with the incomes derived from the project. Financial guarantees can be in the form of guaranteed minimum revenue (roads), guaranteed minimum demand (water availability) or a predetermined payment by a line ministry (co-financed projects).

The decree states that self-sustaining PPPs will go directly into the design stage (allowing those projects to bypass the National Public Investment System, SNIP), and those that require guarantees must receive a favorable opinion from the MEF. The MEF is responsible for defining the standards for registering liabilities based on the distinction between the contingent or direct and the source of the liabilities (e.g. from guaranties and or other related instruments).

The decree assigns to Proinversión (Agency for the Promotion of Private Investment) the task of promoting most central government PPPs, while the Regional Councils and Municipalities are in charge of subnational PPPs.<sup>32,33</sup> The public institution in charge of the project (e.g. the line ministries, municipality) is responsible for defining the types and target levels of services and for conducting cost-benefit analyses.<sup>34</sup>

## **2.2.2 Management of Explicit Contingent Liabilities**

Article 13 of Decree No. 1012 states that "The stock accumulated by the direct and contingent liabilities undertaken by the non-financial public sector in PPP contracts may not exceed 7% of GDP". Stock is computed as net of income and expressed in present value terms. This clause covers only the contracts which are already awarded. The MEF has the power to revise this limit every three years, by taking into account the infrastructure needs and the sustainability of public finances. Such a threshold is useful in

---

<sup>32</sup> Hospital PPPs are procured and supervised by another institution, Essalud which is subject to separate legislation. Disclosure and Contract Information of PPPs, WBI, January 2013.

<sup>33</sup> So far, no PPP projects have been signed by the subnationals.

<sup>34</sup> In some cases, the consultants who will support the development of a PPP project are contracted by PROINVERSION, but this is not the general rule. This can happen for several reasons, for example, when the grantor does not have the resources to pay the consultancy or there is a political will to speed up the development of the project.

limiting the government's fiscal exposure from PPP projects and facilitates the development of a comprehensive overview of the PPP portfolio. In order to monitor this limit, the legal framework requires that the MEF evaluate the probability of default and pricing of the guarantees provided by the government for PPP projects. The MEF computes the stock of fiscal commitments by discounting the projected net direct and contingent liabilities with OECD's commercial interest reference rate (CIRR).<sup>35</sup>

Supervision of individual contracts is undertaken by the responsible institution (line ministries, SOEs, subnationals). If any contract negotiation is required, it is the beneficiary institution that explores whether the negotiation has a financial impact on the contract and if so, requests the MEF's approval for this change.

This practice might lead the responsible institution to underestimate the financial impact of certain contract modifications.<sup>36</sup> An alternative practice could be for the fiscal authorities to review any contract modification to ensure unbiased estimation of the financial impact.

### 2.2.1 Evaluation Methodologies

The MEF uses a two-part approach to evaluating contingent liabilities:

- A methodology for calculating the default probabilities arising from contingent liabilities of the government
- A methodology for the valuation of the credit exposure from these commitments.

This approach has been used to develop an Excel-based model for calculating the probability of default associated with Minimum Guaranteed Annual Income (IMAG) for roads projects and a similar model for the water sanitation infrastructure projects.<sup>37</sup>

Both models have a similar framework and include the following steps:

- Identification:** Identify sources of risk that affect the probability of default (for example in water sanitation, risk would be disruptions of access to water for water sanitation projects and lack of traffic for transport projects).
- Modeling:** Select a method to model the behavior of the risk variables that trigger the contingent liability. The most common is a Brownian motion process.
- Integration:** Tailoring the risk models according to the contractual clauses on the commitments.
- Quantification:** Estimate probability of default through Monte Carlo simulations.

This process computes the probability of default and the exposure from the contingent liability in case of default of the project.

Both of these variables lead to the evaluation of the yearly expected nominal payments arising from contingent liabilities according to the following statement:

---

<sup>35</sup> Discount rate is the average of the last 10 years CIRR. Commercial Interest Reference Rate is the rate determined in U.S. Dollars by the OECD for operations up to five years. The present value of the five year flows amount to 1.49% discounted using CIRR rate (3.33%) is 7%.

<sup>36</sup> Renegotiation might require financial compensation in the form of a payment, an extension of the contract period or a change in the level of risk to which the counterparty is exposed.

<sup>37</sup> For roads, the guarantee is provided on the traffic intensity, while for water sanitation projects, the guarantee is on the availability of water.

$$EL = PD \cdot LGD \cdot EAD$$

where:

EL: Expected loss in case of default

PD: Probability of default of the guarantee

LGD: Effective loss given default of the guarantee

EAD: Exposure of the responsible institution given the default of the guarantee

The first parameter (PD) is calculated using the model mentioned above. Loss given default is assumed 100% which can be considered a conservative scenario. Finally, in order to be able to add the cash flows of all PPP project, the present value of the annual expected loss is obtained by discounting using the Commercial Interest Reference Rate (CIRR).

The model for estimating the potential payments by the government to the SPV is a relatively new methodology and all the problems are not solved yet. For instance, guarantees are valued individually and the correlation between the expected losses from the projects is not computed. Given that most guarantees tend to be activated at the same time during an economic cycle downturn, lack of an overall portfolio management approach limits the ability see overall risk exposure. To resolve this issue, random correlated shocks can be introduced in the Brownian process used to model and simulate project risks (e.g. traffic across all the relevant projects).

### **2.2.2 Budgeting and Accounting for Contingent Liabilities**

In order to enforce the 7% of GDP limit, the total present value of the PPP portfolio must be calculated every year, included in the Public Debt Report, and sent to the Congress with the proposed budget law. Additionally, each sector must manage separately the risks or commitments involved in the project. Consequently, the estimated payments are budgeted and accounted for by the corresponding line ministries. Payments for traditional financing dominate the appropriations of the line ministries which provision a small fraction of the sectorial budget for PPPs.

### **2.2.3 Reporting and Disclosure Policy**

In Peru, the public can access information through Proinversión on contracts that have been signed and that are currently being implemented.<sup>38</sup> In some sectors, such as transportation, where there is high concentration of PPP projects, the Ministry of Transport and the regulatory authority (OSITRAN) also publish large amount of information, including preliminary versions of contracts and annexes, risk allocation, and user fees.<sup>39</sup>

The MEF issues an annual public debt report which includes a one-page section on financial guarantees for PPPs. The report includes an estimation of the stock of contingent and direct liabilities from PPPs and the total amount of guarantees that are expected to be issued during the year. The 2012 report stated a total of \$6,584.2 million for 2012, corresponding to about 3.3% of GDP. This information is sent to the Congress and is available on the website of the MEF.<sup>40</sup>

---

<sup>38</sup> <http://www.proyectosapp.pe/default.aspx>. Under “Procesos Concluidos”, which contains both the public and private initiative projects.

<sup>39</sup> Detailed information on the tender, contracts and the technical fiche for hospital PPPs are published on the website of Essalud. <http://www.essalud.gob.pe/asociacion-publico-privada/>

<sup>40</sup> MEF website (<http://www.mef.gob.pe>), on the located on the public debt page (Deuda Publica/Informes y Reportes).

## 2.3 South Africa

South Africa's PPP program began in the late 1990s with projects executed by the South African National Treasury (NT).<sup>41</sup> The first projects were toll roads, jails, and retail concessions in national parks. Later, PPPs were used in many sectors of the South African economy, including health, transport, IT, public buildings, tourism, toll roads, fleet management, and education. As of February 2013, there were 22 projects signed and 66 projects at different phases of the project cycle.<sup>42</sup>

### 2.3.1 Governance and Institutional Framework

The main legislation for PPPs at the national and provincial levels of government is the Public Finance Management Act (PFMA) from 1999 and Treasury Regulation (Section 16). Municipal PPPs are governed by the Municipal Finance Management Act (MFMA).<sup>43</sup> These laws and regulations support the government's policy objectives for delivering infrastructure and public services. Treasury Regulation defines PPPs as agreements between the public and private party where the latter performs a public service while undertaking substantial project risk (financial, technical, and operational) but in return benefits from unitary payments and/or user fees. The private party can also acquire the use of state property for its own commercial purposes. Section 70 of the PFMA stipulates that the Minister of Finance must approve and concur with all guarantees, indemnities and securities requested by Cabinet Members.<sup>44</sup>

In line with sound practice, there is a specialized PPP unit within the NT which is in charge of regulating PPP projects, providing technical assistance to public institutions through project feasibility, procurement, acting as a center of expertise, and promoting the enabling environment for PPPs. In line with this mandate, the NT's PPP unit has developed a generic project cycle to ensure that project design, implementation and monitoring are carried out rigorously. The project cycle and the instructions are designed to facilitate understanding of the PPP process and avoid idiosyncratic responses.<sup>45</sup>

The Asset and Liability Management (ALM) unit of the NT is involved in the assessment of the PPP projects from the point of view of the government's financial position, direct commitments (unitary payments) and the contingent liabilities. Therefore, the projects undergo an evaluation of project level costs and risks and are approved at the Fiscal Liability Committee of the NT.

### 2.3.2 Management of Explicit Contingent Liabilities

Flow of cash in any PPP project arises from i) public sector paying the private party for the delivery of the services, ii) the private party collecting fees or charges from users of the service, or iii) a combination of these.

PPP legislation allows for development of projects where risks are transferred to the SPV for designing, financing (through equity and borrowing Rands), constructing, and operating infrastructure and services. In general, the government commits to direct contributions through extension of the contract or unitary payments to the SPV which helps limit the contingent liabilities.

---

<sup>41</sup> This chapter benefitted to a great extent from *Managing Contingent Liabilities in Public-Private Partnerships: Practice in Australia, Chile, and South Africa*, Tim Irwin, Tanya Mokhdad:

<sup>42</sup> Website of the PPP unit at the NT.

<sup>43</sup> "Introducing Public Private Partnerships in South Africa" publication, PPP Unit, NT, October 2007.

<sup>44</sup> The Cabinet of South Africa is the most senior level of the executive branch of the Government of South Africa. It is made up of the President, the Deputy President, the Ministers, and the Deputy Ministers.

<sup>45</sup> However, some projects and/or institutions are exempt from these approvals For example, Municipal PPPs are reviewed but not approved by the National Treasury. Irwin, Mokhdad, 2010.

Explicit contingent liabilities arise from:

- Guarantees provided for the minimum amount of user fees/charges
- The risk that the government bears related to contract termination in case this occurs prior to a planned date. The compensation amount depends on the reasons for the contract termination. The required compensation will be a fraction of the outstanding debt if this is higher than the market value of the project. In other words, the government must bear some of the losses related to the SPV default.

Once the contract is awarded, supervision of performance is done by the procuring institution (grantor). The PPP manual (Section 38.1) and Module 6 (Section 5) outlines how this monitoring should be conducted using the qualitative summary risk profile developed during the procurement stage of the project. As grantors can be national, provincial or municipal authorities, there is no unique standard for management of the PPP. There is no monitoring of the fiscal exposure of the consolidated PPP portfolio.

The ALM unit at NT has a well-developed contingent liabilities management system for SOEs loan guarantees where detailed risk assessment is conducted at loan level as well as in a consolidated way.<sup>46</sup> One of the unit's stated objectives is to: *"Enable government to manage financial risk and attract investment by reviewing credit, debt, country ratings and contingent liability risk benchmarks, and ensuring adherence to set standards on an ongoing basis."*<sup>47</sup>

### 2.3.3 Evaluation Methodologies

As in other countries, South Africa's process for developing PPPs involves a detailed review of the projects and the key aspects to assess the risks and commitments assumed by the government.

The responsible entities are required to conduct a cost-benefit analysis.<sup>48</sup> In addition, the PFMA stipulates that the responsible entity should have in place "a system for properly evaluating all major capital projects prior to a final decision on the project." The PPP manual does not describe the requirements of the economic valuation in detail, but provides information on what an economic evaluation should achieve:

*"Give a clear economic rationale for the project. Identify and quantify the economic consequences of all financial flows and other impacts of the project. Detail the calculation of shadow prices/opportunity costs for all inputs and outputs, including: foreign exchange; marginal cost of public funds; opportunity cost of public funds (discount rate); high, medium and low skill labor; tradable and non-tradable inputs; tradable and non-tradable outputs (including consumer surplus, where relevant, based on financial or other model quantities)."*

This describes a proper cost-benefit analysis and is a good starting point for developing methodologies for evaluating the risk exposure over the lifetime of the projects. The PPP Manual does provide details on how to prepare a risk matrix (see figures 2 and 3) for the PPP project, estimate the cost of each risk individually (by multiplying the cost and the likelihood) including the risks that the government bears and construct a nominal cash flow for each risk to compute a net present value for the project. Although no specific methodology is specified to evaluate the explicit contingent liabilities, the ALM team assessed

---

<sup>46</sup> 2013 Budget Review, Chapter 5: Asset and Liability Management, NT website.

<sup>47</sup> Vote 9, 2010 Estimates of National Expenditure: <http://www.treasury.gov.za/documents/national%20budget/2010/ene/vote09.pdf>.

<sup>48</sup> National Treasury PPP Practice Note Number 01 of 2004, South Africa.

the maximum exposure from contingent liabilities, including the early termination, originating from PPPs in the National Treasury Annual Report for 2012-2013, available at the NT web site. The report states that as of December 31, 2012, the maximum likelihood estimate (MLE) for PPPs was R11 billion and that the internal credit risk analysis of the PPPs reflects a risk rating of 2.4, which is classified as low risk. See Figure 2 and Figure 3 for sample tables on how various dimensions are qualitatively assessed and the ratings allocated.

**Figure 2: Example risk register**

Figure 2: Example risk register										
Risk number	Date of registration	Description of risk	Impact			Probability	Possible responses	Target date for action	Owner	Action
			Time	Cost	Quality					
			L	L	M	VL				
			H	M	M	M				
			H	L	VH	H				

VL: Very low; L: Low; M: Medium; H: High; VH: Very high  
 Source: UK Office of Government Commerce, *Guidelines on Managing Risks*, 2001.

Source: National Treasury PPP Practice Note

### 2.3.4 Budgeting and Accounting for Contingent Liabilities

Similar to Peru and Turkey, where a government contribution is anticipated, this must be agreed by the National Treasury or the subnational and such funding must come from an existing budget line of the procuring institution<sup>49</sup>, as there are strict limitations on institutions' borrowing capacity.<sup>50</sup> Liabilities of the public sector start when the project starts delivering services. However, there is no overall consolidated figure for PPP portfolio commitments, costs and risks.

Detailed guidelines on accounting for PPPs were produced by the South Africa Accounting Standards Board (ASB) in November 2008, following the model of IPSAS and IFRIC 12.<sup>51</sup> This is complemented by a note entitled "Provisions, Contingent Liabilities and Contingent Assets" (GRAP 19) published in June 2012.<sup>52</sup> The guidelines indicate that the contracting agency controlling the assets of the PPP project should include these assets in its balance sheet along with the associated liability.<sup>53</sup>

**Figure 3: Example summary risk profile**

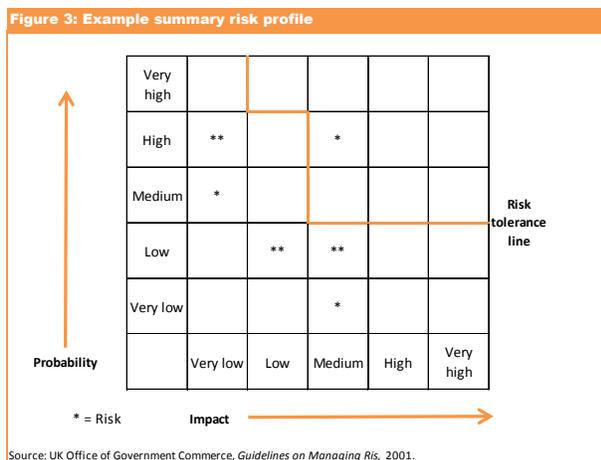
<sup>49</sup> Introducing PPPs in South Africa, NT PPP Unit, October 2007

<sup>50</sup> PPP Manual Module 4: PPP Feasibility Study, Page. 10

<sup>51</sup> Guideline on Accounting for PPPs, ASB, November 2008; Botha 2009

<sup>52</sup> GRAP 19, "Provisions, Contingent Liabilities and Contingent Assets", June 2012

<sup>53</sup> §3.12, §3.18, Guideline on Accounting for PPPs, ASB, November 2008



Source: National Treasury PPP Practice Note

### 2.3.5 Reporting and Disclosure Policy

South Africa makes available to the public the list of projects with information on the name and the responsible entity, the type of the PPP project, contract duration, date of financial close, the private partners and some financial characteristics. In addition, the net present value of committed unitary payments is publicly available on the NT website for some signed PPP contracts<sup>54</sup>. The government does not share these contracts or their summarized versions. However, all municipal PPP contracts are proactively disclosed by mandate. Section 120.6 of the MFMA states that:

“When a feasibility study has been completed, the accounting officer of the municipality must:

- i) submit the report on the feasibility study together with all other relevant documents to the council for a decision, in principle, on whether the municipality should continue with the proposed public-private partnership at least 60 days prior to the meeting of the council at which the matter is to be considered, in accordance with section 21A of the Municipal Systems Act;
- ii) make public particulars of the proposed public-private partnership, including the report on the feasibility study; and
- iii) invite the local community and other interested persons to submit to the municipality comments or representations in respect of the proposed public-private partnership.”

The NT legislation also requires that an entity should recognize a direct payment in the annual financial statements when a reasonably reliable estimate can be made of the amount of the obligation which results from a past event. A contingent liability, on the other hand, should only be disclosed in a note to the financial statements.<sup>55</sup>

## 2.4 Turkey

In Turkey, a first batch of PPP projects was developed in the 1990’s, mainly in the energy sector. In the 2000’s, more projects have been designed and implemented in the transportation sector (maritime ports, airports and customs gates) with more in the pipeline for health and education sectors.

### 2.4.1 Governance and Institutional Framework

<sup>54</sup> Latest PPP Quarterly bulleting which dates from May 2010

<sup>55</sup> Guideline on Accounting for PPPs, NT.

The PPP legislation revolves around projects that are structured as Build Operate and Transfer (BOT), Build-operate (BO), Transfer of Operating Rights (TOOR) and Build–Lease-Transfer (BLT). As of the end of 2012, a total of 111 PPP projects were operating, mostly BOTs (71) corresponding to an investment amount of approximately \$26 billion, while 23 PPP projects with an investment amount of \$9.4 billion were under construction.<sup>56</sup>

There is no centralized PPP unit in Turkey, and responsibilities for developing and managing PPP projects are distributed among different grantors (line ministries and state owned entities). While there is an approval mechanism in place for most projects which involves the High Planning Council (HPC) chaired by the Prime Minister, the criteria for their selection are less well defined.<sup>57</sup> The projects are governed by a set of laws addressing certain models (for example BOTs) or certain sectors (health, education) and managed with the involvement of different entities.<sup>58</sup> The following describes the institutions involved in the BOT and BLT projects which constitute the majority of PPP projects:

- The line ministries are accountable for attaching pre-feasibility studies of the projects when requesting authorization to negotiate from the HPC.
- The HPC chaired by the Prime Minister is the body which gives to the beneficiary institution the right to negotiate and sign the PPP, regardless of whether they benefit from Treasury guarantees. The Minister of the implementing agency or the highest level manager of the municipality is responsible for the signing of the contracts.
- The Ministry of Development is responsible for monitoring the BOT and BLT projects and aligning the list of investments to the development plans.
- The Ministry of Finance is in charge of monitoring the fiscal liabilities contracted by central government entities in line with the central government budget.
- The Turkish Treasury, which is the financing authority, is involved mainly when providing Treasury Investment guarantees and Debt assumption guarantees to PPP projects, as explained later.

#### **2.4.2 Management of Explicit Contingent Liabilities**

The credit enhancements provided by the Turkish government are the following:

- Tax exemptions can be provided for PPP projects as credit enhancements. The legislation allows for unitary payments as well<sup>59</sup>. No contingent liabilities are generated under this approach.
- The Turkish Treasury can provide Treasury Investment guarantees specified in the Turkish debt law No. 4749. These generate explicit contingent liabilities for the government. The energy sector projects in the 1990's involved Investment guarantees for energy sales agreements with a total investment of \$10.2 billion. The only drinking water project - Izmit City, Urban and Industrial Water Supply Project, which was signed in 1995, involved an investment amount of \$890.6 million and benefitted from a guarantee for the take-or-pay commitments of the contracting agency. This project defaulted and the government had to pay to the Water SPV a total of \$1.9 billion as of May 2013. No

---

<sup>56</sup> Kamu-Ozel-Isbirliđi Uygulamalarina Iliskin Gelismeler, T.C Kalkinma Bakanligi, 2012.

<sup>57</sup> Law 3996, the so-called BOT law refers to advanced technology investments requiring significant financial resources without specifying the details.

<sup>58</sup> Law No. 3996 issued in 1994 entitled "Some of the Investment and Services Law On the Build-Operate-Transfer Model," Law No. 3359 entitled "Basic Law on Health Services" under the Build-Lease model, the Decree about the Organization and Duties of Ministry of National Education" about the education -teaching facilities, Law No. 351 numbered "Law on Higher Education Credit and Hostels Institution". Law No. 4749 entitled "Public finance and Debt Management" issued in 2002 and last amended in 2010 organizes the rules for the Investment Guarantees and the Debt Assumption model.

<sup>59</sup> According to the 2008 amendments to Law 3996, total amount of unitary payments to be contracted in a given year cannot exceed 50% of the capital expenditures. Similarly, the total amount of unitary payments to be made in a given year cannot exceed 20% of the capital expenditures.

Treasury Investment guarantees have been provided since 2001 which could be attributed to this single default.

- Responsible line ministries, SOEs and subnational entities can provide minimum revenue guarantees (i.e. number of passengers, amount of energy sales) where in case of a fall in revenue below the threshold set in the implementation contract, the grantor pays the difference to the PPP company. These guarantees, not benefitting from Investment guarantees, are not subject to Treasury's contingent liabilities evaluation and credit risk management mechanisms such as the guarantee limit or the risk account explained in the next section. This leads to less efficient credit enhancement mechanisms given the lack of unified management of these commitments by the government. Such enhancements are common, as securing them tends to be easier than securing central government guarantees. This, however, weakens the governance framework and may increase country's exposure to PPPs, without the central government being able to monitor the extent of the fiscal commitments.
- In 2011-2013, the Turkish government enabled a new credit enhancement tool, the Debt Assumption commitment, that involves assumption of the external financial obligations of the project by either the responsible institution or the Turkish Treasury (in the case of central government institutions) in the case of early termination of the BOT and BLT type projects (similar to South Africa's early termination guarantee). Responsible institutions may assume the outstanding debt of the PPP company where the Turkish Treasury may provide partial or full commitment to undertake these financial obligations as authorized by a Decree of the Council of Ministers. Three projects have benefitted from this guarantee so far with a total investment amount of \$10.5 billion and total loan amount of \$4.7 billion) according to Public Finance Management Bulletin dated May 2014.

This type of guarantee allowed the government to convert the implicit contingent liabilities associated with the early termination risk to explicit ones, with the added benefit of reducing the moral hazard since the early termination risk will be monitored closely. On the other hand, early termination is typically costly for both parties, and is a last resort when other avenues have been exhausted. Therefore, the government has a stake in tailoring the debt assumption payments in such a way that debt providers have always an interest in keeping the contract alive and services operational, inducing them to "step-in" before issues of poor performance lead to default by the private party.<sup>60</sup> To manage the contingent liabilities associated with this type of guarantee, the Turkish Treasury issued in April 2014 a communique which sets the rules and conditions of extending this type of guarantees and organizes the credit risk management measures. The key measures are i) to specify the investment amount of projects which can benefit from this type of guarantee (minimum \$1 billion for BOT projects, minimum \$500 million for health and education projects), ii) provide partial guarantee (85% of the outstanding debt) if the SPV is responsible for the early termination, and iii) define the principles of the corresponding receivables collection.

### **Risk Management Framework for Treasury Guarantees**

In 2002, Turkey implemented structural reforms in the area of public financial management, including debt and risk management functions. As part of this effort, a primary law on Public Finance and Debt Management was enacted whereby existing guarantees were regrouped under Treasury Repayment guarantees for external loans and Treasury Investment guarantees for PPP projects. Various measures were initiated to manage the risks arising from these Treasury guarantees.

Correspondingly, for PPP projects benefitting from Treasury Repayment and Investment guarantees, there is currently a well-established evaluation framework (see next section). Turkish Treasury is currently in the process of developing a separate framework and model for the assessment of the Debt Assumption

---

<sup>60</sup> Quote from section 3.4.5.2 of "Public-private-partnership: reference guide, version 1.0", WBI-PPIAF, 2012.

guarantee. However, the same does not apply to projects that received different credit enhancements from line ministries, public companies or sub-nationals. This exposes the country to the risk of losing sight of the overall exposure from PPPs which might have significant impact on the central government budget.

One of the credit risk management measures introduced is a limit on the committed amount of Treasury guarantees and on-lending.<sup>61</sup> This measure facilitates fiscal discipline by limiting the credit risk and bestows on the Parliament the right to decide on the extent of guarantees. Investment guarantees are included in the definition of this limit in addition to the repayment guarantees. A separate yearly limit (\$3 billion for 2014 for the first time<sup>62</sup>) is defined for the Debt Assumption commitments. As an ex-post measure, the credit risk from the outstanding Treasury guarantees is covered by the risk account which is a reserve for the guarantees expected to be called. Additionally, it is envisaged that the amounts undertaken as a result of debt assumed from early terminated contracts will be recorded as external public debt.

As a result of the limit application since 2002 and selection of beneficiaries according to their creditworthiness, Repayment Guarantees were mainly provided to low-risk bearing public banks and development banks. As for PPPs, as already mentioned, no new investment guarantee has been issued since 2001. It is too early to draw conclusions on the Debt Assumption commitments, which is a recent tool.

### **2.4.3 Evaluation Methodologies**

In order to evaluate the Treasury Repayment and Investment guarantees portfolio, specifically to determine the Treasury guarantee limit, decide on new guarantees and on-lending and the risk account appropriation, the Turkish Treasury has developed the Credit Rating model (CRM). The model is an adaptation of Altman's z-score formula which predicts firm bankruptcies, produces a series of internal ratings for public institutions benefitting from Treasury guarantees, and estimates the probability of default per entity and the expected loss from the guarantees.<sup>63 64</sup> The inputs consist of a series of explanatory variables (entities' financial ratios), data on past defaults and collections with the probability of default derived using the logit model.

One of the modules of the model evaluates the explicit contingent liabilities arising from the TIG provided to the wholesale electricity company (TETAS) for 16 energy sector projects. These guarantees consist of take-or-pay commitments for electricity produced which is subject to energy tariffs escalated by the inflation rate every year until the end of the contract period. Given that these are all for the same beneficiary, a single evaluation model is used to assess the financial situation of TETAS, estimate the probability of default and a consolidated figure for the potential contractual liabilities in case electricity is not purchased by the customers. The model takes into account the tariffs forecasted for the lifetime of the project and the financial situation of TETAS for potential default. The Turkish Treasury developed this evaluation model after the construction period of the project was finished and when the power plants were already operating. If new TIGs were to be considered, the CRM model could be modified to take into account the preparation phase.

---

<sup>61</sup> On-lending operations expose the government to the same credit risk as Treasury guarantees. Therefore, they are subject to same risk management provisions.

<sup>62</sup> Press release on the debt assumption commitments to be made by the Undersecretariat of Treasury, April 28, 2014.

<sup>63</sup> Altman, Edward I. (September 1968). "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy", *Journal of Finance*: 189–209.

<sup>64</sup> An external consultant helped Turkish Treasury develop the model.

Prior to the CRM model, a value-at-risk model was used for complicated and long term projects. This is still part of the Treasury's tool kit although it is used less than the CRM model as it requires a higher level of maintenance and dedicated time and effort to update.

For projects not benefitting from Treasury guarantees, each responsible line ministry is obligated to conduct an internal analysis of projects under its responsibility. These analyses are mainly limited to feasibility studies, with no sensitivity analysis of the economic scenarios nor evaluation of the impact of the proposed risk allocation on the government's budget. This analysis is not always undertaken, however, and when it is done, it often remains internal and is not shared with other parts of the government unless specifically requested.

#### **2.4.4 Budgeting and Accounting for Contingent Liabilities**

Fiscal risks for projects benefitting from Treasury guarantees are budgeted through a risk account which aims to incorporate the fiscal costs of the contingent liabilities. This practice promotes accountability and better reporting practices. For the Debt Assumption model, no appropriation is envisaged but the assumed amount has to be recorded as capital loss in the responsible ministry or institution's budget at the time of project termination and if undertaken by the Turkish Treasury, collected according to the rules defined in the assumption agreement signed between Treasury and the responsible entity.

For projects not benefitting from Treasury guarantees, each public institution/line ministry may or may not allocate appropriations in the annual budget, depending on the agreement with the project SPV and budget practice. Therefore, information on the amount of provisions for projects without a Treasury guarantee is spread through different accounts and is often difficult to track down.

According to the public financial management legislation, public accounts should ensure that all expenditures, guarantees and liabilities, and assets of the public administrations and transactions having financial consequences or causing a decrease or increase in equity are recorded.<sup>65</sup> Public revenues and expenditures shall be indicated in the accounts of the fiscal year of their accrual. Budget revenues shall be booked in the year of collection and budget expenditures in the year of payment. No standards and secondary legislation exist for the accounting of PPP projects.

So far, there has been no clear attempt to consolidate the Treasury's risk account appropriation and the line ministries' accounts to quantify the cost of the contingent liabilities stemming from the PPP projects on the government's budget. Additionally, the payment amounts prompted by the realized contingent liabilities for PPPs not benefitting from Treasury Investment guarantees are not compiled. Even for individual projects, this information is hard to track down.

#### **2.4.5 Reporting and Disclosure Policy**

In terms of commitments, some information is shared by the Ministry of Development, such as the list of all the PPP projects and investment amounts through a publication by the Ministry of Development entitled "Developments about the PPP implementations in the world and in Turkey", November 2012. While the list of projects is announced in this publication, the contracts are not publicly available or disclosed. Turkish Treasury only provides the list and the investment amounts of the projects benefitting from a Treasury guarantee and Assumption Payments<sup>66</sup>. This information does not provide enough information on the contingent liabilities arising from the contracts and hinders the transparency principles.

---

<sup>65</sup> Articles 49 and 51 of the Public Financial management and Control Law, no 5018, 2003.

<sup>66</sup> Turkish Treasury published information on the debt assumptions in the Public Finance Management Bulletin dated May 2014.

Additionally, the internal evaluation of the explicit contingent liabilities is not shared outside of Turkish Treasury and the commitments for the credit enhancements to the PPP projects, beyond the Treasury guarantees, have never been compiled or coordinated to obtain an overall figure. On the positive side, Turkish Treasury does regularly publish information on payments made to defaulted Treasury guarantees, including the only defaulted PPP project.<sup>67</sup>

In conclusion, although there is an established credit risk management framework for Treasury guarantees which facilitates management and monitoring of the project portfolio, the fragmented nature of the PPP governance framework and multitude of parties signing the contracts make it difficult to expand this approach to the whole PPP portfolio. Therefore, it is not possible to develop a streamlined approach to PPP project evaluation, undertake standard risk allocation, or perform dissemination, budgeting and accounting tasks for the entire PPP portfolio. Moreover, the current Treasury credit risk management framework could be improved especially regarding the reporting practices.

### **3 Conclusion**

This paper examines how countries with active PPP projects evaluate and monitor the costs and risks of financial obligations generated by these investments throughout the lifetime of the contracts. Countries develop PPP frameworks focusing on the selection of PPP projects, efficient risk allocation mechanisms between public and private sector and procurement. Less attention is paid to monitoring and evaluation of portfolio risks and the implications of these risks for the government budget throughout the life of the project. Country experiences related to evaluation of direct and contingent liabilities generated by PPP projects are reviewed, focusing on treatment of contingent liabilities and the challenges of measuring and monitoring these in a consolidated framework.

The authors examined the experiences of four countries, representing a range of approaches to PPP risk monitoring and provisioning. In conclusion, it was observed that countries have tailored fiscal risk management and monitoring frameworks to fit their circumstances, given that each country has different practices in the areas of governance, budgeting, accounting and reporting. All four countries assess the overall or partial credit exposure to monitor and manage their fiscal commitments from PPPs in a consolidated way. Three countries, South Africa, Peru and Chile, monitor PPP projects in a consolidated way, and Peru imposes a ceiling on the stock of PPPs. This approach provides closer scrutiny and greater transparency than risk monitoring at the project level only, and allows for greater flexibility in adapting to changing project conditions. In Turkey, there is a well-established credit risk management framework for Turkish treasury guarantees, but a fragmented PPP governance framework hinders expansion of this approach to the whole PPP portfolio.

In order to monitor fiscal risks, all countries have developed evaluation models to help assess fiscal risks and assess project/portfolio level credit exposure. In each of these countries, further scrutiny could be focused on budgeting and accounting practices which could be strengthened and brought in line with international standards. Similarly, sharing and standardizing information would improve transparency and accountability.

The experience of these countries demonstrates the importance of developing special techniques to consolidate both direct and contingent fiscal commitments generated by PPP projects and quantifying the probability of the risk materializing. Equally important, the inclusion of provisions for potential defaults in the medium term fiscal framework and the annual budget allows the government to be prepared while

---

<sup>67</sup> Turkish Treasury website: [www.treasury.gov.tr/reports/public](http://www.treasury.gov.tr/reports/public) debt management reports

contributing to transparency and accountability. Continuous monitoring of the PPP portfolio can also provide the opportunity to foresee potential defaults and other adverse events, such as early terminations or alternations of contracts, and allow governments to take measures as needed to avoid or smooth the impact of potential project failures. For this reason, the financial authority needs to have strong and clearly delineated decision making points, but focusing on those aspects that create direct or contingent fiscal commitments. It is also essential to strengthen capacity of governments to ensure that they can manage and monitor such complex projects and financial structures.

## Annex 1: Summary tables of the Country Practices

Table A : Summary of the Governance and Institutional Framework

	Chile	Peru	South Africa	Turkey
<b>PPP legislation issued in...</b>	1991 Organic law	2008 Organic law	1999 Organic law	1990s Sector & model based laws
<b>Investment amount</b>	<ul style="list-style-type: none"> <li>▪ \$13 billion, 59 projects</li> <li>▪ App. 5% of GDP, 2013</li> </ul>	<ul style="list-style-type: none"> <li>▪ \$10.5 billion, 19 projects</li> <li>▪ 4.7% of GDP, 2013</li> </ul>	<ul style="list-style-type: none"> <li>▪ 22 projects, 2013</li> </ul>	<ul style="list-style-type: none"> <li>▪ \$26 billion, 111 projects</li> <li>▪ 3.4% of GDP, 2012</li> </ul>
<b>PPP unit</b>	PPP unit at MoP (promotion & monitoring)	Proinversion (promotion & advisory)	PPP Unit at NT (advisory)	None
<b>Related institutions</b>	MoP MoF	Proinversion MEF	PPP Unit (NT) ALM Unit (NT)	MoD MoF TT HPC
<b>Financing source</b>	Domestic market	Domestic and external markets	Domestic market	Domestic and external markets

**Table B: Summary of the Management of the Fiscal Commitments**

	Chile	Peru	South Africa	Turkey
<b>Fiscal commitments</b>	<ul style="list-style-type: none"> <li>Min. revenue guarantee (CL)</li> </ul>	<ul style="list-style-type: none"> <li>Financial guarantee (CL)</li> <li>Min. revenue / demand guarantee (CL)</li> <li>Unitary payment (DL)</li> </ul>	<ul style="list-style-type: none"> <li>Unitary payment (DL)</li> <li>Min. revenue guarantee (CL)</li> <li>Early termination guarantee (CL)</li> </ul>	<ul style="list-style-type: none"> <li>Treasury investment guarantee (CL)</li> <li>Min. demand guarantee (CL)</li> <li>Assumption guarantee (CL)</li> <li>Availability payment (DL)</li> </ul>
<b>Management over the lifetime of projects</b>	<ul style="list-style-type: none"> <li>MoP monitors each project</li> <li>MoF evaluates max. present exposure and payments / project &amp; portfolio (2.67% of GDP, 2013, expected net value of government payments of 0.14% GDP)</li> </ul>	<ul style="list-style-type: none"> <li>MEF monitors the 7% fiscal rule on fiscal commitments (\$6,5 billion, 2012, 3.3% of GDP)</li> </ul>	<ul style="list-style-type: none"> <li>NT evaluates max. exposure from project / portfolio (MLE about R11 billion, 0.36% of GDP, 2012)</li> <li>Fiscal Liability Committee at NT has an internal project rating system</li> </ul>	<ul style="list-style-type: none"> <li>MoD monitors BOT/BLT projects</li> <li>Guarantee limit and risk account provisions for Treasury guarantees and assumption guarantee (Limit on assumption guarantee \$3 billion for 2013)</li> <li>TT will evaluate potential impact of BOTs on budget</li> </ul>

**Table C: Summary of the Evaluation Models**

<b>Chile</b>	<ul style="list-style-type: none"> <li>▪ Default probabilities from CLs</li> <li>▪ Probability distribution of future payments from/to the government</li> <li>▪ Market value of the minimum revenue guarantee</li> <li>▪ PV of maximum probably exposure of the portfolio</li> </ul>
<b>Peru</b>	<ul style="list-style-type: none"> <li>▪ Default probabilities from CLs</li> <li>▪ Valuation of the credit exposure from CL</li> <li>▪ Exposure from fiscal commitments evaluated to monitor fiscal rule</li> </ul>
<b>South Africa</b>	<ul style="list-style-type: none"> <li>▪ Unitary payments known and computed</li> <li>▪ Early termination risk assessed</li> <li>▪ CLs do not have a model</li> </ul>
<b>Turkey</b>	<ul style="list-style-type: none"> <li>▪ For TT guarantees: Probability of default based on past performance and financial statements / expected loss from projects and portfolio</li> <li>▪ Models to be developed for assumption guarantee and potential impact of BOTs</li> </ul>

**Table D: Summary of the Budgeting and Accounting / Reporting**

	Chile	Peru	South Africa	Turkey
<b>Budgeting and Accounting</b>	<ul style="list-style-type: none"> <li>▪ Small provision on MoP budget for all PPPs</li> <li>▪ Called guarantees paid from following year's MoP budget</li> </ul>	<ul style="list-style-type: none"> <li>▪ Small fraction of sectorial budget allocated to estimated PPP payments</li> <li>▪ Budgeted and accounted in the corresponding line ministries' budget</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provisions and payments for unitary payments recorded in procuring institution's budget</li> </ul>	<ul style="list-style-type: none"> <li>▪ Risk account provision for Treasury guarantees</li> <li>▪ Responsible intuitions may provision and account depending on project setup</li> <li>▪ If assumption guar. called, cost recorded as capital loss in institution budget</li> </ul>
<b>Public availability of information</b>	<ul style="list-style-type: none"> <li>▪ Contracts in MoP website</li> <li>▪ Consolidated risk exposure for PPP portfolio on MoF website</li> </ul>	<ul style="list-style-type: none"> <li>▪ Contracts in Proinversion and OSITRAN website</li> <li>▪ Loan guarantees and estimation of fiscal commitments published yearly by MoF</li> </ul>	<ul style="list-style-type: none"> <li>▪ List of projects and some financial info. At NT website</li> <li>▪ NPV of the committed unitary payments for some projects</li> <li>▪ Max. exposure from PPP portfolio published by NT</li> </ul>	<ul style="list-style-type: none"> <li>▪ Consolidated information on PPPs in 2012 MoD publication</li> <li>▪ List of Treasury guarantees with investment amount on TT website</li> <li>▪ Payments to 1 defaulted PPP published by TT</li> </ul>

## List of references

- Accounting Standards Board, *Guideline on Accounting for PPPs*, November, 2008.
- T.C Kalkinma Bakanligi, *KAMU-ÖZEL İŞBİRLİĞİ UYGULAMALARINA İLİŞKİN GELİŞMELER*, 2012.
- Bennett, Elizabeth, Peter Grohmann, and Brad Gentry, *Public-Private Partnerships for the Urban Environment: Options and Issues*, PPPUE Working Paper Series, Volume I, 1999.
- Barrett, Thomas C., *Presentation on European PPP Expertise Centre (EPEC)*, European Investment Bank.
- Cebotari, Aliona, *Contingent Liabilities: Issues and Practice*, International Monetary Fund Working Paper, October, 2008.
- Colombia Ministry of Finance and Public Credit (MHCP) – “*Improving the Assessment of Disaster Risks to Strengthen Financial Resilience*”, CHAPTER 7: *Contingent Liability Management in Colombia and the Financial Strategy Associated with Natural Disasters*.
- Conference & Exhibition, *PPPs in Turkey: Financing Future Infrastructure*, November, 2012.
- Constance, Paul. 2004. “Chile’s Toll-Road Revolution: How One Country Is Using Long-Term Concessions to Modernize Infrastructure While Freeing up Funds for Social Programs.” IDB América, Magazine of the Inter-American Development Bank, January.
- European Commission, *Guidelines for Successful Public-Private Partnerships*, March, 2003.
- European Investment Bank, *The EIB’s role in Public-Private Partnerships (PPPs)*, July, 2004.
- European Investment Bank, *Public and Private Financing of Infrastructure: Evolution and Economics of Private Infrastructure Finance*, EIB Papers, 2010.
- The European PPP Expertise Centre (EPEC), *State Guarantees in PPPs: A Guide to Better Evaluation, Design, Implementation and Management*, May, 2011.
- The European PPP Expertise Centre (EPEC), *New Eurostat Rules on Contracts that Fund the Major Part of Availability Payments Using Tolls Collected by or on Behalf of the Government: the Case of the SCUT Motorway Contracts in Portugal*, September, 2011.
- Fiscal Affairs Department (Approved by Teresa Ter-Minassian), *Government Guarantees and Fiscal Risk*, International Monetary Fund), 2005.
- Hammami, Mona, Jean-Francois Ruhashyankiko, and Etienne B. Yehoue, *Determinants of Public-Private Partnerships in Infrastructure*, International Monetary Fund Working Paper, April, 2006.
- Hemming, Richard, M Alien, Barry Anderson, M. Cangiano, and Murray Petrie, *Public-Private Partnerships, Government Guarantees, and Fiscal Risk*, International Monetary Fund, April, 2006.

- IMF (International Monetary Fund). 2005. “*Chile: Selected Issues*. IMF Country Report 05/316.” Washington, DC: IMF.
- Irwin, Timothy and Tanya Mokdad, *Managing Contingent Liabilities in Public-Private Partnerships: Practice in Australia, Chile, and South Africa*, The World Bank, 2010.
- Leruth, Luc E., *Public-Private Cooperation in Infrastructure Development: A Principal-Agent Story of Contingent Liabilities, Fiscal Risks, and Other (Un)pleasant Surprises*, Springer, September, 2009.
- Lewis, Christopher M., and Ashoka Mody, *The Management of Contingent Liabilities: A Risk Management Framework for National Governments, Dealing with Public Risk in Private Infrastructure*, in Irwin and others, eds., 1997.
- OECD, *Recommendation of the Council on Principles for Public Governance of Public-Private Partnerships*, May, 2012.
- OECD, *From Lessons to Principles for the use of Public-Private Partnerships*
- Philippe Burger, Justin Tyson, Izabela Karpowicz, and Maria Delgado Coelho, *The Effects of the Financial Crisis on Public-Private Partnerships*, International Monetary Fund Working Paper, July, 2009.
- Posner, Paul, Shin Kue Ryu, and Ann Tkachenko, *Public-Private Partnerships: The Relevance of Budgeting*, OECD Journal on Budgeting, 2009.
- Multilateral Development Banks, Heads of Procurement PPP Working Group, *Procurement & PPP Transactions Guidance for MDB Public Sector Engagements*, February, 2012.
- Maskin, Eric, and Jean Tirole, *Public-Private Partnerships and Government Spending Limits*, May 2007.
- New Zealand Treasury website
- South Africa National Treasury, *National Treasury Standardised PPP Provisions*, March, 2004.
- Turkish Treasury, *Press release on the debt assumption commitments to be made by the Undersecretariat of Treasury*, April 28, 2014.
- Vittor, Jose Luis and Tim R Samples, *Public Private Partnerships and Latin American Infrastructure Markets: Brazil and Chile*, LATIN AMERICAN LAW & BUSINESS REPORT, July 2011.
- World Bank, *Summary of Approaches to Disclosure of Contract and Project Information in Public-Private Partnerships*, January, 2012.
- World Bank, *PPP Practices in Brazil: Current State of Play and Recommendations Going Forward*, (Draft).
- World Bank, *Best Practices in Public-Private Partnerships Financing in Latin America: the Role of Guarantees*, January, 2012.

- World Bank, *Best Practices in Public-Private Partnerships Financing in Latin America: the Role of Subsidy Mechanisms*, January 2012.
- World Bank, *Best Practices in Public-Private Partnerships in Latin America* by PPIAF, 2011.
- World Bank, *Implementing a Framework for Managing Fiscal Commitments from Public Private Partnerships*, Operations Note, 2013.
- World Bank, *Proposed Adoption and Application of World Bank Performance Standards for Private Sector Projects Supported by IBRD/IDA*, June, 2012.
- World Bank, *Operational note: Implementing a framework for managing fiscal commitments from PPPs by FPD/WBI*, 2013.
- World Bank, *Partenariats public-privé dans le Secteur des Infrastructures*, The World Bank, 2011.
- World Bank Institute-PPIAF, *Public-private-partnership: reference guide, version 1.0*, 2012.
- X Clelan Mandri-Perrott and David Stiggers, *Public Private Partnerships in the Water Sector: Innovation and Financial Sustainability*, IWA Publishing, 2013.