

# Value-for-Money Analysis- Practices and Challenges:

How Governments Choose When to Use PPP to  
Deliver Public Infrastructure and Services

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Report from World Bank Global Round-Table  
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World Bank Institute (WBI) and  
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## 1. Introduction

A growing number of governments are using Public-Private Partnerships (PPPs) to deliver infrastructure. A PPP is a long-term contract between a private party and a government agency, for providing a public asset or service, in which the private party bears significant risk and management responsibility<sup>1</sup>. Such partnerships can help make the best use of the resources of both the public and private sectors—including finance, experience, expertise, and focus on delivery—to expand and improve public infrastructure assets and services.

Governments enter into PPPs for a variety of reasons, as described further in Section 3 below. Nonetheless, for most governments the potential to achieve greater “value for money” than other procurement and delivery models is an important, if not the primary factor in the decision to implement a project as a PPP. Definitions of “value for money” vary; the UK Treasury, for example, defines the concept as follows:

*“Value for Money (VFM) is the optimum combination of whole-of-life costs and quality (or fitness for purpose) of the good or service to meet the user’s requirements”.*

Broadly speaking, a PPP may provide value for money compared to

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<sup>1</sup> This report adopts the broad definition of PPP set out in the WBI and PPIAF (2012) *PPP Reference Guide*. This definition encompasses performance-based, long-term contracts for new or existing assets and services; including contracts paid for by service users (sometimes called concessions), a government agency, or a combination of the two. For more details and examples of different PPP types, see the *PPP Reference Guide*, available at <http://www.ppiaf.org/sites/ppiaf.org/files/publication/Public-Private-Partnerships-Reference-Guide.pdf>.

traditional procurement models if the advantages of risk transfer combined with private sector incentives, experience and innovation—in improved service delivery or efficiencies over the project life-time—outweigh the increased costs of contracting and financing. This raises challenges for policy-makers: how to assess the value for money of different procurement and delivery options—that is, carry out “value for money (VFM) analysis”—and how to use the results of this analysis in PPP decision-making<sup>2</sup>.

VFM analysis plays an important role in many PPP programs: a recent OECD study found that 19 of 20 surveyed countries apply some kind of value for money assessment to proposed PPPs<sup>3</sup>. However, even in countries with well-established PPP programs, the approach to and use of this analysis is evolving, and is often the subject of controversy and debate. Meanwhile, many of the World Bank Group (WBG)’s clients with some PPP experience—for example, in the Latin America and Caribbean region—are trying to move towards a more systematic approach to VFM analysis and PPP project selection, but facing challenges in developing and implementing appropriate methodologies.

To inform this debate, the World Bank convened a global “roundtable” of PPP practitioners to discuss VFM and how it can be assessed. The aim of the roundtable was to draw lessons from countries that have relatively well-developed approaches and tools for VFM analysis: with respect to how this analysis has evolved, what are the on-going and new challenges, and how the approaches might apply in countries with less well-established PPP programs. The presenters at this roundtable—which included PPP practitioners from the United Kingdom (UK), France, the United States of America (USA), Chile, the Republic of Korea (hereafter Korea), India, Canada, and South Africa—are listed in Annex A<sup>4</sup>.

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2 As defined, VFM analysis is only a part of a typical PPP project appraisal process. Other PPP appraisal criteria typically include the feasibility and economic viability of the project (that is, does the *project* provide VFM, irrespective of its implementation as a PPP or other contractual model); its commercial viability (that is, whether the project is likely to be able to provide adequate return to attract good-quality investors); and its affordability, or fiscal responsibility. These criteria and the overall PPP appraisal process are described in more detail in the WBI-PPIAF *PPP Reference Guide*. In some PPP programs—such as the Republic of Korea—“VFM analysis” is used to refer to PPP project appraisal as a whole; throughout this report it is used to refer only to the part of that appraisal that compares PPP to other options for project procurement and delivery.

3 Philippe Burger and Ian Hawkesworth (2011) “*How to Attain Value for Money: Comparing PPP and Traditional Infrastructure Public Procurement*”, OECD Journal on Budgeting Volume 2011/1

4 Unless otherwise noted, references to specific governments’ PPP programs in this report are taken from the respective roundtable participant’s presentation, and the ensuing discussion.

This report presents some of the key issues in assessing VFM that arose during the roundtable discussion, based on the experience of the participants. The content of this report is as follows:

- Section 2 provides an overview of VFM analysis
- Section 3 discusses how VFM analysis is used in the PPP decision-making process
- Section 4 describes some methodological challenges with VFM analysis
- Section 5 concludes, and summarizes the key lessons from the roundtable.

## 2. What is VFM Analysis?

As defined above, the purpose of Value for Money (VFM) analysis is to inform governments' decision on whether to implement proposed projects as PPPs, or through other more "traditional" forms of public procurement (although in practice, the contribution of VFM analysis to that decision varies between PPP programs, as described further in the following section). To that end, VFM analysis typically involves a combination of **qualitative** and **quantitative** analysis: these are briefly described in turn below.

This report focuses on *ex-ante* analysis of the VFM of a potential PPP. This is closely linked with *ex-post* VFM assessment—reviewing whether a particular PPP, or the PPP program as a whole, has achieved value for money in practice—in that experience with PPP can and should influence future PPP decision-making. As discussed further in subsequent sections, in practice few governments systematically carry out *ex-post* VFM assessments of PPP projects—in turn creating challenges in availability of data to inform *ex-ante* VFM analysis.

Most of the PPP programs represented at the roundtable carry out VFM analysis for each proposed PPP project (in some cases, only for projects above a certain size). However, participants noted that VFM analysis may not be necessary for multiple, similar projects—and could instead be applied to a "test case" for the first project of a given type. For example, the road development agency of the **State of Madhya Pradesh, India** undertook VFM analysis when considering new types of road PPP models involving availability payments. Their conclusions were then checked *ex-post*, by comparing the performance of the new PPPs with other road projects.

## Qualitative analysis

Qualitative VFM analysis typically involves sense-checking the rationale for using PPP—that is, asking whether a proposed project is of a type likely to be suitable for private financing. This often takes place at a relatively early stage of PPP development, as described in Section 3.

Some jurisdictions have clearly-defined criteria for this analysis. For example:

- The **UK Treasury** has defined criteria for assessing suitability, and unsuitability, for a Private Finance Initiative (PFI—the UK’s PPP model). Suitability criteria include the long-term, predictable need for the service; the ability to allocate risk effectively—including through performance-related payments and ensuring sufficient private capital at risk; the likely ability of the private sector party to manage risk and take responsibility for delivery; presence of stable and adequate policy and institutions; and a competitive bidding market. “Unsuitability” criteria include projects that are either too small or too complicated; sectors where needs are likely to change or there is a risk of obsolescence (for example, PFI projects are no longer used in the ICT sector in the UK); or where the contracting authority is inadequately skilled to manage PPP.
- In **France**, “preliminary analysis” of a PPP includes checking against several criteria under three categories: PPP relevance—for example, appropriateness of an integrated, whole-of-life approach to managing a project; commercial attractiveness; and the potential for optimal risk allocation.
- In the **Commonwealth of Virginia, USA**, assessment of a potential PPP at “high level” and detailed screening stages also considers proposed road projects against specific criteria to determine if the project is delivered under the Public-Private Transportation Act (PPTA)—that is, as a PPP. These criteria include whether a project is sufficiently complex to benefit from private sector innovation; whether a PPP can achieve appropriate risk transfer; and the degree of stakeholder support. The extent to which a project can generate revenues from tolls is also taken into consideration when assessing possible PPP structures.

In other cases, such as in **Chile**, qualitative analysis of the suitability of a project for PPP plays an important part in PPP decision-making, albeit without being guided by documented criteria.

## Quantitative analysis

Quantitative VFM analysis involves comparing the value for money of a proposed PPP (or actual bids received) with a “Public Sector Comparator” (PSC)—that is, a model of the project if implemented through traditional public procurement. The scope of this analysis varies, as described further in Section 4 below:

- Some governments (such as **Chile**) simply compare the estimated fiscal cost of the PPP (that is, the payments that would be made to the private partner) and of implementing the project under traditional public procurement.
- Most governments (such as **British Columbia, Canada, Korea, and South Africa**) adjust the fiscal cost comparison for the government’s risk exposure in each case—that is, build into the “PSC” the cost of bearing those risks that would be transferred to the private partner under a PPP model.
- Finally, in a few cases (such as **France**) differences in socio-economic benefits between the procurement and delivery models are included.

Quantitative VFM analysis has typically involved comparing two options: a “preferred” PPP model, against a PSC. However, governments are increasingly expanding the analysis. In **Virginia, USA**, for any proposed road project that passes the initial PPP screening, a range of possible contractual structures are assessed: including pure tolled concessions, different levels of availability payments, or design-build-finance models. The **UK Treasury**—having withdrawn its previous PSC model, as described further below—is in the process of considering whether and how quantitative VFM analysis could be applied to a broader set of procurement and delivery options.

### 3. PPP Decision-Making: How VFM Analysis Is Used

Different governments use VFM analysis in different ways. The role of VFM analysis in PPP decision-making is a subject of spirited debate, as evidenced by the roundtable discussion. This debate centers on two main questions. The first concerns the **relevance** of VFM analysis, and whether or not VFM is really the driving consideration when governments decide to implement projects as PPPs. The second relates to the **limitations** of VFM analysis: even where VFM is an important consideration, is VFM analysis—or at least, the approaches to VFM analysis that have been used to date—the right tool for informing this decision? Concerns about the limitations of quantitative VFM analysis led to a recent decision by the **UK Treasury**, pioneer of the PSC, to withdraw its quantitative VFM analysis model for a major revision.

Several aspects of the use of VFM analysis in PPP decision-making, and its relevance and limitations, were raised at the PPP roundtable:

- Why governments do PPPs, and implications for the relevance of VFM analysis.
- Timing and role of VFM analysis in the project selection and development process, and achieving the right balance between qualitative and quantitative approaches.
- Pitfalls of the Public Sector Comparator—in particular, the risk of quantitative VFM analysis appearing “overly-scientific.”
- Role of PSC in procurement—whether and why VFM results are communicated to bidders.

These issues, and the differing perspectives put forward by PPP practitioners during roundtable presentations and discussions, are described in turn below.

## **Why Governments do PPPs, and the relevance of VFM analysis**

As noted by round-table attendees, many governments turn to PPPs not necessarily as the best value for money approach for implementing a project after analyzing all the options, but rather because there is seen to be no realistic public alternative in the face of financial or implementation capacity constraints.

In particular, one of the most common reasons for governments to turn to PPPs is the perception that PPPs create “fiscal space” to enable accelerated implementation of infrastructure projects. This is particularly the case for PPPs involving user charges, which can raise additional revenue for funding infrastructure investment (as well as, in some cases, contributing to more economically efficient use of services). While governments could also introduce user fees for public projects, charges may be seen as politically or socially easier to introduce under a PPP.

Under many PPPs, however, the full cost of the project is ultimately paid by government—that is, over the long term no additional funding or fiscal space is created. However, the nature of the expenditure changes: with upfront capital expenditure often replaced by the recurrent cost of meeting availability payments. Depending on how PPP commitments are treated in fiscal reports and accounts, this can also create “space” in the short term, for example in the face of deficit or debt targets—and hence an impetus to implement projects as PPPs irrespective of whether doing so will create better value for money<sup>5</sup>. This effect can be exacerbated where PPPs involve transfers from one level of government to another—for example, in the UK, where the availability of “PFI credits” were often the driver for contracting authorities choosing to do PPP (indeed these credits were introduced

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5 Evolving norms in public sector accounting appear likely to erode this perceived advantage of PPP over time—at least for government-pays PPPs—as the equivalence of PPP obligations and other public liabilities are increasingly recognized. For further discussion and resources see for example the WBI/PPIAF *PPP Reference Guide* (2012); Katja Funke, Tim Irwin, and Isabel Rial (2013) “*Budgeting and Reporting for Public-Private Partnerships*”, International Transport Forum Discussion Paper No. 2013-7, OECD.



as an incentive for authorities to use PPP); these credits have since been abandoned.

Equally, the decision to introduce PPPs—or in many cases not to introduce PPP, for example in particular “sensitive” sectors, or in the face of influence by public sector unions—may be influenced by political or social attitudes over fiscal or value for money considerations.

In such cases VFM analysis may appear less relevant as an input to decision-making. For example, as discussed at the roundtable and described in Box 1 below, approaches to VFM analysis for PPPs involving user fees vary, with some governments choosing not to apply it. On the other hand, even in the face of limited alternatives, roundtable participants noted the value to be gained from carrying out VFM analysis: to sense-check the decision to pursue the project as well as the proposed PPP structure. Moreover, as described in Section 4 below, some governments explicitly build into VFM analysis the benefits of earlier implementation of proposed PPPs.

### **Box 1: VFM Analysis for User-Pays PPPs**

Governments vary in their approach to VFM analysis for projects involving user charges. In particular, where charging users is perceived to be more feasible under a PPP than for publicly-run infrastructure, VFM analysis may be seen as less relevant. For example:

- VFM analysis in **Chile** is limited to social sector PPPs that will be paid for entirely by Government availability payments. In economic sectors such as transport, user charging is seen as the more economically efficient way to pay for infrastructure, and as more politically and socially feasible under a PPP—the decision to implement a project as a PPP in these sectors is therefore driven by the financial viability of the proposed project.
- Similarly, in **France** VFM analysis is only required for “partnership” contracts; concessions (that is, user-fee projects) have a different legal framework that does not involve VFM analysis.

On the other hand, as some participants noted, VFM analysis can equally be applied to all types of PPPs, and applied to different contractual options—both on the basis that a user fee-funded project could be done as either a Government project or as a PPP; and as a helpful sense-check on the proposed PPP structure. For example, In **Virginia, USA**, the Department of Transportation (VDOT) undertakes VFM analysis for all proposed concessions. To date this analysis has largely involved comparing the public and PPP options for implementing toll roads—going forward the analysis will be used to compare different possible PPP contract types, including concessions based on availability payments.

## Timing and role of VFM analysis in the project selection and development process

VFM analysis could in theory be carried out for all public investment projects to determine the best procurement and delivery option, as a systematic component of a broader project cost-benefit and options analysis<sup>6</sup>. In practice, few countries currently take this approach—although some are moving in that direction.

More often, VFM analysis is formally applied only to **projects already earmarked as PPPs**. That is, the initial decision to propose a project for the PPP “route” is based on a qualitative assessment by contracting authorities, which may be supported by PPP agencies, and often not based on any specific methodology (although this decision may be influenced by the likelihood of subsequently passing a formal VFM screening). Round-table presenters agreed that experienced practitioners “*know what makes a good PPP project*”. For example:

- In **France**, VFM analysis is currently only applied to projects envisaged as PPP, “*more as a technical study pre-implementation of a project as a PPP than a tool to determine the best contracting*”

<sup>6</sup> Presentation by Ian Hawkesworth to VFM Roundtable; for more detailed analysis and recommendations on procurement options analysis, see Philippe Burger and Ian Hawkesworth (2011) “*How to Attain Value for Money: Comparing PPP and Traditional Infrastructure Public Procurement*”, OECD Journal on Budgeting Volume 2011/1

*mode*". However, a recent review by the national audit entity recommended that VFM analysis should be extended to all large, complex public investment projects.

- Similarly, in **Korea**, it is the decision of the contracting authority whether to propose a project as a PPP (alternatively, an unsolicited PPP proposal may be received from a potential investor). PIMAC—which is responsible for appraising both PPP and non-PPP projects—applies VFM analysis only to projects on the "PPP route". If a project is found not to provide VFM as a PPP but has a positive benefit-cost ratio, it reverts to the traditional procurement route.
- VFM analysis in **Chile**—an assessment of the fiscal cost of PPP or traditional public procurement—has to date been undertaken by the finance ministry relatively late in the process, and considered as a "sense check" of the earlier decision by the contracting authority to put the project forward as a PPP.

Moreover, the **timing of VFM analysis in the process of developing a project as a PPP** presents a trade-off: between availability and accuracy of information—limited in early stages—and impact of the analysis, which is typically limited later on in the process as it becomes more difficult to "change route". Many countries iterate the analysis: typically with qualitative analysis taking place earlier in the process, while quantitative analysis comes later.

In the **UK's** current review of its PPP program, the timing of VFM analysis has been an issue of concern. VFM analysis is done at four key stages: at the overall program level, at project inception, prior to launch of public procurement, and prior to contract signature. There has been concern that the UK has "*not got the balance right yet*": earlier stages of analysis are more crucial for decision-making, but often the VFM analysis at this stage receives less scrutiny. Moving forward, the UK Treasury intends to put in more thought (if not necessarily more detail) to VFM analysis at earlier stages, and focus in later stages on double-checking earlier conclusions as more information emerges.

Similarly, the PPP Unit in **Virginia, USA's** Department of Transportation submits all proposed PPPs to a two-stage screening process, which includes qualitative VFM analysis. It is this screening that determines

whether a project is accepted by the unit for development as a PPP. When the quantitative VFM analysis is done later in the process, this creates a pressure to “*deliver the right result*”, given the cost of changing approach at later stages—that is, quantitative VFM analysis is used more to rationalize an earlier decision, than as an actual decision tool.

### **Possible pitfalls of the PSC and quantitative VFM analysis**

In addition to challenges of timing, most round-table attendees agreed that a major risk of quantitative VFM analysis is that the results are seen as “*overly-scientific*”. This was the primary concern of the UK Treasury in withdrawing its PSC model: in the experience of the UK, “*too much emphasis has been given to the quantitative analysis—as if it provided mathematical proof of VFM*”.

In practice, as described further in Section 4 below, methodological challenges and limited information means that quantitative VFM analysis is highly subjective—as one roundtable participant put it, “*at best, a hypothetical analysis on average reference project based on many (unrealistic) assumptions*”. However, the apparent exactness of a quantitative VFM “*result*” can belie the subjectivity of the process. While the specificity and simplicity of a number can be useful—several roundtable participants noted that quantitative analysis “*can be helpful with political and public perception*” of a proposed PPP—it can also tempt officials to over-rely on quantitative results at the expense of “*real judgment*”; or worse, be open to manipulation.

Despite these significant limitations, most attendees viewed quantitative VFM analysis as a valuable part of the PPP development process: albeit as much for the process itself—a systematic examination of the structure and risk allocation of a proposed PPP—as for its input into the decision to implement a project as a PPP. All agreed that a clear understanding of risk is crucial to achieve value from a PPP, and avoid poorly-structured projects that provide fiscal surprises down the road. In this sense, the VFM test can be seen “*as a project management process, rather than a highly statistical-based, rigorous analysis*”.

## Role of VFM analysis in procurement, and communicating PSC to bidders

As well as informing the decision to pursue a PPP, some governments use the results of VFM analysis explicitly in the tender process for a PPP—with a view to ensuring the government’s assumptions on VFM are borne out in the final bids. In some cases the VFM analysis provides a hard limit on acceptable bids, in others more as a “guide” to bidders on the government’s expectations. For example:

- In **British Columbia, Canada**, a firm “affordability ceiling” is announced in bid documents for each PPP. This ceiling is set at the value of the PPP “shadow bid” as modeled by the Government, rather than the PSC value—that is, the idea is to push bidders to achieve the projected value for money savings in practice. A “scope ladder” is also defined, defining how and in what order of priority certain specifications could be removed or reduced, in case no bidder can come in below this affordability ceiling without adjusting the scope of the project.
- In **Korea**, the results of the VFM assessment are used in the bid process in two ways. First, in the case of an unsolicited proposal, the results of VFM test (broadly speaking—including economic viability) inform the bonus awarded to the proponent in the subsequent competitive bidding process<sup>7</sup>. Secondly, the government usually uses the VFM analysis results to set a “bottom line” for price bidding, with a view to achieving VFM.
- In **France**, in the absence of an official doctrine, the results of VFM analysis can be communicated to candidates as part of project documentation, to let them know what to expect with respect to overall cost assumptions. This approach is favored by the national PPP Unit as it ensures all participants have equal access to the information contained in the VFM analysis, and helps avoid initial offers that differ greatly in scope from the envisaged project.

Roundtable participants also noted that communicating VFM analysis to bidders can help ensure a level playing field—recognizing that even if this

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<sup>7</sup> For more on Korea’s approach to dealing with unsolicited PPP proposals, see Hodges and Dellacha (2007) “*Unsolicited Infrastructure Proposals: How Some Countries Introduce Competition and Transparency*”, PPIAF Working Paper No. 1

analysis is not formally shared as part of bidding documents, it may reach some potential bidders through more indirect means.

Whether or not the VFM analysis is communicated to bidders, many governments—such as the **UK**, **Korea**, and **France**—carry out a final “VFM check”, in which final bids are compared with the final version of the PSC (which may have been updated through the course of the tender process, as contract details and specifications are finalized) prior to signing a PPP contract.

## 4. Quantitative VFM Analysis: the PSC and Key Methodological Issues

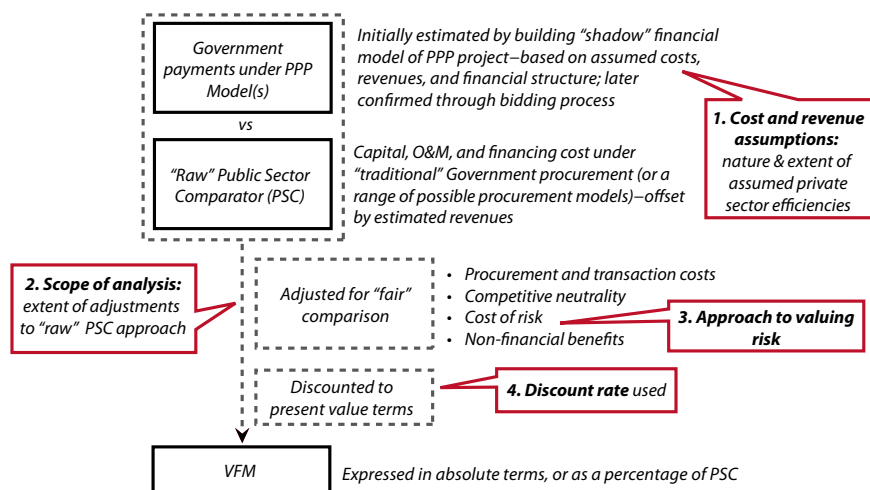
The overall process of quantitative VFM analysis is common to many countries. As illustrated in Figure 1 below, it typically begins with comparing the estimated cost to government of a project under a PPP model (or a range of possible contractual models) to that under a traditional public procurement model. These costs are often then adjusted to take into account various differences between the options—such as tax implications or risk allocation—before discounting the cost streams to reach a present value figure. Nonetheless, several challenges with quantitative VFM analysis—and methodological questions on which different PPP programs diverge—were raised during the PPP round-table. These key issues are highlighted in Figure 1, and described in turn below.

### Key Issue 1: Cost and revenue assumptions

A significant driver of the results of VFM analysis is the assumptions made on project costs under public and private options—in particular, the extent to which a PPP is assumed to achieve lower **costs**, through efficiency or innovation. For countries with longer histories of PPP such assumptions can be informed by actual historic project outturns, although recognizing changing circumstances remains an issue; the challenge is greater for countries with less PPP experience. For example:

- In **France**, earlier VFM analyses typically assumed a percentage reduction in capital costs under a PPP, compared to public procurement. However, a 2013 report by the national audit entity

**Figure 1: Overview of Quantitative VFM Analysis and Key Methodological Issues**



recommended that such an assumption should only be made if based on data on actual project outturns in a particular sector. Increasingly such data is available in France, as the PPP program develops—for example, PPP schools have been found to achieve on average a 15 percent saving in capital expenditure compared to traditionally-procured schools.

- In the **UK**, a large database of more than 700 PFI projects provided a good basis for PFI cost estimates—although assumptions had also been revised for changes such as the increased cost of long-term private sector finance over recent years. On the other hand, public procurement has been improving over time, making historical cost differentials between PPP and traditional public procurement relatively less useful in projecting costs going forward.
- In **Chile**, an assumption of private sector efficiency over public procurement is currently built into their VFM analysis—a “significant assumption” that is based on very limited experience in practice with social sector PPPs.

Differences in project **revenue** assumptions between PPP and public procurement may also affect VFM results. In **Korea**, the treatment of toll revenue in VFM analysis has been a point of concern. Currently the same toll revenue is assumed under PPP and public procurement options—although



this may be unrealistic, as experience suggests tolls on public roads are typically set lower than on PPP roads, resulting in higher traffic, and most likely differing revenues (as well as economic benefits). Also in **Korea**, the revenue from ancillary uses of assets is assumed to be the same under both PPP and public options; whereas in **France** such additional revenue sources (and associated investment) are typically assumed only to apply in the PPP case—if only because administrative law makes it difficult for a government entity to engage in commercial activities that are not core to its function.

## Key Issue 2: Scope of analysis

As described in the overview in Section 2, and highlighted in Figure 1, the scope of quantitative VFM analysis varies. From a starting point of simple cost estimates, most countries make adjustments to capture additional costs or benefits, and “level the playing field” between PPP and public procurement options. Table 1 on page 12 describes these adjustments, and their implications for the scope of VFM analysis in different countries.

**Table 1: Adjustments to VFM analysis**

Adjustment	Description and Country Approaches
<b>Management and transaction costs</b>	The cost to government of project management and transaction implementation may differ between a PPP and traditional public procurement. Treatments of these costs vary: some governments, such as France, adjust both PSC and PPP cost accordingly; while Korea excludes contract management costs from both options.
<b>“Competitive Neutrality”</b>	Most governments adjust the PSC estimate to level out apparent cost advantages of implementation by a public body. These can include adjusting to compensate for differences in cost of land acquisition by public and private entities (in Korea, for example, the same land acquisition schedule and cost is applied under both models), and in tax liabilities.
<b>Cost of bearing risk</b>	One of the key differences between a PPP and traditional public procurement is how risk is allocated—and hence the riskiness, or variability of the cost to government of the project. Approaches to capturing the cost of risk in VFM analysis vary: Many governments (such as <b>Korea</b> , and <b>South Africa</b> ) adjust for the government’s risk exposure by building into the PSC the cost of bearing key risks that <i>would be transferred to the private partner</i> under a PPP model (with risks retained by government in both cases assumed to cancel out). The cost of risk-bearing in the PPP model is assumed to be built into the cost of financing, plus contingencies in construction and operating budgets. In <b>France</b> , <b>British Columbia</b> , <b>Canada</b> , and <b>Virginia, USA</b> , cash flows under both the PSC and shadow PPP model are adjusted for risk, but with different probabilities and risk preferences to reflect the different apt itude and cost of risk-bearing of government and the private party.

	<p>In <b>Chile</b>, on the other hand, no risk adjustment is made—data on risks, particularly cost overruns, under PPPs and public projects are simply considered too scarce to make useful assumptions.</p> <p>Adjusting for risk raises its own methodological issues, as described further below.</p>
<b>Non-financial benefits</b>	<p>Most governments' quantitative VFM analysis assumes that implementing a project as a PPP leaves project <i>benefits</i> unchanged—any implication for quality or timeliness of service is left to qualitative analysis.</p> <p>One exception is <b>France</b>, where the higher benefit associated with expected earlier completion of a PPP project is included in the analysis, in part to offset the implications of faster capital expenditure. This benefit is currently approximated by MAPPP, by using total project cost as a proxy for project benefits, and calculating the value of bringing forward that benefit by <i>x</i> years at the social discount rate—a simple approach that is expected to be refined shortly, as part of a broader review and reform of the VFM approach that will place greater emphasis on non-financial benefits.</p>

## Risk quantification methodologies and assumptions

As noted in Table 1 above, most governments incorporate into VFM analysis the cost of bearing risk—recognizing that risk allocation is an important distinction between PPP and more traditional models of procurement. Generally, the approach taken is to add back to the analysis the cost of any significant risks that will be *transferred* under the PPP model—that is, risks that are retained by government under both public sector and PPP models are assumed to cancel out.

However, this raises its own methodological challenges: how to quantify the cost of risk-bearing. For example, in **France** two different approaches are used. For smaller projects (less than €50 million), a “mean value” is used, and calculated by estimating the probability and impact of any significant risk events. Larger projects use Monte Carlo simulations, in which distributions are assumed for the likelihood and impact of each risk, to calculate a distribution of possible costs. The number and level of detail of risks assessed vary by country—**France** has developed risk distributions for a range of project risks; whereas in **Korea** the focus is on the overall risk of project cost and time over-runs.

This type of quantitative risk analysis is complex, and requires sophisticated financial modeling, as well as data on risk outcomes from previous projects to inform assumptions on probability distributions. This has been a challenge in many countries. For example, the probability distributions used

in **France** have yet to be backed by more evidence from PPP experience—the current approach was developed with advice from an insurance broker. Moreover, historical experience may not necessarily be an indicator of future performance—for example, in the **UK**, improvements over time in public procurement (in particular efforts to address optimism bias) have significantly reduced the risk of cost over-runs of public projects.

As described above, **Chile** does not adjust for risk given the lack of data on project risk outcomes under PPPs or public procurement. Elsewhere in Latin America, governments have struggled to implement in practice the VFM analysis methodologies set out in guidance material—due both to a lack of capacity to implement the complex analysis, and a lack of data to inform assumptions<sup>8</sup>.

## Discount rates

The final step in calculating the relative VFM of PPP or traditional government procurement options is typically to calculate the net present value (NPV) of government payments under each option. Since government cash flow profiles vary significantly between PPP and traditional procurement models, the discount rate applied can have a significant impact on the result of the VFM analysis.

Most governments represented at the round-table (for example, **France, Chile, Korea, and Virginia, USA**) use the appropriate government (that is, risk-free) borrowing rate to discount cash flows under both procurement options. The justification is that the cost of risk-bearing is built in to the analysis explicitly through its cash-flow impact and the cost of financing in the case of the PPP model; moreover, risk-reflective discount rates are more typically used to capture riskiness of income streams, rather than payment streams.

The government of **British Columbia, Canada**, on the other hand, uses a risk-adjusted “project Internal Rate of Return (IRR)” —set by PPP Unit staff based on their previous project experience—to discount cash flows under both public and PPP models. Bidders are then required to use the same discount rate when calculating the value of bids in NPV terms, allowing direct comparison of bids with the PSC and shadow PPP calculations.

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8 Presentation by Daniel Benitez to PPP Roundtable on experience in Latin America with VFM analysis.

## 5. Conclusions and Interesting Questions

The use of value for money analysis to inform PPP decision-making is difficult, and can be controversial. Practitioners face some significant methodological challenges—particularly given very limited ex-post VFM information or other data on PPP project outturns—that mean conclusions of VFM analysis can be misinterpreted or worse, manipulated.

Nonetheless, **governments and infrastructure users benefit from having VFM at the center of PPP decisions.** Sometimes PPP is seen as the only option to deliver a project—because of implementation capacity constraints, or the perceived creation of “fiscal space” by PPPs, whether genuine or not. Even in these cases, there is much to be gained from doing VFM analysis to sense-check the decision to pursue the project, and the proposed PPP structure—it is worthwhile to governments to understand whether or not implementing a project now as a PPP comes at a cost, and if so, to weigh this cost against the associated benefits.

In this light, there is much to be gained in strengthening VFM analysis going forward. To that end, interesting lessons from the round-table included the following:

- **Governments need to strike the right balance between qualitative and quantitative approaches**—particularly in new PPP programs, where there is very limited data available to inform assumptions for quantitative analysis; and in some cases a lack of capacity to implement complex risk analysis. Generally speaking, this will involve greater emphasis and scrutiny on qualitative aspects of PPP decision-making—for example through

clear guidelines and criteria for picking potential PPPs—and developing simplified approaches to quantitative VFM analysis.

- **Governments should be realistic about the nature of quantitative VFM analysis.** Quantitative analysis can be useful to inform decision-making, but should be understood and communicated more as a tool to consistently and systematically assess the combined result of a set of assumptions, than as a scientific process that provides “proof” of VFM.
- **Thorough risk analysis is crucial to successful PPPs.** Many participants saw VFM analysis as important in part because it requires thorough and systematic risk analysis. Whether or not quantitative VFM analysis is carried out, this highlights that sound risk analysis is crucial—to achieving value from a project both in its design (through sound project structuring) and implementation (through effective risk management), and to avoid fiscal surprises.
- **Better data is needed on PPP and major infrastructure investment project outturns.** Quantitative approaches to VFM analysis—and risk analysis more generally—could be improved significantly by more systematic collection of data on actual PPP project outturns, and ex-post assessment of VFM achieved in practice. Round-table participants noted this as an area where the World Bank Group could make a valuable contribution—in collecting new information on PPP performance, as well as in identifying and creating mechanisms by which existing country-level data can be effectively pooled and shared.
- **Ultimately, VFM analysis should be integrated with overall public investment planning.** Some governments are moving towards application of VFM analysis (both qualitative and quantitative) to assess a range of possible project structures. Going forward, several round-table presenters noted that VFM analysis could and should be systematically applied to all major infrastructure projects, to assess the best procurement option<sup>9</sup>.

Much as for other aspects of developing, appraising, and implementing a PPP project, value for money analysis—particularly quantitative risk analysis—

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<sup>9</sup> For a more detailed discussion of a “procurement option test” to be applied to all investment projects, see the final chapter of Philippe Burger and Ian Hawkesworth (2011) *How to Attain Value for Money: Comparing PPP and Traditional Infrastructure Public Procurement*, OECD Journal on Budgeting Volume 2011/1

can be time and resource-intensive. As is the case for the PPP programs represented at the roundtable, most governments benefit from establishing dedicated teams to oversee the PPP development and appraisal process, and rely on the support of experienced advisors in doing so.

Finally, participants agreed that VFM analysis is just the start of the process of achieving value through a PPP. The best-structured and assessed PPP still requires careful shepherding over the project lifetime—with well-defined contract management structures, attentive management of emerging risks, and an appropriately flexible approach to dealing with change—to achieve value for money in practice.

## **Annex A. Global VFM Roundtable 28 May 2013: Agenda and Participants**

This report presents and summarizes the discussion and conclusions of a Global Roundtable on Value for Money analysis, held at the World Bank on May 28, 2013. The aim of the roundtable was to bring together experienced PPP practitioners from a range of countries, to discuss experience with VFM analysis and its use in PPP decision-making. The event was jointly presented by the World Bank Institute (WBI) and the Public-Private Infrastructure Advisory Facility (PPIAF).

Lincoln Flor, Senior Public-Private Partnerships Specialist, WBIPP, was the task team leader and John Saville, Program Assistant, WBIPP, organized the logistics and administrative arrangements.

The roundtable was introduced by Abha Joshi-Ghani, Director of Knowledge Exchange and Learning, WBI. Lincoln Flor made an introduction to Value for Money methodology and the objectives of the roundtable, followed by Satheesh Kumar Sundararajan, Infrastructure Finance Specialist, PPIAF, who provided opening remarks and introduced some core themes on Value for Money Analysis.

The full-day event comprised three sessions, described below.

### **Session 1: Findings on VFM practices in OECD countries**

The first session on VFM practices in OECD countries was moderated by Clive Harris, Practice Manager, WBI. The presenters were:

- Ian Hawkesworth, Coordinator, OECD PPP Network, OECD
- James Ballingall, Head of Assurance Team, Infrastructure UK, **United Kingdom**
- Francois Bergère, Director, Mission to Support Public-Private Partnerships (MAPPP), Ministry of Economy and Finance, **France**

## Session 2: Country Experiences and Lessons Learned I

The second roundtable session, focusing on country experiences with VFM analysis, was moderated by Aurelio Menendez, Transport Sector Manager, World Bank. The presenters were:

- Morteza Farajian, Public-Private Partnerships Program Manager, Department of Transportation, **Commonwealth of Virginia, USA**
- David Duarte, Head of Contingent Liabilities and Concessions, Budget Office, Ministry of Finance, **Chile**
- Hyeon Park, Executive Director, Public and Private Infrastructure Investment Management Center (PIMAC), Korea Development Institute, **Republic of Korea**

## Session 3: Country Experiences and Lessons Learned II

A third session, also on country experiences with VFM analysis, was moderated by Adriana de Aguinaga, Manager, PPP Advisory, International Finance Corporation. The presenters were:

- Daniel Benitez, Senior Transport Economist, Latin America and the Caribbean (LAC) region Sustainable Development Department, World Bank
- Mark Liedemann, Assistant Vice-President, Partnerships BC, **British Columbia, Canada**
- Vivek Aggarwal, Managing Director, Madhya Pradesh Road Development Corporation, **Madhya Pradesh, India**
- William Dachs, Senior Executive Manager, Gautrain Management Agency, **South Africa**.

A wrap-up discussion was chaired by Clive Harris, Manager, WBIPP, and the workshop was closed by Jose Luis Irigoyen, Director, and Head of Global Expert Team on PPP, World Bank.





