

How To Attain Value for Money: Comparing PPP and Traditional Infrastructure Public Procurement

by

Philippe Burger and Ian Hawkesworth*

Governments increasingly use public-private partnerships (PPPs) to pursue value for money. However, value for money is (or at least, should be) the driving force behind traditional infrastructure procurement. Therefore, any project, whether it is a PPP or a traditionally procured project, should be undertaken only if it creates value for money. It seems that the choice between using a PPP or traditional procurement should be simple: governments should prefer the method that creates the most value for money. However, in practice the value-for-money objective is very often blurred, and the choice between using a PPP and traditional infrastructure procurement may be skewed by factors other than value for money. Some factors skew choice towards traditional procurement, while others skew it towards PPPs. Drawing on the results of a questionnaire sent to all OECD and some non-OECD countries, this article considers the various factors that may skew this choice and thereby undermine the pursuit of value for money. The results of the questionnaire point especially to differences in the range and complexity of the ex ante and ex post value-for-money tests that some governments apply to PPPs and traditionally procured infrastructure projects. However, accounting standards, political preferences for or against PPPs, and the strength of public sector unions also play, among others, a role in skewing incentives and affecting choice in some countries. The findings of the questionnaire are augmented by four case studies setting out the procurement processes for PPPs and traditional infrastructure procurement in France, Germany, Korea and the United Kingdom. With the focus on the attainment of value for money and by exploring the issues raised in the responses to the questionnaire, this article sets out some good practices that will align the requirements for these two types of procurement and remove possible perverse incentives that favour one over the other.

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* Philippe Burger is professor of economics and head of the Department of Economics at the University of the Free State, South Africa. Ian Hawkesworth manages the OECD public-private partnership network. He is an administrator in the Budgeting and Public Expenditures Division, Public Governance and Territorial Development Directorate, OECD. An earlier version of this article was presented at the annual meeting of the OECD network of senior PPP officials, Paris, 12-13 April 2010.

1. Introduction

Since the early 1990s, but more so since the early 2000s, there has been a significant increase in the use of PPPs by OECD countries. Countries such as Australia, France, Germany, Korea and the United Kingdom increasingly use PPPs to deliver services that they previously delivered through traditional public procurement. For most of the last decade, PPPs in the United Kingdom constituted approximately 12% of total annual capital expenditure (cf. EIB, 2004:5; KPMG, 2007:4), with other countries following suit. The drive to use PPPs is increasingly premised on the pursuit of value for money (cf. OECD, 2008).¹ As it includes both qualitative and quantitative aspects and typically involves an element of judgment on the part of government, a precise measure for value for money does not exist (see the Appendix for a discussion). Nevertheless, value for money can be defined as what a government judges to be an optimal combination of quantity, quality, features and price (i.e. cost), expected (sometimes, but not always, calculated) over the whole of the project's lifetime. Thus, the value-for-money concept attempts to encapsulate the interests of citizens, both as taxpayers and recipients of public services. As such, value for money should in principle also be the driving force behind traditional infrastructure procurement. Therefore, any project, whether it is a PPP or a traditionally procured project, should be undertaken only if it creates value for money. With value for money being the objective, PPPs and traditional infrastructure procurement are merely two modes to deliver value for money.

Therefore, as a matter of principle it seems that the choice between using a PPP or traditional procurement should be simple: governments should prefer the method that creates the most value for money. However, in practice the choice is not always as simple. In practice, the value-for-money objective is very often blurred, and the choice between using a PPP and traditional infrastructure procurement may be skewed by factors other than value for money. Some factors skew choice towards traditional procurement, while others skew it towards PPPs. This article considers the various factors that may skew this choice and thereby undermine the pursuit of value for money. Factors may include: the legal and institutional set-up that procuring entities face; the range and complexity of the *ex ante* and *ex post* value-for-money tests to which PPPs and traditionally procured infrastructure projects are subjected; the roles in the procurement process of the parliament, the finance ministry, the PPP unit and the procuring entities; and the accounting standards applied to both PPPs and traditionally procured infrastructure projects. Political preference for or against PPPs may also play a role in skewing incentives and affecting choice, together with issues such as the availability of skilled staff, the strength of public sector unions, inability to quantify and price project risks, and the general complexity of some projects.

With the focus on the attainment of value for money and by exploring the issues raised above, this article sets out to compare the two methods of procurement. It used a questionnaire sent to OECD and selected non-OECD countries to collect information on traditional infrastructure public procurement and the procurement of services through public-private partnerships. The results are presented in Section 3. These results are

further augmented in Section 4 by four case studies covering procurement processes in France, Germany, Korea and the United Kingdom. Using the information from Sections 3 and 4, Section 5 suggests good practice that will align the requirements for these two types of procurement and remove possible perverse incentives that favour one over the other. As there might be good reasons why requirements could differ, aligning requirements does not necessarily mean identical requirements for both PPPs and traditionally procured projects. Rather, alignment means that, for the same type of project, the same level of detail and information is available to assess value for money, whether that project is a PPP or a traditionally procured investment project. It also means that the scope and volume of institutional and legal requirements as applied to PPPs and traditional procurement respectively, as well as *ex ante* and *ex post* value-for-money assessments required from each type, do not create incentives to prefer one type of procurement to the other. Alignment furthermore requires that accounting standards do not affect the choice between PPPs and traditional infrastructure procurement.

Given an overview and comparison of the institutional and other aspects of PPPs and traditional procurement in the countries surveyed, this article also sets out to consider the process and requirements whereby a government decides whether a project should be procured through a PPP or traditional procurement. Due to the novelty of PPPs in many countries, clear criteria do not exist generally to guide the choice between these procurement options. The article considers some frameworks used to guide this choice and then sets out a list of criteria that could guide governments in deciding the mode of procurement. In addition, the article considers measures that might reduce the preference for one type of procurement over another, where such a preference is caused by the characteristics of the *ex post* value-for-money assessment. Lastly, the article suggests a unified framework that could be used to structure the selection of procurement options.

2. Defining PPPs and traditional procurement

A clear definition as to what constitutes a public-private partnership does not exist. The OECD (2008) defines a public-private partnership as:

... an agreement between the government and one or more private partners (which may include the operators and the financiers) according to which the private partners deliver the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partners (OECD, 2008, p. 17).

Within this relationship, the government specifies the quality and quantity of the service it requires from the private partner(s).² The private partner may be tasked with the design, construction, financing, operation and management of a capital asset to deliver a service to the government or directly to end users. Furthermore, the private partner will receive either a stream of payments from the government or user charges levied directly on the end users, or both. If the government is also responsible for a stream of payments to the private partner for services delivered, these may depend on the private partner's compliance with government specifications for quality and quantity. For the purposes of this article, the PPP concept includes both "pure PPPs" – i.e. projects where the main source of revenue for the private partners is the government (in the form of regular payments or a

unit charge) – and concessions (where the main source of revenue is user charges levied by the private partners on the beneficiaries of the services).³

A key element of the definition mentioned above is the role of risk. To ensure that the private partner operates efficiently and delivers value for money, it is necessary to transfer a sufficient amount of risk. In principle, risk should be carried by the party best able to manage it. In this context, “best” means the party who can manage the risk at least cost. To manage it may mean the party best able to prevent a risk from realising (*ex ante* risk management) or the party best able to deal with the results of realised risk (*ex post* risk management), whichever option (*ex ante* or *ex post*) is the cheapest. Some risks can be managed and are hence called endogenous risks. However, not all risks can be managed, and cases may exist where one or more parties to a contract are unable to manage a risk. To those parties, such unmanageable risks are exogenous risks; an example is uninsurable *force majeure* risk that affects all parties, while political and taxation risk is exogenous to the private party and endogenous to government.⁴

Box 1. Different country definitions of public-private partnerships

Korea defines a public-private partnership project as a project to build and operate infrastructure such as road, port, railway, school and environmental facilities – which have traditionally been constructed and run by government funding – with private capital, thus tapping the creativity and efficiency of the private sector.

South Africa defines a public-private partnership as a commercial transaction between a government institution and a private partner in which the private party either performs an institutional function on behalf of the government institution for a specified or indefinite period, or acquires the use of state property for its own commercial purposes for a specified or indefinite period. The private party receives a benefit for performing the function or by utilising state property, either by way of compensation from a revenue fund, charges or fees collected by the private party from users or customers of a service provided to them, or a combination of such compensation and such charges or fees.

The **United Kingdom** defines a public-private partnership as “...arrangements typified by joint working between the public and private sectors. In their broadest sense they can cover all types of collaboration across the private-public sector interface involving collaborative working together and risk sharing to deliver policies, services and infrastructure” (HM Treasury, 2008). The most common type of PPP in the United Kingdom is the private finance initiative (PFI). A PFI is an arrangement whereby the public sector contracts to purchase services, usually derived from an investment in assets, from the private sector on a long-term basis (often between 15 to 30 years). This includes concessions and franchises, where a private sector partner takes on the responsibility for providing a public service including maintaining, enhancing or constructing the necessary infrastructure.

The **State of Victoria (Australia)** defines a public-private partnership as relating to the provision of infrastructure and any related ancillary service which involve private investment or financing, with a present value of payments for a service to be made by the government (and/or by consumers) of more than AUD 10 million during the period of a partnership that do not relate to the general procurement of services.

Traditional infrastructure procurement represents the acquisition by government of infrastructure such as roads and buildings (*i.e.* hospital buildings, school buildings). Usually the government specifies the quantity and quality of the service, while the infrastructure is constructed by private companies to whom the construction is typically awarded through tender. Once the construction is finished, the asset is transferred to and operated by government.⁵ This mechanism includes so-called “build and deliver” contracts. Therefore,

both PPPs and public procurement typically involve the private sector. The key distinction is the allocation of risk and the role of risk as an efficiency driver.

In the case of a PPP, the transfer of the appropriate type and amount of risk is key to the success of that PPP. Most often these same risks are also present in traditionally procured projects. However, in a traditionally procured project the transfer of risk to the private parties involved is very limited and usually does not extend beyond the construction phase of the project (an example of the risk transferred is the inclusion in the contract of penalties for late delivery). PPP contracts, however, tend to integrate the construction and operational aspects of the project in a single contract. This ensures that the private partner has an incentive to incur additional construction cost if those costs reduce future operating and maintenance cost, but only if the present value of the operating and maintenance cost saving exceeds or equals the increase in the present value of the additional construction cost. This incentive does not exist in traditional procurement. However, as the discussion below will indicate, despite the fact that PPPs may yield this benefit compared to traditional procurement, not all projects are suitable candidates for PPP project status. The success of a PPP depends critically on the risk transferred (and transferrable), the competition among private parties, and the nature of the service to be delivered. It may also depend on the need for innovation, as well as the complexity of the project.

2.1. The increasing importance of public-private partnerships

Although governments increasingly use PPPs, these arrangements still constitute a relatively small component of total public sector investment. The United Kingdom figure of 12% mentioned above is one of the largest. Some countries also informally state that they do not foresee PPPs exceeding 15% of total public investment, one reason being the rather cumbersome process of creating a PPP (OECD, 2008). However, notwithstanding difficulties, countries such as Australia, Germany, Korea and South Africa, as well as France, Portugal and Spain, increasingly use PPPs. As noted above, there is a divergence in definitions regarding what constitutes a PPP. This also leads to different figures regarding the number of PPPs in the world. As such, not all the figures are comparable, but they do give an indication of the wide extent to which countries use PPPs. According to Deloitte (Ireland) (2009), infrastructure projects constitute the largest sector by number of deals internationally, followed by health care and education, while the United Kingdom is by far the leading country implementing projects, followed by the rest of Europe in second place. Furthermore, PPP activity reached a peak during the period 2003-07, before slowing down due to the onset of the international financial crisis and recession.

Table 1 comprises data collected by the Public Works Financing “International Major Projects Survey” (PWF, 2009, p. 2). It includes projects that represent various combinations of public and private sector risk taking and represents cumulative data since 1985. According to Public Works Financing, road PPPs represent almost half of all PPPs in value (USD 307 billion out of USD 645 billion) and a third in number (567 out of 1 747). Second is rail and third is water. The PWF database also confirms that Europe represents about half of all PPPs in value (USD 303 billion) and a third in number (642).

Table 1. Global public-private partnership deals by sector and region since 1985¹

	Roads		Rail		Water		Buildings		Total		
	Number of projects	Cost (USDm) ²	Number of projects	Cost (USDm) ²	Number of projects	Cost (USDm) ²	Number of projects	Cost (USDm) ²	Number of projects	Cost (USDm) ²	
United States	Total planned and funded since 1985	77	61 844	41	58 334	187	20 001	164	10 986	469	151 926
	Funded by 10/09	35	16 913	27	10 950	136	15 024	158	9 421	356	52 308
Canada	Total planned and funded since 1985	31	18 103	7	9 780	29	3 029	91	12 529	158	43 531
	Funded by 10/09	20	11 058	1	2 000	14	457	49	9 572	84	23 114
Latin America ³	Total planned and funded since 1985	272	101 236	69	51 184	153	17 163	19	1 729	513	171 222
	Funded by 10/09	140	61 652	26	10 355	79	9 865	8	521	253	82 393
Europe	Total planned and funded since 1985	339	320 375	102	157 293	218	34 178	306	90 369	965	602 215
	Funded by 10/09	193	156 692	55	54 579	171	24 657	223	66 975	642	302 903
Africa and Middle East	Total planned and funded since 1985	21	10 886	16	12 479	101	28 166	10	1 186	148	52 717
	Funded by 10/09	13	5 691	4	4 668	45	17 835	4	957	66	29 151
Asia and Far East	Total planned and funded since 1985	295	92 662	93	101 826	180	50 745	37	11 358	605	256 591
	Funded by 10/09	166	54 640	40	55 676	119	37 452	21	7 201	346	154 969
World	Total planned and funded since 1985	1 023	605 106	328	390 896	868	153 282	627	128 157	2 858	1 278 202
	Funded by 10/09	567	306 673	153	138 228	564	105 290	463	94 647	1 747	644 838

1. This database comprises data collected by the PWF International Major Projects Survey. It includes all projects that are being planned, built or are operated in 131 countries. According to PWF (2009, p. 3): "PWF's survey aims to describe projects where governments are seeking to franchise the delivery of public works infrastructure services to private, for-profit companies outside of a regulated, public utility structure. That delegation of control can take the form of long-term service contracts, concession arrangements involving finance, construction and long-term operations of facilities under term-limited contracts; private development and ownership of facilities; and divestiture of infrastructure assets."

2. Cost USDm (million) refers to nominal dollars, converted to USD at time of financial close.

3. Latin America includes Mexico, Latin America and the Caribbean.
Source: Public Works Financing (2009), *Public Works Financing Newsletter*, Vol. 242, October, www.PWFfinance.net.

3. Survey results

3.1. Background information

The survey was conducted during January 2010. Questionnaires were sent to senior PPP and finance ministry officials in 31 countries. A total of 22 countries responded: Australia (federal government and government of New South Wales⁶), Austria, Canada, Chile, Czech Republic, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Korea, Mexico, Netherlands, New Zealand, Norway, Slovak Republic, South Africa (an enhanced engagement country), Spain, Switzerland and United Kingdom. Four of the countries (France, Germany, Korea and the United Kingdom) also served as case studies comparing PPP and traditional infrastructure procurement processes. These case studies can be found in Section 4 below.

Of the 22 countries surveyed, 20 indicated that they do use PPPs in their country at the level of government for which they answered the questionnaire (the exceptions are Switzerland at the federal level and New Zealand). In 13 of the countries, answers pertain to the national/federal government and in seven to the general government (see Table 2).

Table 2. To which level of government do your answers in this survey apply?

National/federal government	13
Provincial/state government	0
National/federal and provincial government levels	0
All levels of government, <i>i.e.</i> national/federal, provincial and municipal government	7
Total	20

Table 3 indicates the percentage of public sector investment that takes place through PPPs and the number of countries to which each range applies. For instance, in nine of the 20 countries, PPPs constitute between 0% and 5% of public sector investment in infrastructure. Furthermore, in nine countries, PPPs constitute between 5% and 15% of total public sector infrastructure expenditure.

The number of PPPs in countries varies significantly. It ranges from one at the federal level in Canada, to three each in Austria, Denmark and Norway, to 670 in the United Kingdom.⁷ In between are France with 330,⁸ Korea with 252, Mexico with 200, Germany with 144, Chile with 60, South Africa with 50, New South Wales (Australia) with 35, Hungary and the Netherlands with nine each, and Ireland with eight.

Table 3. What percentage of public sector infrastructure investment takes place through PPPs?

Range	Number	Country
0%-5%	9	Austria, Canada, Denmark, France, Germany, Hungary, Netherlands, Norway, Spain
> 5%-10%	7	Czech Republic, Greece, Ireland, Italy, Slovak Republic, South Africa, United Kingdom
> 10%-15%	2	Australia, Korea
> 15%-20%	0	
> 20%	2	Chile, Mexico
Total	20	

3.2. The problem statement

As argued in the introduction to this article, even though value for money should be the overriding criteria in the choice between using a PPP or traditional infrastructure procurement (TIP), the choice is very often blurred in practice. More specifically, the choice between using a PPP and TIP may be skewed by factors other than value for money, with some skewing it towards traditional procurement, while others skew it towards PPPs. To ascertain the extent to which there are grounds for considering whether or not such skewing exists, the questionnaire requested respondents to consider whether or not they think that:

- the rules in place impede attaining the maximum value for money by creating incentives to prefer traditional infrastructure procurement (TIP) over PPPs; or
- the rules in place impede attaining the maximum value for money by creating incentives to prefer PPPs over traditional infrastructure procurement (TIP).

In four countries, respondents reported that they do not have enough data to make the assessment (see Table 4). In seven of the remaining 16 countries (i.e. almost half), respondents argued that rules indeed did to a large or to some extent impede attaining value for money by creating incentives to prefer TIP projects over PPPs. However, the opposite is not true – i.e. in 15 of the 16 countries, respondents reported that rules do not impede attaining value for money by creating incentives to prefer PPPs to TIP projects. Hence, on the basis of these results, it would seem that a bias might exist in favour of traditional infrastructure procurement.

Table 4. Do you think that the rules in place impede attaining the maximum value for money by creating incentives to prefer one form of procurement over the other?

	TIP over PPPs	PPPs over TIP
Yes, to a large extent	2	0
Yes, to some extent	5	1
No	9	15
Not enough data to make assessment	4	4
Total	20	20

3.3. Legal framework and institutional set-up

This sub-section explores the extent to which the legal and regulatory framework, as well as the institutional set-up for PPPs, differs from that under which traditionally procured infrastructure projects operate. In eight of the 20 countries, the government passed specific PPP laws and regulations to regulate PPPs (see Table 5). In seven of the countries, sector-specific laws also apply to both PPPs and TIP.

In most countries, both traditional infrastructure procurement and PPPs are managed and regulated in terms of existing laws and regulations pertaining to procurement, contract law and the budget law. However, Table 5 also shows that, in some countries, procurement law applies only to traditional infrastructure procurement (TIP) and not to PPPs. This raises the question as to whether or not in some countries a specific PPP law replaces procurement law. Hence, Table 6 juxtaposes the use of procurement law as applied to PPPs with the existence of a specific PPP law. Table 6 shows that in nine countries there is only

a procurement law that applies to PPPs, and no PPP law, while in six countries there is a specific PPP law, while public procurement law does not apply to PPPs. In three countries, the procurement law and a specific PPP law both apply to PPPs, while in two countries neither a PPP law nor a procurement law applies to PPPs. In view of this situation, a recommendation for countries with a separate and specific PPP law, but where procurement law does not apply to PPPs, would be for the government to consider the degree to which the requirements for TIP and PPPs are aligned. They need to do so to ensure that what is demanded from line departments using these two forms of procurement does not create incentives to prefer one form of procurement to the other based on grounds other than value for money, efficiency and effectiveness.

Table 5. What constitutes the legal framework for PPPs and traditional infrastructure procurement?

	PPPs	TIP
Procurement law	12	17
Contract law, concession law, budget law	15	12
Specific PPP law or regulations	8	n.a.
Sector-specific laws (<i>e.g.</i> for transport or health care)	7	7
Other	2	1
None	0	0

Table 6. Combination of procurement law and specific PPP law and regulations

Procurement law applied to PPPs	9
Procurement law as well as specific PPP law or regulations applied to PPPs	3
Specific PPP law or regulations	6
Neither	2
Total	20

The questionnaire also set out to establish whether or not the legal and regulatory framework reported in Tables 5 and 6 is uniform across all levels of government (*e.g.* national/federal, provincial and municipal). In Austria, federal procurement law applies, but there are also nine different procurement laws for the nine Austrian provinces. In Australia, there is no uniform framework, but national guidelines and policies exist to facilitate PPP policy harmonisation. Canada reported that civil law applies in Quebec while common law applies elsewhere; in addition, there are variations in regulatory regimes between jurisdictions (*e.g.* from province to province; provincial *versus* federal). The Netherlands reported that it does not have a regulatory framework; Hungary does not have one for PPPs. Denmark reported some differences (also at local level), while France, the Slovak Republic and South Africa reported slight differences between levels of government, usually with respect to municipalities. The remaining countries all apply the same framework to all levels of government, both for PPPs and TIP.

Differences between PPPs and traditional procurement also exist in terms of which institutions are involved in infrastructure procurement. Table 7 shows that the finance ministry and the procuring line departments are usually involved in both PPP and TIP projects. Provincial governments are also involved in both PPPs (six countries) and TIP (eight countries). Furthermore, in 11 countries municipalities are involved in TIP, and in 10 countries they are also involved in PPPs. The latter fact indicates the increasing use of PPPs to deliver municipal services in many countries. In addition, more countries

report municipal involvement in TIP and PPPs than provincial involvement. This is also an indication that, with respect to their spheres of activities, municipalities in many countries have a higher degree of independence from central government compared to provinces. This independence very often follows from the existence of own sources of revenue such as municipal service charges. In two countries, legislative and parliamentary committees also play a role in infrastructure procurement through PPPs, while the committees' role regarding TIP occurs in three countries. Ten countries reported that they have a specific ministry that is also involved in TIP, while in six countries a specific ministry is also involved in PPP projects.

Table 7. Which of the following institutions are involved in infrastructure procurement in the case of PPPs and TIP?

	PPPs	TIP
The entity responsible for formulating the government's budget (<i>e.g.</i> Ministry of Finance)	15	14
Line ministry	16	17
Specific ministry/entity responsible for public procurement	6	10
Relevant government agencies (<i>e.g.</i> regulatory agencies)	5	7
Legislative/parliamentary committees	2	3
Other	3	4
Provincial authorities (in the case of provincial procurement)	6	8
Municipal authorities (in the case of municipal procurement)	10	11
PPP unit in the Ministry of Finance	9	n.a.
PPP unit in the line ministry	8	n.a.
PPP unit in a separate agency (<i>e.g.</i> Partnerships UK)	4	n.a.

Many countries also have PPP units (Table 8). These units mostly provide technical assistance and contribute to policy formulation, while in some countries they are also responsible for the approval of PPP projects (OECD, 2010) (also see the discussion below). PPP units take different forms, with 13 units present in the finance ministry and six being independent agencies. The first row in Table 8 summarises the second and third rows but eliminates a double count (*i.e.* cases where there is both a unit located in the finance ministry and an independent unit). It shows that in 14 countries there is a PPP unit in the finance ministry and/or an independent PPP unit acting as an agency. There are ten countries with sector-specific units in the procuring/line departments. Table 7 showed that, in nine countries, PPP units in the finance ministry are involved in the PPP procurement process, while in four the independent agencies are involved. In eight countries, sector-specific units in the procuring/line departments are involved in the PPP procurement process.

Table 8. Does your government have a PPP unit?

A central unit (unit in the Ministry of Finance and/or unit acting as an independent agency)	14
A unit located in the Ministry of Finance	13
A unit acting as an independent agency	5
Sectoral units (<i>e.g.</i> transport, health) located within line ministries	10
No	4

Table 9 juxtaposes the responses of countries on whether or not they have a PPP unit with their responses on whether or not they have a specific PPP law. The left column refers to combinations of a PPP unit and a PPP law, while the heading of the next column refers

to the existence of a specific PPP law. Therefore, the second row, second column indicates that in six countries there is no PPP law but there is a PPP unit, while the third row, second column indicates that in no country is there a PPP law but no unit. Thus, the existence of a PPP law always corresponds to the presence of a PPP unit. However, the reverse does not hold true, *i.e.* the presence of a PPP unit does not necessarily mean there is a PPP law (in six countries, there is a PPP unit but no PPP law).

In Table 9, the headings of columns three to five indicate to what type of PPP unit the numbers in that column refer. Therefore, the third row, third column indicates one country where there is a PPP law but no unit located in the finance ministry. The fourth row, third column indicates that in seven countries there is both a PPP law and a PPP unit in the finance ministry. Furthermore, in seven countries there is a PPP law but no PPP unit as an independent agency, while in eight countries there is neither a PPP law nor a PPP unit acting as an independent agency.

Table 9. **PPP laws and PPP units**

	Specific PPP law or regulations	Unit located in the Ministry of Finance	Unit acting as an independent agency	Sectoral units (<i>e.g.</i> transport, health) located within line ministries
No PPP law, no PPP unit	6	6	8	6
No PPP law, PPP unit	6	6	4	6
PPP law, no PPP unit	0	1	7	4
PPP law, PPP unit	8	7	1	4
Total	20	20	20	20

3.4. Ex ante value-for-money assessment

Significant differences between countries exist with regard to the degree to which PPP and TIP projects are subjected to *ex ante* value-for-money assessments. Though most projects, be they PPPs or TIP, are subjected to *ex ante* value-for-money assessments, the type of assessments differ quite substantially. Table 10 indicates that an *ex ante* process to ascertain value for money is done for all PPPs and TIP projects in, respectively, 11 and 7 countries. Furthermore, for both PPPs and TIP projects, five countries do *ex ante* value-for-money assessments for projects above a specified threshold, while in respectively three and zero countries these assessments are done on an *ad hoc* basis. This means that only one country does not do *ex ante* value-for-money assessments for PPPs, while in eight countries these assessments are not done for TIP. The results of Table 11 indicate that more rigour is required from PPP projects compared to TIP. As noted in the introduction to this article, the higher degree of rigour required from PPPs may in itself create a preference towards traditional procurement. However, the point is not that the requirements for PPPs be watered down, but the opposite: that the rigour of the requirements for TIP be aligned with those of PPPs so as to eliminate any possible incentive other than value for money, efficiency and effectiveness to prefer TIP over the PPP option.

In countries where there are *ex ante* processes for PPPs and TIP, these processes are largely the same for all sectors of the economy (see Table 11).

Table 10. Is there an *ex ante* process to ascertain value for money (this may include a whole-of-life/net-present-value approach) for PPPs and TIP?

	PPPs	TIP
Yes, for all	11 ^a	7 ^d
Yes, for those above a threshold	5 ^b	5 ^e
Yes, on an <i>ad hoc</i> basis	3 ^c	0
No	1	8
Other	0	0
Total	20	20

a. Australia, Austria, Canada, Denmark, France, Germany, Ireland, Korea, South Africa, Spain, United Kingdom.

b. Czech Republic, Hungary, Netherlands, Norway, Slovak Republic.

c. Chile, Greece, Mexico.

d. Australia, Austria, Canada, Denmark, Germany, Mexico, United Kingdom.

e. Hungary, Ireland, Korea, Netherlands, Norway.

Table 11. Is this formal process the same for all sectors in the case of PPPs and TIP respectively?

	PPPs	TIP
Yes	17	9
No	1	2
Other	1 ^a	1 ^b
No response to this question because no formal process exists (<i>i.e.</i> answered "no" in Table 10)	1	8
Total	20	20

a. Varies in Mexico depending on the type of mechanism used (*i.e.* Pidiregas is different from PFI projects).

b. Respondent did not know.

One of the most notable differences between PPPs and TIP projects exists with regard to the methods/processes that are applied to ascertain value for money. PPP projects usually require that procuring entities put together a public sector comparator (PSC). In 17 of the 20 countries, the government uses a public sector comparator, while one of the three exceptions (the United Kingdom) uses public sector guidelines and an *ex ante* value-for-money test that fulfils very much the same role as a PSC (see Table 12). In 12 of the 20 countries, TIP projects are subjected to cost-benefit analyses. TIP projects may also be subjected to cash-flow estimates over the project cycle (three countries) and central guidelines (five countries). However, in countries where TIP projects are not subjected to cost-benefit analysis, projects commence following a needs analysis and costing by the line department which has to be approved by the finance ministry as part of the annual budgeting cycle. What is notable, though, is that more countries require a PSC than require a cost-benefit analysis. Again, this situation points to a discrepancy in the rigour required from PPPs and TIP projects. As such, there might be an incentive to rather pursue TIP, not because it will necessarily yield the highest value for money, but simply because the process to create a TIP is simpler. Furthermore, in the absence of cost-benefit analyses, it might even be possible to pass projects that might not have demonstrated value for money if they had been properly scrutinised in a rigorous manner.

A contrast also exists with regard to the discount rate that line departments or the finance ministry apply when using a whole-of-life/net-present-value approach to assess *ex ante* value for money in the case of PPPs and TIP projects. While almost a similar number of countries use a single prescribed rate for either all PPPs or all TIP projects (respectively nine and seven – see Table 13), seven countries use rates set on a project-by-project basis for PPPs, in contrast to the two who do so for TIP projects. In six countries, the discount rate that is applied to PPPs is the same as the rate applied to TIP projects (see Table 14).

Table 12. What method/process is used to ascertain value for money in the case of PPPs and TIP?

PPPs		TIP	
Public sector comparator	17 ^a	Cost-benefit analysis	12 ^b
Public interest test	2	Cash-flow estimates over the project cycle	3
Central guidelines	5	Central guidelines	5
Other	2	Other	3

a. Australia, Austria, Canada, Chile, Czech Republic, Denmark, France, Germany, Greece, Hungary, Ireland, Korea, Mexico, Netherlands, Slovak Republic, South Africa, Spain.

b. Australia, Austria, Canada, Denmark, Germany, Hungary, Ireland, Korea, Mexico, Netherlands, Norway, United Kingdom.

Table 13. What discount rate does the government use when it applies a whole-of-life/net-present-value approach in the case of PPPs and TIP?

	PPPs	TIP
Single prescribed rate for all projects	9 ^a	7 ^c
Rate set on a sector-by-sector basis	1	1
Rate set on a project-by-project basis	7 ^b	2 ^d
Other	2	2
No response to this question because no formal process exists (<i>i.e.</i> answered "no" in Table 10)	1	8
Total	20	20

a. Czech Republic, Denmark, France, Greece, Hungary, Ireland, Korea, Mexico, United Kingdom.

b. Australia, Austria, Chile, Germany, Netherlands, South Africa, Spain.

c. Denmark, Hungary, Ireland, Korea, Mexico, Netherlands, United Kingdom.

d. Canada, Germany.

Table 14. If the government uses a single prescribed rate for all projects, or if it uses a discount rate on a sector-by-sector basis, are these rates the same for both PPPs and TIP?

Always	6
Often (> 50% of the time but less than 100%)	0
Rarely (< 50% of the time but more than 0%)	0
Never	0
Other	1 ^a
No response to this question because no formal process exists (<i>i.e.</i> answered "no" in Table 10 and do not use either a single prescribed rate or a rate set on a sector-by-sector basis [first two rows of Table 10] for both PPPs and TIP)	13
Total	20

a. Respondent did not know.

The questionnaire also posed an open question to respondents to ascertain how the government makes the choice between using PPPs and traditional infrastructure procurement. Except for a few cases (*e.g.* the United Kingdom, the state of New South Wales in Australia), it is clear that only a small number of countries apply criteria to all prospective projects to establish which mode of procurement will yield the highest value for money. In several countries, traditional procurement is simply the default option for procurement, and whether or not a project is selected as a candidate PPP project depends on the discretion of the line department. Hence, it is not always clear how a project becomes a PPP candidate. As one respondent noted:

In theory there is some kind of value for money but in practice, there is no formal test applied to all infrastructure procurements. The decision to procure as a PPP has been largely driven by champions inside individual government departments/agencies. Once a department/agency decides to look at procuring as a PPP, they would do a value-for-money analysis to support the decision.

Once a project is selected as a PPP candidate, the proposals of prospective private partners are compared to a PSC. Thus, all prospective PPP projects are generally measured against an alternative public sector option (PSO). However, prospective TIP projects are not compared to an alternative private sector option. An alternative private sector option is unfortunately not always viable, as the government cannot be expected to credibly forecast the range of innovative designs and risk management procedures which competing private partners can invent. Hence, there is unfortunately no credible (or at least very limited) scope for governments to create a “private sector comparator”. As Section 5 below argues, the problem is not insurmountable. The discussion in Section 5 will show that the governments of the United Kingdom and the Australian state of New South Wales apply a set of criteria that guide public sector managers to assess which mode of procurement will likely deliver the most value for money. Such a set of criteria could help governments select a procurement mode in a systematic manner.

3.5. Role of the finance ministry and parliament in the approval process

The sequencing of decision making regarding the creation of a project, and more specifically where in this sequence the choice between a PPP and traditional procurement as method of procurement is made, may impact the decision on whether or not the project is actually going ahead. The key question is whether or not the government first decides on the procurement of an asset before it chooses the mode of procurement. Table 15 reports that, in 11 countries, the government always first decides on the procurement of an asset before it chooses the mode of procurement. In three more countries, this is done often, while in four countries this is done rarely or never. In the case of the two countries falling in the “other” category, one has TIP as a default option and requires that, if a project takes the PPP route, the proposal justifies why TIP is not preferred. The second country in the “other” category stated that whether or not the government first decides on the procurement of an asset before choosing the mode of procurement is decided on a case-by-case basis.

Table 15. **Does the government first decide on the procurement of an asset before it chooses the mode of procurement (the latter being the choice between PPP and TIP procurement)?**

Always	11 ^a
Often (> 50% of the time but less than 100%)	3 ^b
Rarely (< 50% of the time but more than 0%)	3
Never	1
Other	2
Total	20

a. Australia, Austria, Denmark, France, Germany, Greece, Ireland, Korea, Netherlands, South Africa, United Kingdom.

b. Canada, Italy, Mexico.

Closely linked to the question about sequencing is a question about budgeting. When line departments present their new project proposals to the cabinet/chief executive/finance ministry, etc., the question is whether or not they have to show that their projects can be funded within their multi-year expenditure budget estimates. Both for PPPs and TIP projects, 15 countries reported that line ministries always have to demonstrate that the proposed projects can be funded, while for three more countries this has to be done often for both PPPs and TIP projects (see Table 16).

Table 16. When the line ministries present their new project proposals to the cabinet/chief executive/finance ministry, etc., do they have to show that the project can be funded within their multi-year expenditure budget estimates in the case of PPPs and TIP?

	PPPs	TIP
Always	15	15
Often (> 50% of the time but less than 100%)	3	3
Rarely (< 50% of the time but more than 0%)	0	1
Never	0	0
Other ^a	2	1
Total	20	20

a. In the case of Norway, a ministry is permitted to present a proposal that cannot be funded within current budget limits. Such proposals will be handled in the cabinet budget process. In the case of Austria, limited applicability for PPP since only one exists.

The decision about whether or not to procure the asset (prior to deciding the mode of procurement) involves the allocation of the capital needed for the project in the normal budgetary cycle. Only when funds are allocated can the government commit to procuring the asset through either a TIP or a PPP. This sequencing prevents a situation where, although an asset cannot be procured due to a lack of allocated funds in the budget, the procuring department sets the project up as a possible PPP because the acquisition of the asset will not appear on the government books. If the sequencing described in Table 16 does not exist, there is a danger that – even though initially a PPP project proposal is presented as an alternative to public procurement (it may even include a public sector comparator) – the actual choice is not between a PPP and traditional public procurement, but between a PPP and no procurement. The absence of the sequencing also creates a way to put pressure on a finance ministry in subsequent years to fund payments to private partners originating in the PPP agreements.

The role of the finance ministry may extend further than just the approval of the annual government budget and the budgets of the individual line departments. The Ministry of Finance may also have a formal, gatekeeping role with respect to the approval of specific projects (even when these projects fall within the existing approved budget envelope of the responsible line ministry). The term “gatekeeping” means that if approval is not obtained, the project cannot proceed. Again, this may differ between PPPs and TIP projects. Table 17 notes that in ten countries all PPP projects or all PPP projects above a threshold are subject to such approval, while TIP projects in eight countries are subject to such approval. It should also be noted that seven of the ten countries mentioned for PPPs require approval for all projects, while in the case of TIP it is only three of the eight. Again, this indicates that the requirements imposed on PPPs are more stringent than those imposed on TIP projects.

Table 17. Does the Ministry of Finance have a formal gatekeeping role with respect to the approval of specific projects (even when these projects fall within the existing approved budget envelope of the responsible line ministry) in the case of PPPs and TIP?

	PPPs	TIP
Yes, for all	7 ^a	3 ^c
Yes, for those above a threshold	3 ^b	5 ^d
Yes, on an <i>ad hoc</i> basis	4	5
No	2	4
Other	4	3
Total	20	20

a. Australia, Austria, Chile, Greece, Mexico, South Africa, United Kingdom.

b. Canada, Korea, Slovak Republic.

c. Austria, Greece, Mexico.

d. Canada, France, Korea, Norway, United Kingdom.

The approval entailed by the gatekeeping role, both in the case of PPPs and TIP projects, may relate to: i) the size of the project (in financial terms); ii) value for money; iii) whether correct procedures have been followed in the project development; and iv) an assessment of whether or not the project adheres to the intention of the original budget appropriation. Table 18 reports the results. It is worth noting that, in 14 countries, approval for PPPs is granted on the basis of value for money, while only 7 countries use that criterion for approving TIP projects. Again, Table 18 demonstrates that PPPs have to fulfil more rigorous requirements compared to TIP projects. And again this supports the notion that incentives might exist over and above value for money that affect which mode of procurement is used.

Table 18. If approval by the Ministry of Finance is required, it is given with respect to which of the following?

	PPPs	TIP
The size of the project (in financial terms)	13	10
Value for money	14 ^a	7 ^b
Whether correct procedures have been followed in the project development	11	6
Assessment of whether the project adheres to the intention of the original budget appropriation	11	10
Other	3	1

a. Australia, Canada, Chile, Czech Republic, Denmark, France, Greece, Hungary, Ireland, Korea, Mexico, Slovak Republic, South Africa, United Kingdom.

b. Australia, Canada, Denmark, Hungary, Ireland, Korea, United Kingdom.

Furthermore, PPPs and traditionally procured projects may also differ in terms of the moment in the procurement process of a specific project when the approval of the finance ministry is required for the process to go ahead. As Table 19 shows, this difference exists particularly in the later phases of the procurement process, *i.e.* after project preparation but before the tender process, and after the tender is complete but before contract signature.

Table 19. At what moment in the procurement process of a specific project is the approval of the finance ministry required for the process to go ahead?

	PPPs	TIP
Before project preparation	6	6
During project preparation	6	5
After project preparation, before the tender process	12	8
After tender is complete, before contract signature	13	6
Not required	0	2
Other	0	1

In addition to the gatekeeping role of the finance ministry, the government might also have a PPP unit that fulfils such a role. Table 20 reports that only six units fulfil this function for all PPP projects, while only one does so for projects above a threshold. Many, if not most, of these units do not fulfil this gatekeeping role alone, but do so together with the finance ministry.

Table 20. Does the PPP unit have a formal gatekeeping role with respect to the approval of specific projects (even when these projects fall within the existing approved budget envelope of the responsible line ministry) in the case of PPPs?

Yes, for all	6 ^a
Yes, for those above a threshold	1
Yes, on an <i>ad hoc</i> basis	1
No	7
Other	1
Not answered by those who answered “no” to the question in Table 8	4
Total	20

a. Australia, Chile, Greece, Mexico, South Africa, United Kingdom (for all PFI projects).

Again, as with the finance ministry, the approval entailed by the gatekeeping role may relate to: i) the size of the project (in financial terms); ii) value for money; iii) whether correct procedures have been followed in the project development; and iv) an assessment of whether or not the project adheres to the intention of the original budget appropriation. Table 21 reports that, in eight countries, approval is granted on the basis of whether or not a project represents value for money.

Table 21. If approval by the PPP unit is required, it is given with respect to which of the following?

The size of the project (in financial terms)	5
Value for money	8 ^a
Whether correct procedures have been followed in the project development	7
Assessment of whether the project adheres to the intention of the original budget appropriation	5
Other	2

a. Australia, Chile, Czech Republic, France, Greece, Korea, Mexico, United Kingdom.

In the cases where the PPP unit has a gatekeeping role, that role might exist at various stages of the PPP procurement process. The process itself may comprise four broad phases: i) before project preparation; ii) during project preparation; iii) after project preparation but before the tender process; and iv) after the tender is complete but before contract signature. It should be noted that the largest number of countries (seven and five) give approval after project preparation but before the tender process, and after the tender is complete but before contract signature (see Table 22).

Table 22. At what moment in the procurement process of a specific project is the approval of the PPP unit required for the process to go ahead?

Before project preparation	3
During project preparation	4
After project preparation, before the tender process	7
After tender is complete, before contract signature	5
Not required	1
Other	0

In addition to the procuring department and the finance ministry (and the PPP unit in the case of PPPs), parliament may also have to approve specific PPPs and TIP projects. This approval is in addition to the regular annual budgeting process. Only in Denmark and Norway is approval required in all cases for both PPPs and TIP projects, while in Germany approval is often required. In five countries, approval is rarely required for PPPs, while in four countries approval is rarely required for TIP projects. This means that, in the majority of countries, parliament plays no role in the approval of specific PPP or TIP projects.

Table 23. In addition to the regular annual budgeting process, is parliament formally involved in the approval of specific projects in the case of PPPs and TIP?

	PPPs	TIP
Yes (always)	2	2
Often (> 50% of the time but less than 100%)	1	1
Rarely (< 50% of the time but more than 0%)	5	4
No	12	13
Total	20	20

3.6. Accounting issues

The accounting for PPPs may in itself create incentives to prefer PPPs to traditionally procured infrastructure projects. For instance, in the case of a PPP, the assets and the associated debt incurred to purchase the assets of the project will probably appear on the books of the private partners. In the case of traditional procurement, the assets and their associated liability – i.e. the public debt incurred to purchase the assets – appear on the government books. This means that, compared to the accounting for PPPs, government expenditure in the fiscal year when the asset is acquired will be much higher in the case of traditional procurement. Since the government is not paying for the asset when it is initially purchased under a PPP, it may create the (false) impression that the government is not paying for the asset at all. However, to think that the government is not paying for the asset at all under a PPP is to ignore the future payment commitments and contingent liabilities of the government to the private partners in subsequent years. This ignorance regarding the future liabilities and payment commitments may create a false incentive to procure the project through a PPP (for more on this, see OECD, 2008). Therefore, to pre-empt this false incentive from arising, the government must decide clear criteria that determine on whose books the asset will appear. Table 24 reports the criteria used in the countries surveyed.

Table 24. What criteria are used to decide whether or not an asset involved in a PPP project appears on the government books?

Eurostat ^a criteria	9 ^b
Criteria set by the IPSASB (International Public Sector Accounting Standards Board)	2
IFRS criteria (International Financial Reporting Standards)	3
National GAAP criteria (Generally Accepted Accounting Principles)	6 ^c
Assets appear on the books of the party who carries the majority of risks	6 ^d
Assets appear on the books of the party who has control over the asset	4
Other	7

a. Twelve of the countries in the sample are EU members.

b. Czech Republic, France, Greece, Ireland, Italy, Netherlands, Slovak Republic, Spain, United Kingdom.

c. Australia, Canada, Denmark, France, Korea, South Africa.

d. Australia, France, Netherlands, Slovak Republic, Spain, United Kingdom.

However, establishing clear criteria that set out on whose books the assets and associated debt liabilities will appear might not be sufficient. The criteria (more importantly) also need to provide for the contingent liabilities⁹ and costs¹⁰ associated with PPPs. The absence of such criteria may create incentives towards the use of PPPs as a procurement option, rather than TIP. Table 25 reports that such provisions exist in 13 of the 20 countries.

Table 25. Have accounting mechanisms been put in place that formally account for the contingent liabilities and costs generated by PPP projects?

Yes	13 ^a
No	7
Total	20

a. Australia, Austria, Chile, Czech Republic, France, Germany, Greece, Hungary, Mexico, Netherlands, South Africa, Spain, United Kingdom.

3.7. Ex post value-for-money assessment

Though necessary to ensure the success of a project, the *ex ante* assessment of value for money is not sufficient to ensure that a project will deliver value for money. A further requirement is the conducting of *ex post* value-for-money assessments that determine whether or not value for money has actually been delivered. Again, there is the possibility that PPPs and traditional infrastructure procurement might differ.

Procuring line ministries, the finance ministry or the PPP unit may conduct *ex post* value-for-money assessments of projects as measured against specific pre-specified performance benchmarks. These benchmarks are usually defined for each project, either when the project commences or during the lifetime of the project. The extent (depth) and frequency with which *ex post* value-for-money assessments are made may also differ, not only between countries, but also between PPPs and traditionally procured infrastructure projects. Table 26 shows that, in three countries, all PPP projects are subjected to *ex post* value-for-money assessment, while in no country are all TIP projects subjected to *ex post* value-for-money assessment. However, for eight countries a selection of PPP projects (either with or without a set frequency) is subjected to *ex post* value-for-money assessment. In respectively four and seven countries, no such assessments are made for PPPs and TIP projects. With regard to such *ex post* value-for-money assessments, it should be noted that a general tendency also exists to apply more stringent requirements to PPPs than to TIP projects. Again, the argument is not that the requirements applied to PPPs should be relaxed, but rather that the requirements applied to TIP projects should be tightened.

Table 26. Do line ministries, the finance ministry or the PPP unit conduct *ex post* value-for-money assessments of projects as measured against specific pre-specified performance benchmarks (defined for each project either when the project commences or during the lifetime of the project) in the case of PPPs and TIP?

	PPPs	TIP
Yes, for all projects and with a set frequency (<i>e.g.</i> annually or every two years)	0	0
Yes, for all projects, but no set frequency	3 ^a	0
Yes, for a selection of projects, with a set frequency	1 ^b	2 ^e
Yes, for a selection of projects, but no set frequency	7 ^c	8 ^f
No	4 ^d	7 ^g
Other	5	3
Total	20	20

a. Australia, Chile, Ireland.

b. Mexico.

c. Czech Republic, France, Greece, Hungary, Italy, Korea, South Africa.

d. Austria, Netherlands, Slovak Republic, United Kingdom.

e. Germany, Ireland.

f. Australia, Chile, France, Greece, Hungary, Italy, Korea, Mexico.

g. Austria, Czech Republic, Netherlands, Slovak Republic, South Africa, Spain, United Kingdom.

In addition to procuring line ministries, the finance ministry or the PPP unit doing *ex post* value-for-money assessments, the supreme audit institution may also conduct value-for-money audits, both for PPPs and for traditionally procured projects. In this case, there is not much difference between the extent (depth) and the frequency with which these are done. Table 27 shows that, respectively, 12 and 14 countries require that a selection of PPPs and TIP projects with no set frequency be subjected to *ex post* value-for-money assessments, while in a further seven countries for PPPs and six countries for TIP projects no such *ex post* value-for-money assessments are done. Furthermore, the overlap between the PPPs and TIP

categories in Table 27 is very high, i.e. 11 of the countries are included in both groups of 12 and 14, while four are included in both groups of six and seven countries that reported a “no”.

Table 27. Has the supreme audit institution done value-for-money audits in the case of PPPs and TIP?

	PPPs	TIP
Yes, for all projects and with a set frequency (e.g. annually or every two years)	0	0
Yes, for all projects, but no set frequency	0	0
Yes, for a selection of projects, with a set frequency	0	0
Yes, for a selection of projects, but no set frequency	12	14
No	7	6
Other	1	0
Total	20	20

3.8. Elements of integrity that may influence the choice between PPPs and traditional infrastructure procurement

In addition to the above-discussed *ex ante* and *ex post* value-for-money assessments, governments may also use other tools. The OECD developed a toolbox to enhance the integrity of public procurement (OECD, 2009). The enhancement of such integrity will contribute to an improvement in value for money in projects. The questionnaire asked respondents which of the following tools are used in the procurement cycle in the case of, respectively, PPPs and TIP projects:

- post-award risk assessment of financial vulnerability of contractors;
- limits on the size of projects;
- project risk indicators (quantifying risk);
- guidelines for risk allocation in projects (between government and private providers/contractors);
- provision for estimated risk in budget submitted to parliament;
- other.

Table 28 reports the results. It should be noted that, while 14 countries report the use of project risk indicators, only six countries report the use of such indicators in the case of TIP. Even though in the case of TIP projects the government retains more risk compared to PPPs, where risk is shared, the government might nevertheless benefit from identifying these risks in the case of TIP projects. It should also be noted that, in five countries, an assessment of post-award risk assessment of the financial vulnerability of private providers is made, while only one country does this assessment for TIP projects. This reflects the fact that, in the case of a TIP project, the government’s relationship with the private party only lasts during the construction phase of the project, while in the case of a PPP the relationship is a long-term relationship usually lasting up to 25-30 years. However, even in the case of PPP projects, one would have expected more countries to conduct these assessments. Only in three countries (for both PPPs and TIP projects) are there limits on the size of projects.

Table 28. Which of the following tools are used in the procurement cycle in the case of PPPs and TIP?

List compiled using OECD (2009), "Enhancing Integrity in Public Procurement: A Toolbox"
(www.oecd.org/governance/procurement/toolbox)

	PPPs					TIP				
	Yes	No	Sometimes	Not answered	Total	Yes	No	Sometimes	Not answered	Total
Post-award risk assessment of financial vulnerability of private providers	5	7	4	4	20	1	10	4	5	20
Limits on the size of projects	3	9	2	6	20	3	10	3	4	20
Project risk indicators (quantifying risk)	14	2	0	4	20	6	5	3	6	20
Guidelines for risk allocation in projects (between government and private providers/ contractors)	12	2	3	3	20	2	7	3	8	20
Provision for estimated risk in budget submitted to parliament	3	9	1	7	20	4	7	2	7	20
Other	1	4	0	15	20	0	5	0	15	20

3.9. Other elements that may influence the choice between PPPs and traditional infrastructure procurement

As discussed in further detail in Section 5 below, several studies have been undertaken for Australia, the United Kingdom and the United States to establish whether or not PPPs deliver improved value for money compared to traditional procurement (cf. Allen Consulting Group, 2007; Arthur Andersen and Enterprise LSE, 2000; Fitzgerald, 2004; Haskins, Gale and Kelly, 2002; Mott MacDonald, 2002; National Audit Office, 2003; and University of Melbourne, 2008). These studies compared the performance of PPPs to that of traditional infrastructure procurement, especially comparing the actual cost and time spent putting the project into operation. All of these studies show that PPPs outperform traditional procurement in terms of both cost and time overruns. The most significant outperformance occurs with respect to cost.

To obtain a notion as to whether the findings in Australia, the United Kingdom and the United States also apply to other countries, the questionnaire asked respondents about on-time delivery and about delivery within budget. Respectively eight and ten countries reported that they do not possess enough data to ascertain whether or not PPPs outperform TIP projects with regard to on-time delivery or keeping expenditure within budget (see Table 29). However, with regard to on-time delivery, the remaining 12 countries all reported that, compared to TIP projects, PPPs perform better. In the case of actual expenditure remaining within budget, nine reported that PPPs outperform TIP projects and one reported that performance is the same for PPPs and TIP projects.

Table 29. Based on the general experience using PPPs and TIP by the government in your country, and compared to TIP, how do PPPs perform with regard to time and cost?

	On-time finalisation of the construction phase and commencement of service delivery	Actual expenditure remaining within budget
Better	12 ^a	9 ^b
The same	0	1
Worse	0	0
Not enough data to make the assessment	8	10
Total	20	20

a. Australia, Canada, Czech Republic, France, Germany, Ireland, Korea, Mexico, Netherlands, Norway, South Africa, United Kingdom.

b. Australia, Canada, Chile, France, Germany, Mexico, Netherlands, South Africa, United Kingdom.

Tables 30 and 31 summarise responses to questions that seek to identify factors that might render PPPs more attractive compared to TIP projects (Table 30), or *vice versa* (Table 31). Earlier in this article, it was mentioned that governments need to account for PPPs in a way that will not create an incentive to prefer the PPP route simply because it allows for not recording the liabilities on the government books. While, according to the survey, debt not being recorded on the government books does not make PPPs more attractive relative to TIP in nine countries, four countries nevertheless responded that it does make PPPs more attractive, while four more countries responded that it sometimes does create such an incentive.

Table 30. **Do the following make PPPs more attractive in comparison to TIP?**

	Yes	No	Sometimes	Not answered	Total
The project generates debt that is not on the balance sheet of the government	4 ^a	9	4 ^b	3	20
The project requires a high level of constant maintenance	10 ^c	2	5 ^d	3	20
The project requires a high level of service delivery performance	12 ^e	0	4 ^f	4	20
The project requires skills that are more readily available in the private sector compared to the public sector	9 ^g	2	6 ^h	3	20
Strong public unions in the public sector in the relevant sector	0	11 ⁱ	3	6	20
Other	2	2	1	15	20

a. Chile, Ireland, Mexico, Norway.

b. Hungary, Italy, Korea, Slovak Republic.

c. Canada, Chile, France, Germany, Greece, Ireland, Italy, Korea, South Africa, United Kingdom.

d. Australia, Czech Republic, Hungary, Mexico, Slovak Republic.

e. Australia, Canada, Chile, Czech Republic, France, Greece, Italy, Korea, Mexico, Netherlands, South Africa, United Kingdom.

f. Denmark, Hungary, Ireland, Slovak Republic.

g. Australia, Canada, Chile, Czech Republic, France, Greece, Italy, South Africa, United Kingdom.

h. Hungary, Ireland, Korea, Mexico, Slovak Republic, Spain.

i. Canada, Chile, Czech Republic, Denmark, France, Greece, Hungary, Korea, Mexico, Netherlands, South Africa.

The questionnaire also considered the extent to which the availability of skills in the private sector *vis-à-vis* the public sector affects the preference towards either the PPP or the TIP option. *A priori* it is not clear whether the availability of skills will necessarily bias the choice towards a PPP. A government may not possess the necessary skills to manage a project itself. As such, it might prefer to use a PPP. However, skills are also needed to manage the public sector oversight of the private partner in the case of a PPP. Thus, if the requisite skills are not available in the public sector, the procuring department may be wary of using a PPP, as it may fear the disadvantage it has relative to the private sector.¹¹ However, Tables 30 and 31 indicate that the absence of skills makes the use of PPPs more attractive relative to TIP projects. Nine countries reported that if the project requires skills that are more readily available in the private sector, it makes PPPs more attractive (with six more reporting that it might sometimes be the case) (see Table 30). For the opposite – i.e. that the absence of skills makes TIP more attractive relative to PPPs – 12 countries reported that it does not, while none reported that it does (Table 31).

Table 30 also shows that if a project requires high levels of constant maintenance and service delivery performance, it might render PPPs more attractive relative to TIP. With regard to the opposite, 12 countries indicated – for when a project requires high levels of both constant maintenance and service delivery performance – that it does not make TIP more attractive relative to a PPP (see Table 31).

Table 31. Do the following make TIP more attractive in comparison to PPPs?

	Yes	No	Sometimes	Not answered	Total
The project is politically/strategically important (<i>e.g.</i> defence)	9 ^a	4	4 ^b	3	20
The project is complex in management and design	2	8	5	5	20
The project risk is difficult to quantify and measure (<i>e.g.</i> large IT investments)	9 ^c	3	4 ^d	4	20
The project requires a high level of constant maintenance	1	12 ^e	2	5	20
The project requires a high level of service delivery performance	0	12 ^f	3	5	20
The project requires skills that are more readily available in the private sector compared to the public sector	0	12 ^g	3	5	20
Strong public unions in the public sector in the relevant sector	5 ^h	4	3 ⁱ	8	20
Other	3	2	0	15	20

a. Chile, Czech Republic, Ireland, Korea, Mexico, Netherlands, Norway, South Africa, Spain.

b. Australia, Denmark, Hungary, Italy.

c. Czech Republic, Germany, Greece, Ireland, Korea, Mexico, Netherlands, South Africa, United Kingdom.

d. Australia, Canada, France, Hungary.

e. Australia, Canada, Chile, Denmark, France, Greece, Ireland, Italy, Korea, Netherlands, South Africa, United Kingdom.

f. Australia, Canada, Chile, Denmark, France, Greece, Ireland, Italy, Korea, Netherlands, South Africa, United Kingdom.

g. Australia, Canada, Chile, Czech Republic, Denmark, Greece, Ireland, Italy, Korea, Netherlands, South Africa, United Kingdom.

h. Czech Republic, France, Mexico, Netherlands, South Africa.

i. Australia, Ireland, Korea.

The presence of strong public unions may also create an incentive towards either a PPP or traditional procurement. Where a government holds a perception that the presence of strong public sector unions affects negatively its ability to deliver value for money, it may prefer to use a PPP (assuming of course that private sector unions are not as strong). However, strong public sector unions may also object to the use of PPPs. Very often the use of a PPP will require a special agreement regarding public sector staff, particularly in cases where public sector staff become redundant as a result of a PPP replacing a service previously delivered by the government.¹² Table 30 indicates that, in only three countries, the presence of strong public sector unions sometimes renders PPPs more attractive relative to TIP, while in 11 countries it does not. This contrasts with Table 31, which indicates that in five countries the presence of strong public sector unions renders TIP more attractive to PPPs, while in three countries this is sometimes the case.

It is sometimes said that complex projects do not make for good PPPs. If a project is rather complex, it becomes extremely difficult for PPP contracts to cover important future contingencies. As a result, a government might prefer to use traditional procurement instead of a PPP. The same goes for projects that face high probabilities of redundancies due to technological change. This explains why PPPs are more prevalent in less complex areas such as roads and other infrastructure. It also explains why, in projects such as health care and education, PPPs usually deal with the infrastructure and management of facilities and less with the direct health service or teaching. However, only two countries report that complexity makes TIP more attractive relative to PPPs, with five reporting that it might sometimes be the case (see Table 31). Eight countries reported that complexity does not make TIP more attractive relative to PPPs.

Complexity and redundancy are very closely linked to cases where it is difficult to quantify and measure project risk (*e.g.* large IT investments).¹³ Also, in these cases it becomes extremely difficult for PPP contracts to cover important future contingencies. However, in contrast to complexity that does not seem to affect the attractiveness of TIP relative to PPPs in so many countries, ten countries reported that a difficulty to quantify and measure risk makes TIP more attractive relative to PPPs (see Table 31).

In cases where a project is politically or strategically important (e.g. defence), a government might prefer to use traditional procurement and not a PPP. In some countries, there is even a prohibition on the private sector delivering these services. In nine countries, the political or strategic importance of a project might render TIP more attractive relative to PPPs, while in three countries this might sometimes be the case.

Lastly, political preferences towards private sector service delivery may have contributed in the past towards a preference for procurement through PPPs, while political preferences towards public sector service delivery may have contributed towards a preference for procurement through traditional infrastructure procurement. Which of these two statements holds true for a particular country very much depends on the influence of ideology in individual countries. This influence very often plays itself out through the political system. Table 32 shows that political preferences towards private sector service delivery contributed to a large extent in the past towards a preference for procurement through PPPs in only one country. In six countries it did so to some extent, while in 12 it did not. However, this situation contrasts sharply with the opposite proposition that political preferences towards public sector service delivery contributed in the past towards a preference for procurement through TIPs: in four countries, it did so to a large extent, in nine to some extent (making a total of 13 countries where it did so to either a large or some extent) and, in seven countries, it did not contribute towards a preference for procurement through TIP.

Table 32. **Political preferences**

	Yes, to a large extent	Yes, to some extent	No	Other	Total
Have political preferences towards private sector service delivery contributed in the past towards a preference for procurement through PPPs?	1 ^a	6 ^b	12	1	20
Have political preferences towards public sector service delivery contributed in the past towards a preference for procurement through TIP?	4 ^c	9 ^d	7	0	20

a. Korea.

b. Austria, Canada, Denmark, Hungary, Ireland, Norway.

c. Czech Republic, France, Norway, South Africa.

d. Australia, Austria, Canada, Germany, Hungary, Ireland, Italy, Mexico, Netherlands.

3.10. Concluding discussion on the survey results

Traditional infrastructure procurement is usually the default option because it is the much older procurement option in most countries (the exception being countries where concessions have been a common procurement method for a long time). Therefore, due to their novelty, the PPP option is still treated in many countries as the “add on” procurement option. The novelty of PPPs in many countries also means that more uncertainty exists with regard to their potential and the risks that they hold. This would explain why, in many of the surveyed countries, more is required from potential PPP projects compared to traditional procurement. Introducing PPPs in most countries also meant the *de novo* design and implementation of a new type of procurement method and system; policy makers had a clean slate on which to design it and then implement it. This very often means that PPP procurement processes fulfil many of the textbook requirements about what would constitute good procurement. For instance, one of the key aspects of good PPP design is a whole-of-life approach to project implementation. Most *ex ante* value-for-

money assessments for PPPs have a whole-of-life approach built into them. However, not all countries follow a whole-of-life approach towards traditional procurement, indicating that more is required from PPPs. In addition, processes to change traditional public infrastructure procurement practices might suffer from inertia meaning that, unlike the newly designed PPP practices, traditional public infrastructure procurement practices might not fulfil all the textbook requirements about what would constitute good procurement.

The survey also indicated that, in some countries, finance ministries (together with PPP units) play a larger role in the approval of projects compared to TIP projects, while PPPs are also in general subjected to more *ex post* value-for-money assessments. Because more is required from PPPs in these countries, an incentive exists to prefer the TIP route instead. However, processes are not the only factor that might render traditional procurement more attractive relative to PPPs and hence create an incentive to take the traditional procurement route. The survey also indicates that, in a significant number of countries, the existence of strong public sector unions as well as political preferences towards public sector service delivery also contributed to rendering TIP more attractive than PPP procurement. Nevertheless, incentives may also operate in the opposite direction. For instance, in some countries, having the debt that a PPP entails off the government books still creates an incentive to prefer the PPP route. Furthermore, if projects require skills that are more readily available in the private sector, or if the project requires a high level of constant maintenance, PPP procurement may also become more attractive compared to TIP. However, overall and on balance, the respondents to the survey felt that the rules in place impede attaining the maximum value for money by creating incentives to prefer traditional infrastructure procurement to PPPs (with not much support found for the opposite proposition).

4. Four country case studies

4.1. Background information

To augment the findings of the questionnaire, this section presents four case studies covering the procurement process for PPPs and TIP in France, Germany, Korea and the United Kingdom. The information in this section, including the table and two figures, originate from the relevant PPP authorities in the four countries.¹⁴ The four authorities were given a list of questions for brief response:

1. Describe the procurement process that a traditional infrastructure project (TIP) undergoes.
2. Describe the procurement process that a public-private partnership (PPP) undergoes.
3. Describe the *ex ante* value-for-money criteria and tests to which a TIP is subjected.
4. Describe the *ex ante* value-for-money criteria and tests to which a PPP is subjected.
5. Describe the *ex post* value-for-money criteria and tests to which a TIP is subjected.
6. Describe the *ex post* value-for-money criteria and tests to which a PPP is subjected.
7. To what extent is the playing field for PPPs and TIP equal or unequal in terms of criteria, tests and processes?

4.2. France

4.2.1. Describe the procurement process that a traditional infrastructure project (TIP) undergoes

The TIP and PPP procurement processes in France follow standard EU procurement laws, i.e. open competition and application of MEAT principles (“most economically advantageous tender”). Table 33 summarises the key elements of TIP and PPP contracts in France. The first row indicates the legal framework covering TIP and PPPs in France, while the second row indicates the long-term or short-term nature of the contracts as well as the scope of their objectives. The third and fourth rows indicate the role of the private sector as well as the extent to which risk is transferred to the private sector.

Table 33. **A comparative analysis of French public procurement tools**

TIP	PPPs	
Procurement contract (call for tender: open or restricted)	Partnership contracts (competitive dialogue or negotiated procedure)	Concessions/build-operate-transfer (BOT) (negotiated procedure)
Law No. 85-704 of 12 July 1985 relating to public works management and its relation to private project management	Order No. 2004-559 of 17 June 2004 on partnership contracts	Law No. 93-122 of 29 January 1993
Short-term; one object (allotment)	Long-term; multiple object	Long-term; multiple object
No financing; successive tenders; no service provided (object is pieces of infrastructure); payment by public authority	Pre-financing and financing; design-build-operate-maintain; service provided to public authority; payment mostly by public authority; third-party revenues possible	Financing; design-build-operate-maintain; service provided to users; payment by users; third-party revenues possible
Construction risk transferred only by pieces	Construction risk transferred; performance risk transferred; demand risk may be transferred	Construction risk transferred; performance risk transferred; demand/traffic risk transferred

Source: Mission d’appui aux PPP, France.

4.2.2. Describe the procurement process that a public-private partnership (PPP) undergoes¹⁵

In France, a PPP is defined as a long-term contract (typically 15 to 35 years) whereby a public entity awards to a commercial firm a DBFO contract (design, build, finance and operate/maintain) for a public asset. Payments are spread over the life of the contract and are linked to performance objectives; they cover operating costs, reimbursement of debt linked to equipment financing, and investors and private partner return on equity linked to the risk taking. A PPP is subject to a comparative preliminary assessment on both legal and economic grounds.

Public authorities may award PPP contracts through one of two alternative options:¹⁶

- Ordinarily by way of a competitive dialogue procedure, for projects where the public authority is objectively not able to either identify the best means to satisfy its needs, or to evaluate which technical, legal or financial solutions are best suited (derived from EU Directive No. 2004/18/CE defining complexity). The object of the dialogue, therefore, is to define the technical means and legal/financial structure to best address the public authority’s needs and will generally involve: i) risk matrix fine tuning; ii) discussion of legal, financial and/or technical clauses; iii) contract wording (drafts and finalisation); and iv) elimination of candidates by means of successive short lists.

- In limited circumstances by way of a tender procedure, for projects launched in a context of particular urgency (specific for partnership contracts).

In broad terms, the competition procedure would typically involve the following stages (for a competitive dialogue):

- the preparatory stage, including scope definition, public sector comparator, preparation of the tender documents package, official issue of a tender notice (*avis d'appel public à la concurrence* or AAPC) and prequalification of candidates;
- the competitive dialogue proceedings proper, including distribution of bidding packs (in particular, tender rules and draft contract), dialogue iterations management, and dialogue iterations conclusions and decisions;
- the final stage, including distribution of the final offer pack, invitation to submit final offers, examination/clarification of final offers, preferred bidder selection, finalisation of contract, approvals, signature and associated controls (legal, budgetary, etc.) (*contrôle de légalité*).

Any aspect of the project may be discussed to allow the public authority to finalise its requirements and for the candidate to finalise its offer, provided the characteristics of the project as initially presented in the tender notice remain unchanged. The award will ultimately be made to the “most economically advantageous” offer with respect to the criteria set out in the tender process (described in more details below). Strict conditions of equality apply to each candidate. The public authority must not provide any candidates with information likely to place them at an advantage against others, and must not reveal to other candidates any indication on solutions or any confidential information proffered.

The procurement timetable clearly varies from project to project, and there is no overall limit on the length of the competitive dialogue phase. Looking again at the three basic stages set out above, an indicative timetable for a given project might be as follows, depending upon the size and complexity of the underlying deals:

- Preparatory stage:
 - from AAPC to prequalification submissions: one-and-a-half months;
 - confirmation of prequalified consortia: one to two months.
- Competitive dialogue proper:
 - from confirmation of prequalified consortia to launch of competitive dialogue proceedings: one to three months;
 - competitive dialogue: four to twelve months.
- Final stage:
 - from conclusion on the last iteration of the competitive dialogue to submission of final offers: two to four months;
 - examination/clarification of final offers to execution/contract finalisation, entry in force of contract (*e.g. due diligences*): two to six months.

4.2.3. Describe the ex ante value-for-money criteria and tests to which a TIP is subjected

Traditional procurement complies with the CMP (*code des marchés publics*) and with a law on public programme management (Law No. 85-704 of 12 July 1985). Both texts do not provide for any compulsory standard value-for-money criteria before, during and after the procurement process.

4.2.4. Describe the ex ante value-for-money criteria and tests to which a PPP is subjected

The *Mission d'appui aux PPP* (MAPPP) has developed a methodology which is described in detail in a PPP guidance book (currently being revised). The methodology is based on the idea that, even if uncalculated, value for money nevertheless does exist in a project realised through traditional procurement. The methodology comprises a comparative assessment of value for money, and more precisely an assessment of comparative value for money: the best realisation mode of a project (traditional or PPP) being the one for which value for money is the maximum. In 2010, the MAPPP made the methodology more sophisticated to take into account the time savings in investment realisation that can be derived from PPP use and that are confirmed by statistical observations. The subject has been widely discussed at the EPEC level – the European PPP Expertise Centre based within the European Investment Bank in Luxembourg, and which co-ordinates PPP systems throughout EU member states.

The need for methodological sophistication and complements is the consequence of the new PPP law of 28 July 2008 that introduced the criterion of economic efficiency. This methodology takes into account what are generally referred to as non-financial benefits associated with PPPs. In particular, concerns about sustainability and ecology are part of the approach.

4.2.5. Describe the ex post value-for-money criteria and tests to which a TIP is subjected

Same as 4.2.3 above, i.e. none.

4.2.6. Describe the ex post value-for-money criteria and tests to which a PPP is subjected

The law of 28 July 2008 introduced rules of monitoring applicable to PPPs. It includes reporting on contract realisation/life, and in particular on the value of the variables on which the preliminary value-for-money calculation has been established. This reporting begins at the end of the competition process, before contract signature: the public authority in charge is obliged to provide the MAPPP with data describing the competition process and, in particular, the financial assumptions and parameters included in the preferred bidder's offer. Such data are examined by the MAPPP and consolidated in a short report to the Minister of Economy and Finance.

4.2.7. To what extent is the playing field for PPPs and TIP equal or unequal in terms of criteria, tests and processes?

PPPs are now mostly on an equal playing field regarding tax issues, eligibility for public subsidies and insurance coverage obligations. However, the procedure remains more demanding and more tightly controlled than traditional public procurement, with in particular the requirement for a preliminary assessment showing the grounds for taking the PPP route (no such requirement exists for projects launched as traditional public procurement, *marchés publics* or concessions).

4.3. Germany

The following applies to projects conducted by the administration at the levels of the central government and of the federal states.

4.3.1. Describe the procurement process that a traditional infrastructure project (TIP) undergoes

The government department responsible for a particular public sector function and the ministry responsible for preparing and executing the budget determine: the staffing level (Point 1) required for the function in question; and the infrastructure (Point 2) needed for that level of staffing. The government department responsible for the function then instructs a building authority at the federal (i.e. central) government level or the federal state level to draw up a plan showing the required scope of the building project. The plan also includes an estimate of the costs to be funded from the budget (Point 3).

Once the department responsible for the administrative function and the ministry in charge of preparing and executing the budget have officially recognised the necessity of the project as outlined in the plan, the building administration of the federal government or the federal state specifies in detail how the building project will be carried out. This specification forms the basis of the procurement procedure. The construction to be procured is divided into construction phases and types of work including overall planning and construction supervision (Point 4). The parcels of work are then put out to tender on this basis. The successful bidder for each is awarded the contract and receives payment once the work is completed (Point 5). When the construction is complete, the building administration signs it over for use to the government department responsible for the administrative function (Point 6). A public sector company responsible for real estate management, or a special administration set up for the purpose, takes care of operation and maintenance (Point 7).

4.3.2. Describe the procurement process that a public-private partnership (PPP) undergoes

Points 1 and 2 of the procedure are identical to those described in sub-section 4.3.1 above. When it comes to Point 3, an analysis is carried out of different variants apt to meet the need. The main component is the PPP suitability test, which investigates whether or not the PPP variant is possible, legally permissible and potentially more efficient. If possible efficiencies are identified, the PPP suitability test is followed by a provisional economic feasibility analysis. This compares the estimated costs of building, financing, operating and maintaining the variants under consideration. Regarding Points 4 and 5, the construction project as a whole is put out to tender on the basis of an output specification, including financing and operation. As regards Point 7, operation and maintenance are carried out by the contractor.

4.3.3. Describe the ex ante value-for-money criteria and tests to which a TIP is subjected

Where conventional procurement is used, the government department responsible for carrying out the administrative function undertakes a cost-benefit analysis of the project before it approves the plans detailing the staffing levels and space required. Once the scope of the building project has been approved, the cost of the investment is estimated using the outcomes of comparable contracting procedures.

4.3.4. Describe the ex ante value-for-money criteria and tests to which a PPP is subjected

Initially, the procedure followed for PPPs is the same as that described in sub-section 4.3.3, but with one special feature: a PPP suitability test is carried out before the cost is estimated. This test answers the question of whether it is at all possible to achieve

higher efficiency by procuring with PPP instead of the traditional procedure (also see sub-section 4.3.2).

4.3.5. Describe the ex post value-for-money criteria and tests to which a TIP is subjected

The investment on offer and the operational and maintenance service on offer must be available in the ordinary course of business at an appropriate price which is usual for the location.

4.3.6. Describe the ex post value-for-money criteria and tests to which a PPP is subjected

Same as sub-section 4.3.5 above.

4.3.7. To what extent is the playing field for PPPs and TIP equal or unequal in terms of criteria, tests and processes?

There is no real difference. Within the legal framework where PPP is a permissible alternative, all of the criteria are neutral and only serve to assess the economic efficiency of the different alternatives.

4.4. Korea

4.4.1. Describe the procurement process that a traditional infrastructure project (TIP) undergoes

The National Finance Act requires that the Ministry of Strategy and Finance (MoSF) conduct a preliminary feasibility study (PFS) for any large-scale investment project that exceeds KRW 50 billion and that requires a central government subsidy of more than KRW 30 billion. Based on general research on large-scale development projects and using the PFS, the MoSF verifies the feasibility of the project with regard to (among others) its economic feasibility, policy analysis, investment priority, proper timing and financing methods.

If a project turns out to be feasible as a result of the PFS, the competent authority carries out a feasibility study. A feasibility study focuses mainly on technical viability, whereas a PFS largely reviews economic and policy adequacy. While a feasibility study is carried out by the concerned competent authorities, every PFS is carried out by the PIMAC (Public and Private Infrastructure Investment Management Center, within the Korea Development Institute, KDI), entrusted by the MoSF, to ensure consistency. After a feasibility study, the competent authority prepares the basic and detailed design and selects contractors through an open competitive bidding process.

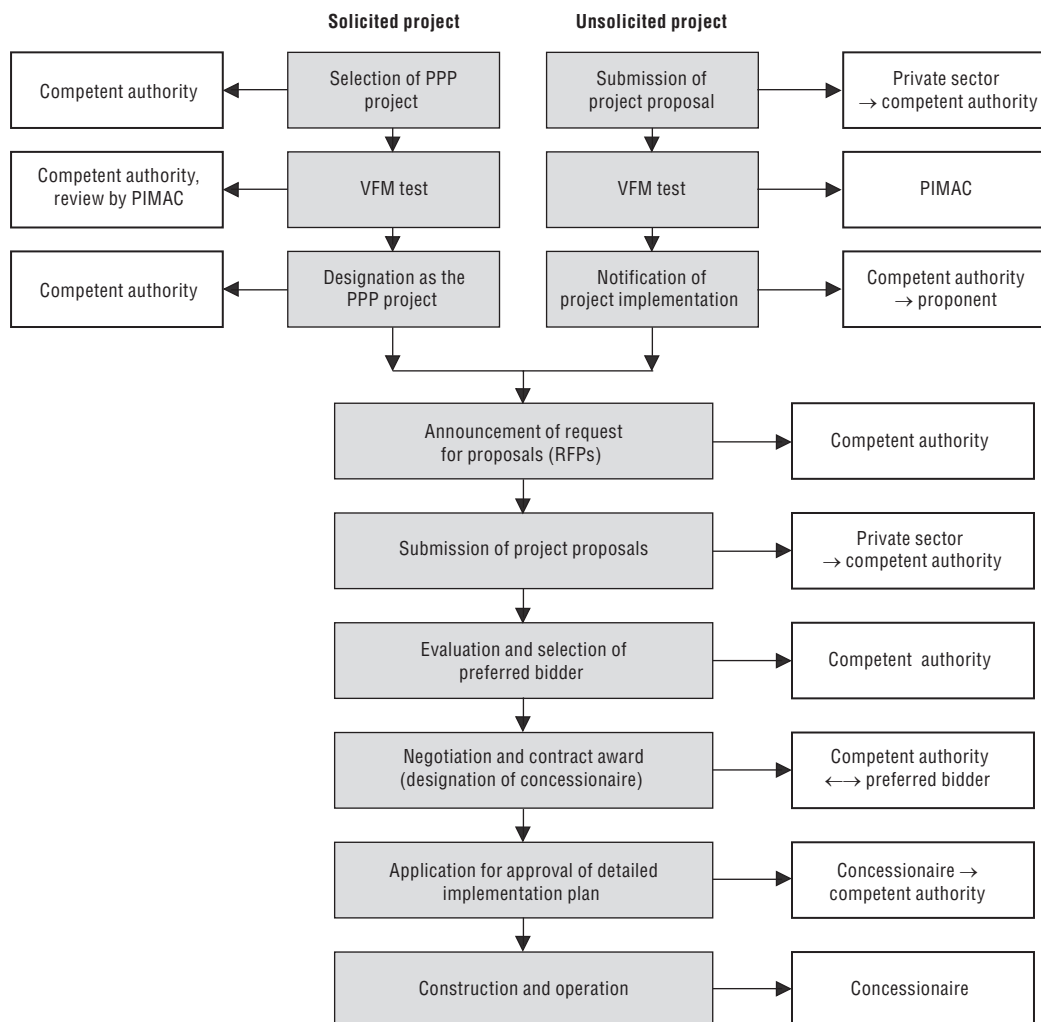
4.4.2. Describe the procurement process that a public-private partnership (PPP) undergoes

The PPP Act and the Enforcement Decree regulate the general procurement procedure for PPP projects. The Basic Plan for PPP formulated under the PPP Act provides a detailed implementation process set by project types and initiation, and defines the roles of associated parties in each step such as the competent authority, the private company, the finance ministry (Ministry of Strategy and Finance, MoSF) and the PIMAC.

The procurement procedure is designed to secure or enhance the value for money of PPP projects. A PFS is also required for PPP projects that exceed KRW 50 billion and require a central government subsidy of more than KRW 30 billion. Procurement procedures for

build-transfer-operate projects (BTO) (concession type) are described in Figure 1. Both solicited and unsolicited projects are eligible for BTO projects. After conducting a value-for-money test to evaluate its potential as a PPP project, a competent authority announces a request for proposals (RFPs) and evaluates proposals for selection. A competent authority negotiates with a preferred bidder for contract terms. After a PPP contract is awarded, the concessionaire commences construction.

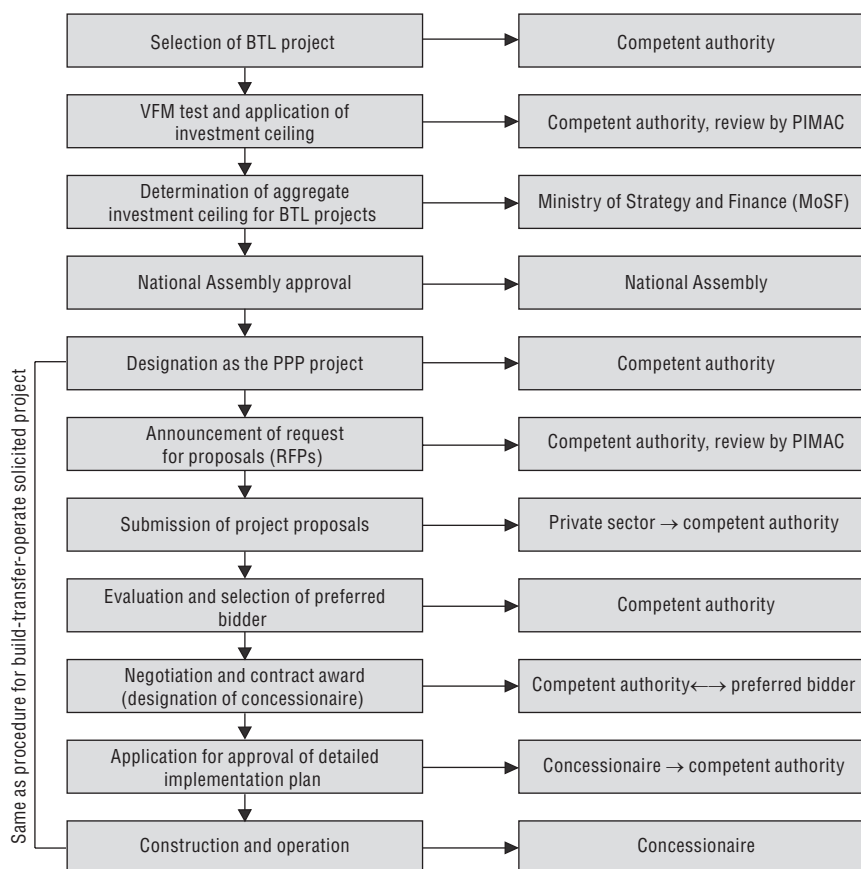
Figure 1. **The PPP procurement process for build-transfer-operate projects (BTO) in Korea**



Source: Public and Private Infrastructure Investment Management Center (PIMAC), Korea.

A build-transfer-lease project (BTL) (service contract type) is initiated by the competent authority, reviewed by the MoSF to decide on an aggregate investment ceiling for BTL projects, and then approved by the National Assembly. The subsequent procedure after the RFP announcement is the same as with BTO projects.

Figure 2. **The PPP procurement process for build-transfer-lease projects (BTL) in Korea**



Source: Public and Private Infrastructure Investment Management Center (PIMAC), Korea.

4.4.3. Describe the ex ante value-for-money criteria and tests to which a TIP is subjected

The main analysis of the preliminary feasibility study (PFS) includes an economic analysis, a policy analysis, and a balanced regional development analysis. The backbone of the economic analysis is a cost-benefit analysis. The economic benefits and costs of a project are estimated on the basis of forecast demand and costs. Policy analysis examines the effects of the projects in qualitative and quantitative terms. The policy analysis includes consistency with higher-level policies, project risks and other project-specific considerations. Balanced regional development analysis evaluates the project from the perspective of a regional dimension. The regional backwardness index, which is a composite index of eight characteristics for local entities, has been developed by the PFS guideline.

To synthesise the results of economic, policy, and balanced regional development analyses, a technique called analytic hierarchy process (AHP) is applied in the PFS. AHP is a multi-criteria decision-making approach that enables the combination of quantitative and qualitative analyses into a decision under a hierarchical structure. Lastly, the MoSF takes a decision on budget allocation for large-scale fiscal projects based on the results of the preliminary feasibility studies.

4.4.4. Describe the ex ante value-for-money criteria and tests to which a PPP is subjected

As is the case for TIP, a PFS is required for PPP projects that exceed KRW 50 billion and require a central government subsidy of more than KRW 30 billion. For PPP projects, a further analysis is conducted that compares the value for money associated with the PPP procurement option with value for money associated with a public sector comparator (PSC). This PSC replicates the case in which the project had been procured as a traditional fiscal investment method. The value-for-money test examines not only quantitative aspects (e.g. costs, demands, revenue) but also qualitative aspects (e.g. service quality, efficiency in contract execution and management, effects of risk transfer, impacts on the public sector and market, and project-specific issues).

4.4.5. Describe the ex post value-for-money criteria and tests to which a TIP is subjected

Ex post value-for-money assessment is not a required process, but is often reviewed for selected TIP projects (not many). The effects of cost overrun and construction delay of selected projects are evaluated. To analyse the cost overrun prevention effect, the total construction costs of projects announced on RFPs and those realised are compared. To assess the construction delay prevention effect, the estimated construction period on RFPs and actual construction duration are compared for completed projects.

4.4.6. Describe the ex post value-for-money criteria and tests to which a PPP is subjected

Similar to TIP projects; see sub-section 4.4.5 above.

4.4.7. To what extent is the playing field for PPPs and TIP equal or unequal in terms of criteria, tests and processes?

The institutional setting for infrastructure project evaluation provides a level playing field for PPPs and TIP. A PFS is required for both TIP and PPP projects that exceed a certain threshold size. A value-for-money test ensures that a PPP option is selected only when it has value for money compared to a PSC.

4.5. United Kingdom**4.5.1. Describe the procurement process that a traditional infrastructure project (TIP) undergoes**

Traditional procurement for infrastructure in the United Kingdom follows a procurement process in line with standard EU procurement laws. This process follows the values of open competition and award of contracts based on the MEAT principles (“most economically advantageous tender”).

4.5.2. Describe the procurement process that a public-private partnership (PPP) undergoes

PPP infrastructure procurement in the United Kingdom follows the same procurement process as that of traditional projects described above.

4.5.3. Describe the ex ante value-for-money criteria and tests to which a TIP is subjected

Before going forward with any infrastructure project in the United Kingdom, a full economic analysis is completed that compares the value for money that is expected to be

achieved through each of the options available. This analysis is completed in line with the HM Treasury *Green Book* (see www.hm-treasury.gov.uk/data_greenbook_index.htm).

4.5.4. Describe the ex ante value-for-money criteria and tests to which a PPP is subjected

Again, prior to going forward with any infrastructure project in the United Kingdom, including PPPs, an analysis in line with the HM Treasury *Green Book* is completed. For PFI projects, a further analysis is then completed that compares the value for money associated with the PFI procurement option with value for money associated with a public sector comparator. This public sector comparator replicates the case in which the project had been procured through a traditional route (see the HM Treasury value for money assessment guidance at www.hm-treasury.gov.uk/ppp_vfm_index.htm).

4.5.5. Describe the ex post value-for-money criteria and tests to which a TIP is subjected

See below.

4.5.6. Describe the ex post value-for-money criteria and tests to which a PPP is subjected

The Office of Government Commerce (OGC) recommends that all projects go through the gateway review process. Gateway 5 aims to assess whether the expected benefits have been realised, whether the contract is operating smoothly, and whether there is a plan in place to improve the value for money that is being achieved by the project (see the OGC Gateway process, www.ogc.gov.uk/what_is_ogc_gateway_review.asp).

The National Audit Office (NAO) also completes around 60 value-for-money reports each year in which an *ex post* evaluation of a project is completed. These reports relate to a wide range of projects that include both traditionally procured infrastructure and infrastructure procured through a PPP. In addition, the NAO has also published a framework to be used to evaluate the implementation of PFI projects (see www.nao.org.uk/publications/0506/pfi_framework.aspx).

4.5.7. To what extent is the playing field for PPPs and TIP equal or unequal in terms of criteria, tests and processes?

HM Treasury policy ensures that there is a level playing field for the PPP and traditional procurement options. The *Green Book* analysis completed for all projects ensures that the procurement route that will provide the best value for money is used. Further to this, the value-for-money analysis completed for PFI projects will ensure that the PFI procurement route is only chosen where this route offers the best value for money when compared to a traditional procurement method.

5. General discussion

5.1. Introduction

Any project, whether it is a PPP or a traditionally procured project, should be undertaken only if it creates value for money. As such, PPPs and traditional infrastructure procurement (TIP) are merely two modes to deliver value for money. Hence, the choice of procurement mode should also depend on which mode delivers the most value for money. However, as the discussion in this article and the results of the questionnaire indicate, the value-for-money objective is very often blurred, and the choice between using a PPP and traditional

infrastructure procurement may be skewed by factors other than value for money. Indeed, overall and on balance, the respondents to the survey felt that the rules in place impede attaining the maximum value for money by creating incentives to prefer traditional infrastructure procurement to PPPs (with not much support found for the opposite proposition).

What seems to be needed is the alignment of what is required from PPPs and TIP. This does not mean that requirements are identical for PPPs and traditionally procured projects. However, alignment does mean that:

- For the same type of project, the same level of detail and information is available to assess value for money, be that project a PPP or a traditionally procured infrastructure project.
- The scope and volume of institutional and legal requirement as applied to PPPs and traditional procurement respectively, as well as *ex ante* and *ex post* value-for-money assessments required from each type, do not create incentives to prefer one type of procurement to the other.

In the light of the small percentage that PPPs constitute in some countries, it might seem unreasonable to undertake such an alignment. However, the question is whether or not governments foresee that PPPs might play a bigger role in the future.¹⁷ If governments foresee an expanding role for PPPs (say, in excess of 10% of total public sector infrastructure investment), the PPP option will become sufficiently important in the pursuit of value for money to require an alignment of procurement option requirements. Bringing about an alignment prior to such an expansion will only serve in the interest of delivering maximum value for money.

The discussion in Section 3 above indicated that there are marked differences between the *ex ante* and *ex post* value-for-money assessment processes that PPPs and traditional infrastructure projects undergo. In general, more strict requirements are imposed on PPPs compared to traditional procurement. Section 4 above demonstrated the extent to which countries such as Korea and the United Kingdom have gone to align TIP and PPP procurement processes, while this section discusses several options to align the two procurement options. It focuses both on the *ex ante* and *ex post* value-for-money assessment processes that PPPs and traditional infrastructure projects undergo. With regard to *ex ante* value-for-money assessment, the article notes that, in general, once candidate PPP projects have been identified as candidates, they are compared to a public sector alternative. However, in many countries this occurs only once they have been identified as candidates. How they get to be candidates is not always clear, with many countries still not having a process in place to select the optimal method of procurement (be that a PPP or traditional infrastructure). Sub-section 5.2 below proposes a list of criteria to select the optimal method of procurement.

In Sub-section 5.3 below, the focus shifts to the *ex post* value-for-money assessment processes. It argues that traditional procurement processes might do well to incorporate some of the features of PPP projects, such as a whole-of-life approach to value-for-money assessment as well as reporting project results on a whole-of-life project-by-project basis. This requires that data be recorded and reported on a whole-of-life project-by-project basis. Recording data on a whole-of-life project-by-project basis will subsequently allow for an *ex post* assessment of both PPPs and traditionally procured projects. Sub-section 5.3 also deals with so-called optimism bias, defined as the propensity of officials to systemically underestimate project construction and operation costs and underestimate project benefits.

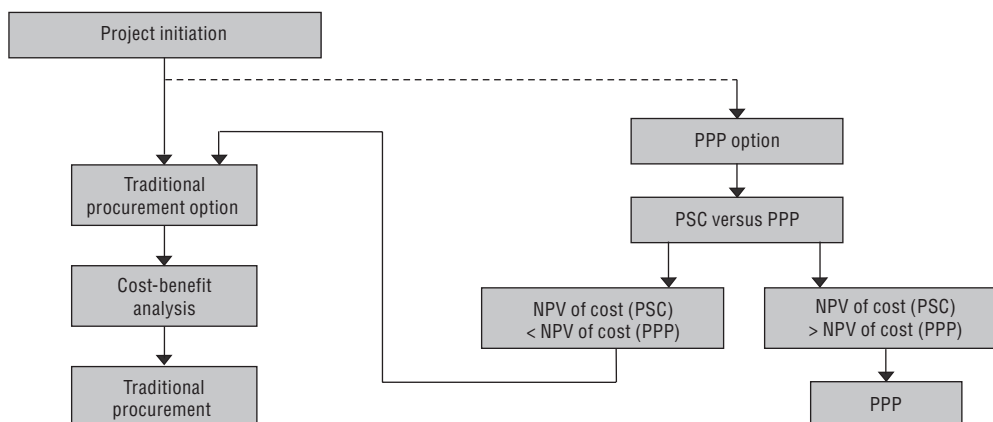
Dealing with optimism bias ensures a more robust comparison between procurement options, which will render *ex post* value-for-money assessments more reliable – i.e. if a PPP outperforms a TIP, it would be clear that this is not due to an optimism bias but to the actual improvements in value for money and efficiency. Introducing the measures proposed in Sub-section 5.3 not only aligns PPP and traditional procurement but also introduces sound financial management, particularly in countries where traditional infrastructure procurement projects are currently not subjected to cost-benefit analysis or any other form of whole-of-life project-by-project analysis.

In addition to value for money being assessed on a whole-of-life project-by-project basis, Sub-section 5.4 proposes that value for money be assessed prior to taking the decision about which mode of procurement will be used. Both the PPP and TIP mode require that the public sector option be a viable one, irrespective of the procurement mode ultimately used. Even in the case of a PPP, the public sector option (frequently in the form of a public sector comparator) always needs to be a real and credible alternative to private delivery. A public sector option that does not deliver value for money should not be the benchmark for a PPP, even if that PPP itself can deliver value for money. It should also be noted that such a whole-of-life project-by-project approach does not necessarily imply a significant increase in the bureaucratic activity needed to create a process. For instance, the United Kingdom has shown that its value-for-money instrument – a spreadsheet developed to assess the value for money of a public sector option and a PFI option – need not be overly elaborate to nevertheless contain the key elements required to assess value for money.

5.2. Ex ante value-for-money assessment and the choice between PPPs and traditional procurement

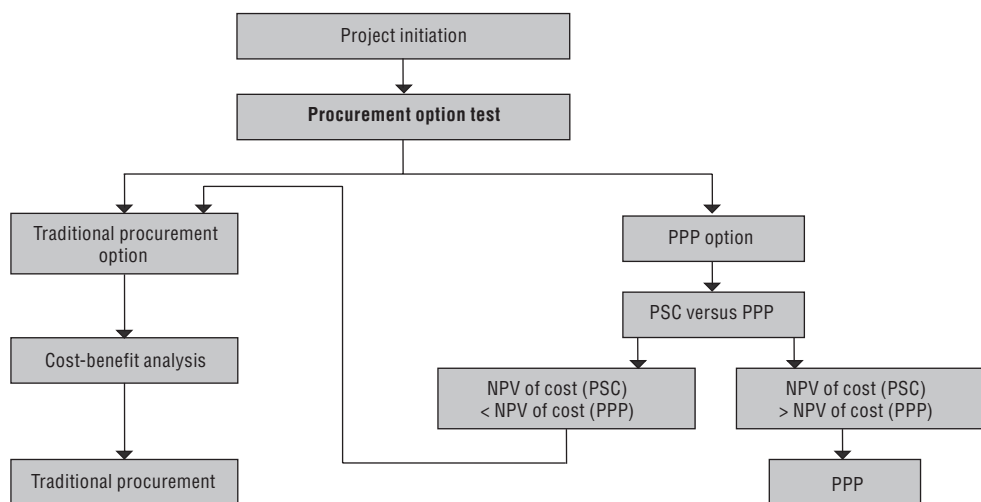
In many countries, traditional procurement is the default procurement option, while procurement through the PPP option represents the exception or is only undertaken when, as one of the survey's respondents noted, there is someone acting as a champion for setting up the project as a PPP. This also very often means that there are no clear criteria to decide which procurement option to use. Therefore, what is needed is a set of criteria to decide which mode of procurement will yield the highest value for money. As shown in Section 3 above, most countries currently using PPPs use a public sector comparator (PSC) to compare the value for money of potential PPP projects to the value for money that traditional procurement could offer. The hypothesis tested in such a comparison is that traditional procurement could deliver more value for money than the PPP option. Ideally, what holds true for PPPs should also hold true for TIP projects – i.e. the question should be asked whether the value for money of projects selected for traditional procurement could not be enhanced if they took the PPP route. However, as argued in Section 3, a government cannot always be expected to credibly forecast the range of innovative designs and risk management procedures which competing private partners can invent. There is unfortunately limited or no scope for government to create a “private sector comparator”. As an alternative, governments could rather consider the use of a procurement option test to decide between the traditional procurement and PPP options.¹⁸ Figure 3b contrasts a procurement process that includes this procurement option test with one (Figure 3a) that treats the PPP option as the exception (indicated by the dotted line) and traditional procurement as the default.

Figure 3a. **The procurement choice with traditional procurement as the default option**



NPV = net present value
 PPP = public-private partnership
 PSC = public sector comparator

Figure 3b. **The procurement choice with a procurement option test**



NPV = net present value
 PPP = public-private partnership
 PSC = public sector comparator

From existing literature as well as existing criteria applied by governments, it is possible to distil the criteria to include in the procurement option test (cf. Miller *et al.*, 2009; Estache, Iimi and Ruzzier, 2009; HM Treasury, 2008; Love *et al.*, 2008; Grimsey and Lewis, 2007; Luu, Ng and Chen, 2003; Kumaraswamy and Dissanayaka, 2001). The literature on the criteria to use when choosing between different methods of procurement predates the general use of PPPs. For instance, Love *et al.* (2008:755-6) as well as Luu *et al.* (2003) list criteria originally set out in NEDO (1985). These criteria are:

- Is early completion important?

- Is on-time completion of the project important?
- Is cost certainty (and therefore whether or not a firm price is needed prior to a commitment being made) important?
- Is price competition important in the selection of the construction team?
- Is flexibility and the ability to make changes to the project once work commences important?
- Is the project complex (i.e. is it specialised, technologically advanced and in need of high levels of servicing)?
- Is quality important?
- Is the government the only party who needs to be responsible for design and cost, or should designers and consultants also carry part of the risk?
- Is the transfer of the risk of cost and time slippage important?

Later criteria very often represent a variation on the above (Miller *et al.*, 2009:89). In addition, that report notes that the Department of Commerce in New South Wales (Australia) uses procurement choice criteria aimed at obtaining the best value for money and managing procurement risk. The department's approach focuses on factors such as value for money, the cash flow rate, timeliness, quality of design, and quality of construction. Miller *et al.* (2009) also highlight the importance of innovation in the design of a project as a determinant of what procurement method is selected.

HM Treasury (2008) highlights several aspects that favour either the selection of private finance initiatives (PFIs), concessions or traditional procurement, as well as variations on these options such as strategic infrastructure partnerships (SIPs), integrators and alliancing. In the case of PFIs, HM Treasury (2008:19) highlights the following criteria that favour their use:

- Major capital investment is required.
- The nature of the service allows outputs to be clearly defined, and risk allocation between the public and private sectors can be made and enforced.
- The capital value of the project exceeds GBP 20 million so that procurement cost is not disproportionately large relative to the size of the project.
- The technology involved is stable and not subject to fast and frequent change.
- Planning horizons are long, and the project is foreseen to operate into the long term.

In the case of concessions, HM Treasury (2008:20) adds that the project should be able to operate independently and that a market (i.e. demand) for the service should exist, with the concessionaire being able to influence that demand.

Using the above criteria as well as the prerequisites for a successful PPP identified in OECD (2008) (where success means a PPP that delivers improved value for money compared to traditional procurement), this sub-section seeks to identify criteria that governments can use as part of their procurement option test (i.e. when deciding between using PPPs and traditional procurement).

The requisites identified in OECD (2008) include risk transfer and competition. OECD (2008) argues that, to obtain value for money in a PPP, sufficient risk must be transferred to the private partner. The risk transferred should be endogenous risk, i.e. risk that can be managed by the private partner (as opposed to exogenous risk that cannot be managed). Risk is defined as the probability that the actual outcome will deviate from the expected

(estimated) outcome. Where the outcome is profit, carrying the risk means that the private partner has the incentive to manage revenue and cost in such a manner that the actual profit is as close as manageable to the expected profit.

However, effective risk transfer requires competition in the bidding process (i.e. competition for the market) and competition or contestability while in operation (i.e. competition or contestability of the market).¹⁹ Competition ensures that the government has a choice between possible private partners, both during the bidding process and during the operational phase. Should a private partner not deliver value for money during the operational phase, the effective transfer of risk will mean that its profit will fall (or it might even make a loss). If the lack of value for money persists, the private partner will either go out of business or, via the step-in rights of the government and the financiers, be replaced by a competitor.

The possible threat of a competitor appearing puts pressure on the private partner to deliver the value for money. If the private partner is aware that no such competitor exists, the pressure will not exist. In these circumstances, if the private partner runs into financial trouble, the government might have to either:

1. cease delivering the service;
2. take over the service and deliver the service itself;
3. bail the private partner out; or
4. renegotiate the contract to ensure the private partner's profits.

If the service that the PPP delivers is seen by the public as an essential service, only options (2), (3) and (4) exist. However, since critics might interpret a takeover as an admission of PPP failure, a takeover might be politically unpalatable. A takeover might also be ruled out if the government does not have the requisite skills to manage the project itself. This will leave bailout and renegotiation as the only alternatives – options (3) and (4). With a bailout, the government in essence takes over the accumulated losses of the private partner. This means that the government, in effect, carried the risk all the while. With renegotiation, the government ensures the private partner's profit. Again, this means that, in effect, the government absorbs the losses that the private partner would have suffered. Furthermore, if the private partner knows that competition is absent and that options (3) and (4) are the only two real options on the table, it will also know that it has an implicit government guarantee. Such an implicit guarantee might cause moral hazard, meaning that the private partner will not manage its risk to ensure the highest value for money – it might not even outperform traditional procurement.

Therefore, in deciding between traditional procurement and a PPP, a government should address the following criteria in the procurement option test:

- a) **Defining, identifying and measuring risk:** Can the risks of the project be clearly defined, identified and measured? To ensure an effective transfer of risk to the private partner, the risks that the private partner will be required to carry should be clearly defined, identified and measured. If risk cannot be defined, identified or measured, there is room for conflict in the contract, particularly when the risk realises. In addition, potential private partners might *ex ante* also be unwilling to take on risks that are not clearly defined, identified and measured.
- b) **The transfer of risk:** Can the right types of risk be transferred to the private partner to ensure value for money? For instance, if the only risk that is transferred is construction

and delivery-of-asset risk, while demand-side and supply-side operational risks are not transferred, then the right types of risks might not have been transferred to ensure the attainment of value for money. If for some reason these operational risks cannot be transferred, or if potential private partners are not willing to take them on, then entering into a PPP does not make much sense. Furthermore, the government needs to transfer endogenous risks, i.e. risks that the private partner can manage. If it also transfers exogenous risks (risks that are exogenous to both the government and the private sector), it needs to compensate the private partner for carrying these exogenous risks (such a payment is akin to an insurance premium). However, exogenous risk does not serve as a driver of efficiency and value for money.

- c) **The size of risk:** Is the risk large enough to make a difference to the value for money being delivered? If the probability is small that actual costs and revenues will deviate from expected (estimated) costs and revenues by a significant amount relative to the profit margin of the private partner, then there is relatively not much risk to manage. As such, entering into a PPP to ensure value for money does not necessarily make much sense.
- d) **Willingness to accept risk:** How large is the appetite of the private partner for risk? If the probability for actual costs and revenues to deviate from expected (estimated) costs and revenues is significant relative to the profit margin of the private partner, but the private partner is unwilling to take on that risk, then the government might be left with too much risk. An example is a toll-road where the government guarantees revenue if traffic falls below a certain level. If that minimum level is relatively close to the expected level of traffic, then not much risk is transferred. As such, entering into a PPP to ensure value for money does not necessarily make much sense.
- e) **Competition for the market:** What is the potential level of competition for the market? If competition levels are limited, the government might encounter the problems discussed above that relate to the lack of competition. Competition for the market is also important when the government follows the traditional procurement route and puts out a project on a tender. However, because a PPP usually integrates both the construction phase and the operational phase of the project – something that is not usually done with a traditionally procured (build-and-deliver) project – competition plays an even bigger role to ensure value for money in the case of a PPP. As such, a PPP might not be the best option when competition is limited, as it might not deliver the best value for money.
- f) **Competition in the market:** What is the potential level of competition in the market? Again, if competition levels are limited, the government might encounter the problems discussed above. If all competition disappears once a contract has been awarded, the next question is whether or not the market will be contestable – i.e. is it likely that, if required, competitors will enter the market? If competition and contestability do not exist, a PPP might not be the best option as it will probably not deliver better value for money.

Additional criteria also need to be added:

- **Whole-of-life contracts:** How large are the benefits from combining the construction phase and the operating phase of a project in one contract? Estache *et al.* (2009:15) mention that combining these two phases depends on the presence of positive externalities between the construction and operating phases. As mentioned above, PPP contracts integrate the construction and operational aspects of the project in a single contract. This ensures that the private partner has an incentive to incur additional construction cost if it reduces future operating and maintenance cost, but only if the present value of the operating

and maintenance cost saving exceeds or equals the increase in the present value of the additional construction cost. This incentive does not exist in traditional procurement. However, in a PPP the size of this incentive depends on the extent to which there is scope for future cost saving, as well as the size of additional construction cost to facilitate this future cost saving – i.e. it depends on the extent of the trade-off. Where this scope and trade-off are limited, there is less need to integrate the construction and operating phases of the project and hence less need to enter into a PPP contract. For instance, in projects where there is not a large capital and construction phase, the scope to integrate is limited, thus also limiting the value-for-money benefit that a PPP can bring.

- **Dealing with cost and quality trade-offs:** Related to the previous point is the relationship between cost and quality. Estache *et al.* (2009:9-10) discuss the case where the private partner has an incentive to incur construction cost that would reduce future cost in the operating phase. However, such future cost reductions may also, in some cases, lead to a decrease in quality. Because the overriding objective of the private partner is to maximise profit, quality might hold a lower priority for the private partner than for the government (for whom service delivery objectives might hold the highest priority). As such, Estache *et al.* (2009:10) argue that the bundling of the construction and operating phases should preferably not be undertaken if a reduction in future cost leads to a relative large reduction in quality. It should be noted, however, that this point is valid only if the quality of future output cannot be defined clearly in the contract (or if the government fails to define it clearly) and if the payment to the private partner has not been linked specifically to the attainment and maintenance of the required level of quality. Hence, the questions are: can the quantity and quality of project outputs be clearly defined, quantified and measured, and can the private partner be kept to those levels by rendering the payment it receives dependent on the attainment and maintenance of the required level of quality? To ensure sufficient risk transfer to the private partner usually means that the private partner is paid if it delivers the quantity and quality set out in the PPP contract. Any significant and persistent shortfall from this will result in lower revenue earnings for the private partner. However, if the quantity and quality of the outputs cannot be clearly defined, quantified and measured, the effective transfer of risk to the private partner will be undermined. With no effective transfer of risk, the driver of improved efficiency and value for money will be absent, and integrating the construction and operating phases in a PPP might then very well cause a reduction in quality of service.
- **The importance of innovation:** How much innovation is required? Where profit depends on improved efficiency and the delivery of improved value for money, and where these improvements will depend on design innovation in a still non-existent project, the government might seriously consider entering a PPP. Leaving design to the private partner also very often means that either the government cannot specify the design itself or, if it can, that it nevertheless realises that, by specifying the design, it runs the danger that its design might not be the most efficient. As such, traditional procurement is appropriate if a contract can specify the design and quality of the asset clearly *ex ante*, while it cannot do so for the quality of the output; the reverse holds for a PPP contract (*cf.* Estache *et al.*, 2009:32). However, it should be noted that, for innovation to take place, the answers to criteria (a) through (f) above must also point towards a PPP for the project in question.
- **The availability of public sector skills:** Closely related to the above is the availability in government of the skills required to operate an asset. Therefore, a PPP is a better option if the government does not itself possess the requisite skills to construct and operate the

project. However, if the government then opts for a PPP, it will nevertheless need skilled staff to monitor the private partner and to manage its own responsibilities and risk.

- **Rapidly and significantly changing technology:** Though innovation is often key to the preference for a PPP, the United Kingdom experience also highlights the need to be careful about selecting projects for PPP/PFI status where the technology involved in these projects is subject to frequent and significant change. Technology affects the nature of the asset, during both the construction and operating phases of a project. Rapidly and significantly changing technology means that the project faces significant (construction and operating) supply-side risks as well as redundancy risks. Changing technology might also influence consumer preferences, thus affecting demand-side risk. As such, the risk generated by rapid and significant change might render the specification of well-defined output and service delivery levels in a PPP contract very difficult. This problem is further aggravated by the long-term nature of PPP contracts (typically 25-30 years).
- **Need for flexibility:** Guasch (2004) notes that, in Latin America and the Caribbean, up to 30% of PPP projects were renegotiated within the first two years of the contract. Estache *et al.* (2009:31) note that in Latin America contractors initiate renegotiations in 50% of rail transactions and 13% of road transaction, with the government initiating no renegotiations in rail projects but initiating renegotiations in 42.6% of road projects. A further 7.4% of road project renegotiations are initiated by both parties. HM Treasury (2003a) reports that 22% of PFI contracts have undergone modifications during their construction stage. Thus, in general, changes to PPP contracts are not the exception. In principle, PPP contracts could allow for flexibility and therefore allow changes to be made regarding output and design. However, the degree of flexibility affects the allocation of risk: the more rigid the contract, the more risk the government carries, whereas if the contract is more flexible, the private partner carries more risk. Nevertheless, the private partner will probably only be willing to carry the additional risk if the government pays it to do so. Of course, renegotiation usually means that the government can only bargain with the party with whom it concluded the contract. This may put the private partner in a virtual monopolistic position and, as such, may mean that the renegotiated terms of the contract could undermine the initially agreed value for money. The difficulty that the government will face is to distinguish between genuine and purported costs of redesign and altering the capital and output. Hence, the larger the possibility that a contract may have to be substantially renegotiated, the less are the benefits of integrating the construction and operating phases of the project and the less benefit a PPP might deliver relative to traditional procurement.

The choice between a pure PPP (depending on the government for its revenue stream) and a concession (depending on user charges levied directly on the beneficiaries of the service) adds further criteria:

- **Sufficiency of demand:** Is demand (and thus the user charges levied by the private partner) expected to be sufficient over the lifetime of the project to ensure that the private partner generates the revenue required for it to maximise its profit? This question is not so much about demand risk as about the expected level of demand.
- **The presence of externalities:** How big are the externalities and the public goods component of the service delivered and, therefore, how large is the free-rider problem? The free-rider problem means that demand is not fully revealed. The extent of the free-rider problem, and thus the extent to which demand is not revealed, will also limit the extent to which user charges can be levied. Ensuring the desired level of service delivery

might require that the government either pays for the service in total (and thereby rules out user charges; this renders the PPP a pure PPP) or subsidises the private partner (and thereby augments the user charges that the private partner levies). Paying in full or subsidising the private partner will then ensure the desired level of service delivery. However, it should also be noted that payment by the government reduces the demand risk that the private partner faces. Thus, in the limiting case where there is no demand risk left, the pursuit of value for money will depend on the supply-side operating risks transferred to the private partner. If these are not present or are limited, using a PPP makes less sense.

- **The need for subsidisation:** In some projects, demand might exist and there might be the possibility to levy user charges, but the government might also have to consider the distributional aspects of the project. For instance, in the case of some healthcare or school projects the possibility might exist to levy user charges, but the government might also wish to support less well-off beneficiaries by subsidising them (*e.g.* by giving them vouchers).

The application of a procurement option test suggests that arbitrary criteria such as “PPPs should not exceed 15%” of public sector infrastructure investment hold little value. Rather, the question is which method of procurement delivers the highest value for money, irrespective of the percentage of public sector procurement that PPPs constitute.

To conclude, this sub-section suggests that, early in the procurement process, a project should be subjected to a procurement option test. This test should guide the government in selecting which mode of procurement is likely to deliver the most value for money, be it a PPP or traditional procurement. This sub-section also sets out the criteria that might constitute such a test (Box 2 below summarises the criteria).

5.3. Ex post value-for-money assessment and the choice between PPPs and traditional procurement

In a study of 258 public sector transportation infrastructure projects from across the world, spanning the period 1927-98, Flyvbjerg, Holm and Buhl (2002) compared actual construction cost (measured at the time of project completion) and estimated construction cost (measured at the time that the decision to construct the infrastructure was taken). They found that in 86% of all projects actual costs exceeded estimated cost, and that on average this excess equalled 28% (Flyvbjerg *et al.*, 2002:282). Rail projects registered the largest excess (44.7%), followed by fixed-link projects such as bridges and tunnels (33.8%) and road projects (20.4%) (Flyvbjerg *et al.*, 2002:282).^{20, 21} They also found that the underestimation of costs did not decrease during the 70-year period covered by their sample.

Flyvbjerg *et al.* (2002:286-290) subsequently consider four explanations that might explain the persistent and substantial underestimation of costs. These are technical, psychological, economic and political explanations. Technical explanations include: a lack of data, honest mistakes, a lack of experience and imperfect techniques. If these were present, the probabilities of over- and underestimating costs should be approximately the same. However, as noted above, Flyvbjerg *et al.* (2002:286-287) show that 86% of all projects had significantly underestimated costs. This led them to reject the technical explanation.

“Appraisal optimism” is the main psychological explanation and refers to the proneness of project developers, officials, politicians and others involved in a project towards being optimistic regarding costs and outcomes. However, Flyvbjerg *et al.* (2002:288-289) dismiss psychological explanations too. They argue that, in the course of time, practitioners must have noticed such proneness. With such learning taking place, mistaken estimates should

decrease over time and thereby reduce, if not eliminate, “appraisal optimism”. However, their results indicate that the extent to which costs have been underestimated did not decrease in the 70 years covered by their data. Therefore, “appraisal optimism” cannot serve as an explanation for the underestimation of cost. However, as discussed below, a question exists as to how much learning really does take place. Very often, actual and estimated cost and time-delay data exist for the construction phase of projects, while only estimated but no actual whole-of-life project-by-project data exist for benefits and operational and maintenance costs.²²

This leaves economic and political explanations; these refer to the incentive structure that officials face. To increase the probability of a project being accepted, officials and politicians may intentionally underestimate the costs and overestimate the benefits of the project (Flyvbjerg *et al.*, 2002:287-288, 289-290). As Flyvbjerg *et al.* argue, the incentive to present optimistic estimates intentionally is very strong, while the penalty for doing so is small, if not negligible.²³ In addition, Flyvbjerg *et al.* (2002:288) argue that, where officials have to compete for funds from a limited budget (which is more often than not the case), there is even more of an incentive to underestimate the costs of the project.

Therefore, Flyvbjerg *et al.* (2002:287-288, 289-290) argue that economic and political explanations, *i.e.* the incentive structure that officials face to intentionally underestimate the costs of their projects, largely explain the actual underestimation of costs, while technical and psychological explanations such as “appraisal optimism” fail to explain. They conclude by arguing that the problem might be addressed by: i) increased transparency; ii) the use of performance specifications; iii) the explicit formulation of the regulatory regimes that apply to project development and implementation; and iv) the involvement of private risk capital in public projects (Flyvbjerg *et al.*, 2002:291). A fifth way is to estimate costs and benefits and then adjust them for “appraisal optimism”. This is done in the United Kingdom, where the government recognised the bias to underestimate costs (HM Treasury, 2003b). As a result, the government *Green Book* (HM Treasury, 2003b:29-30, 85-87), which sets out guidelines for project preparation, recommends that government departments should adjust their cost and benefit estimates of projects to allow for the underestimation of cost and the overestimation of benefits (also see British Department of Transport, 2004, and HM Treasury, 2006a and 2006b, where the adjustments are made for PFI projects). As far as possible, this should be done on the basis of empirical evidence about the degree of the observed bias present in similar projects. Therefore, even if the estimated cost of a project seems affordable, the inclusion of an adjustment to allow for optimism bias may render it unaffordable.

The fourth way to address “appraisal optimism” is the involvement of private risk capital in public projects. This implies the use, among others, of PPPs. The use of PPPs raises the question of how PPPs perform relative to traditionally procured projects. Are PPPs also as prone to the underestimation of costs and, if so, is this underestimation of the same order of magnitude? Several studies have been undertaken for Australia, the United Kingdom and the United States to establish whether or not PPPs deliver improved value for money compared to traditional procurement. For the United Kingdom, these studies include the Arthur Andersen and Enterprise LSE report (2000), the Mott MacDonald review (2002) and the National Audit Office report (2003). Three studies exist for Australia: the Fitzgerald review (2004), the Allen Consulting Group report (2007) and the University of Melbourne report (2008). For the United States, there is the Haskins, Gale and Kelly report (2002). Also see Grimsey and Lewis (2007:174-176) for a succinct summary of the findings of many of the above-cited studies as well as others. These studies all compared the *ex post* performance of PPPs and traditional infrastructure procurement in terms of the actual cost and time used to put the project into operation. A common finding among all these studies is that PPPs outperform traditional procurement in terms of both cost and time overruns, with outperformance in terms

of cost being the most significant. (As reported in Section 3 above, the survey conducted for this article asked respondents to report on the performance of PPPs relative to TIP in their respective countries. Although many of the countries reported that PPPs outperform traditionally procured projects in terms of time and budget, some countries also reported that they do not have sufficient information to report on the budgetary performance of PPPs.)

The University of Melbourne (2008:9) argues that, depending on the measures used, one reason why PPPs may seem to outperform traditionally procured projects stems from the more thorough cost and time estimates required from PPPs versus traditionally procured projects. In the case of a PPP, a public sector comparator (PSC) or reference project might be required. Usually a PSC requires more detail than the budget of a traditionally procured project that is tested in competitive bidding (University of Melbourne, 2008:9).²⁴ More thorough cost and time estimates may reduce what the report calls the optimism bias (i.e. the underestimation of cost) in PPPs relative to that of traditionally procured projects.

The problem, though, is that “optimism bias” or “appraisal optimism” is not necessarily limited to the estimation of construction cost and time. As noted in the United Kingdom *Green Book* (HM Treasury, 2003b), the Mott MacDonald review (2002) and the University of Melbourne report (2008:9), the “optimism bias” could also be present when officials calculate the value for money that a project may create over the whole of its life. To measure the extent of such optimism bias would require data on actual and estimated operating and maintenance costs, as well as outputs (and outcomes) and the relative weighing and discounting of risks over the project life cycle as part of the estimates. However, as noted by the University of Melbourne (2008:9), all the above-cited studies have one common drawback: data on whole-of-life performance for traditionally procured projects do not exist. This means that, beyond the comparison of construction cost and time, it is extremely difficult to really establish whether or not PPPs outperform traditionally procured projects, particularly in terms of delivering value for money. The absence of whole-of-life data on project performance, of course, does not mean that value-for-money criteria are absent from traditionally procured projects. Indeed, as the survey for this article indicates, most governments of OECD countries use cost-benefit analysis when assessing *ex ante* whether or not a project represents value for money. In addition, governments may also use outcome indicators to establish *ex post* whether or not traditionally procured projects represent value for money. However, the difference in data available with regard to PPPs and traditionally procured projects does make it difficult, if not impossible, to compare the operational performance of PPPs and traditionally procured projects.

Because more often than not a whole-of-life assessment of project performance is not made in the case of a traditionally procured project, there might be little learning about the degree of optimism bias/appraisal optimism and thus limited scope to reduce the optimism bias/appraisal optimism *ex ante* (i.e. the underestimation of maintenance and operating cost and the overestimation of benefits). Therefore, in the event that performance is measured *ex post*, traditional procurement may exhibit a bigger failure to achieve expected value for money compared to PPPs that undergo much more value-for-money scrutiny.

It should be noted that the optimism bias/underestimation of cost and the resultant disappointment are not inherent as such in traditional procurement. Indeed, as pointed out by Flyvbjerg *et al.* (2002), the bias results from the incentives officials face. Given the limited learning that follows an absence of measurement, the bias may also result from the technical and psychological explanations that Flyvbjerg *et al.* highlighted. Therefore,

the optimism bias may be present in all longer-term projects, be these PPPs or traditionally procured projects. Nevertheless, the presence of the bias is more significant in the case of traditionally procured projects because of the absence of rigorous whole-of-life assessments of performance in many projects. The absence of such assessments in the case of traditionally procured projects might however create an incentive for officials to prefer traditional procurement. This might be true particularly if procuring entities are afraid that a thorough whole-of-life assessment of performance made in the future may bring to light an absence of value for money. This fear might be very real if, as Flyvbjerg *et al.* (2002) argue, budgeting entities succumbed to the incentive to underestimate costs and overestimate benefits.

In the case of a PPP, the procuring department or entity usually has to indicate why the PPP route will deliver more value for money than the traditional public procurement route. However, the reverse is not true, meaning that a department taking the traditional public procurement route does not have to indicate why that route will deliver more value for money than the PPP route. As argued above, such a comparison might not be feasible in practice, as a government might be unable to foresee what the private sector option would entail. (If the government can foresee it, it would in principle also be able to deliver the project itself, obviating the need for a PPP.) Nevertheless, it leaves traditional procurement as the default procurement option, demanding less from procuring departments in terms of demonstrating value for money. This means that, in principle, it is possible that service provision through a PPP could have delivered more value for money. However, since the comparison is not made, the question as to whether the project delivers maximum value for money cannot be answered.²⁵ This, of course, could explain some of the difference in performance that several studies found between PPPs and traditional procurement. If, according to the government:

- to become a PPP requires the application of a whole-of-life approach that includes the requirement that a project *ex ante* outperforms traditional procurement;
- while, in the case of traditional procurement, it is not necessary that the traditionally procured project outperforms a PPP;
- and if, in the absence of a whole-of-life assessment of performance for traditionally procured projects, there is room for a larger optimism bias in traditionally procured projects; then

it will not be surprising that, when an *ex post* assessment is made on occasion, PPPs indeed do *ex post* outperform traditional procurement. But whether this is due to “optimism bias” or PPPs really delivering improved value for money will be difficult, if not impossible, to say. A related factor is the possibility of cherry picking: *i.e.* one reason why PPPs may *ex post* outperform TIP projects (especially in terms of construction cost and delivery time) is that the projects selected were good projects to begin with. Had these projects been procured through TIP, they probably would also have performed well.

Therefore, what is required is the recording and reporting of data on a whole-of-life project-by-project basis and the subsequent *ex post* assessment of both PPPs and traditionally procured projects. This should be done not only to establish and compare performance in terms of construction cost and time delays, but also in terms of outputs (and outcomes) and operating and maintenance cost.

Furthermore, to deal with optimism bias and to ensure a more robust comparison between procurement options, both traditionally procured and PPP projects should *ex ante*

include an adjustment for possible cost and time overruns and revenue shortfalls. This should be done for the construction phase as well as the operating phase. Where possible, the estimated degree of the optimism bias should be based on empirical evidence collected from similar projects.

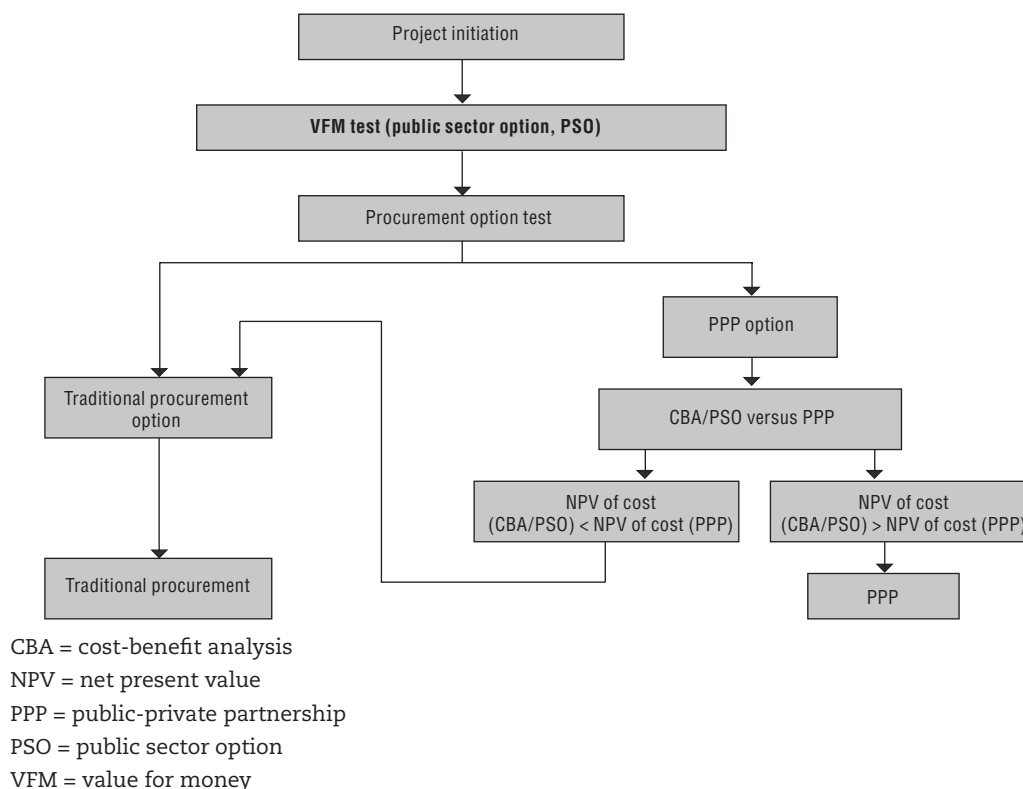
Thus, to conclude, this sub-section suggests that governments record and report data on a whole-of-life project-by-project basis. It also recommends that the data be used to conduct an *ex post* assessment of both PPPs and traditionally procured projects. This should be done with regard to construction costs and time, as well as operating and maintenance cost. It should also be done for outputs and outcomes of projects.

In addition, governments should deal with optimism bias by *ex ante* including an adjustment for possible cost and time overruns and revenue shortfalls, both for the construction phase as well as the operating phase. This should be done for both traditionally procured and PPP projects. Doing so will ensure a more robust comparison between procurement options. In addition, if possible, the estimated degree of the optimism bias should be based on empirical evidence collected from similar projects. By including an adjustment for optimism bias, *ex post* value-for-money assessments will become more reliable and governments can be sure that if a PPP outperforms a TIP, it cannot be ascribed to optimism bias. Instead, such an outperformance will clearly originate in actual value-for-money improvements.

5.4. A unified framework for public procurement options

From the survey results, officials in a significant number of countries clearly noted that the rules in place impede attaining value for money by creating incentives to prefer traditional infrastructure procurement over PPPs. Very often, for a project to proceed as a PPP requires the provision of more detail and the compliance with more prescriptions. Hence, officials in line departments would prefer to follow the easier route towards the realisation of the project. In addition, officials in line departments are also more used to traditional procurement, which in itself creates an incentive to steer clear of unknown, unfamiliar or less well-known procedures. Some officials participating in the survey also reported unfamiliarity among officials in line departments with a whole-of-life planning approach that includes an integrated approach towards construction and operation. As discussed above, this is something that is key to PPP contracting, as it ensures that the private partner has an incentive to incur additional construction cost if this will reduce future operating and maintenance cost. As discussed, this incentive does not exist in traditional procurement. Furthermore, officials in a significant number of countries also reported that political preferences contributed in the past towards a preference for procurement through traditional infrastructure procurement (while no such preferences were reported for procurement through PPPs).

To partially overcome this problem, the discussion above noted the necessity to conduct a procurement option test. This will ensure that the PPP route is not just taken on an *ad hoc* basis, but that clear and explicit consideration is given to procurement options prior to the undertaking of a project. To unify the procurement process further, governments could also shift the value-for-money assessment to earlier in the procurement process and place it prior to the procurement option test (see Figure 4). This will ensure that the public sector option always represents value for money irrespective of the procurement option chosen.

Figure 4. **Unified framework for public procurement options**

This forward shift can be justified on the grounds that an assessment of the value for money of a public sector option is always needed, irrespective of the method of procurement ultimately used. Even in the case of a PPP, the public sector option (becoming the public sector comparator) always needs to be a real and credible alternative to private delivery. Thus, a public sector option that does not deliver value for money should not be the benchmark for a PPP to attain, even if that PPP itself can deliver value for money.

This value-for-money estimation that is brought forward in the procurement cycle might be a broader cost-benefit analysis. However, as a subcomponent it should also contain a narrower estimate of direct costs and benefits (including revenue benefits) for the government. This could simply be called a “public sector option” (PSO), which is akin to a public sector comparator (or the value-for-money assessment for the public sector alternative that is done for PFIs in the United Kingdom; see the value-for-money assessment guidance and spreadsheet for HM Treasury [2006a; 2006b]). Compared to the broader social costs and benefits included in a cost-benefit analysis (CBA), narrower, more direct costs and benefits are easier to define and measure. Furthermore, a PSO done for all projects will bring public sector officials into the habit of always thinking in terms of a lifetime approach to a project’s direct costs and revenues for government. Thus, it forces them to simultaneously consider the construction and operating phases of the project. If the narrower numbers are less difficult to define and measure, it will also render the comparison between procurement options more credible.

Thus, with the PSO in existence, it can also serve as a public sector comparator/ value-for-money (PSC/VfM) assessment model for a PPP and thereby streamline the

procurement process. Should the PPP option then not demonstrate an improvement in value for money over and above the value demonstrated in the PSO, then delivery through public procurement follows.²⁶ Once a project is allocated to either the PPP or the traditional procurement stream, development of the project will reflect the characteristics common to the type of procurement selected. For instance, in traditionally procured projects, the design of the project is specified in detail even before the project is put out to tender. The design specifications are also very often set out in the contract. This leaves little room for contractors to change the design of the service or the output.²⁷ In contrast, in PPP projects the PPP contract specifies the output it requires and the price it will pay for that output, but not the design of the project. Given that a significant part of the efficiency improvement (and hence profit) is contained in the design of the project, the design is left to the private partner.

5.5. Concluding discussion

In addition to being the most common procurement mode, traditional procurement in many of the surveyed countries still constitutes the default mode of procurement. Though it will probably remain the most common procurement mode, it need not remain the default mode. The survey indicated that, although most of the surveyed countries test PPP candidates against the alternative of a public sector option, many countries still do not have clear criteria to identify how projects get to be either PPP candidates or TIP candidates. In some countries, it is left to the discretion of line departments and so-called project champions to identify PPP candidates.

With the above analysis as background, this article developed three sets of recommendations:

- With regard to *ex ante* value-for-money assessment, the article suggested that early in the procurement process a project should be subjected to a procurement option test. This test is meant to guide the government in selecting which mode of procurement is likely to deliver the most value for money. The article set out a list of criteria that should be considered in a procurement option test: drawn from the discussion in Section 5, Box 2 highlights the issues addressed by the criteria.
- With regard to *ex post* value-for-money assessment, the article suggested that:
 - Data are recorded and reported on a whole-of-life project-by-project basis and that subsequently an *ex post* assessment of both PPPs and traditionally procured projects is made. This should be done not only to establish and compare performance in terms of construction cost and time delays, but also in terms of outputs (and outcomes) and operating and maintenance cost.
 - Furthermore, to deal with optimism bias and to ensure a more robust comparison between procurement options, both traditionally procured and PPP projects should *ex ante* include an adjustment for possible cost and time overruns and revenue shortfalls. This should be done for the construction phase as well as the operating phase. Where possible, the estimated degree of the optimism bias should be based on empirical evidence collected from similar projects. The inclusion of such adjustments will render *ex post* value-for-money assessments more reliable – i.e. if a PPP outperforms a TIP, it would be clear that this is not due to an optimism bias but to the actual improvements in value for money and efficiency.
- The article also suggests a unified framework within which to deal with the choice between procurement options. As such, the article suggests that governments could shift the value-for-money assessment to earlier in the procurement process and place it

prior to the procurement option test. This ensures that the public sector option always represents value for money no matter which procurement method is selected. As argued above, the public sector option might form part of a broader cost-benefit analysis. However, the focus of the public sector option (PSO) is narrower, because narrower, more direct costs and benefits are easier to define and measure. The PSO will then merely become the public sector comparator should the procurement option test that follows the estimation of the PSO indicate that a PPP might deliver more value for money than traditional procurement. Should the received PPP bids outperform the PSO, the project becomes a PPP. Should the received bids fall short of the PSO, the project reverts back to the traditional procurement stream since the PSO already indicated that it represents value for money (assuming, of course, the existence of the necessary funds and political will that identified the project as a priority).

Box 2. **Criteria that should be considered in a procurement option test**

- Can risk be defined, identified and measured?
- Can the right type of risk be transferred?
- Is the size of risk large enough to serve as an incentive towards value for money?
- Are private partners willing to accept the risk to be transferred to them?
- How much competition is there for the market?
- How much competition is there in the market?
- How large are the benefits from combining the construction phase and the operating phase of the project in a whole-of-life contract?
- Can the quality and quantity of service output that the private partner must deliver be clearly measured so as to deal with possible cost and quality trade-offs?
- How much innovation is required?
- What is the availability in the public sector of the skills needed to operate the asset?
- How rapidly and significantly does the technology needed for the project change?
- How much flexibility does the government want to change the output specifications of the service to be delivered?

The choice between a pure PPP (depending on the government for its revenue stream) and a concession (depending on user charges levied directly on the beneficiaries of the service) adds further criteria:

- Is demand sufficient to render the levying of user charges a viable source of income for a concessionaire?
- Does the service create externalities that might give rise to a free-rider problem and hence lead to demand not being revealed by beneficiaries?
- To what extent is there a need for/desire by the government to subsidise all or part of the beneficiaries of a service?

APPENDIX

Defining Value for Money

As mentioned in the introduction, the concept of value for money includes both qualitative and quantitative aspects. In addition, it typically involves an element of judgment on the part of a government. As such, a precise indicator to measure value for money does not exist. Value for money can broadly be defined as what a government judges to be an optimal combination of quantity, quality, features and price (i.e. cost), expected (sometimes, but not always, calculated) over the whole of the project's lifetime.

The typical definition for value for money found in the literature defines it in terms of three elements: economy, efficiency and effectiveness (Diamond, 2005:162). Economy is the minimisation of the costs of inputs, while efficiency is the minimisation of inputs for a given set of outputs, or the maximisation of outputs for a given set of inputs. Efficiency entails both technical and economic efficiency. Technical inefficiency, also known as X-inefficiency, refers to when resources are not technically employed in the best way; it usually means that the levels of some inputs can be reduced while still delivering the same outputs (Diamond, 2005:161). A typical example is over-staffed programmes where the level of staff can be reduced without any need to reduce output levels. Economic inefficiency results from the combination of inputs that is not optimal given the relative prices of inputs. Usually, different combinations of inputs can deliver the same level of output (e.g. one might substitute teachers for computerised teaching aids or *vice versa*). However, given the relative prices of inputs, only one of these combinations will minimise cost. Therefore, if by changing the combination of inputs the cost of delivering a service can be lowered, the new combination will represent an improvement in economic efficiency. Economic efficiency is maximised when no further cost reductions can be made by altering the composition of inputs. Effectiveness refers to the impact of policy, i.e. whether or not the outputs reached (e.g. a certain teacher/pupil ratio) deliver the desired outcome (improvements in educational attainment as measured by indicators such as throughput rates). According to Diamond (2005:163), there are two forms of ineffectiveness: technical and economic. Even when delivery of a service is technically and economically efficient, the service itself may technically fall short of addressing the needs it was designed to address. It is then said to be technically ineffective. Economic ineffectiveness exists when the overall effectiveness of public resources can be improved by reallocating resources.

The above argument is sometimes summarised as:

- Economy in the use of resources: maximise inputs per dollar, euro, pound, yen, etc.
- Efficiency: maximise outputs per input.
- Effectiveness: maximise outcomes per output.

Following from these three components, the maximisation of value for money is defined as the maximisation of outcomes with respect to every dollar, euro, etc., spent on inputs. This is only possible if outcomes are maximised with respect to outputs (effectiveness) and if outputs are maximised with respect to inputs (efficiency), which in turn are maximised with respect to every dollar, euro, etc., spent on the inputs (economy).

Although appearing straightforward when stated as ratios to be maximised, such an appearance is deceptive. Defining value for money in terms of outcomes per dollar, euro, etc., spent on inputs addresses only supply-side efficiencies and effectiveness, while leaving out demand-side efficiency. Demand-side efficiency is more commonly known as allocative or Pareto efficiency. This form of efficiency might be the most difficult to measure, but it is nevertheless key to whether or not a service really represents value for money. When considering value for money, the question is “value for whom?” Presumably the answer is not government, but the recipient of the service/taxpayer.²⁸ As in private goods markets, allocative efficiency refers to the allocation of consumers’ purchasing power to various goods and services in a manner that will maximise their welfare (utility). Thus, it refers to the welfare of those receiving a service. An improvement in allocative efficiency can be attained if one can improve the welfare position of one agent (i.e. recipient of the service) without causing a deterioration in the welfare position of another agent. This is attained by reallocating resources spent on services so as to deliver the quantity and quality of different types of outputs (with the desired output features) that will maximise welfare. When no reallocation can improve the welfare of one agent without causing a deterioration in the welfare of another, the allocation of resources is said to be allocatively or Pareto efficient.

Unfortunately, the welfare that individuals derive from consuming goods and services cannot be measured directly. In a private goods market this is not a problem, because individuals are forced to translate the welfare that they expect from consuming a good into a demand for that good (they are said to “reveal their demand”). However, many of the goods that governments deliver suffer from the free-rider problem, which means that demand (and therefore what will maximise welfare) is not revealed. Therefore, it is possible that a service is delivered in a technically efficient way, also reaching all output and outcome goals, but that it is not something society wants and thus wanted to allocate resources to. This renders the service allocatively inefficient and hence also means that, even though all output and outcome objectives might have been reached (supply-side efficiency and effectiveness), the service nevertheless represents no or limited value for money (because it lacks demand-side efficiency). This situation is of course aggravated by budgetary constraints that require the government to set priorities and to trade off the benefits and welfare improvements of different spending programmes.

In essence, the problem is that the composition of goods that will maximise welfare can only be approximated by voters revealing their preferences in elections – an approximation that is quite imperfect at times, as the public choice literature has demonstrated. In addition, allocative efficiency depends on demand, which in turn depends (among other things) on wealth and income. Thus, should the government also pursue redistributive goals, it will indirectly affect the allocative efficiency of its programmes and hence render the decision as to what constitutes value for money even more difficult.

All of the above discussion serves to indicate that what constitutes value for money is not just a quantitative exercise. Because of all the difficulties highlighted above, what constitutes value for money usually also requires a significant level of qualitative judgment on the part of the government. A government needs to judge the unrevealed demand for

different services. Thus, it needs to judge what are the appropriate services to deliver and, in the case of each service, what will constitute the optimal combination of quantity, quality and features. It then needs to deliver these services with economy, technical and economic efficiency, and technical and economic effectiveness.

Notes

1. In some countries, the pursuit towards the use of PPPs has been premised on access to additional and alternative sources of finance. However, it is increasingly understood that PPPs do not necessarily increase the public expenditure envelope, in particular when the future liabilities and payment commitments of PPPs are taken into consideration. As such, the premise of additional and alternative sources of finance might be largely false (cf. OECD, 2008). This leaves the pursuit of value for money as the legitimate premise underlying the drive towards PPPs (cf. OECD, 2008).
2. Mostly PPPs operate through a special purpose vehicle (SPV). An SPV is usually the vehicle through which the construction and operation of the asset is managed by the private partners. The SPV can take many forms. Ye (2008:184) notes that SPVs can be incorporated companies, contractual joint ventures (unincorporated joint ventures), general or limited partnerships and trusts. Furthermore, the SPV can be a single entity responsible for all activities related to the PPP. It can also be a dual-entity structure where one entity is a borrowing entity and the other the managing entity, or alternatively, where one entity is the leasing company and the other the project company. Lastly, a PPP can be a multi-entity structure, with a borrowing vehicle, a management vehicle and a leasing vehicle (see Ye, 2008, for more details).
3. Within the category of public-private partnerships, a number of different models exist and can also give rise to different definitions. These are influenced not only by the responsibilities of the private partner but also the ownership and conceptualisation of the asset. For example, the private partner may design, build, own, operate and manage an asset with no obligation to transfer ownership to the government (e.g. design-build-finance-operate). Alternatively, the private partner may buy/lease an existing asset from the government, modernise and/or expand it before operating the asset but have no obligation to transfer ownership back to the government (e.g. buy-build-operate). Finally, the private partner may design, build and operate an asset before transferring it back to the government when the operating contract ends or at some other pre-specified time (e.g. build-operate-transfer). A large soup of acronyms for public-private partnerships has emerged. This article refers to public-private partnerships in general and does not go into specific types – which, indeed, vary significantly between countries. There exist a number of variations on design-build-finance-operate (DBFO), buy-build-operate (BBO) and build-operate-transfer (BOT) schemes. Variations of DBFO include build-own-operate (BOO), build-develop-operate (BDO), and design-construct-manage-finance (DCMF) schemes. Variations of BBO include lease-develop-operate (LDO) and wrap-around addition. Finally, variations of BOT include build-own-operate-transfer (BOOT), build-rent-own-transfer (BROT), build-lease-operate-transfer (BLOT) and build-transfer-operate (BTO) schemes (see Hemming et al., 2006).
4. The Statistics Office of the European Communities (Eurostat) considers that the main issue in classifying a public-private partnership depends on who bears the most risk. The recommendation in Eurostat's decision is that assets involved in a public-private partnership should be classified outside the government sector if both of the following conditions are met: i) the private partner bears the construction risk; and ii) the private partner bears either the availability risk or the demand risk. The bearer of risk is not always easy to define, and contract design varies. In cases where it is not possible to classify a public-private partnership as on or off the government books, other contract features can be considered, such as if the asset is supposed to be transferred from the private partner to the government at the end of the contract period and at what price. This event is also an important part of the risk sharing (see Eurostat, 2004).
5. A long-standing alternative to traditional infrastructure procurement is the use of processes where the government buys the raw material and other inputs necessary for the construction of an asset and then constructs the asset itself; large public works programmes very often function in this way.
6. Questionnaires were sent to both the federal government and the government of New South Wales. The federal government response covered both the federal and state level, while the response for New South Wales applied to the state level. To prevent double counting for Australia, the responses from the federal and New South Wales governments were consolidated. As one would expect, by far most of the replies to questions by these two respondents were the same. Where a difference

exists, the most encompassing answer was selected. For instance, if one response indicated that the provincial government plays a role, while the other did not select the provincial government as playing a role, the former was selected as the Australian response. Where one indicated “Yes” while the other indicated “Sometimes”, or if one indicated “No” while the other indicated “Sometimes”, “Sometimes” was selected as the response.

7. The United Kingdom count includes only private finance initiatives (PFIs) and not PPPs falling under a wider definition. Italy reported a much higher number (approximately 2 000), but this number includes all concessions.
8. Excludes concessions, and includes only those PPPs falling under the authority of the PPP unit.
9. Contingent liabilities are obligations that have been entered into, but the timing and amount of which are contingent on the occurrence of some uncertain future event. Contingent liabilities are not expected to realise. They are therefore not yet liabilities, and may never be if the specific contingency does not materialise.
10. Contingent costs – like contingent liabilities – are obligations that have been entered into, but the timing and amount of which are contingent on the occurrence of some uncertain future event. However, unlike contingent liabilities that are not expected to realise (although there is a probability that they might realise), contingent costs are expected to realise. An example is the future payment of fees by a government to a private partner for services delivered. Given that the payment of these fees is contingent upon meeting the standards and fulfilling the requirements of the PPP contract, there is a probability that the private partner will not meet the standards and fulfil the requirements. Nevertheless, the private partner is expected to meet the standards and fulfil the requirements, turning this into a contingent cost and not a contingent liability.
11. This disadvantage exists with regard to the ability of the public sector to both negotiate and manage the contract. Although the public sector can use outside consultants for the relatively short time that it takes to negotiate the contract, doing so for the long-term management of the contract is rarely feasible. This might lead to a situation where, although the government does not have the skills to manage the project or oversee private partners to manage it, the government may fear that a PPP might cost more than traditional procurement. Thus, despite its lack of skill, the government might prefer traditional procurement.
12. See OECD (2008:122) on the TUPE agreement in the United Kingdom that dealt with PPPs and labour.
13. Complexity very often means that it is difficult to foresee how all the elements involved in the project might interact and thereby affect outcomes. Measuring the risk (i.e. the probability of outcomes) therefore becomes difficult. Redundancy occurs with the introduction of new technology into a market. The nature and effect of new technology on cost and output can very often not be predicted. As such, innovation and technological change introduce uncertainty (i.e. immeasurable risk) as opposed to what is conventionally understood as risk (i.e. measurable risk).
14. The authors would like to express their gratitude to the relevant authorities for participating and for providing the information necessary to compile this section.
15. The MAPPP (*Mission d'appui aux PPP*) is responsible for supporting and regulating partnership contract projects and procedures, but not for managing tender processes.
16. To be noted: the PPP law of 28 July 2008 widely opened the application field for PPPs to cases that are defined neither by the criterion of complexity nor by the criterion of urgency, but simply by the criterion of economic efficiency. In such cases, the public authority freely chooses competitive dialogue or tender.
17. And even if PPPs constitute just 10% of total public sector infrastructure investment, the amounts involved might be quite significant and, as such, oblige governments to pursue maximum value for money.
18. Further alternatives such as “alliancing”, incremental partnerships and integrator models also exist (cf. Miller *et al.*, 2009; HM Treasury, 2008; Grimsey and Lewis, 2007). They usually represent variations on the theme of either PPPs or TIP. However, they are beyond the scope of this article.
19. In the absence of competition during the bidding process, the best that the government can do is to compare the one bid received to the public sector comparator (PSC). However, some governments do not entertain a single bid on the grounds that the lack of competition means that there is a danger that the government will not obtain value for money.
20. Flyvbjerg *et al.* (2002:293) also note that the smallest projects are usually stretches of roads, while rail, bridges and tunnels are usually larger projects.
21. According to Flyvbjerg *et al.* (2002:281), questions have been raised as to whether or not the correct comparison is to compare the actual data with cost estimates that were made when the decision

- to undertake the project was taken. The question is raised because, depending on the stage of the project cycle, different cost estimates exist: cost estimates are made at the time when the decision to build is taken, when the project goes to tender, when the contract is concluded and when changes were made to the contract. The later these estimates are made in the project cycle, the more accurate one can expect them to be. Thus, estimates included in the contract can be expected to be closer to actual costs, than estimates made when the decision was taken to build. However, Flyvbjerg *et al.* (2002:291) argue that the focus should be on the cost estimate that is used when the actual decision to build is taken, because that is the information used in the decision.
22. It should be noted that this does not mean that data on operational and maintenance cost are not recorded and reported, but that they are not necessarily recorded and reported on a whole-of-life project-by-project basis.
 23. Flyvbjerg *et al.* (2002:288) also mention that cost forecasters may underestimate costs in an effort to pressure officials to cut down on costs. However, they still argue that, even though the intention might be “noble”, the underestimation of cost still means that the viability of the projects has not been established.
 24. The University of Melbourne (2008) uses data coming from the project finalisation sequence. This sequence starts with the original project announcement, then continues to the budget approval, the contractual commitment and lastly the actual finalisation and the readying of the project for commencement of service. The report argues that data from the later stages suffer from less optimism bias, largely because the rigour with which costs and time estimates are made improves for both PPPs and traditionally procured projects during the later stages. However, the point made in note 21 above by Flyvbjerg *et al.* (2002:281) should be remembered here: when measuring the extent of cost underestimation, it is better to use the cost estimate made at the time when the decision to build was taken, because that is the estimate on which the decision is based.
 25. At best what can be said is that the project has delivered (or is expected to deliver) value for money relative to some preset standard.
 26. It should be noted that this is also the stage in the procurement process where alternatives such as alliancing are considered. These are very often variations on PPPs and TIP. However, they fall outside the scope of this article.
 27. This is very often also a source of major cost overruns in traditionally procured projects: after a contract is concluded, the government may realise that it wants to change the design and output. Given that the government is already at that stage locked into a contract that details the design, the design can only be changed at great cost to the government.
 28. Discussing value for money only in terms of the supply-side efficiencies and effectiveness might also explain why some critics of PPPs base their comments on a criticism of the value-for-money concept. Ignoring the demand-side efficiency might create the impression that the answer to the question “value for whom?” is government. To include demand-side efficiency refocuses attention on who policy is ultimately designed for: the taxpayer/voter/citizen.

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