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The Effects of the Financial Crisis on Public-Private Partnerships

*Philippe Burger, Justin Tyson, Izabela Karpowicz,
and Maria Delgado Coelho*

IMF Working Paper

Fiscal Affairs Department

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**Prepared by Philippe Burger, Justin Tyson, Izabela Karpowicz, and
Maria Delgado Coelho¹**

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Abstract

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The paper investigates the impact of the global financial crisis on public-private partnerships (PPPs) and the circumstances under which providing support to new and existing projects is justified. Based on country evidence, cost of and access to finance are found to be the main channels of transmission of the financial crisis, affecting in particular pipeline PPP projects. Possible measures to help PPPs during the crisis include contract extensions, output-based subsidies, revenue enhancements and step-in rights. To limit government's exposure to risk, while preserving private partner's efficiency incentives, intervention measures should be consistent with the wider fiscal policy stance, be contingent on specific circumstances, and be adequately costed and budgeted. Governments should be compensated for taking on additional risk.

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Authors' E-Mail Addresses: BurgerP.EKW@ufs.ac.za, jtyson@imf.org

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I. INTRODUCTION

The recent global economic and financial crisis has generated challenges at all levels of economic policy decisions. Governments in advanced countries and emerging markets have faced an urgent need to act concurrently on different fronts: systemically or politically sensitive economic sectors had to be bailed out; the general downfall in economic activity had to be counteracted; vulnerable population groups had to be protected from declining incomes. These costly actions were taken in a context of falling government revenues and shrinking domestic and foreign financing, with medium to long-term consequences for budgets and debt.

In a number of countries, anti-crisis packages included higher public investment, at times implemented through public-private partnerships (PPPs). The potential role of these arrangements as counter-cyclical fiscal policy tools is sizeable given that they can be used to support private sector recovery and generate employment. Yet, the growing number of PPPs in recent years² and their contractual structures may entail fiscal risks for governments that can be exacerbated by the financial crisis.

PPPs are vulnerable to both the financial and the real impact of the crisis. Although the final consequences and duration of the crisis are not yet known, the likely effects on PPPs can already be identified. Both existing and planned (hereafter pipeline) PPP programs could be affected through various channels, such as the availability and cost of credit, lower growth, and unforeseen exchange rate movements. Depending on the contractual arrangement between the parties, the changed distribution of risks can shift the cost burden between the parties, weakening the attractiveness of PPPs. Parties are being forced to reevaluate risk.

The challenge facing PPPs lies in securing their economic benefits while at the same time containing fiscal risks. Whenever possible, the value-for-money (VfM) of existing projects should be maintained by aligning government interventions in selected projects/contracts with broader fiscal policy objectives, and ensuring interventions are temporary, transparent, costed and budgeted.

The paper studies the impact of the global financial crisis on PPPs based on a theoretical framework and country evidence. Section II briefly describes PPPs; Section III identifies the channels through which the crisis may affect PPPs and assesses country and program-specific vulnerabilities; Section IV presents evidence on the impact of the crisis based on answers to a questionnaire sent to select countries; Section V proposes measures to enhance the

²The national PPP programs have grown over time and, in some countries, constitute a large share of investment. For instance, the total capital value of PPP in Korea equaled 6.7 percent of GDP at the end of 2008, while in Portugal it equaled 5.6 percent at the end of 2007. For South Africa, Peru, and Canada the figures for 2008 are smaller: respectively 1.7 percent, 2.6 percent and 1.4 percent of GDP.

attractiveness of PPPs and principles for preserving VfM and protecting the budget. These fall under the general rubric of how governments cope with infrequent, catastrophic events.

II. PUBLIC-PRIVATE PARTNERSHIPS

The underlying rationale for choosing PPP over traditional procurement or private-sector provision is improved VfM. VfM is maximized when the project maximizes the net present value of social benefits—benefits less costs—of a project over its entire life cycle.³ VfM tests can vary, but typically involve a risk-adjusted comparison of the PPP and public procurement alternatives. In practice, PPPs have also been used to circumvent government accounting rules by moving borrowing off the public sector balance sheets, under the misconception that doing so creates fiscal space for other activities.⁴

The impact of the financial crisis and ensuing economic downturn on PPPs varies depending on the phase of development:

- **Operational phase:** The PPP is negotiated, the construction phase is completed (if applicable), and services are being provided by the private partner(s).
- **Construction phase:** The PPP is negotiated, but the construction of physical assets is still underway and service provision has not commenced.
- **Pipeline phase:** The PPP is planned, and may even be tendered. However, the public and private partners have not reached financial closure and physical works have not started.

Box 1. Definition of PPPs

A PPP is an arrangement in which the private sector participates in the supply of assets and services traditionally provided by the government. However, the literature on PPPs has not reached consensus on a precise definition (cf. Hemming, 2006; IMF, 2004; OECD, 2008; European Commission, 2004; Standard and Poor's, 2005; EIB, 2004). For the purposes of this paper, the term PPP covers arrangements usually characterized by the following:

- 1) An agreement between a government and one or more private partners whereby the private partner(s) undertakes to deliver an agreed upon quantity and quality of service;
- 2) In return for the delivery of the agreed upon quantity and quality the private partner(s) receives either a unitary charge paid by government or a user charge (e.g., a toll) levied by the private partner on the direct recipients of the service;
- 3) An emphasis on a whole-of-life approach. The private partner(s) is usually responsible for both the construction and operational phases of the project;
- 4) Some degree of risk sharing between the public and private sector that in theory should be determined on the basis of which party is best able to manage each risk, thus ensuring that the PPP optimizes VfM.

³While some VfM tests also minimize the net present value of cost, the optimal option selected on a VfM basis is not necessarily the least expensive option available as adjustments are made for quality and risk.

⁴Fiscal space is only apparent, since a PPP merely replaces the debt incurred through traditional procurement with the present value of future service charges, which usually include a component to service the PPP debt.

III. TRANSMISSION MECHANISMS: THREATS, VULNERABILITIES AND RISK

To assess the impact of the global financial crisis on PPPs, one can define the realization of risk as a function of threat and vulnerability:

$$\text{Risk realization} = f(\text{threat, vulnerability})$$

where *threat* is defined as the probability that some negative event occurs in the future, e.g. through one of the channels identified below, and *vulnerability* is linked to PPP-specific or country-specific factors that capture the “preparedness” of the involved parties to either prevent a threat from materializing or cope with its adverse impact.⁵ Vulnerability can be considered as lack of capacity and/or desire of the parties to ensure that, through proper risk and project management, the actual outcome conforms as closely as possible to the expected outcome. The outcome, or *risk realization* is the potential impact on the PPP stemming from the interaction of threats and vulnerabilities. For instance, a drop in traffic volumes is a *threat* to toll-road PPPs. However, in this example *risk* is only present if there is a corresponding *vulnerability*, such as the lack of a minimum revenue or traffic guarantee that allows the private partner to cope with the impact.

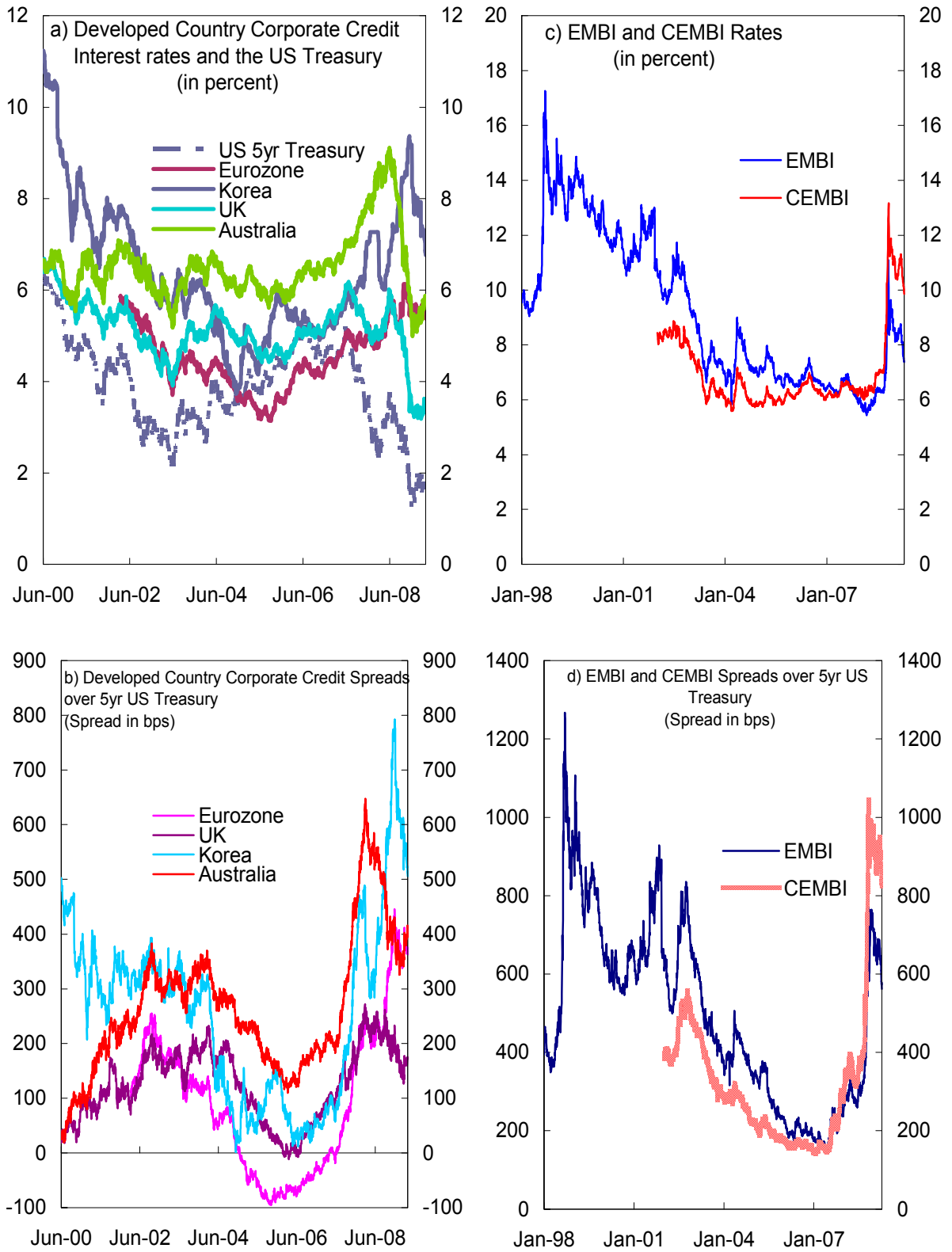
A. Crisis Transmission Mechanisms: Threats

There are several channels through which the financial crisis, the associated increase in risk aversion and the ensuing recession may affect PPP programs. The channels include:

- **Upward pressure on interest rates.** Although policy rates in many developed economies have decreased to historically low levels since the advent of the crisis, emerging markets have seen an increase in both corporate and sovereign bond rates. In most economies, developed or emerging, spreads between corporate and sovereign rates have increased since mid 2008 to levels not seen since the Asian crisis, the dotcom bubble or the Argentine crisis, indicating an increase in risk premiums (Figure 1).
 - ❖ The resulting increase in the cost of borrowing affects projects in the pipeline phase and existing projects with refinancing needs (most likely those in the construction phase) and/or variable interest payments.

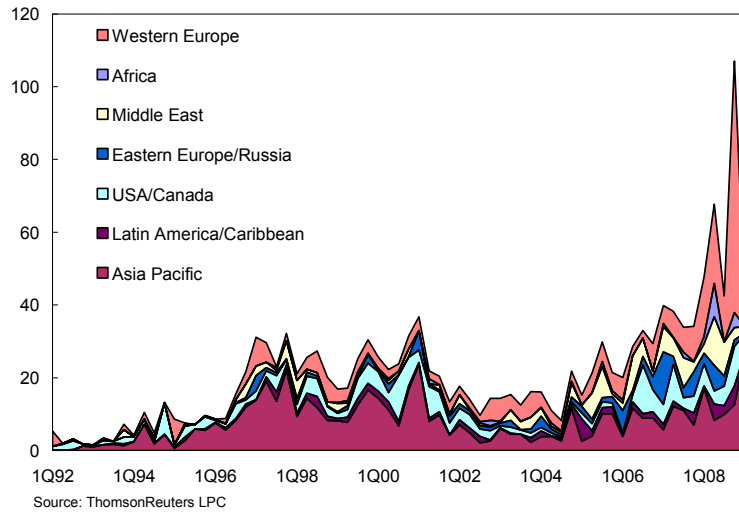
⁵Positive surprises or upside risk can also materialize, but are not analyzed in this paper.

Figure 1. Developed and Emerging Market Interest Rates



Source: Bloomberg

Figure 2. Project Finance Syndicated Loans Volume by Region
(US\$ Billions)



- **Decrease in the availability of credit.** Liquidity constraints are affecting not only the price of credit, but also the quantity available as financial institutions ration credit regardless of price. Banks are wary of extending loans and the downgrading of monoline insurance companies (who guaranteed the repayment of infrastructure bonds at a fee) has shrunk the bond market for infrastructure projects. In

those cases where banks might be interested in extending loans, they might not be able to do so because their capital is too small (Abadie, 2008). Figure 2 presents data on project finance syndicated loans (including PPP projects). After a peak late in 2008, project finance loans declined sharply in the first quarter of 2009, most notably in Western Europe.

- ❖ The most affected PPPs are those in the pipeline phase. Existing PPPs (both those in the construction and operational phase) will already have secured credit through signed agreements with financial institutions, although possibly with residual refinancing needs.
- **The real effects of the economic slowdown on revenue cash flows.** The impact of lower demand for services on the revenue cash flows will have knock-on effects for debt servicing capacity and overall profitability. Examples include lower revenues from landing fees in airports and lower toll-road revenues.
 - ❖ This threat mainly affects PPPs in the operational and pipeline phases. Those in the operational phase suffer from the reduced cash flow—especially where the private partner is reliant on direct user charges (as opposed to service payments from the government). For PPPs in the pipeline phase, the downturn could affect the estimates of future profitability and hence the viability of the project.
- **Unforeseen exchange rate movements.** Where the private partner has sizeable, unhedged, external debt, these movements could have an impact on the balance sheet and debt servicing capacity of PPP projects. In some emerging market countries hedging is impossible due to the absence of forward markets for their currencies. In other cases, partners may have underestimated the exchange rate risk involved. Projects may also be affected by the increased cost of imported capital goods (if the PPP is still under construction) and imported operational inputs.

- ❖ The PPPs most affected are those in the operational or construction phase that have unhedged external debt.

B. Crisis Transmission Mechanisms: Vulnerabilities

PPP vulnerabilities to the crisis can be project specific or extend more widely to the partnership framework. Project specific vulnerabilities are those that can be managed within the project's structure, such as a high, unhedged level of external debt or projects based on overly optimistic revenue forecasts without a corresponding guarantee. Partnership vulnerabilities are more complicated and involve the interaction of project specific vulnerabilities, contract structure, and the institutional framework for PPPs. For instance, authorities could be vulnerable to explicit contingent liabilities, such as a higher likelihood of guarantees being called (exchange rate, minimum traffic, revenue). This poses a fiscal risk if no provision has been made in the budget to cover the obligations. Similarly, partnerships (public and private sectors) can be vulnerable to implicit contingent liabilities, like contractor failure and/or contract renegotiation, even if guarantees do not exist.

The institutional context is key to managing PPPs to secure their benefits while containing risks. Key elements to reducing partnership vulnerability include:

- **Robust public investment planning.** Crucial components include a systematic approach to investment planning, project selection and prioritization, and a framework to consider future implications of projects for the budget. International experience can help identify a priori which sectors and types of projects are most suited to PPPs.
- **Adequate distribution of risks between the government and the private sector.** Better VfM is realized if the party that has better control over a feature of the project that drives VfM also bears the risk associated with it. Risk can be endogenous to both parties.
- **A sound legal framework.** A strong and reasonably detailed legal framework can set the parameters for handling PPPs and also provide assurance to the private sector that contracts will be honored. The more transparent and credible the enabling environment, the less risk premium charged by private investors in PPPs.⁶
- **Regulations limiting aggregate government exposure.** These might include: (i) flow limits on annual total PPP-related payments and contingent commitments, and (ii) stock limits on the overall size of the PPP program or total project liabilities, as part of a wider debt management strategy. Any rule should be consistent with the wider fiscal framework.
- **Good institutions.** Institutions can help manage and assess risks, build government's reputation as a good partner, and lower political and regulatory risk for private partners. This requires an allocation of responsibilities that ensures that the capacity for managing PPPs is adequate and that all agencies' involvement in PPPs is properly aligned and supervised. The Ministry of Finance may be empowered to veto projects that are unaffordable or wasteful.

⁶See Part 3 of IMF (2008) for a more complete discussion.

- **Transparency in PPP finances.** The absence of specific accounting and disclosure rules for PPPs may lead to an understatement of fiscal risks and other long-term commitments. Comprehensive disclosure of PPP-related risks and liabilities in fiscal accounts mitigates the risk of PPPs bypassing expenditure controls, either to move costly public investment off budget and debt off the government balance sheet, or to hide the high cost of contractual arrangements (such as guarantees) to secure private financing.

Table 1 sets out the interaction of threats and vulnerabilities leading to PPP risk in the crisis.

C. Crisis Transmission Mechanisms: Risks

Risks can be classified in a multitude of ways (cf. OECD, 2008; Li et al., 2005a; Merna and Smith, 1996). In PPPs, as in most commercial ventures, it is common to distinguish between commercial, macroeconomic and political risk (Figure 3). Macroeconomic risks entail aggregate demand risk, interest rate risk, and liquidity risk, as well as exchange rate risk. The materialization of macroeconomic risk can, in turn, cause other risks. For instance, interest rate or demand risk can cause credit risk. A distinction should also be made between exogenous and endogenous risk (Li et al., 2005b; OECD, 2008). Some risks can be actively managed by changing behavior; these are endogenous risks. Exogenous risks are those where such active steps cannot be taken.

VfM requires that risk be allocated to the party best suited to carry, or manage, that risk—that is, the party best able to ensure that the actual outcome conforms to the expected outcome and does so at least cost. This type of risk allocation should provide incentives for each party to act in order to manage the risk allocated to them and therefore improve the overall efficiency of the PPP. To best allocate risk, two questions need to be answered (OECD, 2008): (i) which party is best able to prevent an adverse occurrence from occurring, and thereby ensure that the actual outcome conforms as closely as possible to the expected outcome; and (ii) in the case where no party can prevent an adverse occurrence (i.e., an exogenous risk), which party is best able to manage the outcome of the adverse occurrence.

The financial crisis may exacerbate some of the risks facing the various parties of a PPP. Different parties carry different types and amounts of risk, and not all will be affected in the same way. This may alter the attractiveness of PPPs for the parties most affected and reduce their interest in participating in PPPs unless they are compensated. As such they may not want to enter into new PPP agreements, refinance debt in existing PPPs or continue operating under an existing agreement.

Risk can be managed in several ways (OECD, 2008), including through:

- **Risk avoidance**—the risky activity is not undertaken as, for example, when a public body opts for public procurement;
- **Risk prevention**—action is taken to reduce vulnerabilities, for example, when a PPP consortium borrows in domestic currency to avoid exchange rate risk;
- **Risk transfer**—risk is transferred to another party through a contractual arrangement, such as minimum traffic guarantees, but can remain within the partnership.

Table 1. Channels of Transmission of the Financial Crisis

Risk threat and vulnerability		Risk realization		
Threat	Vulnerability	Effect on private partners	Effect on the government	
Financial	Interest rates hike	Large borrowing or refinancing need; variable interest rates	Higher debt service=increasing costs; liquidity problems; questionable feasibility of some projects given lower returns.	Timing of investments (postponing); trade off between PPPs and traditional concessions altered. Possible cash flow support to corporates.
	Unavailability of credit	Underfinanced project or new project	Lowered capacity to refinance; shorter loans; shift to bonds and equity vs. bank loans.	Termination of existing projects, failure to achieve financial close of new projects; capital injections.
		Revenues from the project and/or assets securitized; securities indexed, and insured.	Losses from downgrade of bonds; lowered capacity to refinance given lack of insurers; shorter loans and shift to bonds and equity vs. bank loans.	
Decline in stock market prices	Companies do not hold sufficient levels of their capital in cash	Reduced capital of banks. Reduced lending; solvency problems and recapitalization.	Reduced investment for new and existing PPPs and recapitalization costs.	
Real	Exchange rate depreciation	Sizable external debt, currency mismatches, dollarization	Corporate balance sheets if borrowing externally. Counterbalancing: increase in demand if service is export oriented (including highway). Higher input costs if inputs are imported.	Increased external debt service (financing constraints) and lower attractiveness for new investments relying on external borrowing; private sector defaults if widespread dollarization; call of guarantees. Counterbalancing force: switch from foreign consumption to domestic investment.
	Slump in domestic demand	Commercial projects depending on user fees and explicit contractual guarantees	Corporate balance sheets and pricing of credit by financial partners; liquidity problem; contractor failure and pressure to renegotiate.	Lower domestic revenue (financing constraints) leading to lower investment affecting new and old PPPs; commercial projects risk; call of guarantees due to decline in fees/tolls; pressure to bail out failing contractors and renegotiate.

- **Risk retention**—risk is retained by a specific party who, in theory, should have the incentive to reduce its cost implications. For example, a construction company can manage effectively to reduce the probability of design risks, while a government can reduce the likelihood of policy/regulatory changes;⁷ and
- **Risk insurance**—financial coverage for the loss from a negative outcome.

Box 2. Effect of a Crisis on PPP Partners

A large financial and economic crisis may affect the balance sheets of all the parties to the PPP. These are:

- The relevant government department or agency;
- The private partner(s) responsible for the construction of the asset;
- The private partner(s) responsible for operating the asset and delivering the service;
- The private partner(s) responsible for financing the project;
- The special purpose vehicle, usually owned by one or more of the private partner(s);
- The direct recipients of the service (tax payers/users).

The implications of the financial and economic crisis extend beyond the balance sheet of the Special Purpose Vehicle (SPV). The assets, liabilities, income and expenditure flows of all partners can be affected to varying degrees, and thereby the profitability, solvency and liquidity of a PPP. For instance, given that SPVs usually have rather high levels of debt—frequently in excess of 70 percent of capital (Ye, 2009)—a drop in profit might negatively affect their equity value. A drop in the profit of an SPV will also affect the balance sheet of its owners—more so if the owners also have a high degree of leverage.

The impact of a financial and economic crisis does not only run from the balance sheet of the SPV to that of the other parties. The degree of leverage of a private operator may also impact on its ability to obtain credit to finance a PPP, while, in the case of a financial institution, leverage will influence its ability to extend loans. The realization of the downside risk on a PPP may run in several directions.

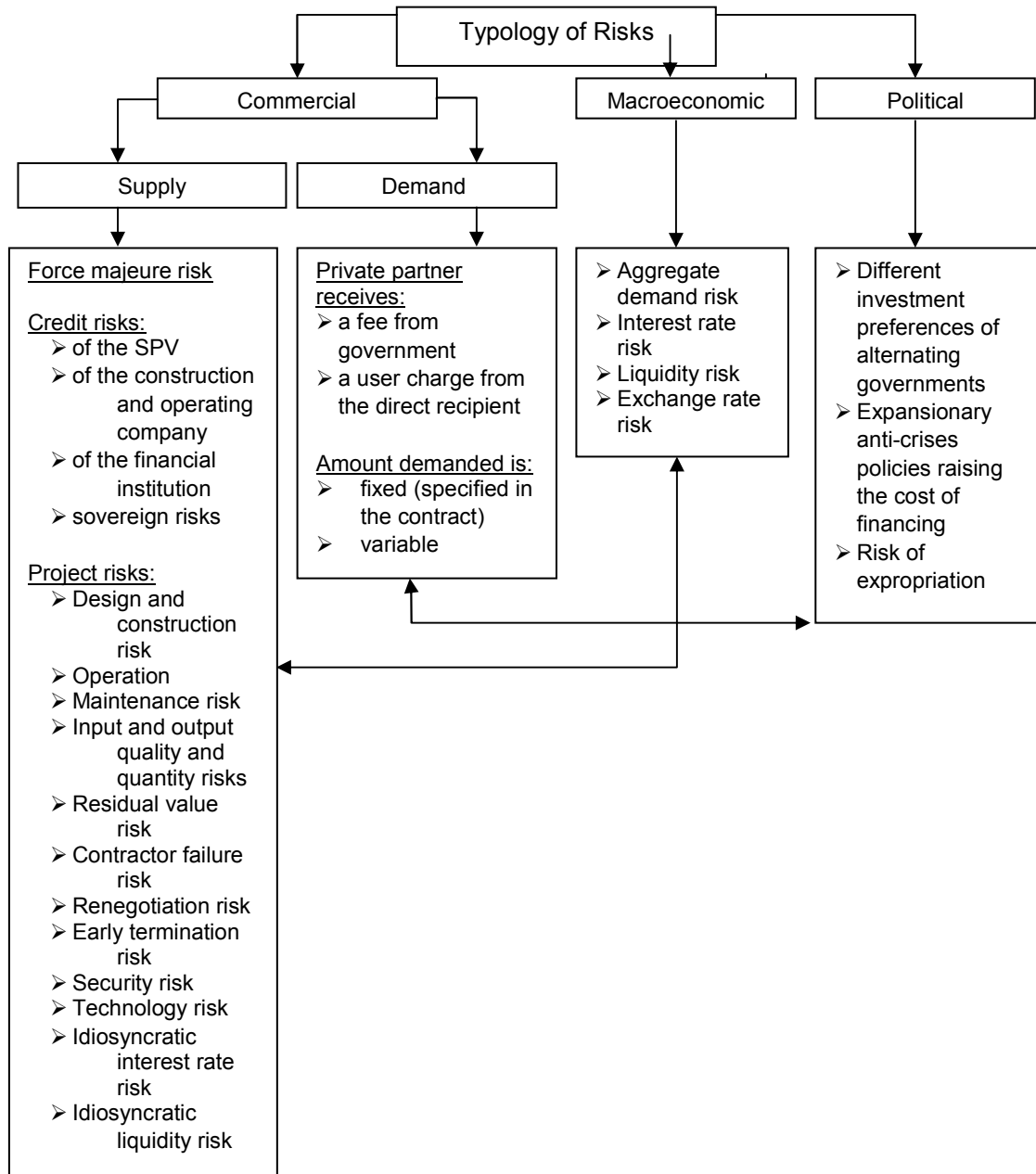
Allocating exogenous risks to the private partner(s) cannot increase VfM as there is nothing that the private partner(s) can do to manage the risk responsibly. This does not mean that the private partner should not carry any exogenous risk—the private partner would normally be expected to carry some macroeconomic risk such as weathering normal business cycle movements. While some risks are either endogenous or exogenous to all parties, there are also risks that might be exogenous to the private partner, but endogenous to the government (e.g., the risk of expropriation). Where a risk is exogenous to both the private partner and the government, the private partner will only carry the risk if it can translate it into an expected cost that can be recuperated by the project.

Risks that under normal circumstances are endogenous (and are transferred to the private partner) might become exogenous in a global crisis. For example, in a credit crunch where liquidity dries up and long-term risk premiums increase significantly, private partners may

⁷By nature, PPPs are more vulnerable to policy and regulatory changes than many other private activities because they imply construction and / or service provision of public goods.

become unable to manage credit risk. A global recession may have a large impact on demand, beyond what could be adequately managed by a private partner within normal operations, and consequently extend beyond the project to the partnership.⁸ It is the transmission of risk to the partnership that is most likely to entail fiscal costs.

Figure 3. Typology of Risks Affecting PPPs

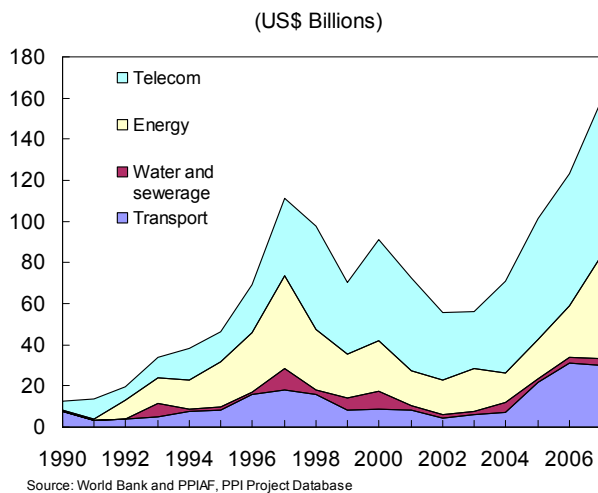


⁸The tails of the risk distribution may have been impossible or too costly to manage for the private partner.

IV. IMPACT OF THE CRISIS: EVIDENCE

The impact of the financial crisis on PPP programs can be seen by looking at the impact of past crises. Ettinger et al., (2005) show how after peaking in around 1997/98, the private infrastructure boom in developing countries dropped off (Figure 4)⁹ due to: (a) privatization being a one-time phenomenon; (b) the financial crisis of 1997/98 that made investment in developing countries riskier; (c) the bursting of the dotcom bubble; and (d) the ensuing slowdown in world economic growth.¹⁰

Figure 4. Total Investment Commitments (Emerging Economies)



Evidence of difficulties in accessing finance in the 2008/9 crisis is found in the shifting preferences of financial institutions. In a survey of more than 20 of the leading banks in the UK PPP market, PricewaterhouseCoopers (PwC) found that a significant effect of the financial crisis is a marked shift in the preference of financial institutions away from long-term loans and towards loans with a much shorter term to maturity (Davies, 2009). Willingness to lend for long maturities depends, according to the PwC survey, on strong client relationships and strong refinancing incentives. However, there are also

banks that, due to limited capital, are unable to enter contracts with a relatively long maturity. Longer term PPPs (concluded for, say, 20 years and over), might therefore only be able to secure loans for shorter periods. This exposes the private operators to more refinancing risk in the form of credit availability and future interest rate volatility.

The most recent data from the World Bank Public-Private Infrastructure Advisory Facility (PPIAF) shows that the financial crisis is affecting new projects in emerging market countries.¹¹ Of the 316 projects surveyed between July 2008 and February 2009, 95 reported delays, predominantly due to the financial crisis (Figure 5). Several points stand out:

⁹In Figure 4 private investment in energy and telecoms refers mostly to privatization, while investment in transport and water and sewerage refers mostly to PPPs.

¹⁰In early to mid 2000s several authors considered the decline in private sector participation (both in PPPs and privatized entities) in the aftermath of the Asian crisis and the burst IT bubble (Correia da Silva et al., 2004; Ettinger, 2005; Estache and Serebrisky, 2004).

¹¹The survey includes projects that reached financial closure, were awarded to a winning bidder, or reached the final stage of the tender/negotiation phase in July 2008 and onwards. It also includes projects awarded before July 2008, but still trying to reach financial closure and projects that were operational before July 2008, but were trying to raise additional financing. A June 2009 update covering a larger sample of projects over the period to March 2009 shows a decrease in the proportion of delayed projects (107 out of 522), perhaps indicating that the impact of the financial crisis on PPPs may be starting to taper off.

- **Uncertainty regarding future demand, access to finance and the cost of financing caused most delays.** In total 9 projects were canceled, while 7 projects that did obtain finance reported that they only did so at a higher cost.
- **South Asia (predominantly India) and transitional economies in Europe and Central Asia accounted for most delays.** Eastern Europe and Central Asia also contained some projects that were canceled.
- **The largest delays were in the energy and transport sector.** New projects and projects in excess of \$250 million were also more likely to register delays.

A survey of selected countries confirms the transmission mechanisms from the financial crisis to PPP programs.¹² In response to a questionnaire sent to a selected group of countries about the impact of the financial crisis on their PPPs and the fiscal accounts, most of the respondents identified the cost of borrowing and access to finance as the main crisis transmission mechanisms. These channels were affecting the project pipeline. Some countries indicated that reduced demand would also act as a channel, while other respondents felt exposed to the risk of contractor failure and/or project renegotiation. Few were worried about exchange rate risk, perhaps reflecting adaptation to past crises (Box 3). Most respondents confirmed the presence of linkages between PPP projects and the fiscal budget, either in the form of payments to the private partners or receipts from them.

Box 3. The Crisis, Emerging Markets, Foreign Investment and Exchange Rates

Ettinger et al., (2005) show that in the aftermath of the Asian crisis and the dotcom bubble burst, private participation in PPP projects in emerging markets declined and only started to increase again in 2004/5. They also show that the largest contribution to the drop came from reduced investments by advanced countries in emerging market PPPs. Consequently, emerging markets became more reliant on the mobilization of domestic sources of financing. This can be problematic if local financial markets are underdeveloped and too small to generate enough savings to finance large-scale projects.

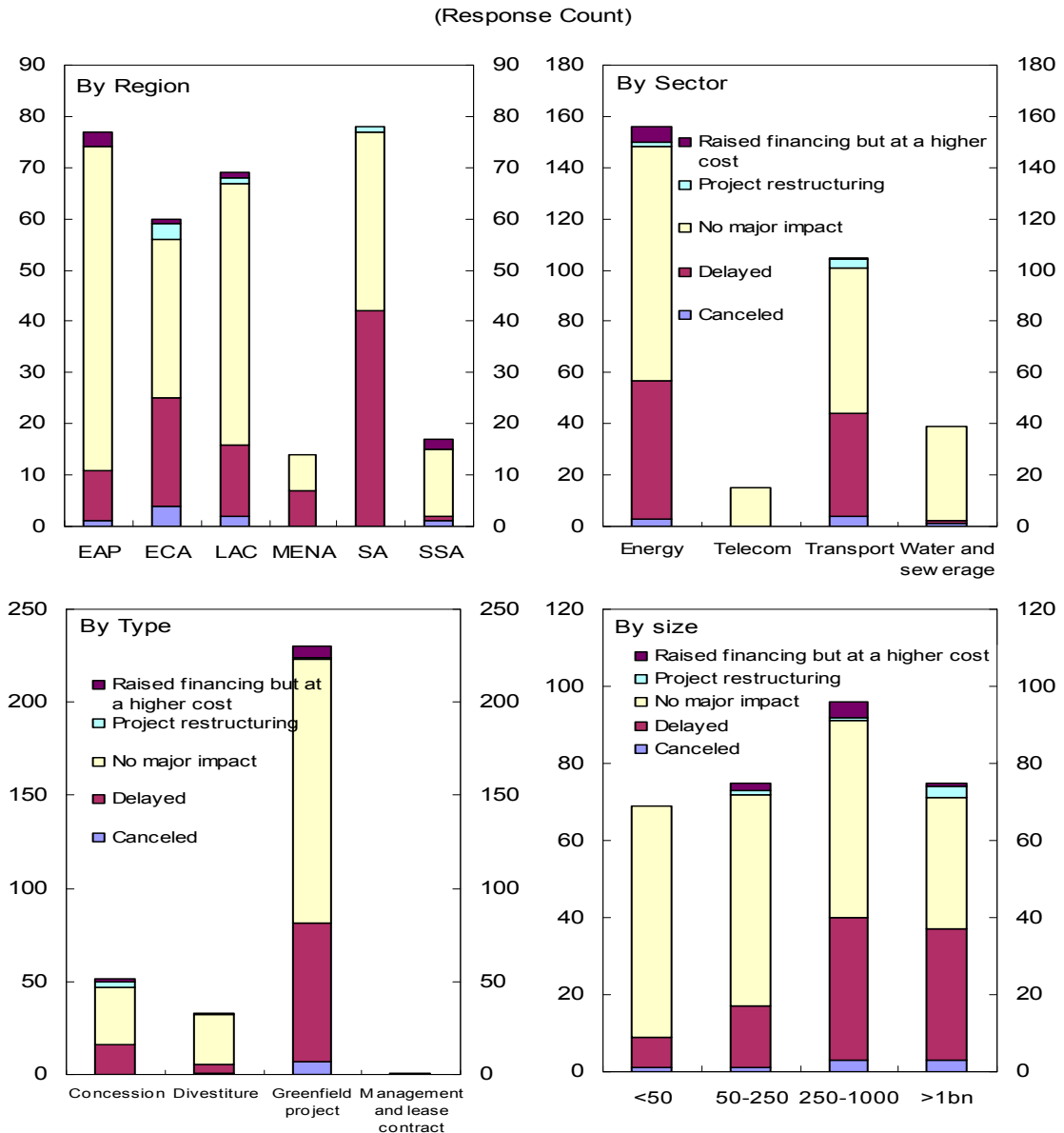
Developed country financiers often form part of consortia that include private operators, who bring with them skills and technical expertise that might not exist in the local market. Thus, reduced participation by advanced country investors might result in a lower rate of technological transfer. However, reliance on domestic investors also has advantages. Domestic investors very often understand the local investment climate better than foreign investors, and can exercise better control over their investments (Angelides and Xenidis, 2009). In addition, domestic investment usually also implies a significant reduction, if not elimination, of exchange rate risk.

The surveyed countries present a variety of institutional frameworks to deal with crisis-related risks (Box 4). Most respondents said that their PPP programs were integrated within a wider, medium-term investment planning framework. More than half the respondents had

¹²The questionnaire was sent to 20 countries. The results reported in the paper are based on the answers of Canada, Columbia, Korea, Mozambique, Peru, Portugal, U.K., and South Africa.

formal guidelines in place for risk allocation and for accounting—both important components for transparency. More than half also made some effort to quantify the risks to which the government was exposed and include the costs in the budget. However, no country had updated estimates of the likely fiscal cost of any risks materializing in the context of the current crisis. While some countries felt there was a risk of contractor failure and/or renegotiation, their legal frameworks had provisions to deal with this eventuality.

Figure 5. Ongoing PPP Projects in Emerging Markets Affected by the Financial Crisis



Source: World Bank and Sustainable Development Network, PPI Project Database

Box 4. Country Evidence: Effects of the Crisis on PPPs

Canada

PPP Canada, which reports to the Minister of Finance, has met with several developers to assess the potential impact of the financial crisis on the P3 program. A key challenge is access to financing stemming from the lower risk tolerance of lenders (with respect to project and refinancing risks) and higher costs for international project finance institutions, particularly European banks, due to cost of raising Canadian dollars. Private sector analysts have noted that credit market capacity has become a concern especially for larger projects over \$500 million. In addition, long term loans for P3 are now more difficult to secure as many foreign banks formerly active in this niche have withdrawn from the market. Obstacles to reaching an agreement during the negotiations phase in one province have resulted in choosing to procure the project using a design-build, fixed-price contract, although the preferred bidder had already arranged committed debt and equity. Notwithstanding these difficulties, the projects carried out at the federal level are not believed to be more likely to proceed as public investment.

Korea

Although private investment had steadily increased since the introduction of PPPs, the pipeline of new PPP projects has declined recently mainly due to aggravating financial conditions. The contract-signing volume fell sharply in 2008, increasing the likelihood that the amount of private investment actually executed will shrink in the future. The contracts signed were less than 70 percent of the initial projection. Interest rates and access to financing were identified as the main channels through which the financial crisis has affected or is expected to affect existing PPP projects and the pipeline. However, the real effects of the economic slowdown on the profitability of existing PPPs have also materialized with a 10 percent decrease in annual port traffic recorded in February 2009. Timely project implementation is impaired by an extended preparation period necessary for feasibility and VFM studies, and for the coordination of different interests during negotiations. In line with the surge in financing costs for private proposals, the government's risk aversion has increased while risk allocation to the private partner is changing: reportedly, private partners are less willing to take on interest rate risk.

South Africa

The government has identified a number of risks from PPPs to which the budget is exposed through contractual structures and guarantees, as well as through the institutional framework. These are: demand risk, residual value risk, exchange rate risk, renegotiation risk, early termination risk, and inflation risk. The budget includes provisions for the expected annual cost of these risks which are treated as contingent liabilities. The financial crisis is reported to have affected new PPPs, their profitability, and the risk aversion of the government. While financing for existing private partners in the PPP project pipeline has not been affected by the crisis, new potential private partners have been hit by higher interest rates and lower access to financing. Although the real effects of the economic slowdown on the profitability of existing PPP projects could not be quantified, lower demand was identified as the main channel of transmission of the crisis. The government reported that the higher borrowing costs and lower expected returns on equity have influenced VFM choices for the PPP project pipeline and the allocation of risks between the private partner and the government.

Figure 6. Survey Analysis: Risks and Institutional Framework

Risks		Responses
Real Sector Threats	Demand	
	Contractor failure	
	Renegotiation	
	Early termination	
Financial Sector Threats	Access to Finance	
	Interest Rates	
	Exchange Rates	
Institutional Framework		
Specific PPP Law		
Mechanisms for litigation and early termination		
Guidelines on risk allocation		
PPPs included in medium term investment plans		
Rules/limits on size of PPPs		
Risks quantified and budgeted to some degree		
Formal rules on accounting		
Legend:		
Highest Number of Responses		Lowest Number of Responses

The crisis has already begun to affect PPP programs, especially the pipeline of new projects. Half of respondents saw the key VfM criteria for new projects changing—specifically, private partners in PPPs were less willing to retain certain risks, such as interest rate risk and financial closure risk and were seeking greater contributions or guarantees from the government. Some countries thought it was probable that previously planned PPPs would now proceed instead as publicly procured projects. A minority of countries responded that they thought it was more likely that guarantees would be called on existing PPPs.

V. MANAGING CRISIS RISKS FOR PPPS

Private partners' interest in PPPs may fade during crises because of an unfavorable risk-return trade-off. Prior to the 2008/9 crisis the 'great moderation' and the perceived ability of monetary authorities to smooth fluctuations created perceptions of a less risky economy. The recent crisis has magnified macroeconomic risks, affecting also the perceptions about risks by the various PPP parties and the private sector risk-return trade-off. Moreover, the ability of private partners to cope with higher costs by passing them on to service users may be limited by the regulatory environment.

Government's actions can enhance the attractiveness of PPPs and shift the risk-return balance. Some of the steps that governments can take are variations of provisions that already exist in contracts and deal with the crisis specifically. Examples are the sharing of interest rate risk in Korea, loan guarantees in France and direct loans in France and the U.K. (see Box 5).

Box 5. Government Measures to Reinvigorate PPPs

Canada

Canada did not have a formal PPP program until recently. Previously, the government partnered with the private sector to leverage private financing and expertise and improve federal infrastructure, but in an ad hoc manner. Through infrastructure programs, the government has also made commitments and contributions to provincial and municipal PPPs, including the Canada Line and the Kicking Horse Canyon projects in British Columbia; Highway 30 in Québec; and the Edmonton ring road in Alberta. Established in 2008, PPP Canada administers a \$1.2 billion P3 Fund to further develop the PPP market. The Corporation has not begun financing projects and is expected to issue an initial call for applications to the P3 Fund in 2009-10. A number of Canadian provinces have taken concrete steps towards the use of PPPs and the development of their respective markets. The provinces of British Columbia, Ontario and Quebec have each created institutions and developed programs focused on using P3s or similar arrangements, which are active in health and hospitals, roads, schools, and other sectors. The Government of Alberta's 2008 Budget Plan included approximately \$6 million for the Alternative Capital Financing office to explore alternative financing options for capital projects, including PPPs. Similar steps have been taken by Canadian municipalities, such as the City of Ottawa, which has officially endorsed the concept of PPPs and established a PPP office.

Korea

The government announced a fiscal stimulus package in response to the financial crisis with more than 15 percent of the envisaged investment to be carried out through PPPs. The package is accompanied by measures to reduce financial burdens on PPPs, smooth interest rate changes, and shorten project implementation. The measures introduce: (i) lower equity capital requirements on concessionaires (5–10 percent); (ii) for large-scale projects, higher ceilings on guarantees provided by the Infrastructure Credit Guarantee Fund (50 percent); (iii) help in changing equity investors for some projects; (iv) compensation for the preparation of proposals to encourage more vigorous competition during bidding; (v) sharing of interest rate risks with concessionaires; (vi) compensation for the excess changes in base interest rates through grading of risks at the time of the concession agreement; and (vi) shorter periods for readjusting benchmark bond yields.

These steps can be taken to support PPPs at various stages:

- **for PPP pipeline projects**, where contracts are still to be signed, some of the proposals below could be used to encourage participation;
- **for existing projects** (construction and operational phase), where contracts are already signed and the private partners want to renegotiate the terms of the contract, governments may choose to provide financial support. Renegotiation may also provide governments with the opportunity to establish greater VfM where it was previously lacking.

A. Intervention Measures

A number of measures have been suggested to help a country tackle the impact of the crisis or improve the attractiveness of PPPs for private partners by facilitating access to finance and

improving the risk-return balance.¹³ The list below is presented to illustrate the range of alternatives, with the risk exposure of the government increasing as one goes down the list. As described below, these types of options should be considered only when three conditions are met: (1) there are extreme circumstances beyond the control of the private partner(s), (2) they yield positive—and maximum, conditional on the crisis conditions—VfM, and (3) the government is compensated for accepting additional risk.

- **Concession extension:** extends the tenure of the agreement to allow the private partner to generate the return needed to ensure the viability of the project;
- **Subsidy:** output-based cash subsidies are the measure most transparently linked to the ultimate objective of the PPP. Alternatively, tax breaks could be used or subsidies could be paid either to the private partners or to direct users of the service (possibly in the form of vouchers);
- **Grant:** extended to improve the attractiveness of the project and reduce the overall exposure of the private partner to risk—these should be subject to conditions;
- **Minimum revenue guarantee:** the guarantee ensures that the private partners can cover the repayment and servicing of their debt liabilities. The provision of a minimum revenue guarantee obviates a debt guarantee;
- **Exchange rate guarantee:** provides protection to a private partner in the case where the domestic currency depreciates significantly thereby protecting the foreign currency earnings of the private partner when the private partner is a foreign company;
- **Debt guarantee:** guarantees the repayment of all or part of the debt;
- **Subordinated loan:** the government provides a standing loan facility on which the private partner can draw if necessary—this may reduce the cash-flow risks that the servicing of senior debt may cause;
- **Equity measures:** guarantees for all or part of the equity values (the private partner can sell its equity stake to the government at an agreed price) or other measures to ensure equity;
- **Step-in rights:** in the case of contractor failure, governments may be able to step in and re-tender the PPP or may have to take over the operation, if there is fiscal space.

B. Intervention Principles

A government's actions to enhance the attractiveness of PPPs may also increase its own exposure to risk. Given that risks not allocated to the private partner are retained by the government, the government might be left with undesirably high exposure that could persist

¹³The measures are summarized from Angelides and Xenidis (2009), Estache et al., (2007), and Irwin (2003).

or intensify over time. To avoid such a situation, while maintaining VfM, some key principles should be followed:

- **Intervention should be justified on economic grounds.** This may be the case if the service in question is a public good or a good with a positive externality, the delivery of which is usually not (entirely) left to the private sector, but rather requires some form of government intervention. For such goods, the government may have an interest in ensuring delivery is not disrupted, e.g., through contractor failure.
- **Interventions should support the wider fiscal policy stance.** Ensuring a smooth stream of PPP projects could support an overall countercyclical budgetary stance if it reduces PPPs' vulnerability to the cycle. This support should be weighed against other options for countercyclical policy.
- **The measures should be quantified and included in the budget framework.** To mitigate the government's exposure to future fiscal risk, any measures should be included within the annual budget process and their medium-term impact assessed, including future government liabilities.
- **Government measures should be contingent on circumstances.** Once the crisis subsides and its impact becomes clearer, perceptions regarding the risk-return trade-off, as well as information on borrowers, might improve. This will lead to a resumption of lending at "normal" rates.
- **Access to the public purse should come at a price.** To mitigate moral hazard and ensure that the private partner continues to effectively manage the risk assigned in the contract, any government support that acts as insurance should be priced accordingly. This may involve charging fees for the guarantees, contingent loans or other financing options. In addition, should the public sector reduce the private partner's exposure to downside risk, they should also share in the upside.¹⁴
- **Intervention should seek to maintain VfM.** The risk borne by the private partner should still be sufficient to ensure the desired VfM. In the case of exogenous risk, the manner and scale at which the risk is mitigated should not undermine efficiency incentives by guaranteeing a certain rate of return for the private partner.
- **The policy should be publicly disclosed.** Measures to counter the crisis run the risk of being seen as changes to the "rules" and could potentially engender moral hazard in the future. Clearly articulated and transparent policies could mitigate this risk.

¹⁴ A good example is that of the Chilean exchange rate guarantee, outlined in Hemming (2006).

C. “Trip Switch” Clauses

To ensure measures are temporary, government intervention could include contingency clauses (or “trip switches”). Once the economy exits the crisis and the risk-return trade-off for private partners improves, the measures should become obsolete. Trip switch clauses should state the mitigating steps to be implemented, as well as indicators, such as interest rate spreads and output measures, that activate the clauses. Furthermore, in the interest of sound public finance, the clauses should also specify indicators that will “deactivate” government intervention.

Following negotiations or renegotiations, these clauses can be included in both new and existing contracts. To the extent that existing contracts are affected by the crisis and private partners request renegotiation of the contractual terms, the government could choose to limit renegotiations to the type of measures discussed below. This will strengthen the hand of government and limit the pressure on government to renegotiate the terms of the contract *de novo*.

The following types of trip switches can be considered for associated intervention measures:

- **Contract extensions:** If revenue (or operational profit) temporarily falls below a predetermined level, the contract could automatically be extended by a pre-negotiated period to allow the private operator to generate the required rate of return. To prevent moral hazard, the fall in profit should be correlated with general economic conditions, as measured by pre-agreed-upon indicators that register severe downturns (e.g., a decrease in activity that exceeds two standard deviations, calculated, for example, with a moving window of 20 or 40 quarters);
- **Output-based subsidy and guarantees:** If revenue (or operational profit) temporarily falls below a predetermined level, government would pay an output-based subsidy that ensures that the private partner can cover its interest costs. As with a contract extension, the contingency (or ‘trip switch’) clause is only activated if the drop in demand that the private partner experiences is correlated with an indicator of severe economic contraction, rather than endogenous risks (e.g., a drop in relative demand for the output as a result of quality or service characteristics that fall short of expectations);
- **Revenue enhancement (shadow tolls):** Related to the output-based subsidy is the temporary substitution of a partial shadow toll (i.e., a toll per user paid by government and not the direct recipient), financed with debt. Once the recession is over, the shadow toll is scrapped, and the toll increases to repay the debt incurred during the recession. During the recession demand is supported by the reduced toll and thus improves the earnings of the PPP, while during the boom, the higher toll reduces demand;
- **Subsidy for interest rate increase:** Instead of providing temporary finance to the PPP, government could aid the PPP by paying a grant that covers the excess over what is considered a normal upper range for interest rate movements (where ‘normal’ depends, in part, on the creditworthiness of the borrower). This subsidy should only be paid in the case of variable interest rate loans (of any maturity) where the interest rate is expected to

return to normal levels, or short-term fixed-interest rate loans. The increase in the interest rate should not be due to idiosyncratic risky behavior by the private partner. A normal upper range for interest rate movements should be defined in the contract;¹⁵

- **Government finance:** The government could finance some or all of the debt to address the short-run difficulty experienced by the private operator. A trip switch clause would provide the government with the option to sell its debt stake in the project after two or three years, or, preferably, if market indicators specified in the clause reach pre-crisis levels. The debt stake can then be sold in an open tender process. In this manner government addresses a short- to medium-term problem with a short- to medium-term solution and does not commit itself to the long-term provisioning of finance. This measure, though, should be used very sparingly since it increases the exposure of government significantly, leaving only the equity stake of the private partner at risk;
- **Debt-equity switch:** the contract could include a contingency clause that requires some of the bond-financed debt to be turned into equity if revenue falls below a level that enables the servicing of debt. An improved debt/equity ratio would de-leverage the balance sheet and alleviate the pressure on interest payments. However, it would also dilute the shareholding and hence control of existing shareholders. This operation could be thrown in reverse once revenue improves again.

Governments should ensure they have sufficient skilled personnel to both negotiate and manage the implementation of the clauses.¹⁶ Should a government wish to implement contingency clauses but face a shortage of skilled personnel, it should opt for clauses based on uncomplicated, straightforward indicators. Thus indicators should be relatively easy to assess with data that is accessible and verifiable by all parties. The indicator and the data used should also not be open to manipulation by any party to the contract. Examples would include interest rate spreads, total revenue earnings and total production figures. Uncomplicated, straightforward indicators are also easier to negotiate, thereby reducing contract negotiation time and cost.

¹⁵For instance, suppose that the average interest rate equals 8 percent, while under normal conditions interest rates have a two standard deviation variation equal to three percentage points. A contract may then state that government will pay a subsidy to cover the cost related to all basis points in excess of the 300 bps (i.e., when the interest rate exceeds 11 percent).

¹⁶ Negotiating the initial inclusion of the clauses is often not the most difficult part, since this can be handled by external technical advisors employed by government during the negotiation phase. However, once the contract is in place, managing the implementation (as well as possible pressure to renegotiate) in the absence of skilled personnel might become problematic.

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