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Insufficient Funds

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Infrastructure investment is typically under-funded—that is, most countries are not investing enough to meet strategic objectives, such as universal access or poverty eradication. This suggests that many economically beneficial projects are not being implemented. This problem is particularly prevalent in developing countries, as noted in the **World Bank report: Closing the Infrastructure Gap** (UN 2016).

Various studies have identified and tried to quantify this funding gap. For example:

- In 2010, the **World Bank's diagnostic study of infrastructure in Africa** estimated that Sub-Saharan Africa needed to spend $93 billion a year on infrastructure, of which only $45 billion was already being met through existing sources—such as government spending, user charges, private sector investment, and other external sources—creating a total funding gap of $48 billion (Foster and Briceño-Garmendia 2010a, 6–9, and 65–86).
- According to the **2013 Inter-American Development Bank's infrastructure strategy**, the additional investment needed in infrastructure in Latin America amounted to $100 billion per year—two percent of regional GDP over an extended period (IDB 2014).
- This funding gap is not unique to developing countries—a **2007 OECD report on Infrastructure to 2030** identified a widening gap between the infrastructure investment needed for the future and the capacity of the public sector to meet those requirements from traditional sources (OECD 2007a, Chapter 1).
- **2013 McKinsey Global Institute report on infrastructure productivity** (Dobbs et al. 2013) estimated $57 trillion (updated to $49 trillion in 2016) in infrastructure investment would be globally required until 2030—simply to keep up with projected global GDP growth. The amount required for investment is more than the estimated value of today's worldwide infrastructure stock.
- The **2016 McKinsey Global Institute report: Bridging Global Infrastructure Gaps** (Woetzel et al. 2016) updates data on global infrastructure needs and provides a look at infrastructure investment trends since the global recession. The report also outlines opportunities to alleviate the spending deficit from increased productivity to actions that can help increase public finance despite fiscal constraints.

As noted in the **World Bank Africa infrastructure diagnostic study** (Foster and Briceño-Garmendia 2010a, 65–86) referenced above, the funding gap can be a symptom of other problems in infrastructure delivery. The authors found that $17 billion, or 35 percent of the funding gap, could be attributed to inefficiency in existing spending due to poor governance, poor planning of investments, under-investment in maintenance, under-charging for services, and operating inefficiencies.

How PPPs can help—infrastructure funding and finance

Many governments turn to PPPs because they recognize that more investment in infrastructure is needed to meet their strategic objectives, but face fiscal constraints or high gearing ratios that limit their ability to undertake additional projects through traditional public procurement. Although fiscal space is one of the most common motivations for using PPPs, it is also among the most debated. The extent to which PPPs genuinely enable governments to increase spending on infrastructure depends on the nature of the project in question. User-pays contracts create long-term fiscal space for the government, while contracts that include availability payments create fiscal space only in the short-term.

Governments often call for private **financing** for infrastructure projects, ignoring the need for sufficient **funding** (from user fees or government budgets) for serving private operator debts and rewarding equity holders. Some development analysts refer to a funding gap instead of a financing gap for infrastructure—private capital will not flow into projects that do not present adequate potential returns. Obtaining additional private finance will always require increased funding over time, to recover and remunerate that private finance—PPP operators may help generate additional commercial revenue, but user fees and government payments will always be the main source of funding.

Funding versus Financing

The terms **funding** and **financing** are often used synonymously, however, there is a technical distinction that is important to understand:

- Financing: Money required at project outset to begin implementation, primarily for asset construction
- Funding: Money required to meet repayment obligations and remunerate the project financiers, namely debt and equity holders

In many languages, the same word is used for financing and funding. For example: *financiamento* in Spanish and Portuguese, *financement* in French.

In general, there is scope to increase funding streams for public infrastructure projects by modeling user charges where appropriate, capturing property value, or selling existing assets. The proceeds from the sale of assets can also be recycled for financing new infrastructure.

The possibility of collecting user fees should not be, by itself, the reason for establishing a PPP—fees may also by collected in publically-financed projects, as happens in many toll roads around the world. Nevertheless, PPPs can sometimes help increase the funding available for infrastructure—that is, bring in more revenue to pay for infrastructure services, including:

- **Increased revenue from better implementation of user fees** by introducing targeted user charges, or reducing leakage in the collection of charges. For example:
  - The N4 Toll Road in Mozambique and South Africa was developed as a toll road under a PPP, since neither government had the funds to invest otherwise. A single cross-border operator allows for cross-subsidization from the South African side to the Mozambican side, making tolls affordable for users; the PPP model has created pressure for operators to maintain the road, serving users, and for governments to prevent overloading (Farlam 2005, 9–10), and (PPIAF 2009).
  - The Fertagus suburban rail service in Lisbon, Portugal provides an example on the role of PPPs in increasing revenues. The PPP contract does not require the operator to charge specific user fees. The operator is simply contractually bound by a cap on the average fee per passenger per kilometer. This means that it is free to use commercial criteria in establishing a range of rates within the cap, such as providing off-peak discounts, passes for frequent users, combinations of train and bus tickets, and even special off-peak passes for unemployed persons. In practice, this freedom, allied to commercial expertise, attracts a larger pool of users, increasing project revenue.
- **New revenue streams from greater asset utilization**—raising revenues from alternative uses for infrastructure assets can reduce the net cost of the infrastructure to government or users. For example, developing a commercial area inside of an airport, or even a bus terminal. Typically, the private partners have a greater ability to identify and utilize assets and increase project affordability.
- **Customizing projects to maximize user utility and increase cost recovery**—Private partners may adapt a project design to improve asset utility to users. As users receive additional value from the asset,

they are more willing to contribute toward cost recovery. Fertagus rail service, in Portugal, is a good example of this innovative approach—by combining the rail transportation project with a bus transportation network in the neighborhood of each station, together with parking facilities at each station, the PPP operator was able to convert the project into a profitable commercial venture, eliminating the previous need for government subsidization.

Governments can also implement user charges, collect revenues effectively, or find innovative alternative uses for infrastructure—as described in **Engel, Fischer, and Galetovic's paper *PPPs: When and How*** (Engel et al. 2009, 7–13) and in their book (Engel et al. 2014). PPPs therefore do not increase the resources available for infrastructure over the alternative of traditional government provision if users are charged the same for the service and those charges are collected. However, the authors note that governments can sometimes find it difficult to charge users a cost-reflective tariff for publicly-provided services.

The availability of private funds to invest in PPP projects should not be a reason for implementing a PPP—the decision should involve a cost/benefit, value-for-money assessment of the PPP, as described in Assessing Value for Money of the PPP. The cost of transferring risk and responsibility to a private party may be too high, considering alternative implementation modes. Investors' interest should be directed to those projects where the impact on service delivery and value to society will be the highest.

Some governments use PPPs as a financing mechanism to **overcome short-term cash budget constraints** by spreading the capital cost of a project over its lifetime. Governments implementing cash-based accounting systems only recognize an expenditure when it is incurred. Thus, the capital costs of traditionally procured infrastructure are charged as expenditure when the construction payments take place (typically two to three years), even if the asset is financed by borrowing. PPPs, by contrast, create cash outflows over a long period of time. A **PWC paper on PPPs** (PWC 2005, 17–19) illustrates how the payment profile for a PPP differs from that of a traditionally-financed project. This practice can enable governments facing short-term cash budget constraints to undertake infrastructure investment sooner. The accounting advantage for PPPs disappears under a full accrual accounting system, in which capital investments are depreciated over time.

Finally, PPPs may be able to help governments **overcome public sector borrowing constraints**. Governments often face a borrowing constraint which may arise from prudent public financial management policies or contractual obligations with multilateral institutions. This constraint may prevent commercially viable, fully user-pays infrastructure projects to be implemented in the public sector. Under a PPP, the project is financed by private sector rather than public sector borrowing and in some circumstances this may enable a government to overcome its borrowing constraint (although as noted in Public Financial Management Frameworks for PPPs, such projects typically create contingent liabilities that may also affect the sustainability of the government's debt and fiscal position).

Engel, Fischer, and Galetovic's paper (Engel et al. 2009, 9) suggests the extent to which PPPs can help relieve borrowing constraints depends on the nature of the constraint. PPPs can help relieve short-term liquidity constraints, enabling commercially viable user-pays PPPs to be built. Engel, Fischer, and Galetovic argue, however, that PPPs are less likely to help when a government is considered insolvent—in this case, it may be difficult for the government to credibly enter into a long-term contract giving up a potential source of future revenue. So a PPP may not be considered viable by investors. On the other hand, in a **2011 paper on Chile's PPP Experience** (Fischer 2011, 17–18, and 27–28), Fischer describes how multilaterals' involvement in a PPP can improve the credibility of the government's commitment to the contract—increasing the potential of PPP to help governments overcome debt constraints.

The extent to which using PPP can enable governments to overcome borrowing constraints also depends on how the PPP is accounted for. As described in Fiscal Accounting and Reporting for PPPs, while international norms and standards continue to evolve, PPP assets and liabilities are increasingly recognized in the government's accounts and financial statistics. If this trend is confirmed, financing of PPPs will become subject to the same accounting constraints as public borrowing for infrastructure projects—effectiveness and efficiency will then be the sole reasons for utilizing PPPs.

PPP pitfalls—using PPPs to bypass public financial management controls

While there are some instances in which PPPs can increase the fiscal space available for infrastructure, in practice these are limited. In the case of **government-pays PPP projects**, the cost of the infrastructure is ultimately met from the public purse. For a given project, the stream of availability payments under a PPP is not very different from the repayment schedule of a debt-financed public procurement scheme.

Absent real efficiency gains, this means the apparent fiscal advantages of PPP arise from accounting quirks—the limitations of cash budgeting, or the definition of public sector debt. At best, this can create budgeting issues; at worst, it can enable governments to use PPP to bypass their own prudent public borrowing and budget limits—creating a temptation to spend more now, in response to political and other pressures to deliver new and improved infrastructure.

Abrantes de Sousa's paper on Portugal's PPP experience (Sousa 2011) describes how inadequate control of the PPP process allowed the government of Portugal to take on significant fiscal exposure to its PPP contracts, contributing to its 2011 fiscal crisis. Abrantes de Sousa describes how the PPP program has created budget problems, and highlights the incentives faced by agencies to use PPPs simply to loosen budget constraints. The United Kingdom's Private Finance Initiative (PFI—a large British PPP program) has also come under criticism for concealing the cost of the government's obligations. **A United Kingdom House of Lords Select Committee inquiry into PFI** (UK 2009, 16–18) found that many witnesses imputed the choice to use PFI to the fact that the government's commitments under these contracts were often not recognized as part of public debt.

Recognizing these challenges, the treatment of PPP in public sector accounts has evolved over time. The latest public sector accounting standards require most PPP assets and liabilities to be included in government balance sheets, as described in Public Financial Management Frameworks for PPPs. However, at the time a PPP project is approved, the future payment commitments may still not be included in budgets and expenditure plans, which often do not look more than one to three years ahead. Public Financial Management Frameworks for PPPs provides guidance on how governments can manage the fiscal implications of PPPs to help avoid these problems.

PPP pitfalls—fiscal risk

Even where a PPP is expected to generate additional resources—for example, by charging users for services—governments typically bear or share certain project risks. For example, governments may provide guarantees on risk factors such as demand, exchange rates, or certain costs; while PPP contracts often contain compensation clauses in case of termination of the agreement for a range of reasons. Even with no guarantees, every PPP contract will present implicit contingent liabilities. For instance, liabilities arising from the need to preserve the project in case of SPV bankruptcy, or resulting from public expectations that must be satisfied. In addition, moral hazard may occur if the private investors perceive that the government cannot afford to let their PPP project fail. They may then force a renegotiation of the PPP contract to obtain a tariff revision or to force the government to shoulder the cost of an unexpected event, even though the general economic equilibrium of the contract is not in jeopardy.

Accepting these risks could be consistent with good risk allocation, as described in Structuring PPP Projects. However, doing so creates contingent liabilities for government—the cost of which can be harder to assess than the direct liabilities and upfront capital costs created by a traditional government investment project. As a result, governments often take on significantly more fiscal risk under PPP projects than they had expected, or than would be consistent with prudent fiscal management.

Fiscal risk can be compounded by the influence of optimism bias on project decision-making (see Poor Planning and Project Selection). For example, a government may agree to provide a demand guarantee for a project, as optimistic forecasts may suggest it has no cost. Contracting authorities can also have an incentive

to overestimate demand to hide the need for subsidies and push through projects that are not viable. The cumulative impact over several PPP projects can create substantial fiscal risk. Moreover, public resources may go into projects that do not provide value for money, as costs turn out to be higher or benefits lower than initially expected.

All this may be exacerbated in contexts of poor fiscal transparency. Partial disclosure on the state of public finances may create distortions—for instance, disclosure of direct commitments, but not of contingent liabilities, may incentivize the adoption of costly projects, with low base-costs and very high contingent commitments.

Irwin's book on government guarantees (Irwin 2007, Chapters 2 and 3) provides examples of how guarantees have been used, in some cases creating large exposure for the government, and describes some of the reasons governments make bad decisions regarding guarantees.

As noted above, in addition to the government's explicit liabilities such as guarantees, PPPs can give rise to implicit liabilities—that is, non-contractual liabilities that arise from moral obligation or public expectations for government intervention—that create further fiscal risk—see (Polackova 1998). Weak contracts and ineffective enforcement can mean that governments fail to really achieve risk transfer to the private sector. Again, this means that governments end up bearing significantly more risk than they had expected when projects were initially implemented.

Excessive Fiscal Risk—Examples from Colombia, Korea, Mexico, United Kingdom provides examples of PPPs for which the government ended up making large, unexpected payments, either as a result of called guarantees (i.e. guarantees which resulted in a claim) or realization of implicit liabilities.

Excessive Fiscal Risk—Examples from Colombia, Korea, Mexico, United Kingdom

Governments often provide guarantees to PPP projects, which often cost more than expected. For example:

- In the 1990s, the Government of Colombia guaranteed revenue on toll roads and an airport, as well as payments by utilities that entered long-term power purchase agreements with independent power producers. Lower-than-expected demand and other problems required the government to make payments of $2 billion by 2005.
- Also in the 1990s, the South Korean government guaranteed 90 percent of forecast revenue for 20 years on a privately financed road linking the capital, Seoul, to a new airport at Incheon. When the road opened, traffic revenue turned out to be less than half the forecast. The government has had to pay tens of millions of dollars every year.

PPP projects can also create substantial implicit liabilities for governments. When PPP projects are financially distressed, governments can be under significant pressure to bail them out to avoid disruptions in service. For example:

- Between 1989 and 1994, Mexico embarked on an ambitious road building program, awarding more than 50 concessions for 5,500 km of toll roads. The concessions were highly leveraged because equity contributions were made in the form of “sweat equity” for the construction instead of in cash. Debt financing for the projects was on a floating-rate basis and provided by local banks—many of them government-owned—which might have faced government pressure to lend. By 1997, a combination of lower-than-forecasted traffic volumes and interest rate rises pushed the government to restructure the entire toll road program and bailout the concessions. In total, the government took over 25 concessions and assumed $7.7billion in debt.
- The United Kingdom National Air Traffic Services (NATS) was partially privatized, to separate the air traffic control functions from the Civil Aviation Authority. Under a PPP arrangement,

NATS was to be paid a fee based on airline traffic volumes. The PPP company took on considerable debt for its investments and operations. After the 9/11 attacks, airline traffic fell below forecasts and the company was in danger of not meeting its debt obligations. To reduce the perceived risk of a disruption in service, the United Kingdom government injected £100 million of equity into the project company.

Sources: (Irwin 2007); (Kim et al. 2011); (Ehrhardt and Irwin 2004)

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