Advocates of public-private partnerships (PPPs) for infrastructure services in developing countries have long battled criticism of these arrangements by civil society groups. The view among PPP advocates generally has been that these criticisms are mostly ideological polemics that mix opinion with selected but often misinterpreted facts. But over the last two decades, as the experience with PPPs has increased in both developed and developing countries, a different kind of critique has emerged, one that is based on non-ideological empirical research, and is sometimes expressed by PPP advocates. These studies often focus on individual aspects of PPPs, and usually do not claim to be “PPP evaluations” or express opinions on the overall value of PPPs. Taken together, a powerful, evidence-based critique of PPPs is emerging, but one that is more measured than much of the criticism of the last two decades. This new critique recognizes many cases in which PPPs have not been successful, but also some situations in which PPPs can generate value for money. Because of its critical tone, some of this research is now regularly cited by the civil society critics of PPPs, giving their arguments more weight than was the case a decade ago. This paper attempts to summarize some of the most compelling examples of this kind of emerging critique, and uses the summary to assess the practicality of the G20’s recent advocacy of large, “transformational” PPPs as tools for dealing effectively with infrastructure challenges in low-income countries.

Global support for public-private partnerships (PPPs) for infrastructure seems stronger than ever before. Discussions in G20 meetings over the last several years have increasingly focused on the need for a huge scale-up in infrastructure investment in developing countries, particularly low-income countries. G20 pronouncements talk about the advantages of realizing this scale-up via large, “transformational” projects involving private sector participation. By this they mean large, regional, or
cross-border infrastructure projects involving private investment and management, which potentially have positive, transformational impacts on entire countries or regions. From time to time over this period, the G20 has considered efforts to help modify the mandates of national and international development banks so that these institutions will take the lead on such PPPs and crowd in the private sector.

As a result, several development banks have been considering adjustments to their business models to give more attention to regional infrastructure PPPs. During the negotiations in 2013 for the 17th replenishment of the International Develop Association (IDA17), the World Bank proposed using IDA funding to help develop transformational PPP projects. Those proposals have now evolved into the Bank’s design of the Global Infrastructure Facility (GIF), an entity meant to coordinate the efforts of MDBs, private investors, and governments to prepare and structure PPPs. The BRICS countries, at their summit in Durban in March 2013, announced plans to create a new development bank (now known as the New Development Bank) that would focus on infrastructure, and do so in a way that would make up for the deficiencies of the existing international financial architecture and help catalyze the private sector investment needed in rapidly-growing BRICS economies (Republic of South Africa 2014). Perhaps the most ambitious and concrete commitment of this kind to date is the decision, announced by the African Development Bank (AfDB) in July 2013, to create a billion-dollar preparation and financing facility for large infrastructure projects in Africa, referred to as Africa50. The institution’s purpose “is to unlock private financing sources... and to accelerate the speed of infrastructure delivery in Africa,” (AfDB 2013).

But as this enthusiasm for PPPs is growing, so is a less widely-recognized body of research that takes a much more measured approach; it still represents a kind of advocacy, but one that incorporates a greater degree of critical analysis of PPP successes and failures. A recent example of this is evident in a World Bank working paper by Michael Klein (2015), an influential PPP advocate during the 1990s and early 2000s. Klein notes that despite more than two decades of use and refinement of the PPP mechanism, there are still no consistent geographical patterns of usage: “The general picture is one of waves of enthusiasm for PPPs followed by some disenchantment and consolidation. Different countries were caught up in the waves at different times.” What accounts for this lack of sustained enthusiasm? Klein says that evaluations show that PPPs can outperform public sector firms, and “are useful tools for reform of service delivery” (Klein 2015). But it is no longer clear that PPPs are consistently better run than public firms. “The evidence suggests that well-run public firms tend to match the performance of private firms in regulated sectors” (Klein 2015).

Klein’s comments are a reminder that a significant amount of evidence-based research on PPPs has accumulated since the late 1990s. But a good deal of it, particularly over the last decade, has not been uniformly positive about PPPs, at least not in the fashion of the largely promotional literature published by MDBs and donors in
the 1990s and early 2000s. Some of this research, for example by economist Antonio Estache, is now being used to bolster PPP criticisms prepared by civil society groups (e.g., Alexander 2013). Such groups have produced a broad collection of critical PPP studies: International Rivers (Bosshard, 2012); Public Services International (Hall 2015); Heinrich Boell Foundation (Alexander 2013); CEE Bankwatch Network (2008); Oxfam (Marriott 2014); the Bretton Woods Project (2016). These groups have long been critical of PPPs, but in the past their arguments against private participation have often seemed more ideological than evidence-based, and therefore not very compelling. But the growing use of evidence-based research reported on by respected social scientists like Estache, Klein, and others has added weight to their arguments, warranting more careful consideration by PPP advocates.

Much of this evidence-based critique of PPPs is dispersed in collections of working papers and academic articles, or focuses on individual aspects of PPP projects, and does not claim to be “PPP evaluations.” In any case, this body of research is having no noticeable impact on PPP discussions in organizations like the G20. This paper attempts to summarize some of the most compelling examples of this kind of emerging critique by organizing them into several key themes: (i) how prevalent is the usage of PPPs in the developing world; (ii) the costs and profits associated with these projects; (iii) the significant outlay involved in preparing these projects; (iv) their struggle to attract commercial financing; (v) how developmental they are; and (vi) the institutional and political problems that limit success. The discussion of each key theme also attempts to extract insights about some of the efforts to deal with these criticisms and establish conditions under which PPPs are likely to provide value for money. Finally, this paper uses this summary to (vii) assess the practicality of the G20’s recent promotion of “transformational” PPPs as mechanisms for dealing effectively with infrastructure challenges in low-income countries.

As there is no universally accepted definition of “public-private partnership” (PPP), this paper adopts Klein’s broad definition of PPP to mean “private participation” in infrastructure sectors like telecoms, transport, water and sanitation, waste management, and electricity: “Activities that fall under this umbrella may sometimes be characterized, for example, as ‘concession’ or ‘franchise’ or ‘build-operate-transfer’ deals” (Klein 2015). Where indicated, some of the data cited here covers “private participation in infrastructure,” which includes information on privatized utilities, as well as more traditional kinds of infrastructure PPPs.

**PPP Prevalence**

The foundation of Klein’s argument is that although many countries use PPPs at least occasionally, the prevalence of usage surges in waves, often driven by fiscal problems or other ways in which the public system has “run into trouble,” (Klein 2015). But the waves inevitably recede, “... in seemingly random patterns,” (Klein 2015). Klein
attributes the shallowness of PPP popularity to a lack of clear and consistent evidence that PPPs perform better than public sector organizations. He estimates that as of 2015, while PPPs account for a share of the total infrastructure investment in low- and especially middle-income countries, it is normal for a country to use PPPs for only about 15 to 25 percent of total infrastructure investment.

Other sources of data suggest even lower levels of PPP prevalence. The World Bank’s Africa Infrastructure Country Diagnostic study (AICD), published in 2010, found that in total, the private sector accounted for an impressive level of infrastructure investment in sub-Saharan Africa (SSA) by contributing about 29 percent of total capital spending (table 1).

But the AICD further qualified this data in several important ways: First, it demonstrated that private investment was heavily skewed in terms of countries, with about 60 percent of total SSA private sector investment shared equally by just two countries—Nigeria and South Africa. Second, private investment was heavily skewed in terms of sectors, with 77 percent of SSA’s private investments since 2000 going to telecommunications, mostly via build-own-operate projects (BOO). According to the AICD, the energy sector, which is arguably the most in need of urgent major capital investment, attracted only 10 percent of total private investment.

Other studies tend to support lower usage figures. Burger and Hawkesworth (2011) surveyed 22 countries (19 OECD countries and three middle-income countries) regarding value-for-money issues associated with PPPs. Of these, eighteen countries reported that less than 10 percent of public sector infrastructure investment took place via PPP arrangements. From 2000 to 2010, the UK’s Private Finance Initiative (PFI) probably averaged a higher annual percentage of total infrastructure investments via PPPs than most other OECD countries, at about 12 percent. The only two non-OECD countries surveyed, Mexico and Chile, reported that over 20 percent of their infrastructure investment occurred via PPPs. A number of the countries surveyed admitted informally that they did not foresee PPPs exceeding 15 percent of total public investment (Burger and Hawkesworth 2011).
Across the developing world, PPPs play a relatively small role in infrastructure investment, averaging between 15 to 20 percent according to the Independent Evaluation Group of the World Bank (Independent Evaluation Group 2014). In the poorest developing countries, the use of PPPs has been even more negligible. Figure 1 demonstrates this, using data from the World Bank’s PPI Project Database to show investments related to “private participation in infrastructure” (PPI) in countries eligible for support from the International Development Association (IDA; i.e., countries whose Gross Net Income per capita is below $1,215), and contrasts these against data from non-IDA developing countries (“blend” countries have been excluded). In its review of PPI activity in IDA countries since 2011, a World Bank report remarks: “The market for PPIs has not been expanding,” (Ruiz-Nunez 2016).

In the developing world, a share of infrastructure investment in the range of 15 to 20 percent does not mean that PPPs have failed to play a significant role in infrastructure. But it is far less than what was expected of PPPs in the 1990s when Klein and his colleagues at the World Bank were considering sharp reductions in infrastructure lending because they expected the private sector to eventually play a more dominant role in bridging the gap and financing and managing infrastructure services in that region of the world.²

What does this information about PPP prevalence tell us about the conditions under which PPPs are likely to provide value for money? The message is simple: PPPs work much better in middle-income economies than they do in low-income economies.
countries. This means that in most cases a complex, long-term, brownfield concession for retail water distribution, for example, requiring significant capital investment, should not be the first choice as the service delivery solution in a least-developed country (as such contracts often were in the early 1990s). This review suggests that the poorest countries can usually benefit more from traditional technical assistance and capacity building, or from hybrid projects that mix elements of PPP contracts with those of consulting or engineering, procurement, and construction (EPC) contracts to reduce risks for the private partners. Reforms to legal and regulatory frameworks within which PPPs eventually would be structured are also critical in these countries, along with help in improving government procedures for things like procurement and construction management.

**Costs and Profits**

PPPs involve multiple stakeholders, all of whom have interests in how the project performs. The conventional view of PPPs is that, when compared with typical public projects, they should provide better service at lower costs. The private partner needs to make a profit, but the return should be reasonable. Projects that do not meet these expectations can be subject to public criticism from government, the news media, user groups, civil society, etc. But getting the balance right in a way that satisfies all key stakeholders is not an easy task, as the recent history of PPPs indicates.

The profitability of private firms involved in PPP projects, and the resulting costs for government and end-users, has long been a controversial subject in industrialized countries like the United Kingdom, where the PFI became one of the OECD’s best-known PPP programs starting in the early 1990s. Studies of the profitability of PFI deals in the U.K. health sector have found rates of return as high as 60 percent (Shaoul 2008).

Whether or not the cause is high profits, PPPs have often tended to be more expensive than traditional public procurement. A 2006 report by the European Investment Bank (EIB) reviewed the costs of 227 road projects in 15 European countries and concluded that projects done as PPPs (65 of the total), were 24 percent more expensive than those done via traditional public procurement (Blanc-Brude, Goldsmith, and Välilä 2006). In a 2015 review of effective interest rates on private finance projects, the U.K.’s National Audit Office found that these rates, at 7 to 8 percent, were double the rates on normal government borrowing, at 3 to 4 percent (U.K. National Audit Office 2015). In a 2016 review of PPP literature sponsored by the UN’s Department of Economic and Social Affairs, the authors concluded that “Overall, the evidence suggests that PPPs have often tended to be more expensive than the alternative of public procurement...” (Jomo et al. 2016).

Most industrialized countries try to anticipate project benefits and costs, including private profits, by requiring a “value for money” (VFM) analysis of PPP projects. VFM
analysis involves estimating project costs, including profits for the private partners, and measuring them against project benefits, including service quality, quantity, and prices for governments or end-users. Quantitative VFM assessment typically involves comparing the chosen PPP option against a “public sector comparator” (PSC). The PSC allows a comparison of the risk-adjusted cost to government of procuring the project through traditional procurement (the PSC), with the expected cost to government of the PPP (pre-procurement) or the actual PPP bids (post-procurement).

The survey by Burger and Hawkesworth (2011) found that 17 of 22 countries used “public sector comparators” to assess the value for money of PPPs. But ever since the technique was first refined and pioneered as part of the UK’s PFI program in the 1990s, it has been criticized for being inaccurate and subject to manipulation, leading some observers to conclude that it is often an expensive way of endorsing the pre-selected choice of private participation. A UK Audit Commission report (2003) concluded that “the PSC has lost the confidence of many people, and risks being seen more as a hoop to jump through on the way to government funding than a valuable exercise that can help ensure better VFM.”

Engel, Fischer, and Galetovic (2014), noted that in some countries PPPs are attractive to government not necessarily because they are expected to be less expensive, but simply because accounting rules allow project costs to be moved off government books in order to give the appearance of lower debt levels. Klein also mentions this and notes that when the United Kingdom changed its accounting rules in 2009, PFI projects became less attractive as a result. If true, this may account for some of the well-documented failures of the PSC to accurately forecast PPP project costs.

Of course, other kinds of quantitative comparisons can be done on an economic cost-benefit basis, using a wide variety of VFM methodologies (World Bank Institute and Public-Private Infrastructure Advisory Facility 2013). It is also true that regardless of the method used, huge mistakes are routinely made in the estimation of financial costs and benefits associated with infrastructure projects—whether or not PPPs are involved. In a survey of 58 rail projects (a mixture of public and private projects), Flyvbjerg (2005) found that costs were underestimated by an average of 45 percent and demand forecasts were overestimated by an average of 51 percent. Flyvbjerg concluded that such consistently large mistakes in cost-benefit estimations must be attributed to a combination of faulty techniques, as well as causal effects like “optimism bias” and “strategic misrepresentation.” Doing an infrastructure project as a PPP does not lead to any more accurate estimation of costs and benefits. Vassallo (2007) and Bain (2009) investigated the forecasting performance of privately-financed toll roads; their findings were similar to Flyvbjerg’s. These authors found that PPP toll road traffic forecasts were typically characterized by large errors and considerable optimism bias.

However, in the developing world, VFM techniques like PSCs are arguably even more unreliable than in OECD countries. Even industrial countries have little objective
relevant data upon which to base cost estimates. Without such data, which is virtually non-existent in low-income countries, calculating with any accuracy how much a project will cost over 25 to 30 years of operation is almost impossible. As noted by Estache and Philippe (2012), officials in these countries often find out, after contracts have been signed, that original forecasts of project costs and profits were inaccurate. Indeed, projects often turn out to be unprofitable for private partners, triggering renegotiations:

“Experience has shown that besides the short-term subsidies sometimes needed to support privatization processes, the public sector often has eventually had to commit subsidies for the long-term as well—usually as one of the outcomes of a renegotiation.” (Estache and Philippe 2012).

A widely-cited study by Sirtaine et al. (2004), examined the profitability of PPP projects in Latin America during the late 1990s using a sample that included both brownfield and greenfield projects. The Sirtaine study suggested that on average, projects demonstrated profitability only after about 10 years. Up to that point, project shareholders earned negative returns on their investments, even when adding in management fees, estimated accumulated capital gains, and potential investment markups. The study further found that 40 percent of the sampled concessions did not have the potential to ever become profitable, with that proportion increasing to 50 percent for concessions in the energy and transport sectors. Indeed, Sirtaine estimated that over the history of these projects, on average they were unable to generate sufficient annual operating income after taxes to cover all of their financial obligations. Only by adding in “indirect forms of dividends” like investment mark-ups, transfer fees, and payments for capital appreciation paid at the end of the contract period could these concessions generate reasonable remuneration for their private partners. The study suggested that, at a minimum, these PPPs face constant cash flow problems over at least the first decade of their existence.

Another study, by Guasch (2004), reached conclusions consistent with Sirtaine’s findings. Guasch found high rates of PPP contract renegotiation after only a few years of operation, that is, long before Sirtaine says that private partners are able to confirm their projects’ long-term profitability. Using a sample that also included brownfield and greenfield projects in Latin America, the study concluded that PPI projects in that region registered a high incidence of renegotiation, about 42 percent, coming on average after only 2.2 years of operation. The results of renegotiation tended to favor operators, mostly with improvements to cash flow and profitability via compromises such as permitted delays in investment obligations (69 percent), reductions in investment obligations (62 percent), tariff increases (62 percent), and increased pass-through to tariffs of cost items (59 percent). Again, this suggested that PPP cash flow problems tended to be severe, generating stresses that operators and investors had to
live with over the long term, and which were critical in precipitating many renegotiations.

Estache and Philippe (2012) concluded that sectors like telecommunications and electricity generation in which cost-reflective tariffs seem less controversial have proven to be reasonably profitable and largely free of subsidies. But most other sectors in the developing world—electricity distribution and transmission, transport, and water and sanitation—often require subsidies to sustain cash flows or bring the rate of return close to the cost of capital. If, with careful analysis the subsidies are not built into the initial contracts, they are likely to result from renegotiation of those contracts. In the latter event, renegotiation increases the risk of a less than optimal reduction in the fiscal benefits that governments care most about, that is, the size and pace of investment. Renegotiations also tend to increase the most politically painful costs—tariffs or off-take payments—sometimes to unaffordable levels for governments.

How are governments and their development partners coping with the fact that PPPs are costlier and less profitable than assumed in the 1990s? One way is to rely more heavily on “blended finance” approaches to PPPs. Since the launch in the early 2000s of the multi-donor trust fund for output-based aid (the Global Partnership on Output-Based Aid), “blended finance” has become increasingly popular as a way of using concessional finance to catalyze private sector investment, particularly in infrastructure PPPs. The International Finance Corporation’s (IFC) Blended Finance Unit, launched in 2007, and the EU’s regional blending finance facilities, such as the EU-Africa Infrastructure Trust Fund, have all used subsidies to bring down the costs of various kinds of infrastructure PPPs (IFC 2012). The use of blended finance in this way creates a hybrid approach that combines PPP elements with those of more traditional public projects.

But blended finance involves subsidies, and the use of subsidies requires justification to ensure that it is really crowding in private finance rather than crowding it out. Economists typically recommend the use of cost-benefit analyses for such justifications to clearly identify any obstacles that reflect market failure and help determine whether subsidized finance can solve the problem. Theoretically, cost-benefit analyses can confirm that the likely development impacts of using subsidized finance far outweigh the distortions that may result. When this kind of analysis can be done, it almost certainly leads to more developmental projects. But the difficulties involved in this should not be underestimated. The World Bank’s Independent Evaluation Group found in 2010 that the use of cost-benefit analysis dropped from 70 percent of all World Bank projects in 1970 to 25 percent in 2008, largely because of problems with data and the difficulties in quantifying costs and benefits (Independent Evaluation Group 2010).
Preparation Costs

The **OECD (2008)** has indicated another important reason for the high costs associated with PPPs in many countries—the high cost of PPP project preparation, especially when compared with the costs of traditional public procurement. Preparation costs include the legal, financial, and technical costs incurred by both public and private sector actors in developing a PPP for commercial operation, and so include “transaction costs” associated with PPP procurement processes and contract negotiation, as well as (especially in some developing countries) “upstream” legal, regulatory, and policy preparation tasks that go well beyond normal transaction costs.

In their review of the PPP literature, **De Schepper, Haeqendonck, and Dooms (2015)** noted widespread agreement among practitioners and academics that PPP preparation costs are higher than preparation costs associated with traditional public procurement. In many cases, these costs are so high that they discourage potential bidders from competing for projects, and in some cases undermine the basic cost-effectiveness rationale of PPPs and negatively impact on the economic and financial viability of projects. De Schepper’s study of 172 public infrastructure projects in Belgium found much longer and more complex bidding processes associated with PPPs than with projects procured via traditional public methods.

There are several reasons why PPP preparation costs are so much higher than the costs of preparing projects involving traditional public procurement. The survey by Burger and Hawkesworth, which found widespread use of “public sector comparators” to ascertain value for money of PPPs, also noted that the process of preparing a PSC and requiring each bidder to prepare a projected PPP model is costly and time-consuming. Complex PSCs can take several months to finalize, and the resulting reduction in net benefits for potential private partners may cause them not to bid on projects that are deemed to be too small, with potential revenues not high enough to compensate for preparation costs. On the other hand, some projects are avoided because they seem too large and complex, leading to expensive bid preparation and time and cost overruns resulting from protracted contract negotiations. This may explain the findings of **Zitron (2006)**, which showed that on average, only three bidders competed for each PPP contract in the United Kingdom, and that there were fewer than three bidders on one-quarter of the contracts. Governments can partially or completely compensate firms for their bidding costs, but of course this increases the cost of the PPP option relative to the traditional public procurement option.

Twelve of the countries in the Burger and Hawkesworth survey said they used some form of cost-benefit analysis to assess value for money for projects involving traditional public procurement, but these appear to be much less rigorous tests than PSCs and do not constitute the public-sector equivalent of “private sector comparators.” Only a few countries applied criteria to all prospective projects to establish which mode of procurement would result in the highest value for money. In other
words, for many countries traditional public procurement remains the lower cost, less complicated, default option for procurement, and the PPP choice depends on the discretion of departmental officials.

There is no single widely accepted metric for infrastructure project preparation costs. Costs may be measured as a percentage of initial capital costs, construction costs, or even the total net present value of the deal over its entire lifetime. Most published work has focused on “transaction” costs, usually synonymous with “downstream transaction costs,” and mostly procurement-related costs incurred by governments or their MDB partners. A sampling of different metrics follows below:

- In a widely-cited study of the procurement phase costs of bidding and negotiating contracts for 55 infrastructure PPPs in six sectors of the U.K. economy, Dudkin and Valila (2005) concluded that total transaction costs of this type averaged over 12 percent of the capital value of the projects, with the public-sector cost at about 3.5 percent, the winning bidder’s cost at about 3.8 percent, and costs to losing bidders totaling about 5 percent.
- The World Bank (Lin and Doemeland 2012) estimated that MDB and government preparation costs for the Nam Theun 2 hydropower project in Lao PDR (total investment: $1.4 billion) amounted to $124 million at project close in 2005, or 9 percent of total project investment.
- Farajian (2010) found lower average transaction costs in several case studies of large transport PPPs in the United States, but concluded that the transport agencies involved were not reporting all relevant costs. He also found that some individual state departments of transportation were requiring that project managers’ budget up to 10 percent of total investment for procurement and contract negotiations managed by state officials.
- Castalia Strategic Advisors (2010) estimated government transaction costs of PFIschool projects in Australia and New Zealand to be 10 to 11 percent of total project construction costs, with significant premiums to be expected for first-time projects in either country.
- Bhattacharya, Romani, and Stern (2012), found that for projects in developing countries involving limited experience with the type of project or technology, or in a low-capacity country, preparation costs, including costs of design and arranging financing “can constitute up to 10 percent of overall investment costs.”
- The AfDB (2013) estimated that their preparation costs for large infrastructure projects in Africa can reach 10 to 15 percent of project capital costs.

These kinds of studies suggest that PPP project preparation costs in developing countries are much higher than they are in OECD countries because of the need to include costs for things like upstream preparation and premia for new or particularly complicated sectors like hydropower. These costs are also considerably higher than for projects involving traditional public procurement because of the need in many cases to carry out value-for-money analyses (which are typically less onerous for public procurement) and use more complex bidding processes.

Under what conditions can governments and their development partners deal effectively with the time and costs involved in project preparation? For many years, the default solution was to make as much of this preparation as possible the responsibility of the private sector. This attitude was an outgrowth of the notion that
implementing a PPP meant handing over government problems with infrastructure to private companies for solution. Probably the first notable example of this approach was the Buenos Aires water concession, signed in December 1992. This was one of the first, large brownfield infrastructure concessions. A “defining feature” of the tender process was a lack of information about the water system and its problems (Alcazar, Abdala, and Shirley 2000). Bidders were supposed to do all of their own due diligence, and the winning bidder was supposed to refine its implementation plan in the first few months after signing the contract. A protracted series of contract renegotiations would follow because latent defects made the project much more expensive than anticipated.

That approach has been frequently copied over the years (e.g., Kotze, Ferguson, and Leigland 2000), but by the early 2000s, donors and MDBs began to recognize that: (i) private partners cannot by themselves fully prepare PPP projects in a way that optimizes economic benefits; and (ii) a much more substantial effort by donors and MDBs to pay for and supervise preparation, before private partners become involved can result in more effective, sustainable, and pro-poor projects. The stronger role for governments and their development partners in identifying problems and designing solutions for private partners to implement is a characteristic of hybrid management contracts being developed or implemented in countries like Benin, Liberia, and Sierra Leone (Republic of Sierra Leone 2015). These contracts shift risks away from private partners, toward governments, donors, and MDBs, who are, theoretically, better able to mitigate those risks. Ultimately, this should make the contracts more productive and sustainable.

On a broader scale, a number of multi-donor project preparation facilities were established in the 2000s to deal with the high costs of preparation, but evaluations later showed that these facilities were too small and too bureaucratic to have much of a substantial impact (Cambridge Economic Policy Associates 2012). As noted in the introduction above, much larger preparation platforms have been created more recently to try to address the problem, but they have not yet had a chance to show results in terms of sustainable PPPs.³

**Finance and Investment**

PPP advocates expect, and sometimes promise, that such contracts will lead to improved efficiency and increases in investment from private sources, consequently leading to greater service capacity and coverage. But again, the evidence suggests that this is not consistently the case. As various studies demonstrate, private sources of finance have not played as strong a role in infrastructure PPPs in developing countries as hoped. In Africa, the long-standing practice in some sectors of government on-lending concessional finance to private concessionaires illustrates this fact. Many of the rail concessions in SSA benefited from this kind of debt, sourced as relatively
inexpensive sovereign guaranteed loans from bi-lateral donors or MDBs. These con-
cessions often needed financial help because concessionaires could not or would not
borrow to finance assets like rail lines, with operational life-spans being much longer
than the terms of the concession contracts. Governments themselves often filled this
gap by providing a large share of project financing. In the 1990s, this kind of on-
lending was usually done with an interest rate mark-up to the concessionaire to cover
government administrative costs and loan loss liability, but was still lower than the
commercial rates that the concessionaire could obtain. As commercial lending for
all kinds of brownfield concessions began to diminish following the Asian Crisis, the
mark-ups were slashed to compensate for diminished global project finance lending,
and by the mid-2000s, in some cases the mark-ups disappeared entirely (Pozzo di
Borgo et al. 2006).

A study by Gassner, Popov, and Pushak (2009), examined whether water and
electricity utilities involving private participation outperformed those run by gov-
ernments. The study used a data set of more than 1,200 utilities in 71 developing
countries. The results of the study showed that the private sector delivered higher
labor productivity and operational efficiency, convincingly outperforming compara-
ble companies that remained state owned and operated. But the study found mixed
evidence regarding increases in investment and could not conclude that investment
usually increases with private participation.

Gassner addressed the investment question in terms of different sectors and types
of private participation. For electricity divestitures, investment per worker increased
with private participation, as economic theory predicts. For lease and management
contracts, which are more common for water and sanitation than for electricity,
private partners were usually not obligated to make major capital investments, but
Gassner’s results suggested that even if private participation generated operational
improvements, the public utility companies involved did not increase investment. And
for concession contracts, which also tend to generate improvements in operational
efficiency, “... there is no conclusive evidence that investment increases.” (Gassner,
Popov, and Pushak 2009). If efficiency improves, but is not supported by increases in
public or private investment in the maintenance and expansion of utility networks,
Gassner asked how operational improvements could be sustained over the long term.

A second study, by Marin (2009), undertook a global review of public-private part-
nerships for urban water utilities in developing countries. The study focused on 65
large urban water PPPs in operation for at least five years. Marin concluded that the
principal benefit of these projects was operational efficiency rather than their ability
to supply private sector finance. The author also acknowledged that private invest-
ment was the main attraction of PPPs in the water sector in the 1990s, but added
that “experience has shown that this was largely the wrong focus,” (Marin 2009).

A host of other studies have found PPP-related efficiencies generated un-
der different conditions, in different sectors, including electricity distribution,
telecommunications, and water distribution (Estache and Rossi 2004; Andrés, Schwartz, and Guasch 2013), and transport (Perelman and Serebrisky 2012). Estache and Philippe (2012) survey many other studies showing some measure of PPP efficiency in different sectors. But again, these studies do not consistently show a corresponding increase in investment.

Government on-lending to PPPs accelerated in some countries after the onset of the 2008 global financial crisis, which caused a collapse of the syndication market, inactive bond markets, and unusually high costs of funding. Governments and DFIs used concessional lending to meet funding shortfalls resulting from projects unable to raise sufficient commercial debt finance on acceptable terms. The U.K. government attempted to salvage its PFI with a proposed investment fund that would provide up to 100 percent of the financing needed for projects to reach financial closure (Farquharson and Encinas 2010). In developing countries such as Brazil, India, Mexico, and South Africa, government-owned development finance institutions provided funding or guarantees to kick-start PPP projects. Because countries like Brazil and India accounted for such a large share of private investment activity in developing countries, their use of DFIs and local public banks to fund large projects kept global PPI market investment numbers from declining as much as expected from 2008 to 2009 (Izaguirre 2009).

The global financial markets have still not fully recovered from the financial crisis and resultant increased financial regulation, at least not in the sense of returning to earlier levels of high liquidity, substantial risk appetites, and low cost of project finance debt provided by commercial banks. Governments, especially those in larger middle-income countries, continue to replace scarce commercial finance with public money from government budgets or donors and MDBs. Recent efforts by the World Bank’s PPI Database to collect detailed information on PPP financing sources in developing countries confirm that the private sector plays even less of a PPP financing role in low-income countries. In 2015, 57 percent of PPP funding in IDA countries came from governments, multilaterals, and bilateral institutions, with the balance coming from commercial sources. For all developing country regions in 2015, the percentage was 41 percent (table 2). In her analysis of this data, one World Bank staff member noted that, “One of the prevailing notions about PPPs is that upfront costs are wholly paid for by the private sector... However, this is a myth,” (Chao 2016).

What does this critique say about the conditions under which affordable private financing can be accessed for infrastructure PPPs? There clearly are factors that make a difference in terms of financing costs involving the particulars of a project like country, sector, type of contract, risk mitigation features of the contact, and the mix of financiers. The stronger a country’s sovereign credit ratings, the easier it seems to be for infrastructure PPPs to raise affordable private finance (IMF 2006). In terms of sectors, power generation is probably the easiest in which to raise private finance, largely because the supply of power is relatively commercial, with cost-reflective end-user
Table 2. Breakdown of PPI financing by region, 2015, in $ billions

<table>
<thead>
<tr>
<th>Region</th>
<th>Total Investment</th>
<th>Public Money</th>
<th>Donors/MDBs</th>
<th>Private Sector</th>
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<td>All Regions</td>
<td>39.0</td>
<td>27%</td>
<td>14%</td>
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</tr>
</tbody>
</table>

Source: Chao and Saha 2016.

tariffs being less controversial for power than for services like water and sanitation. Electricity generation PPPs can also be purely private operations, often structured as Independent Power Producer (IPP) projects involving ownership of the assets by the private sector rather than by government as in traditional concessions. Private financing for power generation can also be relatively affordable because generation is not a natural monopoly service in the same way that some other infrastructure services are, such as water supply—multiple facilities can be built to feed power into national grids, so generation can be relatively competitive. This puts some downward pressure on financing costs.

IPPs may be popular, but affordable private finance for all kinds of large PPPs usually requires a host of risk mitigation mechanisms. Most IPP power purchase agreements (PPAs) must be backed by security arrangements such as escrow accounts, letters of credit, targeted subsidies, budget commitments, etc. In countries without domestic capital markets that can finance PPP projects, PPAs often must be denominated in hard currencies such as U.S. Dollars or Euros, indexed to currency baskets, or backed by foreign exchange liquidity facilities. Sovereign guarantees are also usually required to back various aspects critical to PPP project cash flows and profitability, including off-take commitments, fuel supply availability, currency convertibility and transferability, interest rates, exchange rates, tariff rates, and revenue levels. Donors, MDBs, as well as private institutions also provide guarantees or insurance products to cover risks that private lenders or investors are unable or unwilling to take. Finally, governments, donors, and MDBs have all increased their financing shares in large PPPs to reduce the size of private project finance and help make it affordable.

But when governments assume or share project investment risks, they need to manage conflicts of interest. For example, can governments act simultaneously as financiers interested in the financial sustainability of projects, as well as regulators charged with protecting the interests of end users? Will a government allow a concession company in which it has invested substantial amounts of capital to declare bankruptcy?
Does it ultimately matter if private participation leads to operational efficiency, but not more investment? Lastly, if services become less costly and their availability increases, why should a lack of investment be a concern?

The problem is that PPPs tend to involve complex contracts that are difficult and costly to prepare. Most of the time this effort and expense is justified on the basis that more investment will be forthcoming. The absence of such investment substantiates Klein’s point that very little separates PPPs from well-run public companies, and argues for more attention to basic management improvements and better regulation before considering private participation.

**Poverty Impacts**

If a PPP generates investment, or even if it achieves only efficiency gains, it can make possible a host of other benefits like improved service quality, affordable tariffs, or expanded service access. In poor countries, these kinds of benefits are usually cited as justification for involving the private sector in infrastructure service delivery. But Estache and Philippe (2012) note that there is relatively little empirical evidence that focuses on the development impacts of small or large-scale PPPs. What evidence there is suggests that such projects do not provide the poor with enough affordable access to services.

Gassner’s study, cited above, shows why this topic can generate so much controversy. She compared average annual values for indicators measuring performance before and after private sector involvement in water and electricity utilities. Private involvement (via PPPs or privatization) generated a number of impressive efficiency gains, but they were not associated with an equitable distribution of project benefits. For example, the labor productivity gains were associated with reductions in staff numbers for both water and electricity. Employment fell by 24 percent in electricity and by 22 percent in water following the introduction of private participation. Utilities operated by governments used considerably more employees than privately operated utilities to achieve the same level of service. Moreover, the efficiency gains were not associated with changes in investment or average residential tariffs. Because the gains would normally translate into lower costs for the operator, Gassner speculated about reasons why there was no sign of the lower costs translating into greater investment or lower prices. One possible explanation was that services were already so underpriced that even huge efficiency gains could not justify price reductions. Another possibility was that the private operators took advantage of weak regulatory oversight to simply retain all of the gains as profits, passing on nothing to customers or to cover O&M costs. This latter possibility raises questions about the long-term sustainability of PPP efficiency gains.

In their survey of PPP research, Estache and Philippe (2012) concluded that investment and efficiency gains in the telecommunications sector (resulting mostly...
from technological advances) have generally contributed to the wide distribution of benefits like increased access, improved affordability and better service quality. But in most other sectors, even when benefits result from improved efficiency or investment, they are not always shared with customers or governments. This is because regulation is not typically designed to pass on such gains to other stakeholders like residential users: “For the most successful projects, unless regulation works, efficiency gains become rents which fuel conflicts between government, users and operators,” (Estache and Philippe 2012).

How can PPPs be done in such a way that the likelihood of developmental benefits is strongly increased? PPPs that successfully generate benefits for the poor residents of developing countries usually begin with the realization that such benefits do not automatically result from increased private investment or improved efficiency. And as long as private partners are mostly responsible for developing work plans, as part of the bid process and later during early stages of implementation, there is no reason to expect effective measures for benefit distribution. This is not a particularly new problem. PPP contract designs and tariff structures that fail to benefit—or even disadvantage—major constituencies of stakeholders have led to renegotiations and project collapses from the early days of infrastructure concessions in the early 1990s. Many recommendations have been made about the need to undertake stakeholder analysis by modeling the distribution of project benefits before a contract has been awarded (e.g., van den Berg 2000). But again, this kind of preparation requires financial resources and expertise that must be brought into play before PPP contracts are signed.

Governance Issues

Governance refers to the various ways in which governments’ institutional capacity or lack thereof, intentionally or unintentionally affects the performance of PPPs. Political leadership is a rare but highly important way in which governments can facilitate significant infrastructure investment via PPI arrangements (Jones, Jammal, and Gokgur 2002; Eberhard, Kolker, and Leigland 2014). But generally, strong political support for PPPs in low-income countries is rare. A country’s investment climate can also have a major positive impact on the development of PPP projects (IMF 2006), but almost no low-income countries have investment grade credit ratings that would reflect strong investment climates.

Engel, Fischer, and Galetovic (2014) argued that the governance structure under which most PPPs operate is “usually defective.” This is largely because PPPs share many of the same defects as standard public works, including improper design, poor procurement, and frequent renegotiations that Engel and his co-authors conclude are often opportunistic attempts by private contractors to increase profits. A recent study by the World Bank’s Public Private Infrastructure Advisory Facility (PPIAF) found
that in the interests of getting projects to completion, many developing countries use limited competition and direct negotiation to procure private sponsors and operators (PPIAF 2014). But PPIAF also found that projects procured in this manner tend to be more expensive and subject to more problems in implementation.

Eberhard and Gratwick (2010) found that few African countries have established the key legal and regulatory elements needed to guide private participation in their power sectors—a clear policy statement and supporting legislation. Some countries have passed laws permitting independent power producer (IPP) projects, but almost none have addressed the relationship between IPPs and state-owned energy providers. In a more recent study, Eberhard et al. (2016) conclude that in general, Africa’s power sector continues to reflect a partial approach to reforms that facilitate more private investment, with little achieved over the last 20 years in terms of unbundling, privatization, or the introduction of competition.

After “PPP units” became prominent in countries like the United Kingdom and Australia, they have become the preferred institutional tool to regulate the process of PPP project development in many developing countries. A variety of international organizations have recommended establishing PPP units, including the OECD (2010), the UN (2007), and APEC (2008). The rapid growth in the number of such units seems to have resulted from a widespread perception that well-functioning PPP units are important for the success of a country’s PPP program. However, a recent literature review by Lemma (2013) concluded that “there is very little quantitative evidence of the value of centralized PPP coordination units...”. There seems to be consensus that a large and growing number of such units exist, but they differ so widely by country and sector that it is difficult to generalize about their value, or even agree on how to measure their worth (Burger and Hawkesworth 2011; EPEC 2014).

The contribution of PPP units to achieving success may not be entirely clear, but the reasons for their ineffectiveness are more so. One of the earliest studies of these units, sponsored by PPIAF (2007), noted that they were often established due to frustration on the parts of governments with the inability of existing institutions to move PPP programs forward. But the study found that in such situations the governments often overlooked the fact that the very shortcomings that made the existing institutions underperform may well undermine the new PPP units as well (PPIAF 2007). The PPIAF study concluded that in countries where top politicians do not support the PPP program, where procurement of infrastructure and capital works is not transparent and competitive, and where the machinery of government is chronically uncoordinated, PPP units are unlikely to be effective. The study concluded that there is little chance that PPP units can work well where such problems persist.

One problem with PPP units that seems to have limited their usefulness is their disappointing performance in accelerating PPP deal flow. Government officials in developing countries often expect such units to speed up the process of getting PPPs to completion. But such units often produce exactly the opposite result—the flow of
deals slows down because of the perceived need to carefully apply standardized procedures in project development. Better-prepared projects should be more sustainable, and that should off-set lengthy preparation periods to some degree. But this logic rarely satisfies government officials interested in getting projects done as quickly as possible.

South Africa’s PPP Unit, which was established in mid-2000 in the National Treasury, and which boasted procedures and guidebooks that quickly became good practice examples used by other national agencies in Africa, is a case in point (Lemma 2013). The guidelines called for over two dozen relatively elaborate preparation steps, as well as a series of National Treasury approvals of the process recommended by the Treasury’s PPP Unit. The entire process (including the use of “public sector comparators”) was quickly judged by the private sector to be too lengthy, too complex, very expensive, highly over-regulated, and unfortunately responsible for slowing down PPP deal flow (Castalia Strategic Advisors 2007). The PPP Unit itself admitted that its required VFM studies at the municipal level averaged about 30 months (Levinsohn and Reardon 2007). As a result, under this regulatory regime, PPP deal flow remained stagnant in South Africa.

In 2012, the PPP Unit lost its status as a separate department within National Treasury when it was absorbed by the Government Technical Advisory Centre (GTAC), and its role changed from process regulator to the provider of PPP transaction advisory services (GTAC 2015). The experience of South Africa’s PPP Unit seems consistent with the findings of several researchers, confirming that complicated frameworks for regulating the development of PPP projects can significantly slow the process of getting projects to financial close (Zhang and Kumaraswamy 2001; Chan et al. 2010).

PPIAF’s long experience with the creation of PPP units, particularly in Africa, suggests two conditions under which these entities can add value. First, if units have no authority to require compliance with their recommendations, they tend to be quickly relegated to minor advisory roles without much influence. This is because in poor countries governments cannot afford to employ the sort of experts whose advice is of significant value to public or private sector project proponents. Sometimes experts can be seconded to PPP units from private sector firms, or recruited for limited periods with the help of donor funding. But these kinds of experts typically cannot be retained long enough to transfer significant levels of professional skills to regular staff (and if they do, regular staff members tend to leave for higher-paying jobs). To enforce government rules regarding how PPPs should be developed and structured, as opposed to just providing advice, units can function reasonably well with a small central core of expertise. The rest of the staff component can be made up of competent project managers with more general kinds of professional skills.

Second, the rules that PPP units enforce should minimize direct pre-approval of actions by senior government officials based on vague decision-making guidance,
in favor of routine, post-audit reviews of actions based on clear, specific procedural
guidelines or regulations. Senior officials can become involved after the fact, if the
post-audit reviews reveal that proper procedures were not followed. The pre-approval
approach encourages arbitrary decision making and can slow implementation to a
standstill. But the post-audit approach is not easy to implement: it requires clear
and complete procedural guidelines or regulations, along with consistent, reasonably
high-quality auditing skills and procedures. PPP units will not work well in countries
already plagued with severe governance defects affecting standard public works proc-
urement and contracting. This is one of the reasons why PPPs are not ideal tools for
every developing country.

Transformational PPPs

In light of the preceding discussion, what is to be made of the G20’s enthusiasm
for regional or “transformational” PPP projects? Indeed, why would such projects be
any more successful than smaller and simpler PPP projects in meeting expectations
regarding costs, profits, finance, investment, equity, efficiency, and governance? Al-
though the term is widely used, there is no precise, universally-accepted definition of
“transformation project”, but as noted previously, the term is normally used to refer
to large, regional, or cross-border infrastructure projects involving private participa-
tion. Various prioritized lists of such projects have been compiled by several interlocu-
tors, including the World Bank (2011), the G20 MDB Working Group (2011) and the

Such regional projects are extremely rare. SSA’s actual experience with regional
infrastructure PPI projects is almost non-existent. The World Bank’s PPI Database
has recorded only seven regional infrastructure projects on the African continent
since 2000 (all in SSA). Five have been transport projects, while; two have been nat-
ural gas transmission projects (World Bank, PPI Project Database). But it would be
misleading to imply that large regional projects are easier to do in other regions. Since
1992, the PPI Project Database has recorded only 15 cross-border projects globally,
in any infrastructure sector. The disadvantage of so little experience with large re-
regional projects is clear. Koppenjan (2008) notes that the learning curve associated
with structuring mega-projects as PPPs is extremely steep and such projects seem to
be most successful in countries and sectors with a considerable amount of PPP expe-
rience at a variety of levels.

Those who defend these large PPP projects point to the advantages of economies-
of-scale and of scope. This “bigger is better” approach is also consistent with popular
theories of economic development, which argue that big development challenges
like poverty alleviation, energy scarcity, and urbanization can only be solved by “big
push” solutions involving large projects and large amounts of aid (Sachs 2006). How-
ever, these “transformational” projects frequently possess the size and complexity that
would make them subject to what Flyvbjerg would call the “iron law of megapro-
jects.” According to Flyvbjerg (2014), 90 percent of projects costing over one billion
dollars, end up “over budget, over time, over and over again.” This is a problem for
all large projects, not just PPPs, but Flyvbjerg points out that “Private capital is no
panacea for the ills in megaproject management, to be sure; in some cases, private
capital may even make things worse...” Flyvbjerg (2014). Part of the reason for this
is that the complexity of large PPPs—with multiple players, complicated and lengthy
contract negotiations, high transaction costs, forecasting uncertainties, etc.—leads
to what Ansar et al. 2016 call a low “investment fragility threshold”—a high vul-
nerability of the investments to become unrecoverable due to the impact of random
events.

With large, transformational projects, economies-of-scale are cited as a factor that
should help reduce the amount of preparation costs. But using the cost metrics dis-
cussed earlier, and even assuming some economies-of-scale, the costs of preparing
transformational PPP projects are staggering. The average total cost of the 14 re-
gional power sector projects in the Priority Action Plan of the Program for Infrastruc-
ture Development for Africa (PIDA) is $2.9 billion (AUC 2012). Preparing projects
of that size could require as much as $430 million in total development costs, with
roughly one-third of that ($140 million) being the responsibility of the government
and its development partners. These development costs tend to be more expensive
than costs incurred for developing conventional publicly procured projects, because
in addition to more complicated contracts and contact negotiations, they involve
much more up-stream preparation. Many low-income countries do not have a specific
PPP legislative framework conducive to large PPPs or a single set of procedures for
the award of a suitable PPP contract. Without such a legal-regulatory framework in
place, project sponsors need to obtain multiple licenses, permits, and authorizations
from various governmental and local authorities in order to implement the project.
All of this increases the political risk for private investors, in case one or more key
permissions cannot be obtained, and makes it more difficult to have these licenses,
permits, and authorizations assigned to the project financiers as a form of security
under the financing arrangements.

What role would private finance play in these large, regional PPPs? Inga III, a re-
gional power project which is probably on more lists of “transformational” infrastruc-
ture projects than any other in SSA, suggests some answers to this question. When
it came under serious consideration in the early 2000s, Inga III was intended to be
the third and largest hydropower project in the Inga basin of the Congo River in the
Democratic Republic of the Congo (DRC). Private sector participation has always been
described as a requirement for the project rather than an option because the com-
bination of the government plus donors and MDBs did not have the kind of capital
required for project investment (World Bank 2014). But as the project developed, it
became clear that private partners would not necessarily be responsible for all or even most of the finance required for the project.

In a “preliminary financing feasibility study” commissioned by the World Bank (BNP Paribas 2009), the consultants estimated the total cost of the project at about $9 billion for a facility that would generate 4,500 MW. The debt share of total costs ($6.7 billion) would be provided by four MDBs, six DFIs, several export credit agencies, and Chinese policy banks. Commercial banks were expected to provide no more than about 10 percent of the total, assuming that MDB credit enhancements could be accessed from the World Bank’s Partial Risk Guarantee (PRG) facility and the Multilateral Investment Guarantee Agency (MIGA). The study assumed that one-third of the equity needed for the project (about $2.2 billion) would come from the government, sourced as loans from MDBs. This government equity contribution (about $730 million) would be in addition to project preparation costs that could be as much as $400 million for a project of this size, using the metrics discussed above.

At about $1 billion, the government contribution needed to make Inga III viable as a PPP seems untenable. In mid-2010, the government reached the completion point under the Enhanced Heavily Indebted Poor Countries (HIPC) initiative after benefiting from assistance under the Multilateral Debt Relief Initiative (MDRI). By 2013, the DRC’s total outstanding central government debt owed to bi- and multilateral creditors was $2.9 billion (IMF 2015). This total reflected a marked improvement over the 2009 level. But the DRC’s debt sustainability rating was still assessed as “moderate” by the IMF, meaning that any sharp increase in external debt, even to MDBs or donors, risked the return of debt distress. The wisdom of a precipitous 30 percent increase in such debt to support Inga III would no doubt be questioned. The conclusions regarding Inga III seem clear: it would not be predominately financed by the private sector, leaving the government with a financing burden that it could not afford. The alternative to a transformational PPP in this case is not a project done using traditional public procurement. Rather, it is a collection of smaller projects (public or private) that are more easily financed and managed.

Is there any evidence to suggest that benefits resulting from efficiencies or investment generated by large transformational PPPs would be distributed equitably across the country’s population? In terms of equity arguments, MDBs have not been consistent in their messaging. On the one hand, the World Bank (2011) argued in its infrastructure strategy update that “Large infrastructure projects have often been successful in making project affected people the beneficiaries of the project displacing them, as well as achieving development objectives, like the benefit sharing arrangements in hydropower.”

But the same document (World Bank 2011) acknowledged that the Bank’s strategy of pursuing economic growth through such infrastructure projects, with the expectation that benefits will “trickle down” to the poor, had not been borne out by the facts, and that the results of this approach have often been “slow”. Poverty impacts

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have proven “complex to achieve and demonstrate,” and “Learning from past experiences, the Group will do more to enhance the delivery of infrastructure services to the poor,” (World Bank 2011).

At least in the power sector, views on the socio-economic value of large regional projects may be changing. The International Energy Agency (IEA) has acknowledged that 70 percent of rural areas in developing countries are best electrified with mini-grid and other off-grid solutions (mostly wind and solar), and that these kinds of solutions would need to receive most of the new investments recommended for the power sector (International Energy Agency 2011). The value of this small-scale approach seems to be supported even in the DRC, where the government’s Inga III project director recently acknowledged that the project will not generate many benefits for rural areas, and that off-grid solutions involving wind, solar, and small hydropower will be needed to adequately serve populations in those areas (Worldfolio 2016).

The larger the PPP, the more important it is to have knowledgeable and well-capacitated partners, including governments who must play a principal role in project preparation, procurement, and post-closure performance monitoring. In the poorest countries, that kind of capacity does not exist, so donors and MDBs try to create it, sometimes specifically for transformational projects.

But how effective is this kind of just-in-time institutional development? Again, Inga III serves as an instructive example. As a condition of receiving an IDA grant for project preparation studies in 2014, the DRC Government was asked by the World Bank to adopt a key element of improved project governance. By 2015, the government agreed to create a ring-fenced development authority (Agence pour le Développement et la Promotion d’Inga – ADEPI) to manage Inga’s development, and mobilize private participation and public financing. ADEPI was supposed to be created by law as an autonomous entity reporting to the Prime Minister’s office. It was to have a Board of Directors representing various Inga development stakeholders. All ADEPI staff members, including the Director, were supposed to be recruited competitively. In other words, ADEPI was expected to act as a kind of independent PPP unit specifically for the Inga project, combining financial resources and expertise to ensure that responsible best practice was followed in the development of the project.

The grant was made, but the government evidently did not feel compelled to meet these obligations. On September 12, 2016, the World Bank (2016b) cancelled its grant support to Inga III. The activity had already been suspended in July due to the government’s decision to “take the project in a different strategic direction” to that agreed with the Bank in 2014. At the time of suspension, only 6 percent of total preparation financing had been disbursed; most of the studies had not been completed, and many had not been started. ADEPI had not been established as an autonomous entity (World Bank 2016a). In late 2015, President Kabila moved ADEPI into his cabinet and took personal control of the project. But this meant that the independent PPP unit functions would be lost and some of the key environmental and
social studies probably would not be completed. The lesson here also seems clear: governments without a recent history of legal, regulatory, and institutional reforms are unlikely to make rapid, significant progress in these areas during the course of a single large project.

Are there ways of increasing the chances that transformational PPPs will be successful? There are very few examples of successful PPPs of transformational scale, but Ansar and his colleagues (Ansar et al. 2016) make recommendations regarding ways of avoiding problems with mega-projects, which apply equally well to large PPPs: (i) be skeptical of the numbers presented at appraisal; (ii) seek to de-bias estimates of time to task completion, costs, and benefits by demanding more extreme stress tests; and (iii) look for evidence of meaningful cost-benefit analysis as part of appraisal.

A second way to improve the chances of mega-PPP success is to involve multiple countries in the project and ensure that one or more of the project partners has some PPP capacity and can take a leadership role in the project. The N4 Toll Road Concession, awarded in 1997, linked South Africa’s most industrialized, but effectively land-locked northern and eastern regions (Gauteng and Mpumalanga provinces) to the Mozambican port of Maputo. When the project reached closure, it was recognized as a pioneering accomplishment—it was the first toll road concession signed in SSA. It was the first cross-border transport PPP, and only the second regional PPP in any sector. The project was successful because of high-level support that came directly from the presidents of the two countries, but also because of South Africa’s technical and managerial expertise, and their already considerable experience with toll roads. South Africa led the project and built capacity among Mozambican counterparts along the way (Thomas 2009).

A third way to avoid problems with transformational PPPs is to do smaller PPPs instead. This is particularly the case when transformational PPPs involve massive capital investments based on razor-thin profit margins. When possible, projects of this kind need to be broken down into smaller projects. In the case of projects like Inga III, this suggestion is more practical than it may sound. Since the last wave of work on Inga III began in the late 2000s, a change in thinking about investment in renewable power generation has occurred in Africa, thanks to South Africa’s Renewable Energy IPP Program (REIPPP) and the Scaling Solar Renewable Energy IPP Program in Zambia. Over four rounds of bidding between 2012 and 2015, South Africa’s program attracted $19 billion in private investment in 92 on-grid IPPs, totaling 6,327 MW, with wind and solar PV prices among the lowest in the world (Eberhard, Kolker, and Leigland 2014). Instead of being primarily about climate change mitigation, or off-grid service in rural areas, REIPPP has shown how quickly renewable energy can add generating capacity to power grids, as compared with large hydropower or coal-fired plants. Construction times for these solar projects are typically under 12 months per facility. In other words, by 2018, South Africa will have 32 percent more generating capacity in place than Inga III is expected to provide after ten years of
construction is finished. The Scaling Solar program, designed by the IFC for the Zambian Government, is a much smaller tender program, but has reduced power prices even more than in South Africa (IEA 2017). REIPPPP and Scaling Solar both involve extensive pre-bid project design, government and third-party guarantees, donor and MDB financing (of preparation as well as capital investment), and non-negotiable project documentation.

Conclusions: The Emergence of Hybrid PPPs

PPPs have not, in general, met expectations. Based on the findings of the survey by Burger and Hawkesworth (2011), it seems realistic to assume that PPPs may eventually account for 10 to 15 percent of public sector infrastructure investment in OECD countries and up to 25 percent in developing countries. These are of course not insignificant percentages, but they are nothing like what was expected of PPPs in the 1990s. In particular, the evidence shows that PPPs have never successfully gained a foothold in the poorest countries. The studies reviewed in this paper suggest that governments and their development partners have not done a very effective job of anticipating PPP costs and profits, so assessments of value for money involving tools like public sector comparators have been frequently off the mark. This is true of all kinds of infrastructure projects, in developed as well as developing countries, but especially so in the case of PPPs. In the developing world, particularly in the poorest countries, PPP project costs have been higher than expected, and profits lower. This of course has contributed to the limited use of PPPs in these countries.

PPP project preparation costs are much higher than were expected in the 1990s, and higher than the costs of preparing projects for traditional public procurement. This is partly because of the upstream legal and regulatory preparation required in many developing countries, as well as the complexity and higher costs of PPP procurement compared with traditional government construction contracting (value-for-money assessments involving tools like public sector comparators also tend to be more rigorously applied to projects involving private participation, but most experts argue that such tools should be used for both PPP procurement and traditional government contracting). High preparation costs present governments and their development partners with a difficult problem: who pays for preparation costs that cannot always be recovered in some way from the project?

New data compiled by the World Bank in 2016 (see table 2), suggests another surprising conclusion about infrastructure PPPs: in many situations, private finance is not the predominant source of investment funding for these projects. Governments, or their state-owned banks, along with donors and MDBs, account for more than half of this funding in many cases, even in middle-income regions like Latin America. This
kind of public funding seems essential to attract private finance for many kinds of projects. But this reality challenges some of the traditional definitions of PPPs, especially with regard to the role of the private partner.

Perhaps one of the least surprising findings about infrastructure PPPs is the fact that developmental benefits in terms of poverty reduction are far from automatic. This has been a special focus of former World Bank economist, Antonio Estache, and his critical assessments have found their way into some of the most powerful civil society critiques of PPPs. Estache and others point out that positive poverty impacts must be purposely designed into projects, and then monitored by regulators (Estache and Rossi 2004; Andrés, Schwartz, and Guasch 2013). Private partners do not typically pursue these benefits without substantial incentivization by governments and donors.

Governance problems can have significant negative impacts on PPP project development and oversight. Governments must play a strong role in PPPs, but often the ultimate justification for doing a project as a PPP is the weakness of host government institutions and their lack of skilled staff. PPP units can help, but cannot be expected to work more effectively than other existing governmental agencies. It is not always an exaggeration to say that a government capable of fully playing its role in designing, developing, implementing, and regulating PPPs is probably better off using traditional public procurement to achieve the same objectives. This supports Klein’s point that well-run public companies match the performance of private firms in regulated sectors.

The bigger the PPP, the more prominent are all of these problems—“bigger is better” does not seem to apply to these kinds of projects. Part of the problem is simply the size of the project, but doing a project as a PPP accentuates the problems created by size. This is the reason why transformational PPPs are so rare, and existing projects like Inga III have encountered so many problems. But the best alternative to a transformational PPP is not necessarily a project done via traditional public procurement. It is scaling them down to smaller projects, or a collection of smaller projects, done as either public or private projects. Smaller projects reduce the overall investment fragility of these undertakings, making them more easily financeable. What still seems unclear is why the G20 and other international groups continue to promote mega-PPPs as solutions to infrastructure problems in poor countries. Civil society groups seem to have taken the lead in criticizing the G20’s approach (Alexander 2013). But despite the fact that these groups now routinely cite studies making up the emerging evidence-based critique of PPPs, their opinions have had no noticeable impact on G20 discussions.

If PPPs continue to account for 15 to 25 percent of infrastructure investment, this suggests that governments and their development partners may be finding some situations in which conditions are right for PPPs to provide value for money. The emerging evidence-based critique of PPPs suggests the type of conditions
required, but these are not the same ones envisioned in the 1990s. It is no longer assumed that self-sustaining PPPs that fully cover all operating and capital costs are workable and desirable in a large variety of infrastructure service delivery situations in poor countries. The World Bank long ago stopped advising governments that were granting concessions to insist on full cost-recovery tariffs, as it did in the 1990s (Kerf et al. 1998).

The evidence-based critique of PPPs suggests that compared with the traditional PPP model promoted in the 1990s, successful PPPs today tend to be hybrids, combining some elements of traditional PPPs with those of consulting or EPC contracts. These hybrids involve less of a role, and lower risks, for private sector operators and financiers, and more of a role (and more risks) for governments and their development partners. This shift in roles is evident across the spectrum of criticisms discussed in this paper: (i) “blended” or subsidized finance now plays a much stronger role in ensuring private sector profits from PPPs; (ii) project preparation is no longer left solely to private partners, but is increasingly paid for and managed by governments and donors; (iii) significant amounts of private finance are available only if governments and MDBs provide guarantees and other risk-mitigation mechanisms and share the financing burden using public or concessional money; (iv) developmental benefits are achieved when projects are designed to include them, and this design work is no longer left to the private sector; and (v) governments must play a strong role in the PPP project development and oversight, but improving governance in poor countries typically requires considerable amounts of funding and pressure from donors and MDBs. In situations where even hybrid projects are difficult to carry out, mainly in the poorest countries or with mega “transformational” scale projects, PPPs have not been very successful, and are no longer frequently attempted.

Notes

1. This database defines “PPI projects” to include management contracts, utility privatizations, and merchant projects, as well as projects more widely thought of as PPPs.
2. In a 1998 publication that asked authors to speculate on the future of MDBs like the World Bank and EIB, Klein “looked back” from a 2044 vantage point and noted that “…the private provision of most economic and social services rendered the funding and guarantee functions of the World Bank group largely superfluous,” (Klein, 1998).
3. Examples are Africa50, established by the African Development Bank, and the World Bank Group’s Global Infrastructure Facility (GIF), both of which emphasize project preparation as well as financing.
4. Wind and solar power are much more variable than hydropower, and cannot provide the base load capacity that most developing countries need. Thus, this comparison between large hydropower and wind/solar is somewhat unfair. But when combined with small hydropower plants or gas-based generation, wind and solar could dramatically reduce the need for a massive hydropower investment in a country like DRC, especially if the primary objective is increasing energy access for the largely rural population.

Leigland
References


European PPP Expertise Centre. 2014. Establishing and Reforming PPP Units: Analysis of EPEC Member PPP Units and Lessons Learnt. Luxembourg: European Investment Bank.


