**PPPs and growth in developing countries**

In many low- and middle-income countries, interest has been growing in forms of public-private partnership (PPP) in which private companies are contracted to design, build, finance and operate new social and economic infrastructure assets on behalf of government authorities (Farquharson et al., 2011). In some cases, non-asset related services (such as clinical services in hospitals, teaching in schools and custodial services in prisons) are also included in the ‘bundle’ of activities contracted out in this way (Sekiri et al., 2011). This adds an extra layer of complexity to a model that already presents tough challenges for policy-makers, especially in contexts of limited capacity. Despite this, there is a lack of clear guidance as to how PPPs can best serve policy-makers’ objectives such as better governance and higher growth. This article draws on theoretical and empirical research to address these questions.

**Theoretical foundations**

This paper focuses primarily on partnerships in which a private sector consortium (‘the operator’) commits to design, build and finance new or upgraded infrastructure, and may subsequently deliver a specified suite of services within those assets over the contract period. In this model, the operator assumes substantial financial, technical and operational risks, and receives a financial return over the life of the contract through a defined price for its services to be paid by the public sector and/or users. The payment is structured to cover the operator’s costs of production (including both technical and financial costs) and is made as services are delivered.

From an economic perspective the PPP model has three important features, namely that: (i) payments are made to the operator according to the operator’s performance in delivering the outputs that are specified in the contract, while decisions about the inputs associated with production are made by the operator; (ii) all inputs associated with production, including the design and construction of new assets, maintenance of those assets and the delivery of all ‘core’ and ‘non-core’ services over the contract period, are bundled together within a single transaction; and (iii) there is a sharing of the risks inherent in the production of the outputs.

The PPP model may serve governance objectives if the transfer of risks (e.g. those associated with the construction and availability of the assets and possibly the demand for those assets) enhances accountability in service delivery. The transfer of these risks may also serve economic objectives if this transfer results in the production of the contracted outputs at a lower cost than organisational alternatives (or, conversely, at a higher quantity and quality for the same cost). The case for using the PPP model resides in its ability to allocate risks more effectively than alternative procurement methods, thereby motivating a clearer focus on managing a project’s whole-of-life costs and the quality of its services. By bundling together a wide range of activities in a single contract, the private operator of a PPP has the potential for achieving substantial economies of scope. And because the price that the private operator receives for delivering services is fixed (or capped) it may also have a strong incentive to exploit this potential to lower its costs of production.

**Competition and price**

But what is the likelihood of achieving ‘reasonable’ prices through the PPP approach? Economic models tend to assume that the bidding processes are competitive, but this may not be the case in low- and middle-income contexts. If bidding is uncompetitive, prices will not be efficient (such that prices approximate marginal cost). Where a concentration in market share leads to a lack of competition in procurements, this may confer substantial advantages on bidding firms in bargaining with state authorities. Features of the procurement process such as (i) the number of bidders involved and (ii) the period and scope of exclusive, bilateral bargaining, are likely to have a material impact on competitiveness and hence contract prices.

One aspect of price that may be affected by the rigidities of the procurement process is the finance price – the rate of return expected by the operator’s equity – and debt-holders. On the equity side, the minimum return that will be acceptable to investors is its opportunity cost of capital, defined as the return observable on alternative investments in the same risk class. In finance theory, risk is normally measured from the perspective of an investor with a perfectly diversified portfolio. Computing the risk of a portfolio involves estimating the variance of the returns on individual assets and the extent to which they vary together, or ‘covary’. If the returns tend to move in opposite directions, this reduces portfolio risk, while if the returns on the assets move in the same direction, risk is increased. In a perfectly diversified portfolio, the risk on individual investments is eliminated and the variance of the portfolio converges on the covariance – i.e. the component of systematic risk.

Given that the returns to equity-holders on a PPP are unlikely to vary with other assets and asset classes (being primarily a function of its own performance on the contract) this model would suggest that the required equity return should be low. However, there is a general recognition among financial economists that, even if the above is a rational approach to calculating required returns, it is not an accurate description of real decision-making among investment practitioners. Recent evidence from the UK suggests that equity investors evaluate projects using corporate hurdle rates, based on
the opportunity cost of capital for their companies, rather than cost of capital benchmarks appropriate to their specific investments (National Audit Office, 2012). Corporate hurdle rates will normally be higher than is appropriate for PPPs because the level of risk associated with their other business activities (which are subject to substantial market risk) is higher.

In addition, equity returns are strongly influenced by the requirements of debt funders (PricewaterhouseCoopers and Franks, 2002). Lenders set minimum requirements for cover ratios—effectively the level of free cash flow that a project is required to maintain over and above the amount needed to make debt repayments—which have a strong influence on required returns. In projects in some developing contexts, in which lenders take a conservative approach to setting cover ratios, this requires higher equity returns than is implied by the level of risk borne by investors. Consistent with this, a succession of academic studies (e.g. Hellowell and Vecchi, 2012) have shown that expected rates of return to equity in health care PPP projects are consistently higher than is predicted by the standard finance theory approach.

Of greater significance for the economics of the partnership is the interest rate on the debt, as this will typically account for between 80–90 per cent of the total capital expenditure required for the project (Farquharson et al, 2012). For debt-providers, the focus of capital allocation and pricing decision-making is credit risk, i.e. the quantified possibility that the actual return on a loan may differ from that which the lender expects at the time that the loan is agreed, with the result that the lender incurs financial losses. Credit risk is the probability that the borrower will fail to meet the terms and conditions of the loan agreement. Part of the way lenders try to anticipate and manage the impact of credit risk is by charging a risk premium—a margin in the loan price above their own cost of raising funds (e.g. from depositors or the wholesale markets). Lenders will also consider the recovery rate, which is the proportion of the outstanding debt that will be recovered in the case of default.

As PPP contracts are underpinned by a government revenue stream (and perhaps also supported by multilaterals), it might be expected that credit risk, and thus interest rates, would be low. However, there are a number of reasons why, in real world markets, the determination of required interest rates on debt capital will depart from this simplified model. Since the collapse of Lehman Brothers in September 2008, even the mature infrastructure financing markets of Europe, North America and Oceania have operated in a context of a severe credit crunch that has had a major impact on the cost and availability of debt capital for infrastructure projects (Burger et al., 2009). Changes in financial sector regulation and concerns about the quality of assets held by banks have restricted long-term lending across the world. New Basel III stability ratios, in particular, make long-term loans expensive in terms of banks’ risk-weighted capital adequacy requirements. Risk premiums on loans in mature markets have tripled relative to pre-crisis norms (Hellowell and Vecchi, 2012), and this is expected to have a major impact on the cost and volume of bank lending in low- and middle-income countries (World Bank, 2011).

Historically, capital markets in developing countries have been shallow and ill-equipped to provide the long-term financing required for infrastructure projects. In addition to a shortage of domestic credit, the structure of the financial sector in these countries is a constraint on investment. Since shorter loan tenors imply higher annual payments of debt principal, most PPP projects will require an amortisation period of at least 15 years to be affordable (Hellowell and Vecchi, 2012). Hence, while long-term financing is essential, it is not available in developing countries where domestic banks typically hold only short-term deposits and other liabilities. In Sub-Saharan Africa, for instance, the longest available loan tenor is five years or less and, even where longer loan terms are available, commercial interest rates are typically high compared with high-income countries (Irving and Manroth, 2009). This discussion indicates that contract prices may be high in developing contexts—even when the ownership, bundling and risk transfer features of the partnerships approach are in favour of better governance and higher efficiency.

**Fiscal risks**

In most jurisdictions, the investments associated with PPPs are recorded off the government’s balance sheet, reducing their impact on measures of government spending and debt. Even though a PPP often generates a future liability for the public sector that is analogous to a sovereign debt commitment, the off-balance sheet nature of the associated investment may enable higher investment overall. This is likely to be attractive to policy-makers in low- and middle-income countries, where public spending limits constrain.

Allocation of risk should aim at reduced production costs and increased accountability in service delivery
the ability of governments to finance their development needs. Many countries – even those that have benefited from involvement in the HIPC and MDRI debt relief initiatives – are experiencing difficulties in retaining a sustainable level of debt in the wake of the global financial crisis. Fiscal constraints are a particular concern for those countries that must meet the conditions associated with IMF loans. Although the IMF has established new, more flexible facilities for low-income countries, conditions continue to focus on limiting the deficit by setting a ceiling on the level of net credit extension to the government.

Of course, some of the off-balance sheet investment may be pro-growth. However, the approach generates fiscal risks when a government has no long-term budgetary framework that adequately captures the recurrent expenditures associated with such investments (Monteira, 2007). In most low- and middle-income countries, even a Medium-Term Expenditure Framework involves a planning horizon of just three years (F Ischer, 2007). This implies that the main decisions on the project, including whether to sign the contract, are made perhaps half a decade before fees are actually charged. In this context, national-level policy-makers (and development financiers) may place undue emphasis on completing the transaction rather than on ensuring that the project’s economic benefits exceed the costs and that the recurrent (public) expenditures associated with the project are sustainable.

Conclusion

The PPP model may serve governance objectives if the contract with the private operator enhances accountability in service delivery, and economic objectives if bundling and risk-transfer lead to lower costs or higher/better quality output. However, constraints on competition, and certain rigidities in the capital markets, may compromise the achievement of these goals. In addition, PPPs may generate substantial fiscal risks, and in low- and middle-income contexts in particular the impact of these can be severe. It is important that there is adequate knowledge and motivation within government agencies to manage these fiscal risks judiciously.

REFERENCES


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