

Buyer Beware

A Critical Assessment of
Public-Private Partnerships
in Ireland and the Global South



Financial Justice Ireland (FJI) is a membership organisation working for global financial justice. This report was commissioned by FJI as part of the European Commission funded Citizens for Financial Justice project in September 2019.

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Contents

1	Foreword
5	1. Introduction
7	2. Promises and Pitfalls; A Critique of Public Private Partnerships
7	2.1 (Perceived) Deficiencies in the traditional procurement model
8	2.2 Economic Efficiency, Value-For-Money and the Use of PPPs
11	2.3 Obstacles to Achieving Better Value for Money under PPP
12	2.4 PPP Performance: The International Experience
13	2.5 PPP, Off-Balance-Sheet Financing and Public Finances
14	3. Public Private Partnerships in Practice
14	3.1 PPPs in High Income Countries; The Case of Ireland's National Broadband Plan
17	3.2 PPPs in Low Income Countries: Two Case Studies from Ghana
20	4. Conclusions & Recommendations
22	Annex 1: Glossary
23	Annex 2: Bibliography

Foreword

By Financial Justice Ireland

In May 2019 it was announced that the roll-out of the National Broadband Plan was set to cost the state approximately €2.97 billion euro. Despite this investment, it would not result in the state owning any of the infrastructure built under the plan. Coming after years of delays and months of Ministerial meetings, controversial private dinners and high profile resignations, this was far from the first controversy to emerge relating to the Irish state's use of Public Private Partnerships (PPPs).

In 2008, as the global financial crash began to take root in Dublin, a high profile Public Private Partnership worth €900 million collapsed. The contracted developer, McNamara Constructions, withdrew because projected profit margins had dropped. The collapse of the PPP caused delays lasting until this day to five separate inner city regeneration schemes, where public housing was demolished but has not yet been replaced.

Ireland's experiences are replicated in cases around the world. And yet the PPP remains a preferred option for the delivery of critical public infrastructure, both in many wealthy countries, and in lower- and middle-income countries in Africa, Latin America and Asia. Indeed, most prominently, the World Bank's 'billions to trillions' strategy made the use of PPPs, and other mechanisms for 'leveraging' private finance using public money, a bedrock of its policies for financing public infrastructure in the Global South.

Why?

The major justification given for this focus on PPPs is that the world faces an acute infrastructure gap. According to McKinsey (2016) the global investment requirement for the period 2016-2030 amounts to 3.8 per cent of global GDP, or an average of \$3.3 trillion per year. In the era of austerity, the private financing which can be accessed via the use of Public Private Partnerships is marketed as a panacea allowing governments to grow investment infrastructure without the associated debt.

This paper takes a critical look at the assumptions behind these justifications. It assesses the empirical research which has been undertaken in recent decades into the performance of PPPs, and looks at particular case studies of infrastructure PPPs in Ireland and Ghana, including the Irish National Broadband Plan.



Are PPPs proven to enhance value for money and economic efficiency?

Governments and economists base their support for PPPs on a number of assumptions, which lead them to believe PPPs will deliver more efficiency than traditional procurement. Primarily, they claim that by contracting a private company to manage the entire design, build, operation, maintenance and financing of a piece of infrastructure, the company will have greater incentives to save money, build a high quality product, and manage deadlines well. Otherwise, they themselves will bear the risk.

In reality, however, this often doesn't take place. The evidence shows that private contractors generally are not penalised for missing deadlines, or running over budget. And where the contractor hits a snag, they often simply renegotiate the original contract. A 2014 IMF report showed that 55% of all PPPs get re-negotiated. Effectively, this means that the risk remains with the state, regardless of what a contract might say on paper. And research also suggests that claims PPPs lead to greater innovation, transparency and competition are equally unsound. These shortcomings have been acute in many countries in the Global South. One examination of more than 1,000 Latin American PPP contracts in the late 1980s and 1990s found that 54.4% of contracts in the transportation sector and 74.4% of contracts in the water industry had been re-negotiated.

There are also significant doubts as to whether PPPs prove to be cheaper. The costs of bidding and tendering processes involved in PPPs often push prices up significantly. Monitoring of the private sector's performance in delivering a PPP can push up costs by as much as 25%. And borrowing is almost always more expensive for a private company than for a government; studies of the use of PPPs under the Private Finance Initiative (PFI) in the UK showed interest rates for the private financiers involved at 2-3% above the cost of government borrowing.

This report details one case in Ghana where a PPP to build and operate a water desalination plant resulted in such high costs that the state water company now makes a loss of US\$1.11 for each cubic metre of water which is produced. This is because it must maintain extremely high payments to the private operator, if water costs are to remain affordable to users. The PPP was supported by a World Bank investment guarantee of US\$179m.

Closing the infrastructure gap: There Is An Alternative

Separate to value-for-money arguments, a significant justification for the use of PPPs is the low up-front costs involved for governments. The theory goes that PPPs enable governments to deliver the same services, without raising a deficit, because the up-front finance is provided by the private company contracted under the PPP.

However, the full cost – plus profit – of the infrastructure will always eventually be paid by the state and/or service users – just over a longer period of time. And often, by 'hiding' the true cost of the investment off the government balance sheet, there is far less transparency about rising costs, sparking unpredictable debt crises, particularly in poorer countries. In Ireland, the projected future liability in respect of PPP contracts that were signed to date and in the pipeline is well over €9 billion.

In short, significant evidence has emerged that PPPs are far from a panacea, in terms of either finance or quality. And neither is PPP the only model available to us to carry out this investment. State-owned enterprises and other public investment vehicles continue to play a major role in providing vital infrastructure for countries at different stages of economic development. They allow full ownership and democratic control of both infrastructural assets themselves, and, more importantly, the vital public services which those assets are intended to deliver.

In countries in the global south, the 'optimal conditions' required to even theoretically benefit from PPP are undoubtedly weaker – the ability to ensure competition between multiple qualified, competent bidders; skilled and well-resourced government auditors and civil servants; strong governance mechanisms to ensure accountability and transparency.

In the absence of any concrete evidence that PPPs offer cost-savings, efficiency or higher quality when compared with public investment models, it makes little sense to rely on them as a primary investment model in a country such as Ireland, let alone promote them as a financing model for the Global South.

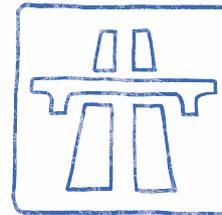
PPPs by numbers



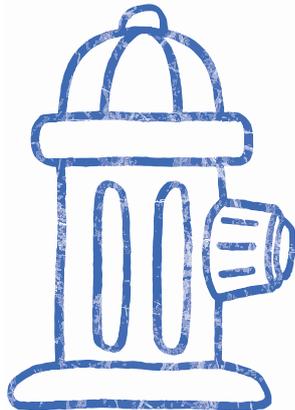
According to McKinsey (2016) the global investment requirement for the period 2016-2030 amounts to 3.8 per cent of global GDP or an average of **\$3.3 trillion** per year



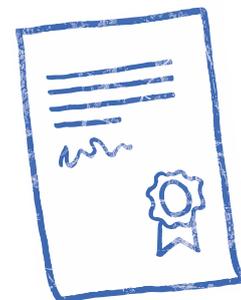
55% of all PPPs get re-negotiated



One third of Ireland's c.1270km of motorway/dual carriageway network has been delivered by **13 road PPP contracts**



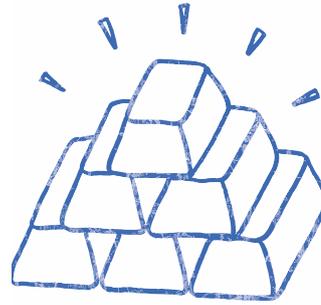
74.4% of all PPP contracts in the water industry were re-negotiated, according to a 2004 study from Guasch on 1,000 Latin America PPP contracts in the late 1980s and 1990s.



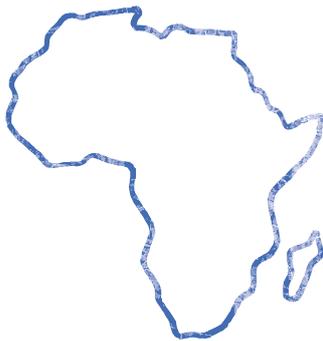
40% of PPP contracts in the water services sector were cancelled before completion



Torres and Pina (2001) estimate that the monitoring of the performance of the private sector partner in PPP type of arrangements entails extra costs of **3 to 25%** of the contract value



In 2017 the IMF published comparative data showing that Ireland's PPP capital stock (as a percentage of national income) **exceeded the average** recorded for EU and advanced economies. Moreover, Ireland's PPP capital stock ranked **5th** in the EU-14 behind Portugal, UK, Greece and Spain ¹



Africa faces a massive infrastructure gap of **US\$93 billion** per year.



Between 2015 and 2019, the estimated cost to the Irish Exchequer of the subsidy required to roll-out the National Broadband PPP sky-rocketed from €800million to a possible **€2.97 billion** ²

1. IMF (2017) Ireland: Technical Assistance Report-Public Investment Management Assessment, IMF Country Report No. 17/333, Washington D.C.: International Monetary Fund.
2. As of July 2019, the Exchequer cost is expected to be in the range of €2.1bn to €2.97bn. The latter amount is inclusive of VAT and contingencies.

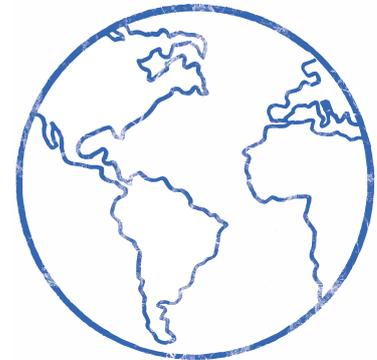
1: Introduction

Quality infrastructure is a key driver of economic growth and improved standards of living. Public infrastructure in transport, water, energy, schools and hospitals is an essential element in all societies. Yet, every region of the world faces an acute infrastructure gap. According to McKinsey (2016) the global investment requirement for the period 2016-2030 amounts to 3.8 per cent of global GDP or an average of \$3.3 trillion per year. Africa faces a massive infrastructure gap of US\$93 billion per year. Moreover, if there is a continuation of the current global trajectory of underinvestment the global shortfall will be 11 percent, or \$350 billion a year.

Closing infrastructure gaps poses numerous public policy challenges. Governments must make decisions about how to finance and fund infrastructure investment as well as choosing between different models of ownership, regulation and procurement. In addition, efficient infrastructure investment requires the development of institutions that govern all stages of the infrastructure project cycle covering aspects such as project appraisal and selection, procurement, project management and regulation. Governments face a host of choices in relation to these complex issues but the principal decision concerns regulatory options which include state-owned enterprise (SOEs), different types of public procurement and full privatisation.

Since the mid-twentieth century the use of SOEs, as vehicles for public investment, has been widespread. Although privatisation policies resulted in significant reductions in the share of public investment accounted for by SOEs, they continue to play a major role in delivering public infrastructure and services around the world. In 2017 it was estimated that that central governments (excluding China) are full or majority owners of 2,467 commercially oriented SOEs. In aggregate terms these enterprises are valued at over USD 2.4 trillion and they employ over 9.2 million people (OECD, 2017).¹

Notwithstanding the enduring nature of public enterprise, the era of privatisation that commenced in the late 1970s involved the emergence of several types of reform that sought to increase the role of the market and private production of public services. In the context of infrastructure, public-private partnerships (PPP) have become an important part of the toolkit governments are employing in order to improve infrastructure policy. Since the Private Finance Initiative (PFI) was launched by the government in the UK in 1992, it has led the way in the adoption of PPP with over 700 projects financed by the private sector between 1992 and



The global investment requirement for the period 2016-2030 amounts to an average of \$3,300,000,000,000 per year

2017. Elsewhere in Europe a smaller number but still substantial few hundred PPP deals were finalised over the same time period. In low and middle income countries (LMICs) nearly 5,000 private infrastructure projects were completed between 1984 and 2013 although these included a variety of private sector participation models including concessions, greenfield projects, lease contracts and divestiture of public assets (Fitch Ratings 2013).

Multilateral organisations such as the World Bank are strong advocates of PPP especially in LMICs. Nevertheless the international experience over the last thirty years shows that the use of PPPs has been challenging and often problematic. To date, PPP has accounted for 10 to 15% of public infrastructure investment in OECD countries.² Although substantial, this level of investment is much less than what was envisaged in the 1990s and the market for public private participation in infrastructure (PPIs) has not been expanding. Also, in the UK – which has been the pioneer of PPPs – the level of PPP investment has almost stopped. Experience has shown that PPP projects have frequently proved difficult to implement and numerous PPP deals have gone sour and failed to achieve policy objectives. Governments considering the use of PPP should therefore exercise a degree of caution.

1. OECD, 2017, The Size and Sectoral Distribution of State-Owned Enterprises, Paris: OECD Publishing
2. The OECD is the Organisation for Economic Cooperation and Development consisting of 36 mostly high-income countries.

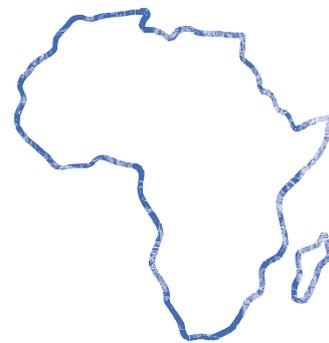
Defining Public Private Partnerships

Co-operation between the public and private sectors is nothing new but in recent years the label public-private partnership (PPP) has been commonly applied to a host of different forms of cooperation such as contracting out services (e.g. refuse collection), and urban renewal regeneration initiatives. The type of PPPs covered in this paper are long-term infrastructure contracts. These differ from traditional (or conventional) procurement models where separate contracts are agreed for different stages of the project life-cycle such as design, construction or operation.

A typical infrastructure PPP involves a long-term contractual agreement between the public and private sectors in which the latter agrees to construct a given asset (e.g. a hospital or road) and provide related services for the duration of the contract (typically 20–30 years). This form of PPP is characterised by a number of notable features. First, PPP contracts are typically agreed for a bundle of activities that may include the design, build, operation and financing of a given project. Secondly, the PPP contract includes provisions for the sharing of project risks. Such risk-sharing provisions, which are not common under traditional procurement methods, are designed to provide incentives for efficient and effective delivery of the asset and related services. An important feature of many PPPs is that they involve a significant element of private finance whereby the private contractor finances the investment through private borrowings or its own resources (debt or equity). Fiscally constrained governments can be attracted to such PPPs where the private contractor finances some or all of the investment in infrastructure which is funded (paid back) by a combination of Exchequer funding or user-fees (e.g. road tolls).

A range of different acronyms have been adopted to describe such PPPs. These include DBO (Design, Build, Operate), DBFO (Design, Build, Finance and Operate) and concession PPPs with the precise label applied depending on the exact roles and distribution of risks between the public and private sectors. Infrastructure PPPs, which command the focus of this article, have become increasingly prevalent over the last two decades as governments around the world grapple with the challenge of providing much needed infrastructure. However, there is evidence that in countries such as the UK and Ireland, where PPP has been ex-

tensively used, there has been a re-think on the merits of PPP. Experience in these countries has highlighted the pitfalls of PPP and raises serious questions about the scope for PPP to deliver quality infrastructure and services more efficiently than traditional approaches to procurement.



Africa faces a massive infrastructure gap of US\$93 billion per year.

This paper examines the PPP model of infrastructure procurement. It looks at the rationale for using PPP and critically examines this rationale by drawing on empirical evidence. It explores the factors that have contributed to the evident degree of disenchantment with PPPs in several countries at different stages of economic development. It presents a detailed case study of PPP procurement in Ireland which has been a global leader in PPP investment in relative terms. The case examined – the National Broadband Plan – has been beset by problems that illuminate the challenges faced when implementing PPP. As these challenges are exacerbated in the LMIC context the paper also examines two cases of PPP procurement in Africa. The cases from both the high-income country (HIC) and LMIC settings show that governments should be wary of the PPP approach as it cannot deliver on the promises of its advocates unless they are carefully used and there is sufficient capacity to design, implement and manage PPP contracts. Also, it is essential that governments do not use PPPs to achieve short-term political goals while storing up enormous debts for future generations.

2: Promises and Pitfalls: A Critique of Public Private Partnerships

2.1: (Perceived) Deficiencies in the traditional procure- ment model.

It is important to recognise that PPP is just one of a number of approaches that governments may adopt in order to deliver physical infrastructure and related services (for example, a hospital and medical services). When governments consider how they will arrange the delivery of new infrastructure they can choose between different options. We can think of those options residing along a continuum that range from a state-led approach to a purely market-based approach. In most high-income countries governments have made extensive use of public enterprises (state-owned and municipal) as vehicles for the provision of vital infrastructure.

Procurement from the private sector has also been used. Conventional (or traditional) procurement represents a shift away from the state-led approach. Under conventional procurement of large infrastructure projects (for example, motorways, power plants, government buildings) the public sector normally procures assets, not services, from the private sector. Hence, separate procurement processes may be conducted for different elements of a given project such as the design and construction of the asset. Once the asset is built the public sector takes control of its operation and the responsibility for providing the relevant services. PPP represents a further shift away from the state led approach (towards private markets) as the private contractor is assigned responsibility for providing an infrastructure asset and the related service.

This chapter explores the main justifications for adopting the PPP model, and provides a critique of the evidence for these justifications.

Problems with traditional procurement have been one of the main justifications for the emergence of PPP as an alternative approach. A number of influential studies have demonstrated serious problems with conventional procurement models due to time and

cost overruns as well as revenue shortfalls. Danish academic Bent Flyvbjerg has led a number of these studies including the examination of 258 large transport infrastructure projects covering 20 countries (Flyvbjerg et al., (2002). The vast majority of these projects were procured by conventional means and costs were found to be underestimated in 90% of cases. Another major study, published by consultants Mott MacDonald (2002) examined the outcome of 50 large infrastructure projects in the UK. They reported that time overruns exceeded the estimated duration by 17% and capital costs exceeded estimated by 47% on average.

The list of projects characterised by these problems is extensive and is drawn from several countries over a number of decades. Examples (including some PPPs) highlighted by Flyvbjerg (2009: 348) include: America Boston's Big Dig, LA's subway, San Francisco's Bay Bridge, Denver's new International Airport, and the New Woodrow Wilson Bridge in Washington, DC. In Britain, the London Tube public-private partnership, the West Coast Main Line upgrade, the Railtrack fiscal collapse, the Millennium Dome, the Scottish parliament building, the Humber Bridge, and the cost overruns on the 2012 London Olympics have been major boondoggles.

PPPs are proposed as a superior alternative approach to traditionally procurement. The basic argument is that PPPs work better because of private sector management and long-term contracts that incentivise efficient delivery of quality infrastructure. Almost 30 years of international PPP experience raises serious doubt about this basic proposition. The following sections present a critical analysis of the arguments in favour of PPP by examining the conditions that must hold if PPP is to achieve its ascribed objectives. It also refers to relevant empirical evidence as part of the critique.

2.2: Economic efficiency, Value-For-Money and the use of PPPs

The adoption of PPP is often justified on the grounds of economic better value for money (VFM) compared to conventional procurement.³ A significant body of existing economic literature covering public procurement (broadly) and PPPs (specifically) has offered insights into the characteristics of PPP and how they may or may not encourage VFM. The principal arguments that support PPP in terms of VFM relate to PPP characteristics such as bundling, risk transfer, competition, and superior innovation due to output specification. However, detailed scrutiny of these arguments exposes important weaknesses that undermine the rationale for PPP. Critical analysis of these arguments reveals how the justification for PPP depends on conditions that do not always prevail in practice.

2.2.1: Bundling and Risk Transfer

Bundling the different stages of the project life-cycle into a single contract is one of the main characteristics of PPP contracts. When the private sector is contracted to design, build, operate, maintain and finance the asset, it is incentivised to consider the implications of its actions at different stages of the project (Iossa and Saussier, 2018), the assumption goes. For example, it encourages a whole-life costing approach as well as innovation at the building and operation stages. In addition it incentivises the contractor to meet construction deadlines as payments may not be made until the asset is in operation.

Construction and time schedule risk are one of the standard risks of all infrastructure contracts. Other categories of risk include: statutory/planning risk; design risk, operation risk, availability risk; demand risk; legislative (regulatory risk); financial risk and residual value risk.⁴ Compared to traditional procurement, the bundling feature of PPPs creates greater scope for the contractual allocation of these risks thereby encouraging greater efficiency. By transferring risks that are normally retained by the government under conventional procurement, to the private sector, incentives are created for the private sector to increase returns by reducing costs and increasing efficiencies.

Examining the evidence: Pitfalls associated with Bundling / Risk Transfer

Notwithstanding the potential positive impacts of risk-sharing a number of important points must be borne in mind. First, **achieving optimal risk-sharing depends on contract design and requires signif-**

icant expertise and resources on the part of the public sector. Also, complex infrastructure contracts cannot account for every event and contingency and are therefore incomplete. The contract may impose too little or too much risk on the private sector. If too little risk is transferred the required incentive effects may not materialise. If too much risk (or inappropriate risks) are transferred possible downsides include reduced competition for contracts contract failure or re-negotiations.

Second, besides the difficulties in relation to designing optimal risk-sharing clauses in PPP contracts, a key issue is the **de facto transfer of risk once projects commence.** A danger in this respect is that public sector clients might be reluctant to enforce risk transfer agreements. There are a host of examples where public sector clients have failed to penalise PPP contractors for underperformance with the result that risks are ultimately passed on to service users or their insurers.⁵ In some instances this may be justifiable in the interest of sustaining cooperative relations in the context of partnership agreements (Parker, 2009). There is however a trade-off between the benefits of “letting things go” and the loss of incentives contained in the risk transfer agreement. This trade-off presents one of the principal pitfalls involved in the PPP procurement and poses substantial challenges for public sector clients involved in managing PPP contracts.



55% of all PPPs get re-negotiated

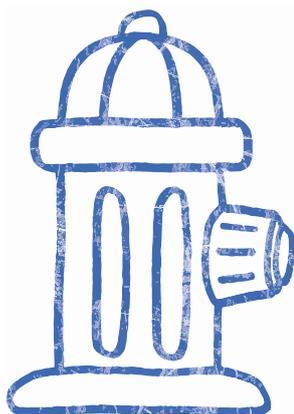
Third, a potentially serious consequence of inefficient risk-allocation is that **the management of the contract becomes more difficult resulting in contract re-negotiations or terminations.** A report by Quyranne (2014) of the IMF Fiscal Affairs Department reported that 55% of all PPPs get re-negotiated. In addition, PPP contracts were re-negotiated, on average every two years, and in the majority of cases, these resulted in an increase in tariffs for the users (Vervynck and Romero, 2017). These findings were consistent with those reported by Guasch (2004). In his examination of more than 1,000 Latin American PPP contracts

3. The economics literature mainly focuses on the performance of PPP in terms of economic efficiency. The wider PPP literature tends to consider PPP performance in terms of Value for Money. This paper uses the terms efficiency and VFM interchangeably.

4. For a full description of these risks see Iossa and Saussier (2018).

5. Reeves (2008), Lonsdale, Iossa and Saussier (2018); Parker (2012).

in the late 1980s and 1990s it was found that 54.4% of contracts in the transportation sector and 74.4% of contracts in the water industry had been re-negotiated. Importantly, most cases of contract termination or re-negotiation were attributable to contract design failures in relation to risks. It should be noted that contract re-negotiations are also pervasive in developed countries. There is evidence from the US and EU showing that the challenges associated with assessing and allocating risk are onerous and problems in this regard has led to contract revisions (Estache and Saussier, 2014; Parker, 2009; Engel et al, 2014) and unanticipated financial burdens on the public sector (Renda and Schrefler, 2006).⁶



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Fourth, **the transfer of risk to the private sector increases the cost to government as the contractor will add a risk premium.** Boardman and Vining (2012) make the point that “private sector participants often require high premiums to accept risk or may not be prepared to accept certain kinds of risk at all” (2012: 124). There is solid support for this contention. Edwards et al. (2004), for example, concluded that in the UK, the Highways Agency paid a 25% premium on construction cost on its first four PPP road projects. Similarly, Blanc-Brude et al. (2009), in their examination of European road project PPPs undertaken between 1990 and 2005, indicated that the premium on construction prices for PPPs was approximately 24% higher than for traditionally procured roads. More recently the UK National Audit Office (2018) in its report on the private finance initiative (PFI) and PF2 questioned the size of risk premia for risk transfer. It quoted a paper prepared for HM Treasury in 2012 that concluded “there is an inbuilt incentive to price cautiously for lifecycle risk, requiring the build-up of significant reserves. This may not necessarily result in optimum value for money for the public sector, although data illustrating out-turn costs for lifecycle is scarce” (2018:18). It also reported that (a) bidders were currently pricing the cost of insurance at a 20% premium to the market price in order to provide protection against future price rises and that (b) investors may also factor the risk of tax increases

into their bids at the outset even though these “risks may not materialise and in some cases subsequent changes, such as reductions in corporation tax rates, have increased rather than reduced investor returns” (2018:18).

In summary, the bundling and risk-sharing features of PPP make it a theoretically appealing alternative to traditional procurement. However, there is an abundance of evidence showing that the benefits that may be derived from these features are not guaranteed to materialise. This depends largely on whether contracts are designed and implemented in an optimal fashion which in turn depends on the quality of wider institutions which varies from country to country.

2.2.2: Competition for Contracts and the Tendering Process

The traditional economic case for competition in markets has, in the context of procurement, been extended to competition for markets. There is now a significant body of evidence to suggest that the mere exposure to competition of in-house service providers is sufficient to improve product and service quality as well as achieve cost-savings (Domberger and Jensen, 1997). It should be noted however that a number of factors could serve to limit the degree of competitiveness for contracts. These include corruption, collusion between bidders and loss-leading behaviour where bidders submit cheaply priced bids at less than the true cost of providing the asset and service.

Examining the evidence: Pitfalls associated with Competition & the Tendering Process

Estache and Saussier (2015) show that corruption in public procurement (not just PPPs) is an ongoing problem in developed and developing countries. **They cite a recent survey of 8 EU countries which found that the overall direct cost of corruption in public procurement in 2010 amounted to about 19% of the estimated value of tenders for public expenditures on works, goods and services published in the EU electronic tendering system.** They suggest that PPPs offer an opportunity to reform procurement processes and increase the degree of competition for contracts but the “upshot is that PPPs help, but they are not a sufficient condition to ensure improvements in efficiency as compared to pure public provision” (2014: 5).

The problem of **loss-leading behaviour** (underbidding for contracts) has arisen in the UK where PFI contractors Jarvis, Amey and more recently Carillion have encountered severe financial difficulties for reasons including underbidding and mispricing of PFI contracts.⁷ Another factor that reduces potential competition is the cost of bidding. Given the integrated nature of PPP projects, bids are necessarily complex and require significant investment. For example, O’Rourke (2003) estimated that in PPP contracts in the Irish roads sector, bid costs alone ranged between €2m - €4m, (for projects with predicted values ranging from €340m - €550m). The scale of these costs plus the risk of failing to win contracts can be a significant deterrent for potential bidders.

6. Cited in Iossa and Saussier (2018).

7. Standard and Poor’s Global Ratings (2018)

Overall, the degree of competition is a crucial determinant of the efficiency of the PPP approach. The reality is that there are several obstacles to ensuring real competition for contracts as few firms have the capacity to tender for PPP contracts. When competition is limited the risks for the public sector increase as the bargaining power of private contractors is strengthened thereby increasing the scope for opportunistic behaviour before and after contracts are agreed.

2.2.3: Innovation and Output Specification

Another driver of VFM under PPP is the scope of the model to encourage private sector innovation thereby improving the dynamic efficiency and quality of public services. The key feature in this regard is output specification. Proponents argue that the adoption of PPP facilitates a move from away from detailed input specification, which characterises traditional procurement. For example, where the private sector is contracted to build a school in Ireland they do so in accordance with specific norms relating to classroom size and facilities. Under PPP the public sector provides an output specification wherein they specify the requirements for the service (rather than the asset) to be provided. This allows competing bidders the scope to create innovative solutions that may offer better VFM.

Examining the Evidence: Pitfalls in relation to Innovation and Output Specification

Evidence supporting the advantages of PPPs in terms of innovation and better quality infrastructure is scarce. Most of the available research actually suggests that the move to output specification is more illusory than real.

For example, it is commonly accepted that the scope for innovation in the case of roads projects is extremely limited. Moreover, evidence from the education sector in the UK and Ireland has shown that there is still heavy reliance on input specification. On the basis of evidence gathered from tracking a new High School project, Ball et al (2000 and 2001) concluded that there was a movement away from output specification to a more input-oriented approach. They add that before submitting their bid, the private sector was advised of the acceptability or otherwise of particular design solutions through informal financial meetings with the local authority. Similar findings were recorded in the case of a PFI hospital where the apparently innovative design of a new PFI hospital was based on another recently completed hospital, built under traditional procurement, with the same architect employed on both projects.

2.2.4: Transparency

The efficiency of all models of infrastructure procurement can be improved by transparency. In practical terms this covers full disclosure of details regarding: the appraisal of proposed projects (for example cost-benefit analysis), the appraisal of the PPP option (usually VFM assessments); tendering documents

(including bidding criteria and scoring mechanisms); contract documents and performance evaluations.

The benefits of transparency include accountability and lower fiscal costs. The availability of information is necessary if governments, public officials and private contractors are to be accountable for their decisions and thereby incentivised to act in the public interest. Accountability is of particular relevance in the context of PPP. The shift towards greater private sector involvement in public service delivery weakens the thread of accountability between citizens, parliament and those responsible for service delivery (executive government). A key challenge in the implementation of PPP is therefore to establish mechanisms that improve accountability. Transparency is vital in this regard and the advantages of making PPP arrangements more accessible and assessable are widely recognised (Barrett, 2003, Demirag and Khadaroo, 2008, Forrer et al., 2010). The international experience suggests that PPPs are characterised by serious shortcomings vis-à-vis expectations in this regard. Among the problems identified in the PPP literature are limited transparency and complex adjustment formulae (Hodge and Greve, 2007), corruption, the curtailment of potential improvements in transparency through the use of commercial confidentiality clauses and inadequate accountability downwards to users through the measurement of user satisfaction (Maltby and Gosling, 2004, Shaoul et al., 2006). These problems critically undermine the justification for PPP. The lack of openness about PPP deals including relevant financial details such as returns to PPP investors is such that it calls the legitimacy of PPP into question.

Fiscal costs can also be lowered by transparency. Countries often fail to disclose fiscal aspects of PPPs such as government guarantees and contingent liabilities. Palcic et al (2018) show the difficulties in accessing basic accurate information about the true capital cost of road PPPs in Ireland as well as the amount of public finance committed to these deals. Insufficient transparency makes fiscal policy decisions less informed. In addition it encourages governments to commit resources to projects that may not be ultimately affordable or financially sustainable over the life of PPP contracts. Vervynck and Romero (2017) provide several examples of countries (including the UK, Ghana, Tanzania, Uganda, Peru and Lesotho) where PPPs have swallowed up the budgets of public authorities and left lasting negative fiscal legacies.

Overall, there is ample evidence to suggest that the case in favour of PPP is far from watertight. Close examination of the rationale for PPP shows that several conditions must be met if PPP is to deliver on its promises. Meeting these conditions is easier said than done and there is now a substantial body of evidence which shows that the practice of PPP procurement frequently fails to meet them.

2.3: Obstacles to Achieving Better Value for Money under PPP

Even if the market for PPP contracts is competitive and risks are optimally allocated there are other obstacles to the achievement efficiency and VFM, namely transaction costs and the cost of private finance.

Transaction Costs

When considering VFM/Efficiency the critical question is whether the total cost of PPP is lower than the counterfactual of traditional procurement (Boardman et al, 2005, Vining et al, 2005). Total cost equals production cost plus transaction costs (Williamson, 1975) where the latter refer to the costs of establishing and maintaining a partnership; "more specifically, they encompass legal, financial, and technical advisory costs incurred by both public and private sectors in the procurement and operational phases of a project" (Dudkin and Valilla, 2005). There are good reasons for believing that transactions costs are higher under PPP compared to traditional procurement. It is generally accepted that transaction costs are likely to be high when the agreement is characterised by investment in specific assets, complexity, uncertainty and low levels of competition (Williamson, 1975, 1985). Such conditions are likely to apply in long term contracting settings such as PPP.



Monitoring of the performance of the private sector partner in PPPs entails extra costs of 3 to 25 % of the contract value

Dudkin and Vallila (2005) estimate the magnitude of transaction costs under PPP. Using data on 55 contracts across five sectors in the UK they conclude that ex ante transaction costs alone amount on average to well over 10% of the capital value of the project. The public sector and the winning bidder's costs reach some 7%. In addition, the aggregate costs incurred by failed bidders can be estimated at some 5% of the project's capital value, bringing the total procurement phase transaction costs to well over 10%. The authors

do not estimate transaction costs incurred over the operating stage but they do note that these can also be significant. They quote Torres and Pina (2001) who report some evidence related to the US, noting that it has been reported that the monitoring of the performance of the private sector partner in PPP type of arrangements entails extra costs anywhere between 3 and 25 per cent of the contract value. As a consequence, it has been recommended in the US context that monitoring costs of 10 per cent of the contract value be budgeted in such arrangements.

Later studies support these findings. Soliño and Gago de Santos (2010) used data on projects in the EU to estimate that overall transaction costs accounted for between 3-10% of the capital value of PPP projects (depending on whether the negotiated or competitive dialogue model of procurement is adopted). Also, Thomasson et al (2016) used a case-study approach and found that the ex ante transaction costs amounted to 7-8% of total project cost.

It should be recognised that these studies do not reveal insights into the magnitude of transaction cost differences between traditional public procurement of investment projects and PPPs. However it is widely recognised that factors such as the long-term nature of PPP projects, the inclusion of private finance and longer duration of PPP tendering periods increase the relative level of PPP transaction costs thereby creating an obstacle to the achievement of VFM/efficiency in PPPs.

Potentially Lower Financing Costs for the Public Sector

The second major barrier to achieving greater efficiency using PPP is the relatively higher cost of private finance compared to the cost of government borrowing (Ball et al 2001, Hodge and Greve, 2007). It should however be acknowledged that there is considerable debate about the true difference between the borrowing costs incurred by the government and the private sector. For example, Bettignies and Ross (2009) and Parker (2012) advance a number of arguments that suggest the differential is illusory. They argue that governments and private companies mainly borrow from the same financial markets and that governments are only able to raise money at a slightly lower rate because it has a lower risk of default. They further argue that when this default risk is taken into account, the effective borrowing rates of government and the private sector are not much different.

The alternative view is described by Boardman et al. (2010) who present a number of arguments. For example, they point out that short-run financing of PPPs might come from private capital markets but most government projects are ultimately funded via taxes (often paid by future taxpayers). They make the important point that "taxes come primarily from reduced consumption rather than reduced investment. Because it can be argued that consumption rates of interest (technically, the marginal time preference) are relatively low, the actual cost of often future taxpayers government funds is lower than the private sector's borrowing

costs. One can also argue that because government has a more diversified portfolio of projects than any private sector consortium, the risk to government is lower and consequently the cost of funds is lower" (2012: 130-131).

The PPP experience (especially in the UK) supports the view that costs of private finance have been higher than cost of government borrowing. Early studies of the PFI in the UK found that private consortia faced significantly higher interest rates in the 2% – 3% range (Hall, 1998, Heald, 1997). This interest rate differential results in substantially higher whole-life costs under PPP. Parker (2012) described how the global financial crisis resulted in increases in the costs of debt financing by between 20 to 33%, and the overall financing costs have increased the annual contract charge under typical PFI projects by 6 to 7% (2012: 32). In addition the the House of Commons Treasury Select Committee (2012) concluded that the long-term expense of PFI deals was now much higher than conventional forms of public sector project financing as a result of the international financial crisis. The cost of capital for a typical PFI project was put at over 8%, or twice the rate on long-term government borrowings. Evidence to the Select Committee suggested that paying off £1bn of debt incurred through PFI may cost the taxpayer the equivalent to a direct government debt of £1.7bn.

More recently the National Audit Office in the UK added to the growing consensus regarding the higher cost of private finance. It reported that data collected by Infrastructure and Projects Authority (IPA) "on PFI and PF2 deals entered into since 2013 show that debt and equity investors are forecast to receive a return of between 2% and 4% above government borrowing. However, some 2013 deals, agreed when credit market conditions were poor, projected an annual return for debt and equity investors of over 8%; this was more than 5% higher than the cost of government borrowing at the time" (2018: 14).

Overall, when the magnitude of PPP transaction costs and the relatively higher cost of private finance are taken into account, it becomes clear that the PPP approach to infrastructure procurement must generate significant efficiencies if it is to improve upon traditional procurement models.

2.4: PPP Performance: The International Experience

Given the propositions in favour of PPP as well as the associated pitfalls it is instructive to examine the accumulated evidence regarding the international experience with PPP over the last thirty years.

Whereas supporters of PPP can point to numerous examples of important infrastructure projects that have been delivered using PPP there is a scarcity of reliable evidence that shows PPP has consistently met the objective of delivering quality infrastructure efficiently. In their forthcoming book, leading PPP academics Graeme Hodge and Carsten Greve review the available evidence and find that "rigorous performance assessments in terms of the public interest has been surprisingly limited. Independent analysis has been even scarcer. This has left our judgement as to the performance of PPP disappointingly open". Overall, the evidence is weak and mixed.

One of the reasons for Hodge and Greve's conclusion is the lack of reliable data which is available to conduct these studies. In this respect it is instructive to examine the studies by national auditors that have access to better information. Hodge and Greve comment that there is no doubt that auditors have been evaluating PPP experiences more harshly in recent times. They quote the National Audit Office (NAO) (2009: 6) in the UK, which warned PFI was 'one of many routes of delivery', and that while it 'can work well . . . [it was] not suitable at any price or in every circumstance'. The NAO found financial modelling which was 'error-ridden and given undue influence as the basis for decisions', and in which 'too much weight [was] placed upon subjective judgments of risk, which can easily be adjusted to show private finance is cheaper' (National Audit Office 2009, 8).

In 2018 the European Court of Auditors published a study of 12 EU co-financed PPPs in France, Greece, Ireland and Spain in the fields of road transport and Information and Communications, Technology (ICT). They found that the use of PPPs risked insufficient competition and took longer to procure compared to traditional procurement. They were also found PPP to be subject to considerable inefficiencies in the form of delays in construction and major cost increases. In addition, the risk allocation between partners was "inefficient, incoherent and ineffective while high remuneration rates (up to 14%) on private partner's risk capital did not always reflect the costs borne" (2018: 11).

Confirming this UK and European Audit Office theme, the more recent global analysis of Boers et al., (2013, 470) reviewed 48 audit reports from 21 Audit offices internationally. Their conclusion was that 'there is still no hard evidence to show that Design, Build, Finance, Maintain (Operate) projects represent the most efficient form of government procurement', and that whilst there are potential benefits to be gained from using PPPs, 'there is no reason ... to assume that these benefits will automatically accrue'. These analyses follow earlier sobering independent assessments from both the US and Australia.⁸

8. Government Accountability Office (GAO) USA (2008) Highway Public-Private Partnerships: Securing Potential Benefits and Protecting the Public Interest Could Result from More Rigorous Up-Front Analysis. Washington DC: GAO. Public Accounts and Estimates Committee (PAEC). (2006) Seventy First Report to the Parliament: Report on Private Investment in Public Infrastructure. Melbourne: Parliamentary Committee.

2.5 PPP, Off-Balance Sheet Financing and Public Finances

Although efficiency and VFM arguments have been advanced to justify the adoption of PPP it is not an exaggeration to suggest that governments have been largely attracted to PPPs for reasons related to public budgets and finances.

In privately financed PPPs such as concessions and DBFOM models governments generally have to pay a relatively small part of the total cost up-front, and often little or nothing throughout the construction phase. When the construction stage is completed and the infrastructure asset is in operation the governments or users begin to pay substantial amounts with these payments spread over many years. In other words, governments can take the credit of delivering new infrastructure but can pay later or have users pay later (Boardman and Vining, 2012).

In budgetary terms therefore PPPs can be used to keep debt off-balance sheet. Under EU rules it is possible for governments to avoid adding the capital cost of PPP projects to the official national debt figures. This depends on certain conditions around risk allocation being met. If these conditions are met the accounting rules devised by Eurostat allow the capital and operation costs to be recorded as expenditure and added to General Government Debt on a phased basis over the relevant contractual periods (i.e. in excess of 20 years). Off-balance-sheet financing therefore presents an attractive means of delivering much needed infrastructure while meeting internal or external borrowing limitations.

A number of important points must be taken into account when considering the implications of off-balance sheet financing and its attractions for some government. First, the argument that PPP offers a means of circumventing exchequer constraints is unconvincing. Put simply, what is bought now will be paid for later. Among the contributions on this issue is that of the Commission on PPPs in the UK. They explicitly state that "the argument that the PFI in no way relaxes the constraints facing government holds regardless of the state of the public finances at any point in time" (2001:80). This argument is supported by the detailed analysis of the PFI and public sector finance by Ball et al. (2002) who find that any fall in borrowing that arises due to a switch to PFI finance will diminish over time and eventually disappear. Quiggin (2002) concludes, "the superficial appeal of such projects as a way of reducing public sector debt has been shown to be an illusion generated at high social cost" (2002: 13).

Second, an issue of major concern relates to fiscal sustainability. In the UK, the House of Commons Treasury Select Committee (2011) noted that PFI continues to allow organisations and government the possibility of

procuring capital assets without due consideration for their long-term budgetary obligations" (2011: 55). This points to the problem of PPP usage creating a legacy with a long-lasting fiscal impact. This has been illustrated by the UK where the NAO (2018) which found that future payments for existing projects will average of £7.7 billion a year over the next 25 years with these payments covering financing costs (debt and interest payments and a return to shareholders) and operational costs. In addition, public bodies also have to pay for maintenance and operational costs of publicly financed buildings.

The risks around the fiscal sustainability of financial commitments due to PPPs have been brought into sharp focus in Portugal which is the country with the highest rate of PPP investment (relative to GDP) in Europe. Vervynckt and Romero (2017: 8) highlighted how, in 2014, the IMF's fiscal transparency evaluation for Portugal found that "PPP's are still a significant source of fiscal risks in Portugal (...) the estimated present value of central government's recorded financial commitments was about 6 percent of GDP at end-2013", while "contingent liabilities, related to law suits, ... on December 31, 2012, amounted to €2.1 billion (1.3 percent of GDP)". Worryingly, the IMF found that "little or no information is provided on the 75 central government concessions or on PPPs at the local level. (...) The total investment value of [these] amount to around €21.3 billion (13 percent of GDP)".

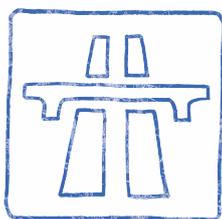
Concerns about the long-term financial commitments arising under PPP have also arisen in Ireland. In 2018 the Inter-Departmental/Agency Group on PPPs noted that the projected future liability in respect of PPP contracts that were signed to date and in the pipeline is well over €9 billion. Moreover, the total cost of unitary payments is expected to peak at €410 million in 2023. Thereafter, payments are expected to average at approximately €400 million per annum from 2024-2035 and €300 million from 2036-2042. The path to zero unitary payments will take another 11 years until 2053.

These future commitments have created a fiscal sustainability issue for the Irish government as they "will absorb a significant amount of the discretionary capital expenditure allocation of some Departments for each of these years, before any decisions on the funding of new capital projects can be considered" (2018:3). In 2015, the Irish government responded to the problem of the financial exposure associated with all PPPs by imposing a 10% cap on the amount of PPP payments that could be included in the aggregate Exchequer capital allocation for that year. This was subsequently changed and the capital value of PPPs will now be "charged to the capital allocation of Departments, effectively meaning that there will be no distinction between procurement options for budgetary control purposes" (2018: 3).

3: Public Private Partnerships In Practice

3.1 PPPs in High-Income Countries; The Case of Ireland's National Broadband Plan

Since the late 1990s PPPs have been extensively used in Ireland. Initially the use of PPPs was mainly attributable to rapid economic growth which placed extreme pressure on the country's under-developed stock of infrastructure. As the need to address the deficit of infrastructure became more urgent it was decided to experiment with new forms of procurement that involved greater private sector participation and finance.



One third of Ireland's c.1270km of motorway/dual carriageway network has been delivered by 13 road PPP contracts

A wide range of projects have been procured by PPP, including the National Convention Centre, Primary Care Centres, Courts and a Waste to Energy facility. PPPs have been especially prominent in the transport and education sectors. One third of Ireland's c.1270km of motorway/dual carriageway network has been delivered by 13 road PPP contracts. In the education sector, 27 schools (contracted as bundles) and two higher education projects have been delivered by PPP to date.⁹ At the end of 2016 the estimated value of all

contracted PPPs amounted €4.95 billion with the projected total cost of these payments expected to equal €9.65 billion.¹⁰

In comparative terms Ireland is an extensive user of PPP. In 2017 the IMF published comparative data showing that Ireland's PPP capital stock (as a percentage of national income) exceeded the average recorded for EU and advanced economies. Moreover, Ireland's PPP capital stock ranked fifth in the EU-14 behind Portugal, UK, Greece and Spain.¹¹

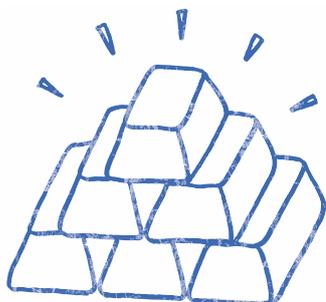
As Ireland has twenty years of experience with PPP and has developed a number of institutions to support their procurement it provides a suitable case for studying PPP procurement.

Like most countries Ireland faces increasing demand for infrastructure that provides reliable access to digital services. Despite considerable growth in the rollout of broadband services from 2003 onwards, Ireland is still ranked close to the bottom of the European rankings in relation to broadband penetration rates. In August 2012 the Irish government announced its National Broadband Plan (NBP) which set a target of a minimum 30Mbps download speed to be achieved for all households in Ireland ahead of the EU's 2020 target for such speeds. The current version of the plan is to stimulate investment in the development and operation of a wholesale and local access high-speed broadband network for approximately 540,000 premises in rural areas in Ireland where commercial operators currently have no firm plans for the delivery of such services.

Once the NBP was announced the next step was to decide on the regulatory model that would be used to deliver the infrastructure. The final decision was based on an analysis conducted by international consultants KPMG and published in an 'ownership report' in December 2015. The KPMG report considered five regulatory models which ranged from a state-led approach (establishment of a new state-owned enterprise) to different PPP types. However, when the report was published KPMG recommended consideration of just two privately financed PPP models (the full concession and gap funding models) and a state-led approach was ruled out.

9. Department of Public Expenditure and Reform (2018) Report of the Inter-Departmental / Agency Group on PPPs, Dublin, Stationery Office.
10. Houses of the Oireachtas, Parliamentary Budget Office (2018) An Overview of Public Private Partnerships in Ireland, Briefing Paper No. 5, Dublin, Stationery Office.
11. IMF (2017) Ireland: Technical Assistance Report-Public Investment Management Assessment, IMF Country Report No. 17/333, Washington D.C.: International Monetary Fund.

In July 2016, the government announced its decision to proceed with a PPP/gap funding model for the NBP. Under this model, the private sector operator is subsidised through capital grants, which are paid during deployment and over the operational life of the contract. The grant amount will be the minimum amount



In 2017 Ireland's PPP capital stock exceeded the average recorded for EU and advanced economies and ranked fifth in the EU-14

necessary for the private sector to deliver the project whilst also making an acceptable rate of return, and will be subject to clawback mechanisms that track actual financial performance against forecast during network build, operations and at contract expiry. The private sector partner bears the risk associated with wholesale network deployment, operation and exploitation over the 25-year contract term and beyond, and the payments of capital grant (upfront and during operation) are subject to the operator meeting the performance standards in the contract. Importantly, the private sector retains ownership of the network at the end of the 25-year contract.

The contract was advertised in the Official Journal of the EU in December 2015 and the government announced that Exchequer funds of up to €275 million had been earmarked for the plan. In the meantime however the procurement of the broadband network has been beset by problems. Three bides were shortlisted for the project in July 2016. However, in April 2017, the government announced that that one of the bidders (Eir - the former state owned telecoms company) would remove 300,000 homes from the intervention area, leaving 542,000 covered by the NBP (a further 85,000 premises had been added to the original 757,000 included in intervention area prior to April 2017). This change impacted the plans of the other bidders and in September 2017 one of the three shortlisted bidders, Siro, withdrew from the competition stating that there was no longer a business case

for bidding for the contract. This was followed by Eir's withdrawal in January 2018 citing concerns in relation to increasing uncertainty about regulatory and pricing issues.

Despite the removal of vital competitive tension the government forged ahead with the procurement process which continued to face ongoing difficulties. In July 2018 the major utility partner in the remaining bidder's consortium withdrew thereby raising serious concerns about the capacity of the consortium to deliver. Shortly after the submission of the single final tender (in September 2018) it was revealed that the consortium behind the bid was led by US investor Granahan McCourt with Irish telecommunications company, Enet, a key supplier. There have however been persistent doubts about the precise composition of the consortium as the final bid revealed that construction company John Laing had also withdrawn.

The next controversy to beset the procurement was the revelation of a series of private dinners and meetings between the Minister for Communications, Climate Action and the Environment and the CEO of Granahan McCourt. This ultimately led to the Minister's resignation and the conduct of an official review of the tender process is requested by the Taoiseach.

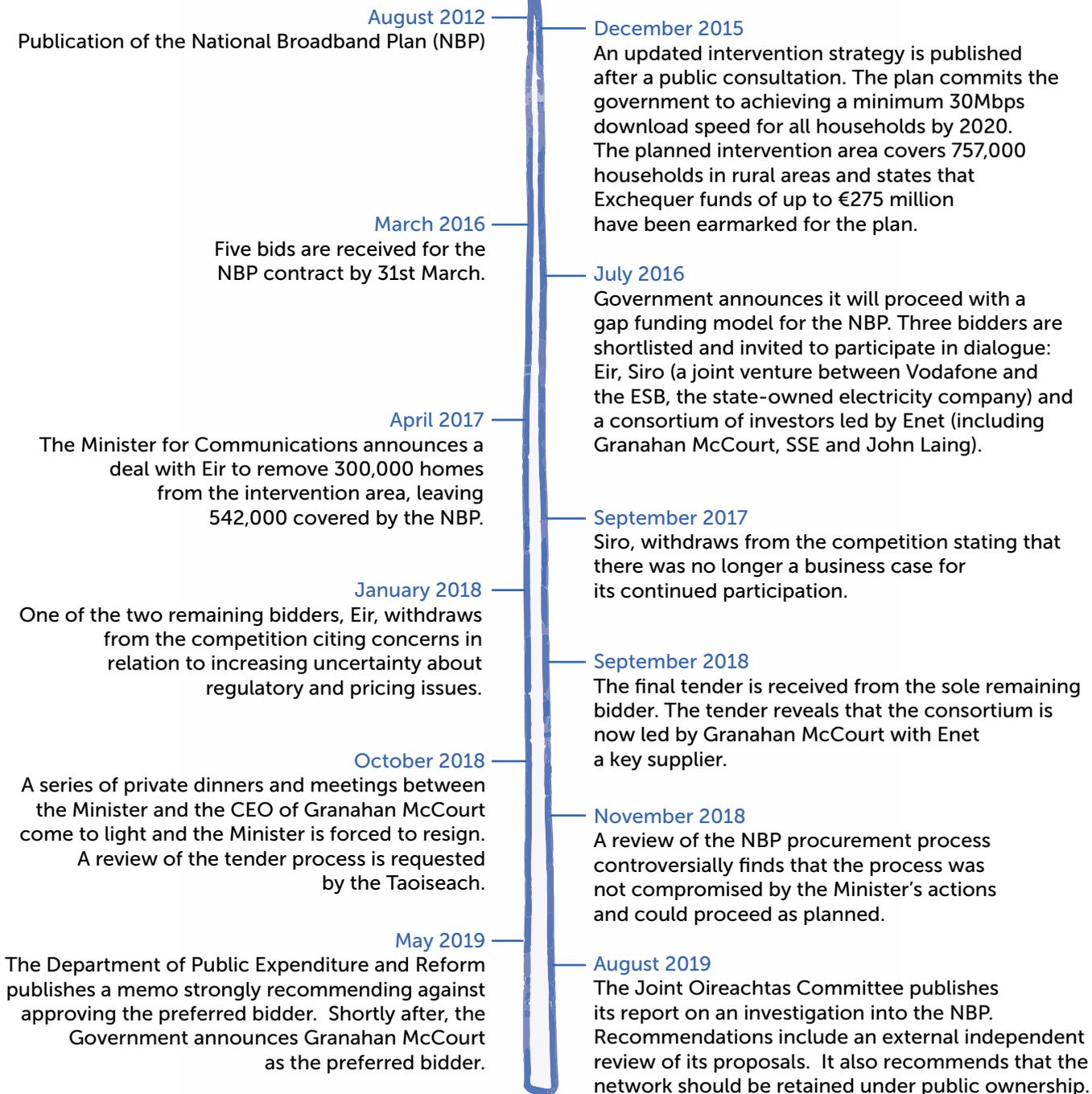
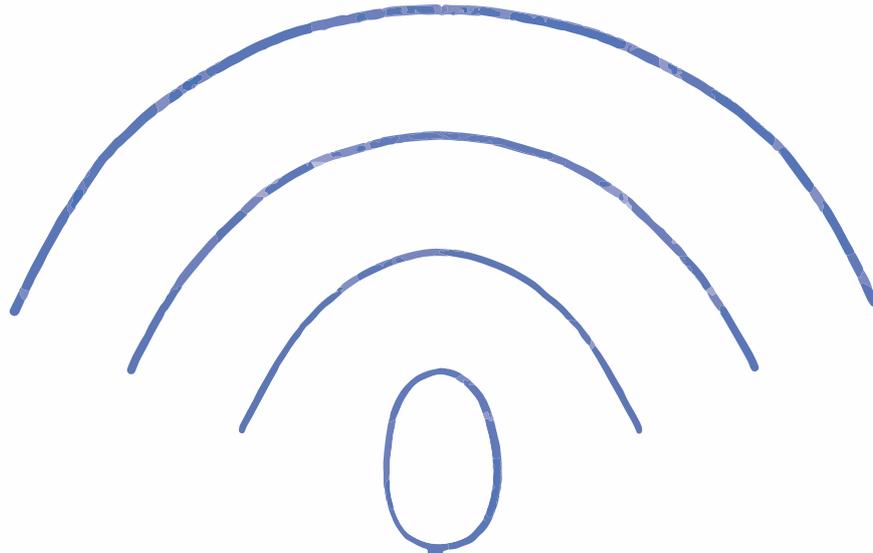
Between 2015 and 2019, the estimated cost to the Irish Exchequer of the subsidy required to roll-out the National Broadband PPP skyrocketed from €800 million to a possible €2.97 billion.

Notwithstanding these events the government have steadfastly persisted with the procurement process. However, when the Granahan McCourt consortium was announced as the preferred bidder in May 2019, further public controversy ensued in light of a number of new revelations. First, the estimated cost to the Exchequer (the cost of the subsidy) had skyrocketed to a possible €2.97 billion.¹²

Second, the documentation released after the announcement of the preferred bidder revealed that senior officials in the Department of Public Expenditure Reform (DPER) are strongly opposed to the procurement for reasons including affordability and knock-on consequences for other planned capital investments.

12. As of July 2019, the Exchequer cost is expected to be in the range of €2.1bn to €2.97bn. The latter amount is inclusive of VAT and contingencies.

Timeline of the Development of the National Broadband Plan



In addition, DPER opposes the procurement as there is only one remaining bidder. It also voiced detailed concerns about the accuracy of the cost-benefit analysis used to support the decision to proceed with the project. Importantly it questioned the potential for achieving VFM under the current procurement as well as the degree of risk transferred to the private contractor. Specifically it claimed that by 2028 the private bidder will have recouped most of its investment while the state will have invested €2.44 billion at that stage. A related revelation following the announcement of the preferred bidder was that its equity stake would amount to €220m (compared to the government subsidy of €2.97bn). It is noteworthy that this information was initially not placed in the public domain. Importantly however it raises doubts about the extent of financial risk taken by the preferred bidder and the strength of the incentive to achieve VFM.

Lessons from the National Broadband Plan Case

The case of the NBP illuminates the pitfalls of adopting the PPP model notwithstanding the extensive experience accrued in Ireland since the late 1990s. The case also provides support for the basic economic proposition that market-based approaches to infrastructure procurement such as PPP are less likely to be efficient when the project is characterised by complexity, uncertainty and the requirement for large-scale investment in specific assets.

To date, the procurement process has failed to ensure that the key drivers of efficiency/VFM have been put in place. The sequence of events since the NBP contract was tendered in December 2015 has seen all competitive pressure tension, which proponents identify as a principal justification for PPP, removed from the process. It is not surprising that the projected costs to the exchequer have escalated in the absence of competition for the contract.

Although the preferred bidder for the NBP will take on significant risk, particularly in relation to construction risk, operating risk and revenue risk the details that have emerged show that the level of private equity (investor's own resources) accounts for an extremely low proportion of the overall cost of the project. In addition the preferred bidder is not borrowing significant amounts from banks or international capital markets. Instead, it appears that they will work on a cash-flow basis and rely on payments from the Exchequer as the project progresses. Unlike other privately financed PPPs therefore, this gap funding model approach will not possess the advantages that arise from the due diligence and close monitoring of all aspects of the deal by experienced lenders. Overall, it appears that some of the risk-sharing advantages that typically apply to PPP projects do not apply in this procurement model, which increases concerns that the procurement will not deliver VFM.

The procurement process has also been characterised by a lack of transparency. The information placed in the public domain has been heavily redacted and the financial data that was used to support the selection of the project and the Gap Funding/PPP model has not been made available. Moreover the government has proved to be reluctant to share vital information such as the size of the preferred bidder's equity stake. This has raised suspicions about the overall merits of the decision to proceed with the procurement and public confidence in the project has been damaged.

Finally, this case highlights the risks associated with wider privatisation policies especially where governments sell control of vital infrastructure to private operators that hold dominant positions in relevant markets. One of the key obstacles to progressing the NBP as per the government's plans has been the dominant role played by Eir and the fixed-line telecoms infrastructure that it controls. This can be traced back to the impact of the privatisation of the firm in 1999. To a large extent, Ireland's NBP is a necessary response to the historical lack of investment by Eir in its fixed-line infrastructure in recent years, particularly outside of major urban centres. However, in seeking to address the digital divide issue in rural areas it is very difficult to find a solution that does not directly involve Eir, or indirectly involve access to the fixed-line infrastructure that it owns. European state aid rules in particular make any intervention by a government seeking to address a market failure extremely difficult since incumbents can opportunistically exploit such rules to frustrate any plan that might threaten their natural monopoly position. This has certainly been evident in this case given Eir's announcement that it could provide high-speed broadband services to 300,000 (most commercially viable) premises within the proposed intervention area. This was a key factor in the decision of one other bidder to withdraw from the contract and ultimately led to the removal of all competitive tension from the procurement process. The real danger is that it will have significantly negative implications in the future as the private owner of publicly funded infrastructure will be in a position to exploit the monopoly position granted before and after the final contract is signed.

3.2 PPPs in Low Income Countries: Two Case Studies from Ghana

Despite the lack of clear evidence in favour of the PPP approach it is striking that global support for PPPs is now stronger than ever. International organisations such as the OECD, United Nations and World Bank continue to promote PPPs and to develop tools for improving policy making and implementing PPP projects in countries at all stages of economic development including LMICs (Hodge and Greve, 2019).

The World Bank Group (WBG) has been especially active in promoting PPPs and making PPP policy for a considerable time. Since the late 1980s the WBG, in conjunction with the private sector (multinationals, financial institutions, consultants) and other multilateral organisations (for example, the International Monetary Fund and Asian Development Bank) was active in promoting the privatisation of public services especially infrastructure (Tan, 2011). However, during the Infrastructure Action Plan period of the early 2000's, "the World Bank shifted its focus from privatization to a flexible range of PPPs" (Noumba-Um, 2011: 467). Since then it has intervened at different levels to provide guidance on policy reforms and to provide finance to PPP projects. Vervynckt and Romero (2017:14) note that over the period 2002-2012, it increased its support to PPPs by more than threefold, from US\$0.9bn to US\$2.9bn. In addition, it has worked at 'upstream' and 'downstream' levels to support public and private participation in PPPs. Upstream, it works through channels including its PPP unit, the Public Private Infrastructure Advisory Unit (PPIAF) and the PPP Knowledge Lab to develop policy, regulatory frameworks and advice on PPP policy tools. At the downstream level, it operates through its private sector arm, the International Finance Corporation (IFC) and its political risk insurance arm, the Multilateral Investment Guarantee Agency (MIGA).

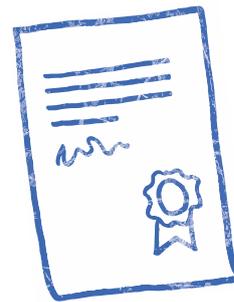
The ongoing enthusiasm for PPP among international organisations such as the WBG stands in sharp contrast to the body of evidence that provides a measured but critical analysis of PPP's successes and failures. The evidence from more independent (academic) and critical literature shows that many high-income countries (HICs) do not necessarily have the capacity to ensure efficient procurement of PPPs. The challenges of achieving best practice in the procurement of PPPs are exacerbated in LMICs due to both the existence of less capacity to implement and maintain strong systems of accountability and governance, and political interference (Laffont 2005; Estache and Wren-Lewis 2009; Levy 2014).

Bearing these factors in mind the following section examines two case studies of PPP procurement in Africa. The case studies are sourced from a forthcoming book titled *Duality by Design – The Global Race to Build Africa's Infrastructure* edited by Nuno Gil, Anne Stafford and Innocent Musonda. Both case studies examine the performance of the PPP approach in mainly economic and financial terms focusing on the drivers and obstacles to achieving efficiency/value for money and evidence on the outcomes date.

Water Desalination in Ghana¹³

Addressing the deficit of water infrastructure is a major challenge for the African continent. Previous experience with private participation in the water

services sector has been problematic with 40 per cent of contracts (mainly, lease or management contracts) cancelled before completion (Foster and Briceño-Garmendia, 2010). In Ghana, the struggle to meet water demand (of around 800,000 m³ per day) in the capital city, Accra (population, 3m) paved the way for the government to adopt the PPP-approach. In 2011, the Ghanaian Water Company Ltd. (GWC) entered into a new US\$126 m twenty-five-year build, own, operate, transfer, (BOOT) contract for a desalination plant with Abengoa, a Spanish company, and the Japanese Sojitz Corporation. The main objective of the project was to



40 per cent of PPP contracts in the water services sector were cancelled before completion

provide a stable water supply for 500,000 residents of Accra at an affordable price. The project, which was supported by a World Bank investment guarantee of US\$179m, was procured without a competitive process and was sole-sourced in order to ensure speedy delivery. From the outset the project was likely to impose significant costs on the GWC which is required to pay for the electricity required for the plant as well as an availability fee. It is also required to pay a charge of around US\$1.44 per cubic metre produced. The tariffs paid by domestic users are set by the national regulatory agency. These are set low at around US\$0.33 which means that the GWC makes a loss of US\$1.11 for each cubic metre produced by the desalination plant. In addition, media reports suggest that the GWC is under financial stress and is unable to pay the availability fee which means that large debts are mounting. The media has also reported that GWC is unable to pay its monthly electricity bill of around US\$330,000 which imposes financial pressure on the electricity company.

It is reasonable to expect that the contract will be re-negotiated or cancelled and the World Bank will be required to intervene due to its investment guarantee.

13. Source: Stafford, A., Stapleton, P., and C. Agyemim-Boetang (forthcoming) "Controlling Long-Term Financial Sustainability in African Infrastructure Projects" in Gil, N., Stafford, A., and Musonda, I., *Duality by Design – The Global Race to Build Africa's Infrastructure*.
 14. Source: Stafford, A., Stapleton, P., and C. Agyemim-Boetang (forthcoming) "Controlling Long-Term Financial Sustainability in African Infrastructure Projects" in Gil, N., Stafford, A., and Musonda, I., *Duality by Design – The Global Race to Build Africa's Infrastructure*.

Electricity Generation Project in the Ghanaian Energy Sector¹⁴

The energy sector accounts for the most significant proportion of Africa's major infrastructure gap with capacity running at around 10 per cent of that elsewhere in the developing world (Eberhard, Foster and Briceno-Garme, 2008). In Ghana, where power failures are frequent, the PPP approach was adopted in order to address the electricity supply problem. In 2015, the government entered into a US\$510m BOOT contract with the UAE-based Africa Middle East Resources Investment (AMERI) Group LLC. The private company was contracted to supply ten gas turbines, described as supplying amounts varying between 230 and 330MW of electricity. Following delivery, the turbines would be connected to the power grid. The private contractor would then own and operate the turbines for a five-year period before ownership was transferred to the government of Ghana.

The contract which involved a government guarantee in the form of a letter of credit for US\$510m was procured without competitive tendering. Instead it was procured through sole-sourcing, which is permitted under the Ghanaian procurement law if a project is classified an 'emergency project'. In such cases competitive tendering is not required as the process is considered necessarily lengthy. Emergency projects are designed to be fulfilled within ninety days and this BOOT contract was signed off very quickly with limited public transparency.

The project has encountered a number of difficulties that highlight the importance of the conditions required for efficient use of PPP. Initially the project was opposed by the energy policy think-tank – the African Centre for Energy Policy. The principal issue related to the true cost of the project. An investigation by a Norwegian newspaper drew attention to potential fraud committed by a Norwegian citizen involved as a director of the AMERI Group. This subsequently led to assertions that the true cost of the project should have been US\$360m, as it emerged that AMERI had simply subcontracted the deal at a price of US\$360 m for purchasing the turbines and operating them through the power network. A commission was established by a new government to investigate the VFM aspects of the deal. The subsequent report by the Ministry of Energy concluded that the differential between the contracted amount of US\$510m and the US\$360m cost for the subcontract represented excessive commission for AMERI. Furthermore, as there was a delay with the implementation of the project the report found that it failed to meet the classification of an emergency contract. It was therefore recommended that the contract be re-negotiated for the purpose of reducing the overall cost of the project.

Lessons from Ghana

The details in both cases indicate that the PPP model has failed to ensure that vital infrastructure was efficiently procured and it is doubtful that either project is likely to prove affordable or value for money. Both cases demonstrate the pitfalls of entering into PPP contracts without competitive tendering. In both cases the justification for adopting sole-sourcing was based on the urgent need for vital public infrastructure. As competitive tendering was understood to be time-consuming and complex it was decided to use sole-sourcing thereby implying the willingness to accept the trade-off between quick delivery of the infrastructure assets with the risk of financial unsustainability.

A major downside of sole-sourcing is that the benefits of a transparent and efficient procurement process are foregone. Such benefits include competitive pricing, lower transaction costs, VFM and accountability. Although transparency is frequently limited in competitive tendering processes it is close to zero under sole-sourcing. This removes the scope for scrutiny of deals by parliament, public auditors, citizens and other stakeholders. As a consequence, public officials are less accountable for decisions thereby increasing the probability of selecting unaffordable and costly projects. The lack of transparency and accountability mechanism evident in both cases was exemplified by the fact it was left to the media to expose details in relation to aspects of the deals such as corruption and the financial strain faced by public authorities.

In both cases it appears that little due diligence was undertaken. In the case of the electricity generation project, the contract was signed quickly because the outright purchase of the turbines was not affordable. The use of sole-sourcing helped in circumventing the need to justify PPP using appraisal tools such as cost-benefit and VFM studies. In the case of the water desalination plant it should be noted that such infrastructure is normally costly for citizens. Furthermore, as this was the first water desalination plant built in West Africa and new technologies were being used, project risks were likely to be significant. However, there are no project appraisal reports in the public domain and it appears that citizens served by the plant are cross-subsidised by citizens in other parts of the country where water supply is profitable for the state-owned company.

4: Conclusions and Recommendations

Meeting infrastructure needs is among the most pressing of today's global challenges. Providing essential and quality infrastructure is central to the achievement of several *UN Sustainable Development Goals* including: clean water and sanitation; affordable and clean energy; and smart and sustainable cities. In order to meet the infrastructure challenge, governments around the world face a number of regulatory options ranging from state-owned enterprise to different forms of procurement including traditional procurement and public-private partnerships. PPPs are frequently proposed as the solution for closing infrastructure gaps especially during periods of tight public funding. However, although multi-lateral organisations such as the World Bank Group have invested considerable resources in promoting PPPs it remains the case that even in economies that make strong use of them, PPPs typically make up only about 5 to 10 percent of overall investment (McKinsey, 2016). **While there are significant differences across countries and sectors, state-owned enterprises and other vehicles for public investment continue to play a major role in providing vital infrastructure for countries at different stages of economic development.**

There is now almost thirty years of international experience with the use of PPPs, and the international evidence shows that PPPs are not a panacea for infrastructure deficits and problems with infrastructure policy. There have been numerous PPP failures and it is evident that not all projects are well suited for PPPs. Moreover, developing the institutions required for effective use of PPP takes time, not least in developing countries. This is one of the main reasons why PPP accounts for a minor share of infrastructure investment in most countries and state-led investment, largely via SOEs, often leads the way.

Ultimately, PPPs are a tool for financing infrastructure projects that can only work well when particular conditions exist: the project makes economic sense; there is a clear and efficient process to select a partner; there is appropriate risk transfer between the government and the partner; and there is a revenue stream to provide appropriate risk-adjusted returns (McKinsey, 2016). This requires considerable administrative capacity that can be ensured only through suitable legal and institutional frameworks and long-lasting experience in the implementation of PPP projects (Iossa and Saussier, 2018, European Court of Auditors, 2018).

The international evidence, drawn mainly from the PPP experience in high-income countries, shows that governments often fail to follow good practice that will ensure PPP procurement delivers value for money (economic efficiency) and financial sustainability of privately financed projects. This is exemplified in the case of the PPP used to procure Ireland's National Broadband Plan which does not fulfil the basic condition that tendering is competitive; about which doubts persist regarding the allocation of risks; and where the government shows ongoing reluctance to put vital information into the public domain.

Such problems arise in countries at different stages of economic development but they are likely to be acute in LMICs due to lower capacity to implement and maintain strong systems of governance that improve accountability and reduce political interference. Even where such capacity exists there are other obstacles such as low levels of contestability between bidders and higher private finance costs because equity investors will require premia for political and macroeconomic risks (Hellowell, 2019).

Such factors explain why PPP investment has not reached anticipated levels in LMICs. They also explain why the private sector has not been the principal source of finance for these projects. Instead, governments, multi-lateral development banks and donors account for more than half the funding in many cases (Leigland, 2018)

The international evidence gathered over the last thirty years has not been consistently positive about PPP and has been at odds with much of the advocacy in favour of PPP by multi-lateral organisations and donors in the 1990s and early 2000s. The evidence-based research presented in this paper shows that there is growing disenchantment with PPP in countries such as the UK and Ireland. Overall, the evidence does not provide clear support for the proposition that PPP offers a more cost-efficient model of infrastructure procurement. Moreover, there are concerns about the financial and fiscal sustainability of many PPP contracts which are frequently re-negotiated and terminated in extreme cases.

The fundamental question that arises is whether governments should continue to adopt the PPP model? The evidence reviewed in this paper indicates that all countries, especially LMICs, should take a cautious

approach. Efficient use of the PPP model clearly depends on governments having the contracting expertise required to organise competitive tenders, to craft comprehensive outcomes with clearly defined outcomes and to manage long-term contracts by devising systems that effectively monitor contractor performance and enforce contracts by imposing penalties and deductions when performance falls short.

The lessons from the cases analysed in this paper are consistent with the emerging consensus that the foundation of good governance is accountability. Flyvbjerg (2009) Boardman and Vining (2012) and Stafford et al., (2019) make several recommendations for achieving accountability and better governance which can be applied to both PPP and traditional procurement. The following points which synthesise their recommendations apply to countries at all stages of development.

- Governments engaged in infrastructure procurement should separate the agencies that: (1) analyse the desirability of projects and decide which of the alternative provisioning modes to employ (government production, traditional procurement or PPP) (2) administer the PPP contracting process and monitor the implementation of the contract, and (3) evaluate the overall success of projects. Although these tasks require the same skills, it would help to keep these agencies separate because otherwise there would be incentive problems: an agency is always reluctant to criticize its own earlier decisions (Boardman and Vining, 2012);
- Cost–benefit analysis and other types of ex ante appraisal such as VFM assessments should be shifted from promoters to a more independent office, for instance with the Treasury/Department of Finance, in order to reduce risks of agency problems (Flyvbjerg, 2009);
- Multilateral organisations and donors recommending PPP in LMICs should focus their assistance on improving the governance of all approaches to infrastructure procurement. This involves investing in human capital and ensuring government professionals, especially project managers, forecasters and finance professionals who have the skills necessary to challenge unrealistic projections (Stafford et al., 2019).
- The vast majority of infrastructure projects are publicly funded. Therefore, project details, forecasts, peer reviews, benchmarkings and all contracts should be made publicly available. All relevant documentation should be available to facilitate public scrutiny by all stakeholders including by the media. Governments should be considerably more transparent on all aspects of procurement and PPPs. In addition, governments should be unwilling to contract with private sector participants that will not accept transparency. (Flyvbjerg, 2009, Boardman and Vining, 2012);
- Bidding should be made as competitive as possible. Sole-sourcing should be avoided. Measures that governments can take to create competitive tension include encouraging public entities to bid where this is technically feasible. They may have valuable location specific or service-specific knowledge that would give them a cost advantage. Second, the (government) PPP promoter should foster and seek out competing bidders (Boardman and Vining, 2012).
- Better project monitoring is vital to ensure issues of accountability are addressed. This could also be coupled with contingency planning. Monitoring gives opportunities for involvement on the part of all stakeholders, including the private partners, contractors, public sector and users, all of whom can contribute to feedback on a project’s processes, operations, costs and affordability (Flyvbjerg, 2009);
- Finally, private finance and PPP can play a constructive role. Flyvbjerg (2009) goes as far as arguing “that the decision to go ahead with a major infrastructure project should, where at all possible, be made contingent on the willingness of private financiers to participate without a sovereign guarantee (emphasis added) for at least one-third of the total capital needs. This should be required whether projects pass the market test or not—that is, whether projects are subsidized or not or provided for social justice reasons or not” (2009:360). The advantage of private capital is that its providers are incentivised to invest in conducting the due diligence to ensure projects are successful. Private capital therefore provides an extra set of eyes on the project but it does not “mean that government reduces control of major infrastructure projects. On the contrary, it means that government can more effectively play the role it should be playing, namely as the ordinary citizen’s guarantor for ensuring concerns about safety, environment, risk, and a proper use of public funds” (2009:360).

The common threads between these recommendations are accountability, transparency and investment in skills and institutions. Importantly, these recommendations apply to all forms of infrastructure procurement including PPPs. This suggests that PPPs have a part to play in addressing global infrastructure shortages. But that role should be limited and carefully managed. Buyer beware!

Annex 1: Glossary

High-Income Countries / Upper Middle Income Countries / Lower Middle Income Countries / Low Income Countries	The World Bank uses these groupings to category countries on an annual basis according to income, as measured by Gross National Income (GNI) per capita in each country.
Fiscal sustainability	Fiscal Sustainability is a term used by economists to describe the ability of a government to sustain its current spending and taxation policies without threatening government solvency. However, the precise definition of what constitutes 'sustainability' is hotly contested.
Conventional Procurement	Conventional Procurement, as compared with a Public-Private Partnership, is a model under which the government purchases a specific asset or service outright through a competitive tendering process, and then takes control of it.
Bundling	Bundling is a process within the PPP model whereby an infrastructure asset's construction and operation are combined into a single contract.
Design Build Operate (DBO)	A DBO is a PPP model in which one contractor is appointed to design and build an asset and then operate it for a period of time, usually with an agreed regular payment from government and/or service users.
Design Build Finance and Operate (DBFO)	A DBFO operates similarly to a DBO, except that the contractor is also responsible for securing finance for the project.
Concession PPP model	Under the Concession PPP model, responsibility for an entire infrastructural system (e.g. water provision) transfers to a private operator, who typically obtains most of its revenue from the consumers of that service. Under this model, the asset eventually reverts to state ownership after an agreed period.
Risk Transfer	The term 'risk transfer' refers to efforts to move the financial risks associated with developing infrastructure away from the state, and onto the shoulders of a private operator (or vice versa).
Private Finance Initiative (PFI)	The term PFI typically refers to the particular model of PPP pursued by the UK government in the 1990s and 2000s.
Loss-leading behaviour	In procurement, loss-leading behaviour is the practice of a company setting extremely low costs in order to secure a contract, which may not always be realistic.
Unitary payments	This refers to the agreed, periodic amount which is payable to the contractor under a particular PPP payment mechanism.
Gap funding PPP model	The Gap Funding model is similar to a standard PPP, except that the private company additionally retains ownership of the infrastructure or asset which it develops.

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