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The Global Experience with Infrastructure Public–Private Partnerships

Matti Siemiatycki

INTRODUCTION

Around the world, public–private partnerships (PPPs) have become increasingly popular ways to deliver large-scale public infrastructure projects. Between 1985 and 2010, PPPs have been used to procure more than 2,000 highways, bridges, rapid transit lines, schools, hospitals, prisons, and waste and water treatment facilities, with a combined capital value of over $700 billion.[1] And PPPs have been widely accepted across partisan political lines. In the United States, both Democrat- and Republican-controlled states have experimented with PPPs. Internationally, PPPs have been widely used by liberal, centrist, and conservative governments in countries as diverse as Brazil, Spain, Britain, Canada, Portugal, India, The Netherlands, and others. PPPs have also been promoted by international development agencies like the United Nations, the World Bank, the African Development Bank, and the Organization for Economic Cooperation and Development.

Alongside their growing application globally, PPPs have become lightning rods of controversy, with their pros and cons hotly debated. Planners and related professionals in law, architecture, engineering, and financial advising have been thrust to the forefront of these debates. Government planning, engineering, and legal departments have often been tasked with producing the official reports that evaluate the merits of using PPP procurement for a given project and provide the basis for public deliberation and political decisions. Moreover, an important business niche has developed for legal and finance professionals to analyze, advise, structure, and execute the complex transactions that underpin PPPs.

Yet infrastructure PPPs have received surprisingly limited attention in the scholarly and professional literature for planners. This has left some planners and planning lawyers underprepared and under resourced to meaningfully engage in the debates about PPPs when they first arrive in their communities, or to share and learn from the experiences from past projects in other jurisdictions. This may be particularly the case at the municipal scale, where fewer major infrastructure PPP deals have been done to date but the industry has identified a potential growth market.

Against this backdrop, the purpose of this commentary is to provide a critical reflection on the origins and novelty of PPPs, detail how the various procurement models function, and draw on past experiences to highlight some of the limits and opportunities associated with the rise of PPPs. Through this analysis, I will show that PPPs are neither a panacea nor an inescapable recipe for disaster; instead, the success or failure of a PPP project depends on the quality of the processes through which it is planned and the ways that key project risks are apportioned between the public- and private-sector partners in order to deliver value for money.

A SHORT HISTORY OF PPPs

Throughout history, the public and private sectors have always partnered to deliver large-scale infrastructure projects. What have evolved over time are the structure and dynamics of the relationships between the partners. Prior to the early 20th century, the private sector played a primary role in the provision of public infrastructure. They would design, build, finance, and operate major transportation links, energy facilities, and prisons, typically with government permission and monitoring.

In the United States, for instance, private companies were granted concessions to build, finance, and operate the first highways, recouping their initial investment by charging tolls on the roads. Similar concession-type arrangements were used in France and Spain. In Canada, the transcontinental railroad that stitched together a country and brought new provinces into the confederation was largely privately financed and built in exchange for a small initial government payment, exclusive indefinite private operating rights, and the transfer of vast swaths of crown land to the railway company. In countries as diverse as the United States, New Zealand, Canada, and Australia, privately owned and operated prisons were common prior to the 20th century, with spaces leased by governments as needed. Electricity providers and street transit conglomerates also emerged as private businesses at the turn of the 20th century. While such arrangements

Matti Siemiatycki is an assistant professor of planning and geography at the University of Toronto. His research examines the planning, financing, and delivery of large-scale infrastructure projects.

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flourished for a time, they were faced with a common set of challenges, including poor safety records, a pattern of labor abuses, corrupt business practices, and unequal distribution of services, as profits were placed before the wider public interest.

By the mid-20th century, recognizing the importance of high-quality public infrastructure as a key public interest concern, governments took a more active and central role in the planning and provision of infrastructure. During this period, failing private conglomerates in a wide range of infrastructure sectors were nationalized following either bankruptcy or voluntary sale or through expropriation. This shifted the balance of responsibility for infrastructure provision from greater private-sector responsibility to greater public-sector responsibility.

A vast expansion of public infrastructure followed during a period that stretched from the 1950s to the late 1970s, in what Alan Altshuler and David Luberoff (2003) have termed "the Golden Age" of infrastructure.[2] Infrastructure was largely provided through a model of project delivery known as the design-bid-build approach, which gave government a central role in project planning and operations. In this model, government agencies determine investment priorities based on their own criteria and develop the specific design of the project in-house, often in consultation with advisors from a private engineering or planning firm. Once the project design is completed, a competitive bidding process is initiated to select a builder to construct the project as specified. The construction is financed either through general government debt or bonds, which are typically repaid through general government revenues rather than directly from user fees. Upon completion of construction, the facility is publicly owned and operated either by public employees or, in some instances, a privately contracted operator.

This model of infrastructure delivery is highly disaggregated in the way that the private sector is involved at different stages of the project, and it created a specific set of challenges. First, beginning in the late 1970s, there was growing political antipathy to taking on public-sector debt among cash-strapped governments, which limited the public funding available for facility maintenance as well as further expansion of critical infrastructure. Second, there was a growing recognition that large-scale infrastructure projects were prone to what Bent Flyvbjerg and his colleagues call a "megaproject paradox": systematic cost overruns and construction delays, followed by poor service quality; construction not always of a high quality, leading to service outages or unavailability; and lower-than-expected financial returns, environmental amelioration, and social equity benefits.[3] Because of the disaggregated structure of the partnership and the incentives built into the contracts with the separate design firms and builders, the financial burden of these risks commonly fell to the public-sector partner, which typically had to pay for escalating construction costs, fixing poor construction, and financial shortfalls.

One response to the challenges facing the traditional model of government-provided infrastructure was a return to a private-sector-led model of infrastructure provision through outright privatization. Amidst a prevailing rhetoric that government was generally inefficient and lacked the necessary competition to spur innovation and efficiency, beginning in the late 1970s, governments around the world began selling off their state-owned enterprises in key infrastructure sectors such as energy; telecommunications; public housing; and air, bus, rail, and freight transportation. This was accompanied by extensive deregulation to encourage competition between new market entrants. The outcomes of privatization have been decidedly mixed and hotly debated in both the academic and public discourse. What is clear is that the bruising ideological debates over the merits of privatization have led many countries to abandon wholesale privatization efforts that represent a retreat of the state. Instead the search is on for new models to effectively leverage the comparative strengths of government and private-sector participation in infrastructure provision.

THE CONTEMPORARY PRACTICE OF PPPs

Contemporary PPPs emerge out of this evolving history in approaches to infrastructure provision, and are intended to redress some of the past challenges with infrastructure project delivery. In the mid-1980s, the Conservative government in Britain pioneered the current application of PPPs when they began experimenting with new ways of involving private-sector participation in the design, construction, financing, operation, and maintenance of public infrastructure. In the quarter-century that followed, there have been significant innovations and refinements in the PPP models used in the infrastructure sector, and PPPs have become a truly global phenomenon. A PPP has been used to deliver an infrastructure project in more than 90 countries worldwide. More than a dozen countries have procured over 15 projects using PPPs. And more than 30 national and state governments have created high-level agencies and government departments that are exclusively tasked with promoting, implementing, and monitoring infrastructure PPPs. In the United States, which has been slower to adopt PPPs than other jurisdictions, more than 25 states have now enacted the necessary legislation to enter into PPP arrangements in the infrastructure sector.

A basic contemporary definition of a PPP has three primary characteristics: a project that provides mutual benefit between the partners; a contractual concession that involves the private sector in some combination of facility design, construction, financing, and long-term operations; and the genuine sharing and transfer of project risks to the partner that is best able to manage them. This definition is intended to exclude the traditional model of government contracting for infrastructure provision at one end of the spectrum, since such arrangements rarely include private financing upon which meaningful risk transfer is predicated. At the other end of the spectrum, the PPP definition also excludes outright privatization. Privatized projects are free enterprises governed through regulation and con-

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trolled by the private sector in perpetuity, rather than partnerships arranged around concession contracts and contract law where the public sector is significantly involved in ensuring that the project delivers public benefit.[4] Despite efforts to clarify the definition of PPPs, there has still been some blurring with the meaning of privatization.

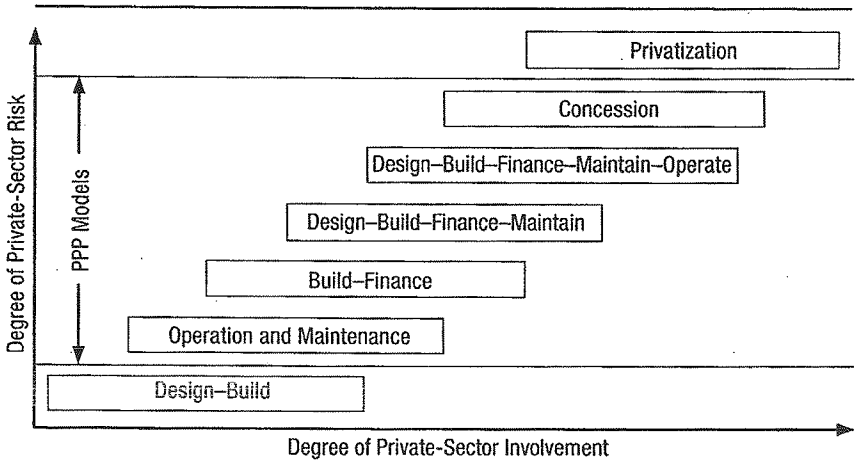
The PPP models that emerge from this definition of partnership aim to bundle a range of project delivery tasks such as facility design, construction, financing, operations, and maintenance into a single long-term concession with a private-sector partner, typically a consortium of firms with diverse specializations. The PPP process begins with a public-sector client developing a set of performance specifications that they would like a project to achieve in order to meet the public interest. The public client then initiates a public bidding process to select a concessionaire who designs a project that best meets the performance specifications and will also bundle elements such as construction and finance and perhaps even operation and maintenance as requested.

The winning private-sector partner's initial capital investment in the project's design and construction costs are repaid through either the collection of user fees or direct government payments based on service availability over the concession period, which typically ranges from 25 to 99 years. At the end of the concession period, control of the asset reverts back to the government, which can then either operate it using public-sector employees or contract out facility operations. PPPs thus restructure the role of government from a planner and provider to a purchaser and regulator of public services.

As shown in Figure 1, within this broad framework of a concession-style approach to partnership, PPPs can involve a wide range of partnership models that bundle various tasks into the concession. As more tasks are included in the concession, the private-sector partner's responsibility for project delivery expands. At the same time, with greater responsibility for project delivery functions comes the assumption of greater levels of risk by the private-sector partner.

When viewed within their historical context, contemporary PPPs share much in common with the project delivery models of the past. Some analysts have indeed questioned whether PPPs are anything new at all or merely "old wine in new bottles," either part of a language game to rebrand unpopular public asset privatizations or an extension of traditional contracting models that transfer little meaningful risk to the private sector.[5] The validity of these arguments depends on the motivations and structures of the PPP deal being used in a specific case. Despite ongoing questions about the novelty of PPPs, however, the narrative of partnership to deliver projects has become pervasive in the infrastructure sector. It is thus timely to explore the roll-out and implications of PPPs as a key contemporary approach to infrastructure project delivery.

FIGURE 1. THE SCALE OF PUBLIC–PRIVATE PARTNERSHIPS: RISK TRANSFER AND PRIVATE-SECTOR INVOLVEMENT



Source: The Canadian Council for Public-Private Partnerships

RATIONALES AND MOTIVATIONS

PPPs seek to redress some of the challenges seen with projects delivered through both the traditional model of project delivery and outright privatizations. Early rationales for PPPs were based on a motivation to bring in new money and enable cash-strapped governments to build publicly popular new infrastructure without taking on (or appearing to take on) major public debt. This "off-balance sheet accounting" was especially important in continental Europe, where governments sought to make important upgrades in public infrastructure without overstepping their European Union mandated debt limits.

Yet the prospect of PPPs bringing in new money has proven illusory for many projects. Many types of critical public infrastructure such as courthouses, public school buildings, street lighting upgrades, and rapid transit lines do not have a revenue stream of user fees sufficient to repay the initial private-sector investment. Instead, any initial private investment in a project is repaid directly through scheduled government payments over the operating concession period. In such cases, up-front private financing as part of the PPP does not bring in new money but simply shifts infrastructure investments from an upfront capital expenditure to an annualized payment. This reality is reflected in new accounting regulations that increasingly require governments to account for all private infrastructure financing on their balance sheets at the time that the investment is made.

Another early rationale in support of PPPs was that they could deliver infra-

[T]he detailed information necessary to follow the private money being invested into and drawn out of these complex financial transactions as profits has not always been made available either to the public or regulators.

structure more cheaply than traditional government procurement by tapping into efficiencies achieved by firms working in competitive environments. Far from reducing costs for cash-strapped governments, however, PPPs actually have considerably higher base costs than projects delivered through traditional procurement. First, private-sector financing for infrastructure is substantially more expensive than when governments use standard public debt or bonds to finance infrastructure investments, especially following the global financial crisis of 2008. As private lending has tightened, the interest rate spread for private-sector borrowing in recent PPP projects has typically been 100 to 200 basis points above standard government borrowing costs. This amounts to an additional $20 to $40 million in financing costs for every $100 million that the private-sector partner borrows over a 35-year concession period. Thus PPPs are akin to purchasing infrastructure on a giant government credit card, a buy-now, pay-later scheme with a substantially higher interest rate.

Second, the base construction costs on a PPP project are typically higher than those on a comparable public-sector project, as the private-sector partner charges a premium for bundling various design and construction functions into a single concession and taking on greater risk. In one study of road PPPs carried out by the European Investment Bank, it was found that the underlying cost of construction for similar projects was 24 percent higher when built using a PPP as compared to traditional design-bid-build government procurement.[6] Third, PPPs have higher transaction costs than traditional procurement associated with structuring the complex project agreements and monitoring and enforcing the long-term PPP arrangement.

As the initial motivations for PPPs have been contradicted, governments and project promoters have increasingly identified value for money as the key guiding rationale and driver of PPPs. PPPs deliver value for money in two key ways: by leveraging private-sector expertise to achieve more innovative and efficient project designs that better meet the public interest, and, more significantly, by meaningfully transferring the cost of major project risks such as construction cost overruns, opening delays, lack of facility availability, and lower-than-expected revenues to a private-sector partner that has an incentive and capacity to manage them. These risks have historically plagued major public-sector projects, costing governments hundreds of millions and even billions of dollars.

Thus contemporary PPPs are not intended to discredit or eliminate the role of government in effectively providing infrastructure, as was sometimes the case during earlier privatization efforts. Nor are they promoted as a way to lower the cost of delivering public infrastructure. Instead, PPPs are now seen as a mechanism to improve the effectiveness of public-sector procurement and project management by better managing key project risks. Through PPP models where the private-sector partner has made a large up-front financial investment in the project that is only recouped once construction is complete and the facility is operating to the predetermined performance standards, a strong incentive is in place to tightly manage the project and meet delivery budgets and schedules. With a significant number of PPPs now completed and in operation, there is emerging evidence that PPPs do in fact have a better record than traditional design-bid-build projects at delivering infrastructure on time and on budget.[7]

Yet at what costs are such benefits being achieved? The global experience with PPPs to date shows that they have been faced with a range of potential risks and shortcomings beyond on-time and on-budget delivery that challenge not only the realization of value for money but in fact the entire viability of the PPP model.

SHORTCOMINGS OF PPPs

PPPs have been prone to particular shortcomings that challenge the public interest benefit of infrastructure projects delivered through this approach. At their core, these limitations result from the restructuring of the project-delivery process to more deeply involve private-sector participation at all stages and from the ways that key project risks are apportioned between the partners.

First, PPPs have faced challenges in terms of transparency of information and public accountability. During the conceptualization, planning, and approval stages of a project, the application of PPP models can limit meaningful public engagement in decision making, something that has been widely identified as contributing to successful infrastructure projects. In PPP arrangements, the commercial sensitivity of information contained in project bids such as construction methods, technological innovations, the cost of private financing, and the premiums paid to transfer risk has meant that this information is not widely released during the project planning process. Moreover, once PPPs are approved and operational, even though concession agreement contracts and project assessments are often published, the detailed information necessary to follow the private money being invested into and drawn out of these complex financial transactions as profits has not always been made available either to the public or regulators. It can thus be difficult for decision makers and the public to fully debate the merits and value of various competing project designs or project financing models.

Accompanying concerns about a lack of transparency of PPP transactions is unease that PPPs have in some cases generated excessive profits for their private-sector investors. This raises questions about whether such arrangements actually deliver on their proposed value for public money proposition, because high private profits will either be captured through high user fees that disadvantage patrons or from larger-than-necessary government subsidies based on facility availability. By selling shares in PPP projects before the conclusion of the concession period, or refinancing project debt after the initial high-risk construction phase is over to lower borrowing rates, initial investors in PPPs have occasionally reaped very high profits, sometimes in the range of 20 percent to 30 percent return on investments.

Reservations about the twin shortcomings of limited transparency and the

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potential for investors to reap significant profits were captured in the findings of a 2011 British House of Commons inquiry into private finance initiatives (PFI), a British term for PPPs.

> The taxpayer's position is made worse by poor transparency of investor and contract information alongside patchy public sector commercial skills. We suspect that initial investors are able to make excessive profits from selling PFI shares, yet we lack the information to know for sure.[8]

Based on such experiences, the inquiry concluded, "At present, PFI deals look better value for the private sector than for the taxpayer."[9]

In addition to trepidation about the financial value of PPP arrangements, PPPs also raise particular planning-related challenges that can limit the public benefit of an infrastructure project. The PPP process can limit project innovation and the building of long-term flexibility into the design of infrastructure facilities, as the private-sector partner aims to save on up-front construction costs and minimize project risks during the period that they are responsible for operations. Moreover, in PPPs where the private-sector partner's initial investment in a project is recouped entirely through user fees rather than scheduled government payments for facility availability (in other words, revenue risk is transferred to the private-sector partner), governments often lose control for setting user fee rates, service coordination, and integration into the wider network, to the detriment of facility users. Some early PPPs also contained noncompetition clauses to protect the commercial interests of the private-sector investors. However, these contract terms were not always publicly disclosed at the time that the deals were signed; they raised public ire when they were discovered and seriously limited the capacity of governments to upgrade facilities over time.[10]

Indeed, a common critique of PPPs has been the inflexibility of the long-term concession agreements that govern the partnership and the risk of present decision makers locking in the policy options of future governments. PPP concession agreements typically stretch over hundreds and sometimes thousands of pages. These contracts are intended to pre-specify the terms and responsibilities of each partner over the duration of a long-term partnership in complex urban areas characterized by uncertainty and change. In such contexts, the long-term contractual arrangements associated with PPPs can make it difficult or costly for governments to retrofit infrastructure facilities over time to meet changing conditions, public demands, or evolving policy objectives without paying substantial penalties to the private-sector operator.

In fact, the long-term structure and lack of flexibility of PPP concessions has been a source of tension that has challenged the viability of many PPP projects. Given the high stakes associated with PPPs for each of the partners, disputes have commonly arisen over user fee rates, service quality levels provided by the private operator, differing interpretations of the contract agreement, and desires by the public partner to upgrade or expand the facility, especially when future governments dispute the policy decisions that their predecessors codified in PPP contracts. These disputes are most acute when the private-sector operator recovers the majority of its initial investment from user fees rather than government payments. Although PPP contracts contain dispute resolution clauses, it is not uncommon for these to be bypassed for legal remediation, resulting in high transaction costs for both of the partners.

One feature of PPPs to date has been the prevalence of the contracts being renegotiated. While PPPs are designed to give governments long-term certainty and to transfer project risks to the private sector in exchange for a premium return, in cases where project profitability does not meet expectations, the private-sector partner has often initiated strategic renegotiations of the PPP contract in order to improve the terms of the agreement and boost profitability.[11] This undermines the extent to which project risks are actually transferred away from the government, a key premise upon which contemporary PPPs are based. In response to the challenge of unexpected renegotiations initiated by the private-sector partner, some more recent PPP concession agreements aim to improve the sharing of risk by including mechanisms to automatically rebalance the concession agreements. Through the application of variable length contracts or terms specifying minimum and maximum rates of return, PPP contracts are being drafted that compensate the private-sector operator if financial returns fall well below expected levels and credit the public-sector partner if profits exceed a given rate of return.

Nevertheless, PPP arrangements are volatile. A surprisingly large number of projects do not reach the conclusion of their concession period. Numerous projects such as the Cross City Tunnel in Sydney and the Las Vegas Monorail have gone bankrupt and proceeded through court-administered restructurings. However, the government partner has bought out or taken over other projects facing financial or performance challenges, such as the State Route 91 express toll lanes in Orange County, the Orlyval airport rail link in Paris, and the Croydon Tramlink in London. This raises questions about whether the government is ultimately the risk holder of last resort, even when the risks of poor facility performance and lower-than-expected revenues are contractually transferred to the private-sector partner.

CONCLUSIONS

As illustrated throughout this article, PPPs are neither inherently positive nor inherently negative. PPPs emerged as a response to challenges with both traditional government procurement models and outright privatization efforts. Yet the success of a major infrastructure project is not assured simply by the decision to deliver it using a PPP. Rather, success is determined by the quality of the processes through which the PPP is structured, planned, and delivered, and the ways that key project risks are allocated between the partners.

As PPPs continue to gain in popularity around the world, important lessons can be learned from past experiences to redress the identified shortcomings

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of this model of project delivery. First, it is critical that key project information is publicly released during the project planning process prior to approval, enabling the public and decision makers to meaningfully assess the merits of a PPP compared to other procurement alternatives. This includes: a full breakdown of project costs and how they compare with those under a traditional procurement model, the allocation of project risks between the partners and the cost premium associated with risk transfer, the expected rates of return for project investors, and the contractual terms of the partnership and whether any noncompetition agreements exist. This information is rarely released during the standard PPP procurement process.

Second, in terms of the allocations of risk between the partners, PPPs have shown strong results in delivering large-scale infrastructure projects on time and on budget, and project planners should continue to examine mechanisms to transfer these risks to the private sector. Conversely, the public sector is better suited to manage the factors that influence variations in project revenues. The accompanying loss of flexibility and control over the setting of user fee rates, service integration, and long-term planning associated with attempts to transfer revenue risks to the private sector have resulted in conflicts between the partners and instability in PPP arrangements. Rather than seeking to transfer revenue risks to the private sector, government planners should explore the application of rebalancing mechanisms within the PPP concession agreements that aim to share rather than fully transfer this risk.

Third, PPPs are complex financial and planning transactions that have high stakes because they codify a set of relationships over a long period of time and are costly to adjust once set. Therefore it is critical that the public-sector partner has staff with the expertise to evaluate project risks, develop accountable decision-making processes, structure contracts that protect the public interest, and closely monitor the effectiveness of these arrangements. For public partners that are new to using the PPP process, hiring experienced external advisors can provide an important resource when developing PPPs with experienced bidders that have been involved in dozens of projects around the world. Over time, jurisdictions that have delivered many projects through PPPs have developed special-purpose agencies to ensure that best practices are followed and past lessons are being applied to future projects. Finally, new dispute-resolution mechanisms are necessary to minimize the severity and cost of conflicts between the partners and the frequency of contract breakdown.

Despite advancements in the PPP models and project delivery approaches used today, pressing challenges still remain. Only by continuing to evolve and meet the identified challenges head-on will PPPs remain an effective model of infrastructure megaproject delivery.

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