UNIVERSITY OF CALGARY

THE SCHOOL OF PUBLIC POLICY
SPP Research Papers

Volume 9 • Issue 12 • March 2016

THE THEORY AND EVIDENCE CONCERNING PUBLIC-PRIVATE PARTNERSHIPS IN CANADA AND ELSEWHERE[†]

Anthony E. Boardman, Matti Siemiatycki and Aidan R. Vining

SUMMARY

The popularity of Public-Private Partnerships (PPPs), as a way for governments to get infrastructure built, continues to grow. But while the public is often led to believe that this is because they result in a more efficient use of taxpayer funds and a more streamlined process, this is not necessarily the case. In fact, the clearest advantage that PPPs offers is to politicians, who are able to transfer to private partners the risks of miscalculated construction costs and revenue projections (as with a toll road, for example). For taxpayers, the deals can often work out worse than if the government had simply pursued a fixed-price design-build Public Sector Alternative (PSA) arrangement.

Even from the very start of the process, there are often a limited number of private consortia equipped to bid on major PPPs, which already leads to the potential for bidders to build in higher profits, and thus, higher costs for taxpayers. Nor are these private consortia oblivious to the risks they assume; they must therefore build into their bid an effective "insurance premium" to account for unforeseen delays and increased costs. The use of private debt to finance construction further inflates prices over a government's lower cost of capital.

To an incumbent government, a key advantage of PPPs is the ability to avoid upfront costs, and let the private consortium arrange financing until the project is complete, allowing politicians to take the credit for new infrastructure while passing future maintenance and operating costs off onto future politicians, taxpayers and/or users. This, however, only provides both the incentive and bookkeeping artifice — since costs are incurred off the government's current balance sheet — for governments to build more infrastructure than might otherwise be justified.

Advocates of PPP would argue that one clear benefit PPPs do offer the public is an impressive record of bringing in projects on time and on budget. It is true that the inflexibility of contracts and the financial risk transferred to the private partners have a powerful effect in keeping projects on track. However, the yardsticks by which the on-time

[†] A preliminary version of this paper was presented at the 2015 Urban Policy Program Symposium, held at The School of Public Policy, University of Calgary, June 2015. We would like to thank participants for their helpful comments and suggestions, especially Jack Mintz. We would also like to thank two anonymous reviewers for their helpful suggestions.

and on-budget criteria are measured are typically flawed. The “start dates” of PPPs are marked after the conclusion of a lengthy negotiation and project-planning process between a government and a private consortium, making project completions seem more efficient than they really are. Meanwhile, the estimated cost of a project has a tendency to increase during that preliminary process. In other words, the delay and cost inflation that so often characterize traditional PSAs are not magically eliminated in a PPP: they just tend to occur prior to the first shovel breaking ground, rather than incrementally over the course of the project’s construction.

Ultimately, several of the problems common to traditional government PSA projects, and supposedly absent from PPP arrangements, are still there, only much harder to discern. The costs can be just as high, if not higher than with a fixed-price PSA, the timeframes can be just as lengthy, when the entire process is accounted for, and the amount of government resources tied up in the negotiation and planning process will often rival that of traditional procurement methods. Furthermore, all those risks that are supposedly transferred to private players are never truly transferred: The government is always the residual risk holder should the consortium somehow fail. From a policy standpoint, the measure of whether PPPs are worthwhile should be based not on whether they come in on time or on budget, but whether they increase social value relative to a PSA. There is, currently, no convincing evidence that they do.

1. INTRODUCTION

Since their introduction in the U.K. in the 1990s, public-private partnerships (PPPs) have been adopted in many countries around the world, including Canada. While the use of PPPs waned during the global financial crisis, it has rebounded somewhat as the global economy has recovered.

PPPs procure services for government using private sector capital and expertise. The key normative justification for PPPs is that the private sector has stronger incentives to deliver services more efficiently and at lower cost than with traditional government procurement. PPPs are mostly used to provide and maintain infrastructure, including roads, bridges, water and wastewater treatment plants, schools, hospitals and prisons. On occasion, the private sector also provides the services that use the infrastructure, such as correctional services and clinical services. In Canada, federal, provincial and municipal governments have all employed PPPs. For the most part, however, PPPs are primarily contracted with provincial governments, mostly in urban areas.

Globally, governments are attracted to PPPs out of a desire to provide new infrastructure to address the so-called "infrastructure deficit." Between 2004 and 2013, the European Union signed PPP contracts with a total capital value of 207 billion euros (US$280.7 billion). The European Commission has launched an ambitious "Investment Plan for Europe" that encourages large-scale private financing of public infrastructure.[1] In North America, by 2009, $200 billion in investments had been planned or realized through PPPs.[2] In the U.S., the Obama administration has been considering policy options that would attract private capital to finance large infrastructure investments.[3] The EU, the OECD and the World Bank have developed PPP guidelines for practitioners and are promoting their use.[4] Despite the interest from many governments in PPPs, there are many unresolved issues: Have PPPs generally been successful? Do they provide more social value than traditional procurement? Do municipalities face any special issues?

The main purposes of this paper are to discuss the potential theoretical advantages and disadvantages of PPPs versus traditional government procurement methods and to review the evidence on the outcomes of existing PPP contracts. Despite the purported advantages of PPPs, there are many reasons why they often do not deliver good social value or live up to other expectations. While we focus on Canada, the main issues do not vary by country. Therefore we draw upon the global experiences with PPPs.

This paper is organized as follows. Section 2 provides an overview of PPPs and a brief history of PPPs in Canada. Section 3 identifies and discusses the theoretical benefits of PPPs. Section 4 considers the diverse rationales that governments have put forward to

---

1 See European Commission Investment Plan, accessed February 9, 2016, http://ec.europa.eu/priorities/jobs-growth-and-investment/investment-plan_en.

2 See Public Works Financing Major Project Database, accessed February 9, 2016, http://pwfinance.net/projects-database/.

3 See White House Press Secretary Office, "Fact Sheet: Increasing Investment in U.S. Roads, Ports and Drinking Water Systems Through Innovative Financing" (January 16, 2015).

4 European Commission, *Guidelines for Successful Public-Private Partnerships* (Brussels: European Union, 2003); OECD, *Recommendations of the Council on Principles for Public Governance of Public-Private Partnerships* (Paris: OECD, 2012); World Bank, *Public-Private Partnerships Reference Guide*, Version 2.0 (Washington, D.C.: World Bank, 2014).

justify their use of PPPs, that is, the actual or "positive theory" rationales why governments use PPPs to deliver infrastructure. Section 5 discusses some of the disadvantages of PPPs, including the higher cost of private sector financing and higher transaction costs. Section 6 draws on the available evidence to evaluate the performance of PPPs to date. Section 7 considers trends in PPPs in Canada and elsewhere, and contains some policy recommendations.

2. OVERVIEW OF PPPS

What is a PPP?

A PPP is a long-term contract between a government agency and a consortium of private sector firms whereby the consortium provides a range of project services and at least some private capital. The private sector partners in a new project typically form a special-purpose vehicle (SPV), which is a distinct legal entity formed to deliver the project and limit the financial liability of the parent firms.[5] In a "classic" PPP, the consortium bundles the design, building (i.e., construction), financing, operation and maintenance of new physical infrastructure as a "DBFOM" contract. In the U.K., this form of PPP is referred to as a Private Finance Initiative (PFI). A key feature of a DBFOM is that it enables the purchasing government to transfer some risks to the private sector partners, including potentially: the risk of construction-cost overruns and delays, the risk that, once operational, the facility does not function as contracted and, sometimes, the risk that revenues from user fees or user demand do not meet the projected levels. In exchange, the consortium receives either (1) an agreed periodic fee from government (an "availability payment"); (2) "shadow tolls" payments from government, which vary with usage (a "usage" payment); or (3) it collects tolls directly from users. Thus, the consortium generally earns revenue over the contract life, typically for 20 to 35 years. In principle, these revenues cover the private sector's initial investment in the project (design, construction and borrowing costs) and operating and maintenance costs, plus a profit margin. At the end of the contract, asset ownership reverts to the public sector. In a sense the private sector offers the public sector the ability to "rent to own," that is, the public sector pays the private sector an annual rental fee for a specified period and then owns the asset at the end of that period.

In practice, PPP contracts vary in the extent to which the private sector engages in all DBFOM activities. For highways without tolls, like the Sea-to-Sky Highway in B.C., there is no "operator" in the traditional sense, but the private consortium is responsible for facility maintenance over the life of the contract. In hospitals and schools, the private sector will "operate" the building and may provide some "soft services" like laundry and catering. However, the public sector usually retains responsibility for "core" services, such as the medical and educational services. But this is not true in all countries. For example, in the Spanish region of Alzira, some PPPs provide clinical services as well as the hospital DBFOM activities and, in Madrid, PPP schools provide the in-class curriculum and

[5] In Europe and India, they are known as special-purpose entities (SPE).

teaching as well as the physical buildings.[6] In contrast, in more recent PPP contract models, such as the U.K.'s PF2, soft services are no longer generally included.[7]

Financing arrangements also vary considerably. For example, even in DBFOM-style PPPs, such as the Canada Line transit project in Vancouver and the Northeast Anthony Henday Drive project in Edmonton, governments provided a significant share of the initial capital. For the $889 million Evergreen Line transit project in Vancouver, the contractor designed, built and financed the capital costs of the project with repayment of the investment made through partial progress payments as key construction milestones were met and with the balance paid upon substantial construction completion. In total, the contract period was only approximately 3.5 years; after that the project was operated and maintained by the public sector.

In some countries, governments and analysts use the term PPP more broadly. In the U.S., for example, any "partnership" (including contractual arrangements) involving the public and private sectors may be classified as a PPP. The U.S. General Accounting Office (GAO) treats relatively straightforward contracting-out of government services as falling under the PPP umbrella.[8] Many commentators in the U.S. regard temporary mixed enterprises (like General Motors) or urban renewal projects that are privately controlled, but publicly subsidized, as PPPs.

According to the Canadian Council for Public-Private Partnerships, an industry group that lobbies in support of PPPs, relatively simple operate-and-maintain contracts or design-build contracts are PPPs.[9] Infrastructure Ontario classifies PPPs into five categories as shown in Table 1. It identifies over 20 hospitals delivered using a build-finance procurement model as PPPs. The contractors financed part or all of the construction, where government has already developed their preferred design. Contractors are repaid their initial investments upon completion.

---

6 B. Acerete et al., "A comparative policy analysis of healthcare PPPs: Examining evidence from two Spanish regions from an international perspective," *Journal of Comparative Policy Analysis* 17, 5 (2015): 502-518.

7 HM Treasury (U.K.), *A New Approach to Public-Private Partnerships* (London: HM Treasury, 2012).

8 See U.S. Government Accounting Office, "Public-Private Partnerships: Key Elements of Federal Building and Facility Partnerships," GGD-99-23 (1999).

9 See Canadian Council for Public-Private Partnerships, "Models of Public-Private Partnerships," accessed February 9, 2016, http://www.pppcouncil.ca/resources/about-ppp/models.html.

TABLE 1 PPP MODELS IN CANADA, WITH SAMPLE PROJECTS AND CONSTRUCTION COMPLETION DATE

Greater Public Sector Responsibility			*Greater Private Sector Responsibility*	
Build Finance	**Design-Build-Finance**	**Design-Build-Finance-Maintain**	**Design-Build-Finance-Operate-Maintain**	**Long-Term Asset Lease/ Asset Sale**
Sudbury Regional Hospital, Sudbury (2009)	Humber College Learning Resources Centre, Greater Toronto (2015)	Centre for Addiction and Mental Health, Toronto (2012)	Confederation Bridge, New Brunswick-Prince Edward Island (1997)	NAV Canada Air Traffic Control, Canada (1996)
Roy McMurtry Youth Detention Centre, Greater Toronto (2009)	Lachine Train Maintenance Centre ATM, Montreal (2015)	BC Cancer Agency Centre for the North Project, Prince George (2012)	Canada Line Rapid Transit system (2009)	Highway 407, Greater Toronto (1999)
Sunnybrook Health Centre, Toronto (2010)	Evergreen Rapid Transit Line, Metro Vancouver (2016)	Durham Consolidated Courthouse, Oshawa (2009)	Chief Peguis Trail Extension, Winnipeg (2012)	Bruce nuclear power plant, Ontario, (2000)
Markham Pan Am Games Centre, Markham (2014)	Mosaic Stadium, Regina (2017)	McGill University Health Centre, Montreal (2015)	Northeast Anthony Henday Drive, Edmonton (2016)	Teranet land-use registry, Ontario (2003)

To clarify, for our purposes, we refer to a DBFOM or DBFM contract as a "classic" PPP. Such contracts contain financing and a bundle of activities, some of which span the life of the contract. However, the private sector does not have to perform 100 per cent of the DBFOM activities for a contract to qualify as a PPP. Nonetheless, in most countries and here, a PPP requires that the private sector both provides some "significant" project financing and also engages in at least two of the other activities. Thus, a contract where the private sector provides design, construction and some project finance qualifies as a PPP according to our definition. Provision of significant private sector capital, at least during the construction phase of the project, is a necessary condition to count as a PPP. This requirement ensures that the private sector has some "skin in the game." But, accordingly, a fixed-price design-build contract is not a PPP according to our definition.

Privatization, Asset Sales and the Sale of Long-term Leases. Privatization occurs when the public sector transfers ownership and control of an asset to the private sector. Some governments have transferred specific highway operations and maintenance to the private sector through so-called asset-monetization concessions. In effect, government sells the long-term operating rights and maintenance obligations to existing assets in exchange for an upfront payment. The private sector receives revenue from the highway tolls it collects.[10] Examples include the Chicago Skyway and the Indiana Toll Road. The amounts paid by the concessionaire can be high. For example, the winning bidder for the Indiana toll-road concession paid US$3.8 billion (in this case, resulting in the initial operator's bankruptcy). In the U.S., asset sales are considered to be PPPs. However, they differ from classic DBFOM PPPs because the infrastructure (for example, a highway) is already in existence and so there is little, if any, design element or new construction (build): they are "brownfield projects" rather than "greenfield projects." Both Boardman and Vining and Snyder and Luby argue that the sale or long-term leasing of existing infrastructure is essentially "financial engineering."[11] In our view, such sales are more usefully thought of and classified as privatization rather than as a form of PPP.

[10] K. Birch and M. Siemiatycki, "Neoliberalism and the Geographies of Marketization: The Entangling of State and Markets," *Progress in Human Geography* (online, 2015).

[11] A.E. Boardman and A.R. Vining, "The Political Economy of Public-Private Partnerships and Analysis of their Social Value," *Annals of Public and Cooperative Economics* 83, 2 (2012): 117-141; T. Snyder and M. Luby, "The Sale and Lease of Public Assets: Fiscal Savior or Sacrilege?" *Public Works Management and Policy* 20 (2012): 1-25.

Public Sector Alternative (PSA). What are the alternatives to a PPP? In most circumstances, the most likely alternative is a number of separate contracts with independent private sector companies to design, build, operate and maintain some new infrastructure, with the public sector providing non-contracted services. We characterize this type of contract as the public sector alternative (PSA).[12] Like PPPs, PSAs vary considerably in design and scope, but for our purposes, the critical distinguishing features are that the private sector does not provide finance, nor does it bundle *many* different activities into a single contract.

PPP proponents tend to caricature PSAs as situations where construction companies take on illusory risk but, in fact, are handed blank cheques, take on no risk and generate huge cost overruns.[13] However, cost overruns in PSAs are not inevitable. Indeed, a fixed-price design-build contract may be part of a PSA. Risk transfer is often regarded as a major benefit of PPPs, as we discuss later, but this benefit can also be achieved by PSAs. Significant risk may be transferred to the private sector in any fixed-price contract, whether that contract is organized as a PPP or a PSA.

Worldwide Use of PPPs

PPPs have been adopted in many developed and developing countries, including Australia, India, Ireland, South Korea, South Africa, Spain, and Turkey, to name just a few. The main use of PPPs in the U.S. has been for roads/highways, especially at the state level and for water treatment/ desalination plants, especially at the municipal level. In addition, the private sector builds and operates new prison facilities. As of late 2012, 32 states had enacted PPP-enabling legislation.[14] However, relatively few U.S. states have actually adopted PPPs in any significant way; the most active are California, Virginia, Florida, Massachusetts, Texas and Washington. In some U.S. PPPs, the private sector contributed only a relatively small percentage of the capital, with the remainder coming from federal or state loans and grants. For example, in the I-495 Capital Beltway HOT Lane project, the private equity partner only provided financing for US$349 million of the US$1.93 billion total.[15] As we discuss above, many so-called transportation PPPs are road concessions, which are more appropriately thought of as privatization rather than as PPPs.

PPPs have also been used in a number of key emerging countries including India, Mexico, Brazil, Argentina and Colombia, mostly to deliver new toll highways. In Colombia, for example, the Bogota bus-rapid-transit system was delivered through a PPP. In Africa, South Africa has been the main country where PPPs have been used to deliver infrastructure, including hospitals, government buildings, toll roads, and the Gautrain mass-rapid-transit line (connecting Johannesburg and Pretoria). China has made extensive use of PPPs in

---

[12] In "value for money" analyses, the alternative to a PPP is referred to as the Public Sector Comparator (PSC). This terminology implies that the decision-maker has already selected the PPP option and the PSC is purely a hypothetical alternative. Ideally, "traditional" government provision and a PPP should be on an equal footing—plausible alternatives to each other ex ante. For this reason, we prefer and will use the PSA terminology.

[13] B. Flyvbjerg, N. Bruzelius and W. Roghengatter, Megaprojects and Risk (Cambridge: University Press, 2003).

[14] R. Geddes and B.L. Wagner, "Why do U.S. states adopt public–private partnership enabling legislation?" *Journal of Urban Economics* 78 (2013): 30-41.

[15] See http://www.fhwa.dot.gov/ipd/p3/default.aspx (accessed March 3, 2016).

the road, transit and water sectors, but in many cases there is a blurring of the public and private sectors, making some of these arrangements more akin to public-public partnerships.

An Overview of PPPs in Canada

In Canada, well-known early PPPs included Highway 407 (1999), the Confederation Bridge (1997) and the Pearson Airport in Toronto (1996).[16] Boardman and Vining have written a detailed account of the period 2000–2010 in Canada.[17] PPPs have been used mainly at the provincial level, with relatively few at the municipal or federal levels. From 2000–2010, British Columbia (B.C.), Ontario, Alberta, and Quebec were the most active provinces. Most Ontario projects in the past few years have been large transportation projects, such as the Herb Grey Parkway in Windsor, and LRT projects in Toronto, Ottawa and Waterloo, following a wave of hospital and justice-system projects. As discussed above, Ontario uses an expansive definition of PPP, ranging from build-finance projects that are primarily used for large renovations or expansions of existing assets (e.g., Sunnybrook Health Sciences Centre and Roy McMurtry Youth Detention Centre) to classic DBFOMs (See Table 1). Recent PPPs in Canada focus more on transferring facility "construction risk" (i.e., delivering the project on time and on budget) rather than demand or revenue risk. Indeed, most recent PPPs in Ontario do not include new user fees, even in sectors such as roads where tolls have been used globally. In contrast, there are tolls on new PPP bridges in B.C., such as the Golden Ears Bridge, as well as on other new bridges that were not PPPs, such as the Port Mann Bridge.

Governance of PPPs in Canada

In Canada, the B.C. and Ontario governments and the federal government have established special-purpose PPP agencies. Partnerships BC, Infrastructure Ontario and PPP Canada are Crown corporations, in effect if not in name, 100 per cent owned by the respective governments. These agencies are mandated to *promote* PPPs. For example, PPP Canada provides "expertise and advice in assessing and executing PPP opportunities at the federal level as well as leveraging greater value for money from Government of Canada investments in provincial, territorial, municipal and First Nations infrastructure through the PPP Canada Fund."[18] Thus, it is an important source of funds for municipalities that want to use PPPs. At this point in time, it is not yet clear whether the incoming federal government will continue this policy.

These agencies have their own boards of directors and are staffed by professional specialists. The provincial agencies are responsible for developing the methodologies used

---

16 A Vining, A. Boardman and F. Poschmann, "Public-Private Partnerships in the U.S. and Canada: There Are No 'Free Lunches,'" *Journal of Comparative Policy Analysis* 7, 3 (2005): 199-220.

17 A. Boardman and A Vining, "P3s in North America: Renting the Money (in Canada), Selling the Roads (in the USA)," in *International Handbook on Public-Private Partnerships*, ed. G. Hodge, C. Greve, and A. Boardman (Cheltenham, U.K.: Edward Elgar, 2010), 354-398.

18 PPP Canada website, "About us," accessed February 9, 2016, http://www.p3canada.ca/about-us/.

to assess the value for money of a PPP. These assessment methods vary considerably.[19] These agencies also commission the studies on individual projects, which are typically carried out by major accounting firms. The PPP agency is responsible for running the procurement process—soliciting bids, selecting winners and negotiating final terms with bidders, conducting value-for-money studies, writing contracts and monitoring the construction phase of the project. In most cases, once construction is completed, the asset becomes available for use by the line ministry (e.g., health, transportation, justice, etc.) or agency (e.g., a health authority or municipal transit agency) that is the primary operator of the facility. This agency then monitors and enforces the contract during the operation phase of the concession. From that point on, PPP agencies typically have little or no direct involvement in projects.

3. THEORETICAL BENEFITS: NORMATIVE RATIONALES FOR PPPS

Introduction

This section discusses the normative justifications for PPPs; that is, why it might be appropriate to use PPPs to provide infrastructure. Boardman and Vining argue that the key relevant normative criteria for most government decision-making should be allocative efficiency or, more broadly, social welfare.[20] Either version of this goal can be expressed as a linear combination of (the present value of) consumer benefits (consumer surplus), private sector benefits (producer surplus), employee benefits (employee surplus) and net government revenues (government surplus). The benefits or costs that each group bears should be adjusted for risk. The PPP should then be compared to other alternative procurement method(s), the PSA.

Incentive Incompatibility and Cost-Saving Innovations

Traditional government-procured or -produced infrastructure projects have often cost considerably more than initially budgeted and have failed to meet their construction timelines or their demand and performance targets.[21] Many analysts have pointed out the major problem facing such cost-plus (non-fixed-price) public sector procurement is the poor incentive structure of the relationship.[22] Often there is a moral hazard problem: the more it costs, the more the private sector is paid.[23] In response, Flyvbjerg et al. argue that although

[19] A.E. Boardman and M. Hellowell, "Comparison and Analysis of Specialist PPP Units Methodologies for Conducting Value for Money Analysis (paper presented at the Fourth Annual International PPP Symposium, New York, September 15-16, 2015).

[20] A. Boardman and A. Vining, "Assessing the Economic Worth of Public-Private Partnerships," in *International Handbook on Public-Private Partnerships*, ed. G. Hodge, C. Greve and A. Boardman (Cheltenham, U.K.: Edward Elgar, 2010), 159-186.

[21] B. Flyvbjerg, "What You Should Know About Megaprojects and Why: An Overview," *Project Management Journal* 45 (2014): 6-19.

[22] R. McAfee, R. Preston and J. McMillan, "Bidding for Contracts: A Principal-Agent Analysis," *RAND Journal of Economics* 17, 3 (1989): 326-338.

[23] A.K. Dixit, "Incentives and Organizations in the Public Sector: An Interpretative Review," *Journal of Human Resources* 37, 4 (2002): 696–727; S. Burgess and M. Ratto, "The Role of Incentives in the Public Sector: Issues and Evidence," *Oxford Review of Economic Policy* 19, 2 (2003): 285–300.

governments can avoid some incentive incompatibility problems by signing fixed-price contracts, these contracts are difficult or time-consuming to enforce.[24]

Against this backdrop, PPPs that include some private finance have the potential to create better incentives for private sector firms to overcome the moral-hazard problem and to better control risks that they are able to manage. Thus, if done appropriately, the private sector firms are incentivized to deliver projects more cost-efficiently. In turn, greater cost-efficiency will likely improve social welfare.

In recent years, innovation has also emerged as an important public policy goal that governments seek to deliver. It is often claimed that PPPs provide more innovation than do PSAs. However, it is important to note that an innovation is not just an invention. In our view it must increase social welfare. The incentives within PPPs may encourage inventions that drive down project costs and reduce risks to the concessionaire over the life of the contract, and improve social welfare. However, treating the cost-saving innovations and the cost savings themselves as separate benefits would be double counting them.

Economies of Scope Benefits

A key rationale for using PPPs is the potential for economies of scope among some or all of the bundled activities.[25] Typically, the SPV brings together firms with complementary expertise early in the bidding stage and incentivizes them to jointly develop a proposal that reduces total lifecycle costs. In principle, co-ordination leads to facility designs that are actually buildable without requiring extensive changes and have an appropriate long-term maintenance and rehabilitation strategy in place. Such economies of scope may lead to social welfare benefits. Furthermore, these benefits may increase as more activities are bundled together and, therefore, are potentially largest in a DBFOM contract. A more limited DBF contract is unlikely to realize such benefits.

Quality and Innovation Benefits

Bundling complementary skills in a PPP and the nature of the PPP contract-negotiation process may produce a higher-quality project; that is, one that is better from the perspective of the operator or the user (consumer).[26] Such benefits improve social welfare. However, while quality improvements are possible in a PPP, the incentive structure encourages cost-reducing innovations, not quality-improving innovations.

Some critics argue that governments are more willing to invest in building new facilities than in their maintenance.[27] Under-investment in the maintenance of government facilities

---

[24] B. Flyvbjerg, N. Bruzelius and W. Rothengatter, *Megaprojects and Risk: An Anatomy of Ambition* (New York: Cambridge University Press, 2003).

[25] O. Hart, "Incomplete Contracts and Public Ownership: Remarks, and an Application to Public-Private Partnerships," *The Economic Journal* 113, 486 (2003): 69-76.

[26] If the PPP also has lower costs, we can simply say it offers better value.

[27] Under-maintenance may arise because governments may prefer to spend money on new infrastructure, rather than on maintaining existing infrastructure, for political reasons or the desire to "make a mark." Or, a new government may not be committed to the project of a previous government.

will lead to the social value of that asset declining more than optimally. A key aspect of PPPs is that maintenance is explicitly included in the contract and "ring-fenced." Better and more appropriate maintenance expenditures may result in an asset that provides more benefit to the operator or users.

Risk-Transfer Benefits?

PPP proponents argue that a major benefit of PPPs is transfer of risks to the private sector. Risks should be allocated to the party best able to manage the risk. Basically, this means the party that can bear the risk at the lowest cost. However, assuming no difference in costs, moving the risk from the public sector to the private sector is not a benefit, but is simply a transfer from a social welfare perspective.[28] What matters is whether a PPP can mitigate or manage these risks better than a PSA can. If it can (and assuming other costs and benefits are the same), then the total lifetime cost of the PPP will be lower than that of the PSA. Thus, risk transfer will be taken into account in a correctly conducted financial analysis. Risk transfer should not be treated as an additional benefit.

Of course, there are political benefits to transferring risk. Indeed, this is a major reason governments favour PPPs. But one does not get something for nothing. The private sector requires compensation to take on additional risk. This payment for risk is equivalent to an insurance premium: the government purchases an insurance policy against the risk of cost overruns and other risks.[29] Why doesn't the government self-insure? According to finance theory, if the goal is to maximize government wealth (i.e., minimize the present value of government costs) and government holds a diversified portfolio of investments (i.e., projects and programs), then government should ignore non-systematic (i.e., project-specific) risk.[30] Therefore, there is no financial reason why government should pay for insurance. But because a PPP implies that government is not self-insuring, we can infer that governments generally shift the risks to the private sector for political reasons. This argument applies to government jurisdictions with well-diversified portfolios. Regional districts or municipal governments do not necessarily manage large, diversified portfolios of projects or programs. In this situation, risk transfer may have some value.

In practice, the risks that governments seek to transfer vary considerably. The two most important risks are construction-cost risk and revenue risk.[31] The former is nearly always transferred in a PPP (as well as in fixed-price PSAs). Revenue-risk transfer varies across countries and over time. Many private sector participants in PPPs are very reluctant to take on both construction-cost risk and revenue risk. PPPs that take on revenue risk are exposed to many factors that may lower their revenues including increases in competition. Sometimes government may compete directly with a PPP by, for example, building new non-toll road that follows a similar route to a PPP toll road. Where they bear revenue risks,

---

28 In fact, this transfer involves transaction costs.

29 P. Edwards et al., *Evaluating the Operation of PFI in Roads and Hospitals* (London: Certified Accountants Educational Trust, 2004); F. Blanc-Brude, H. Goldsmith and T. Välilä, "A Comparison of Construction Contract Prices for Traditionally Procured Roads and Public-Private Partnerships," *Review of Industrial Organization* 35, 1-2 (2009): 9-40.

30 J. Berk and P. DeMarzo, *Corporate Finance,* 3rd ed. (Upper Saddle River, N.J.: Prentice Hall, 2013).

31 In practice, governments rarely transfer *all* of the risks. Government almost always remains as the residual financier and risk holder. With respect to construction risk, government often retains permitting risk, which is more within its control.

private sector firms are likely to demand comprehensive non-compete terms that restrict governments from taking measures that undermine revenues.

Fiscal Constraints and Additions to Infrastructure

In a classic PPP, government is responsible for only a relatively small part of the costs upfront, and often little or nothing throughout the construction phase. Only after construction has finished and the PPP is operational, do governments or users begin to pay substantial amounts and, even then, payments are generally spread over many years—usually 25–30 years. In many countries the future liability does not appear on the government's balance sheet and is, therefore, an example of off-balance-sheet financing. This strategy appears to improve government's current budgetary position and minimizes or reduces the government's short-run deficit (i.e., current incremental borrowing). By using off-balance-sheet financing of PPPs, governments can get around internal or external borrowing limitations.[32]

Government administrators often say that projects were only undertaken because they were PPPs. A financially strapped government that is unwilling to raise taxes may not be able to undertake a PSA. But it might be possible to undertake the project as a PPP by using off-balance-sheet financing. Thus, PPPs may be associated with more infrastructure than would otherwise occur, at least in the short run. They are a way to provide infrastructure when facing binding fiscal constraints.

Getting around borrowing limitations can have normative merit. Most governments do not make a clear distinction between current expenditures and capital investments. Long-term investments are fundamentally different from current expenditures because, by definition, they extend over time. Thus, many of the benefits arise in the future (and potentially benefit future generations). Mintz and Smart show that a relaxation of borrowing rules could improve economic performance.[33] They argue that capital should be separated from current revenues and expenditures and they consider relaxing fiscal constraints so that capital expenditures are funded by debt. If governments do not relax the fiscal constraints for capital projects, one can make a case that PPPs are a "second-best" solution.

4. WHY GOVERNMENTS LIKE PPPS

Positive Rationales for PPPs

Using PPPs to procure infrastructure has specific features that make them highly attractive to governments. As Hodge and Greve argue, PPPs must be understood as both a legitimate project-delivery approach that has the potential to deliver public value when

---

[32] Sometimes these limits are imposed by previous governments in the same country, as in the case of the U.K.'s PSBR, or they may be imposed by the European Union, for example, to meet the Maastricht criteria related to public debt.

[33] J. M. Mintz and M. Smart, "Incentives for Public Investment under Fiscal Rules," World Bank Policy Research Group Working Paper 3860 (2006).

used appropriately, and also a governance tool that has the potential to deliver significant political benefits to the political party or ruling interests in power.[34] In this light it is necessary to explore why governments may seek to leverage PPPs to realize their own political objectives. Drawing on political economy theory, we refer to these reasons as "positive" rationales for government selection of PPPs.[35]

Oversimplifying somewhat, governments seek to maximize votes or political benefits. While there should be a financial imperative for governments to better manage infrastructure delivery to protect the public interest, there are strong political reasons for governments to prefer PPPs over PSAs.[36] This section discusses the major ways in which PPPs help incumbent governments.

On Time and On Budget

Claiming "on-time and on-budget" project delivery is one way that PPPs deliver political benefits. Cost overruns on mega-projects are a highly visible symbol of government mismanagement and failure, which reflect poorly on the political party in power. Such projects often receive extensive media coverage, and it is common for late or over-budget projects to become key issues in election campaigns. As we discuss above, traditional government procurement has led to cost overruns in the past. Since PPPs reduce the probability of cost overruns and increase the probability of being on time and on budget, they also generate political benefits.

PPPs are potentially more likely to be on time and on budget for three reasons. First, the construction phase does not begin until the end of an extensive planning and negotiation period so that the PPP is "ready to go" immediately upon contract signing. Second, due to the nature of the contract (the ability to write clear conditions into it), PPPs have strong incentives to complete on time and on budget. Third, a PPP contract is relatively inflexible, which reduces the likelihood of making expensive changes.[37] How relevant are the "on-time and on-budget" criteria for judging the value of PPPs? They have much political appeal. However, longer contract negotiations can mean that the total time frame is actually longer than it would otherwise be—in effect, "the clock" starts ticking later. Furthermore, there may be higher financing costs and transaction costs. However, "on-time and on-budget" criteria eliminate one form of optimism bias: government's ability to fool itself with respect to schedules and costs.

---

[34] G. Hodge and C. Greve, "Public-Private Partnerships: Governance Scheme or Language Game?" *Australian Journal of Public Administration* 69 (2010): S8-S22.

[35] Boardman and Vining, "The Political Economy."

[36] A. Downs, *An Economic Theory of Democracy* (New York: Harper, 1957).

[37] Of course, all contracts contain termination agreements and force majeure clauses. Force majeure provisions vary considerably across jurisdictions, but there are almost always some limitations on private sector risk exposure. See: Allen and Overy, *Termination and Force Majeure Provisions in PPP Contracts* (Luxembourg: European PPP Expertise Centre, 2012).

Rent to Own: Provide Now, Pay Later

Governments are tempted to use PPPs to provide infrastructure now, even if they do not face binding fiscal constraints, because voters tend to suffer from "fiscal illusion." Governments may garner votes by obscuring the level of spending and the tax requirements associated with that spending.[38] Governments prefer opaque methods of raising revenue or expenditures to direct taxation. Politicians or elected officials may act as though they believe that voters do not exhibit rational expectations with respect to expenditures.[39]

As mentioned above, a difference between a PPP and direct government provision is the timing of the cash flows. With direct government provision, government bears large "upfront" costs and relatively low costs "over time" (typically for 30 years). In a typical PPP, government pays little or nothing "upfront" and relatively large amounts "over time." Thus, incumbent governments can provide current users and voters with current benefits, thereby garnering political credit, while deferring costs to future politicians, future voters or users. Importantly, however, the government's cash costs are shifted, they are not eliminated and might increase over the life of the project. Boardman and Vining characterize this government strategy as "renting the money," although it could also be described as "rent to own."[40]

Higher Net Government Revenues from Toll Projects

Another potentially attractive PPP feature from the government's perspective is that the project may feature tolls and, if so, the tolls may be higher than if government provided the infrastructure directly. Non-users perceive tolls as more fair because they pay less while users pay more. Users do not like paying tolls to anyone. However, they appear to be somewhat less resistant to paying tolls to the private sector than to government, although evidence is hard to find. Greater distance from toll payers that the PPP format provides may reduce government's political risk associated with tolling and increase governments' willingness to allow the imposition of some user fees or higher user fees than would otherwise prevail. Potential user resistance is hard to organize *before* the project is finalized due to the collective action problem.

Keeping The Consultocracy Happy

PPPs also often provide political benefits by channelling financial benefits to aligned interest groups, such as law firms, merchant banks, large construction firms and consultants, labelled by Hodge and Bowman as the "consultocracy."[41] For example,

---

[38] T. Borcherding, S. Ferris and A. Garzini, "The Growth of Real Government," in *Handbook of Public Choice,* ed. J. Backhaus and R. Wagner (Amsterdam: Kluwer Academic, 2004), 77-108.

[39] R. Sauer, "The Political Economy of Gambling Regulation," *Managerial and Decision Economics* 22 (2001): 5-15; M. Marlow and D. Joulfain, "The Determinants of Off-Budget Activity of State and Local Governments," *Public Choice* 63, 2 (1989): 113-123.

[40] See Boardman and Vining, "P3s in North America."

[41] G. Hodge and D. Bowman, "The 'Consultocracy': The Business of Reforming Government," in *Privatization and Market Development: Global Movements in Public Policy Ideas*, ed. Graeme Hodge (2006), Chapter 6.

Hellowell has made the case that, when initially elected, "New Labour" in the U.K. continued with Conservative Party's PPP policy in order to curry favour with "the City."[42]

5. DISADVANTAGES OF PPPS

Higher PPP Financing Costs

Even if a PPP could provide a project at a lower production cost (i.e., excluding financing costs) compared to the PSA, its total cost to government costs might still be higher when other costs are included. A key reason is the difference is the cost of capital. A PPP is financed by private capital, which is paid back over the length of the contract (typically on the order of 25–30 years). The mix of debt and equity financing does vary widely: PPPs are often highly leveraged, using 90 per cent private debt and only 10 per cent equity. The higher cost of capital in a PPP stems largely from a higher cost of debt. Interest rates for PPPs are normally around 150–300 basis points above (national or provincial) government rates, but rose to 300–400 basis points higher in the aftermath of the 2008 global financial crisis.[43] This difference adds significantly to the cost of PPP project delivery, especially when the private financing is repaid over the long-term life of the operating concession. Even in Ontario, which has made extensive use of short-term PPP construction finance, the auditor general concluded this financing cost was $6.5 billion (or 14 times) more costly than government borrowing. This analysis was based on a portfolio of 75 infrastructure projects that had base construction and operation costs of $26 billion.[44]

But, some analysts argue that, in fact, there is little difference between the financing costs of a PPP and PSA. De Bettignes and Ross argue that government funds come mainly from borrowing in financial markets where they compete with the private sector. Governments can only raise capital at a lower rate than the private sector because of a lower default risk. When this default risk is taken into account, the effective borrowing rates of government and the private sector are quite similar.[45] Similarly, Boyer, Gravel and Mokbel argue that government's risk-free borrowing rate may not reflect the risk actually borne by taxpayers who implicitly guarantee to provide additional funds should they be necessary.[46] These arguments imply the risk-free rate that governments can borrow at underestimates the true cost of capital. Should default risk be taken into account? The counter-argument is that the government can, in fact, finance at a lower rate and, therefore, this is the rate that should be used for a financial evaluation.

---

42 M. Hellowell, "The UK's Private Finance Initiative: History, Evaluation, Prospects," in *International Handbook on Public-Private Partnerships*, ed. G. Hodge, C. Greve and A. Boardman (Cheltenham, U.K.: Edward Elgar, 2010), 307-332.

43 D. Ford, *Capital Markets 2013 Mid-Year Report: The Role of Capital Markets in P3 Financing* (Torys LLP), accessed January 23, 2014, http://www.torys.com/Publications/Pages/CapitalMarkets2013Mid-YearReport-05.aspx.

44 Auditor General of Ontario, "Infrastructure Ontario—Alternative Financing and Procurement" (2014), accessed May 22, 2015, http://www.auditor.on.ca/en/reports_en/en14/305en14.pdf.

45 J. De Bettignes and T. Ross, "The Economics of Public-Private Partnerships," *Canadian Public Policy* 30, 2 (2004): 135-154.

46 M. Boyer, E. Gravel and S. Mokbel, "The Valuation of Public Projects: Risks, Cost of Financing and Cost of Capital," *Commentary* 388 (C.D. Howe Institute, 2013).

Higher Private Sector Transaction Costs and Risks

PPP consortium formation takes time and experience. Also, developing and negotiating a PPP bid requires more upfront design and engineering work than in traditional procurement, and these costs are often only recouped if the bid is successful. Managing the bid and the contract requires good contracting and co-ordination skills, which are expensive to develop and provide. All of these factors raise firms' transaction costs.

Additionally, firms require a premium to compensate for the ex post risks that government actions will change the contract conditions. Some contracts explicitly restrain some future government behaviour. However, private sector firms require a significant premium if current and successor governments have considerable leeway to alter contracts to the firms' detriment. These premiums are likely to be particularly high if the PPP assumes revenue risk.

High Private Sector Profit Margins

Even if a PPP had lower costs than a PSA, the private sector participants per se do not want to pass on the lower costs to government. Their primary goal is to maximize their profits. Sometimes this reality gets lost in the "partnership" rhetoric and in governments' desire to deliver services. Private sector profit margins are a cost to government. Of course this cost applies to PSA contracts as well. The key issue is whether PPP margins are likely to be higher.

The major determinant of any difference in profit margins depends on the level of competitiveness during the bidding and contract-negotiation stages. Private sector firms or consortia are more likely to be able to negotiate a high price (and therefore enjoy high margins) if there are few bidders. In practice, the bidding process in many PPPs may not be very competitive due to significant barriers to entry. These barriers may arise because of the nature of projects, their size and complexity, actions of governments themselves (for example, restricting bids to domestic firms), and informational barriers (for example, knowing how to contract with government).

Higher Government Transaction Costs

Transaction costs include all of the costs that are required to initiate, negotiate and manage the PPP relationship over the life of the contract. These costs include deal structuring and closing costs, staff time for performance monitoring and meetings with service providers, data-collection regimes and external audits, and for dispute resolutions or contract renegotiation.

Williamson argues that the level of transaction costs depends on: the degree of asset specificity, the level of complexity, and uncertainty.[47] PPP contracts often have these characteristics and therefore are likely to have high transaction costs. PPP contract costs are also likely to be affected by the level of ex ante competition and government contract-

[47] O.E. Williamson, "The Economics of Organization: The Transaction Cost Approach," *The American Journal of Sociology* 87, 3 (1981): 548–577.

management skills. Most PPPs exhibit high asset specificity, complexity, uncertainty/inflexibility, low ex ante competition and (sometimes) poor contract management skills.[48] Therefore, PPP projects are likely to have high transaction costs.[49] Proponents of PPPs tend to focus on the "partnership" between the public and private sectors. However, Boardman and Vining emphasize that government is the "principal" in these contracts, while the SPV or the private sector firms are the "agents" and there are inevitable principal-agent problems that increase transaction costs.[50]

PPP contracting can be thought of as government contracting out under unfavourable circumstances. Flyvbjerg et al. point out that fixed-price PSA contracts can be difficult or time-consuming to enforce.[51] However, PPP contracts are generally much more complicated and cover a much longer time frame. Therefore, PPP transaction costs are likely to be significantly higher than PSA transaction costs. Of course, the irony is that complex and uncertain projects are exactly the ones where governments would like to reduce their risk exposure for normative and positive reasons.

Profit maximization is a dynamic process. Firms wish to maximize the present value of their future risk-adjusted cash flows *at all times* during the contract. Over time, as events unfold, firms' optimal strategies will often change and firms may extract more profits through renegotiation of incomplete contracts. Problems may also arise because some members of a consortium may sell their equity interest in a PPP and maintenance providers often turn over. Later participants may be more "aggressive" in their demands.

Private sector opportunism is potentially high because PPP contracts are intentionally inflexible. Inflexibility has both benefits and costs. Governments cannot change their minds on the fly. However, ex ante, there is uncertainty and, as events unfold and demands placed on public facilities evolve, governments may legitimately wish to change the terms of the contract. Contracts might be renegotiated at an acceptable price but often government is subject to "hold-up" by the private sector and incurs significant costs.[52]

Another reason why governments' transactions cost may be particularly high in PPP contracts is that governments might get into an "escalation of commitment."[53] For a government, there is often more at stake in terms of political outcomes (and symbolism)

---

[48] Asset specificity depends primarily on the nature of the project itself and is largely invariant to the procurement alternative. Obviously, a bridge in a particular location is a highly specific asset. However, PPP "innovation" may lead to lower-cost fixed assets, which, in turn, increases the degree of "sunkness." For example, PSA stations on the Canada Line might have had more sunkness than the PPP stations that were built. Also, PPPs might behave strategically and design in more flexibility in an asset's uses if it thinks the government may want to change the use of a facility. It might be able to extract higher future payments for making changes. There is little doubt that PPP contracts are more complex than PSA contracts. They involve simultaneous consideration of multiple stages/activities that extend over a long period of time. More contingencies must be considered. The longer time period also means that there is greater uncertainty. PSA contracts focus on fewer activities and occur over a considerably shorter time frame.

[49] Vining, Boardman and Poschmann, "Public-Private Partnerships."

[50] Boardman and Vining, "The Political Economy."

[51] Flyvbjerg, Bruzelius and Rothengatter *Megaprojects and Risk*.

[52] T. Ross and J. Yang, "Comparing Public-Private Partnerships and Traditional Public Procurement: Efficiency vs. Flexibility*," Journal of Comparative Policy Analysis* (online April 23, 2015).

[53] J. Ross and B. Staw, "Organizational Escalation and Exit: Lessons from the Shoreham Nuclear Power Plant," *Academy of Management Journal* 36, 4 (1993): 701-732.

than there is in the project outcome itself.[54] Politicians may be vulnerable to escalation of commitment for two reasons. First, those initiating the PPP agenda may make an ideological commitment to the PPP process. Second, although many of the economic costs on a particular project may be sunk at some given point, the political costs are not sunk. Politicians in executive positions (as well as government PPP-contracting agencies) want to avoid the perception that they have made a bad investment decision or that they are vacillating or weak. Consequently, even if a PPP develops major problems, political proponents are unable to credibly threaten to "pull the plug" on a project. Knowing this, private sector participants may "up the ante," especially if they sense desperation on the government's part. This problem can be most severe when a PPP is still in the construction phase or where a project has already started and the contract has not been finalized.

Government is *Always* the Residual Risk Holder

PPPs always carry the risk that a private sector participant could go bankrupt. Some level of bankruptcy is optimal from a societal risk-allocation perspective, although bankruptcies impose high transaction costs on all actors. PPPs are government projects. In the event of one firm in the consortium or the SPV entering into bankruptcy, governments still retain the residual risk and associated costs of the project: whether they re-contract the project, complete the project themselves or (most unlikely) decommission it. In the event that bankruptcy cannot be resolved by an entirely private sector solution and government intervenes, private sector investors usually receive a significantly reduced "haircut" than they otherwise would. However, because equity investors are only exposed to the loss of their equity investment, they have, in effect, a put option. PPP contracts may underestimate the expected cost of this equity investor option.

6. HOW HAVE PPPS ACTUALLY PERFORMED: IN CANADA AND GLOBALLY?

Introduction

Almost all of the participants in PPPs sing their praises. But data about the actual performance of PPPs are scarce and, even if they do exist, it is hard for disinterested analysts to access them. Assessing success is made difficult by the reality that PPP participants (including government-specialist PPP units) control and limit access to most of the relevant data. In contrast, the media tend to focus on negative experiences. Various auditors general provide the most balanced assessments, but given their mandates, they naturally focus on auditing rather than on comprehensive evaluation.

Do PPPs deliver the normative benefits or exhibit some of the disadvantages we have described above? The key question is whether PPPs increase social value relative to a PSA or some other relevant counter-factual. To date, much of the published evidence on

[54] M. Edelman, *The Symbolic Uses of Politics* (Urbana, Illinois: University of Illinois Press, 1985); A. Brown, "Politics, Symbolic Action and Myth Making in Pursuit of Legitimacy," *Organization Studies* 15, 6 (1994): 861-878.

PPPs by somewhat disinterested scholars draws upon case studies of individual projects or a small group of non-randomly selected projects and therefore cannot provide a completely satisfactory answer to the key question. However, there is now a burgeoning multidisciplinary body of literature focusing on PPPs around the world. Here we draw on this literature to provide an impression of the actual performance outcomes of PPPs to date. The available, limited evidence suggests mixed success. PPPs are not always "problem, problem, problem" nor are they the nirvana that many proponents would have one believe.

This section first examines the competitive nature of the bidding process and then discusses the on-time and on-budget criteria. It then considers the evidence about PPP cost savings, whether due to better incentive compatibility or economies of scope. It then turns to the benefits side and considers benefits (and costs) accruing to users or consumers. Next, it considers the impacts on employees and the private sector. Finally it considers various impacts on government: risk transfer, government transaction costs, whether PPPs produce net additions to infrastructure, whether PPPs create future affordability problems and whether PPPs provide value for money.

The Bidding Process

Those managing the PPP process seek expressions of interest from as many qualified bidders as possible. PPP agencies then typically invite complete bids from three different consortiums. This balances the necessity for sufficient competition on one hand with the recognition that developing a complete PPP bid is very costly and time-consuming. As the Canadian PPP market has become more mature and there has been a robust pipeline of projects, many large international firms have bid on PPP projects alongside Canadian incumbents. Generally, there are a sufficient number of bidders in Canada, although there are examples where requests for proposals only mustered a few bidders. For example, the Eglinton Crosstown light rail line in Toronto and a PPP to deliver a bundle of multiple schools in Alberta only received one or two bidders. Often the number of bidders decreases as the PPP bundles more activities.[55]

On Time and On Budget

PPP advocates emphasize the on-time and on-budget criteria because PPPs often perform well on them. In Canada, PPPs constructed since the mid-2000s have generally been completed on time and on budget. In Ontario, Infrastructure Ontario concluded that of 30 projects delivered since 2007 by the agency, 29 were completed below budget and 22 were conducted on time.[56] Similarly, in British Columbia, a Ministry of Finance review of Partnerships BC found that all 40 PPP projects delivered by the agency since 2002 were completed on time and within budget.[57]

---

[55] A.S. Solino and J.M. Vassalo, "Using Public-Private Partnerships to Expand Subways: Madrid-Barajas International Airport Case Study," *Journal of Management in Engineering* 25, 1 (2009): 21-28.

[56] MNP, *Infrastructure Ontario Alternative Financing and Procurement (AFP) Project Track Record Review.* (Toronto: Infrastructure Ontario, 2013).

[57] British Columbia, Ministry of Finance, "Review of Partnerships BC," accessed May 22, 2015, http://www.fin.gov.bc.ca/ocg/ias/pdf_docs/Review%20of%20PBC.pdf.

While a PPP construction may be delivered on time and on budget, these are not the appropriate criteria to assess social value. The size of the budget is much more important. If the budget is padded enough, it is reasonably easy to come in on time and on budget. Indeed, PPP contracts may include large premiums to ensure that budgets are actually met. Edwards et al., for example, concluded that in the U.K., the Highways Agency paid a 25 per cent premium on construction costs on its first four PPP road projects.[58] This premium was paid to ensure that they were built on time and on budget. Similarly, Blanc-Brude, Goldsmith and Välilä, in their examination of European road-project PPPs undertaken between 1990 and 2005, conclude that ex ante construction prices were approximately 24 per cent higher than for traditionally procured roads. They find that this is roughly equivalent to reported ex post cost overruns for traditionally procured PSA projects.[59]

It is important to note that costs often escalate significantly between the first publicly announced PPP budget estimate and the eventual fixed-price signed agreement. For example, in British Columbia, the Golden Ears Bridge had a total construction cost of $808 million, well over the initial budget of $600 million. The cost of the Canada Line rapid-transit project rose from $1.35 billion when it was first brought forward for approval to $2.1 billion when the final contract was signed. The cost of the William Bennett Bridge in Kelowna rose from $100 million when initially announced to $144 million when the project contract was signed. In each of these cases once the final contracts were signed, the projects were built to their contracted price. In effect, therefore, there were "moving budgets."

Suspicions about budget padding and moving budget limits would be less of an issue if the government's PPP advocacy agency were not the agency deciding what the budget should be. But it often is. Indeed, when these factors are taken into account it may well be that some PPP contracts incur the same sort of cost-underestimation as traditional PSA contracts, which we discussed earlier.

Innovations that Provide Cost Reductions and Economies of Scope

Private sector participants that bring process or product innovations that lower costs have done so through design or construction innovations. These include the selection of the optimal building materials and finishes, and through developing smaller building footprints within the performance specification to save costs, rather than major design changes that enhance public utility.[60] This kind of benefit, in theory and in practice, is one of the largest potential sources of benefits from PPPs. Government administrators have little expertise and few incentives to come up with innovative designs or construction approaches that reduce total lifecycle costs. However, fixed-price design-build PSAs have similar incentives to reduce design and construction costs, though not necessarily total lifecycle costs.

---

[58] Edwards et al., *Evaluating the Operation*.

[59] Blanc-Brude, Goldsmith and Välilä, "A Comparison."

[60] E. Hoppe and P. Schmitz, "Public-private partnerships versus traditional procurement: Innovation incentives and information gathering," *RAND Journal of Economics* 44, 1 (2013): 56–74; A. Roumboutsos and S. Saussier, "Public-private partnerships and investments in innovation: the influence of the contractual arrangement," *Construction Management and Economics* 32, 4 (2014): 349–361.

One of the major purported benefits of PPPs is that there are economies of scope from bundling different activities into a single contract. If so, the present value of the total lifecycle costs of a PPP might be lower than for a PSA. Unfortunately, the evidence on this important issue simply does not exist as far as we are aware.

Quality and Innovation Benefits: Impacts on Users and Consumers

PPPs can have positive and negative impacts on users and surrounding communities. The Canada Line rapid-transit project in Vancouver illustrates both. The winning PPP consortium proposed building a significant portion of the underground rapid-transit line using a cut-and-cover method rather than a deep-bore tunnelling approach that was expected by project planners and members of the community. The cut-and-cover construction method had lower cost and was less risky for the contractor. It also enabled stations to be built nearer the surface, which made them easier to access by transit users and created user benefits. However, the cut-and-cover construction method was far more disruptive to traffic during the building period and had a significant, adverse impact on retailers in the surrounding area, resulting in a long-running lawsuit to recoup lost store incomes.

As we discuss above, PPPs might put forward a more optimal maintenance program. However, even if the original budget allocates funds for maintenance, this is no guarantee that maintenance will be performed optimally or that the facility is, at the end of the contract term, transferred to the public sector in accordance with the value or in the condition specified in the contract. The latter risk is referred to as residual risk value.[61] Partially because few PPP contracts have reached the end of the contract period in Canada and the difficulty of finding an appropriate counter-factual, there is no empirical evidence about this.

Some PPP proponents claim that PPPs have a more innovative "look and feel." However, iconic architecture and design has not been a common feature of PPPs in Canada or globally. The evidence on the architecture of PPPs suggests that PPPs tend to deliver functional, if mediocre architecture, with very few PPP projects globally winning major awards for architectural merit.

Impacts on Employees

In general, private sector unions are supportive of PPPs while public sector unions are not. Private sector unions, such as the carpenters' union in Ontario and the American building and trades unions, have been largely supportive. These construction unions think that PPPs will create more employment.[62] In contrast, public sector unions, which provide operations and maintenance of infrastructure projects, have opposed PPPs. In Canada, union websites often criticize the use of PPPs; see for example, the sites of the Canadian Union of Public

[61] C. Ji, J. Yuan, R. Han and Q. Li, "A Case-Based Reasoning System for Residual Value Risk in Public-Private Partnership Projects," *ICCREM* 31, 3 (2013): 680-692.

[62] M. Siemiatycki, "Canadian pension fund investors in transport infrastructure: A case study," *Case Studies in Transport Policy* 3, 2, (2015): 166–175.

Employees and National Union of Public and General Employees. There is some anecdotal evidence that PPPs reduce the bargaining power of some unions and reduce employee wages. With the Kelowna General Hospital in British Columbia, for example, by building a new acute-care facility tower as a PPP, the private sector consortium took over the cleaning contract for the entire facility and reduced both the number of employees and employee wages.

Private Sector Profit Margins

A number of private sector firms have specialized in PPP projects. Presumably, these firms earn *at least* a normal return from this business. However, given the high barriers to entry, the returns are likely to be higher. Empirical evidence concerning private sector returns from individual PPPs is slim, as firms do not publish financial data on individual projects. However, Vecchi, Hellowell and Gattic find that private sector participants in PPPs that provide hospital facilities in the U.K. earn an *excess* return of almost 10 per cent on average.[63] And in Lesotho, the annual government payments to the concessionaire that operates a new hospital in the capital increase by seven per cent each year to account for inflation, and generate a 25 per cent return on investment for the private partner.[64]

Some SPVs have gone bankrupt. However, in many of these cases, the existence of an SPV limits the liabilities of the parent private-sector firms. To begin, private sector equity investment is often limited and governments may guarantee the debt held by bondholders if debt payments by the SPV are in doubt.

Government Risk Transfer

PPP projects are often "sold" to the public on the basis of significant risk transfer to the private sector partners, including revenue risk transfer. Risk transfer might pertain to both costs and revenues. PPPs do transfer cost risks to the private sector. However, most of these risks could be transferred to the private sector in other fixed-price contracts. Also, the premiums paid may exceed the benefit to government. To date there is limited empirical evidence upon which to assess the appropriateness of the risk premiums being paid in PPP arrangements.

In Canada, on the other hand, PPP consortia are usually unwilling to accept much revenue risk.[65] Revenue risk depends on use (or demand) and price (tolls). Use is often hard to predict and can be affected by factors outside of the operator's control, including government decisions. The Canada Line in Vancouver provides an example of a PPP project where only 10 per cent of the ridership risk on the project was transferred to the private sector partner. This was the case even though ridership levels exceeded the initial

---

[63] V. Vecchi, M. Hellowell and S. Gattic, "Does the Private Sector Receive an Excessive Return from Investments in Health Care Infrastructure Projects? Evidence from the UK," *Health Policy* 110, 2-3 (2013): 243-270.

[64] Oxfam, "A Dangerous Diversion: Will the IFC's flagship health PPP bankrupt Lesotho's Ministry of Health?" accessed May 22, 2014, https://www.oxfam.org/sites/www.oxfam.org/files/bn-dangerous-diversion-lesotho-health-ppp-070414-en.pdf.

[65] A Vining and A. Boardman, "Public-Private Partnerships in Canada: Theory and Evidence," *Canadian Public Administration* 51, 1 (2008): 9-44.

projections. Less experienced governments seem particularly unable to transfer *any* revenue risk and often end up essentially guaranteeing private sector profits; see, for example, the Zagreb Wastewater Treatment Plant in Croatia, and the Horgos-Pozega Highway in Serbia. Vining and Boardman also found that PPP projects with minimal actual risk of low usage were the ones where more use-risk was transferred to the private sector.[66]

Private sector operators will accept revenue risk if the PPP is taking over existing facilities, where historic traffic levels and toll revenues are known and are more predictable. This issue warrants a brief discussion, although we view these contracts more as privatizations than as PPPs. Long-term leases of existing toll roads in North America, Europe, Australia and Chile have often transferred demand risk to the private sector participants. However, even here, the results have been mixed. While Highway 407 in the Greater Toronto Area experienced traffic growth and has been highly profitable for the private sector partners, the operator of the Indiana Toll Road went bankrupt when traffic volumes failed to meet expected levels.

Transferring demand risk to the private sector has often been contentious, because of the loss of public-policy flexibility that is often associated with the non-compete and toll-escalation clauses in these contracts. In the Highway 407 case, the toll-rate escalations permitted in the contract resulted in numerous unsuccessful lawsuits by government to get the private concessionaire to drop the rates. And in the case of the State Route 91 express toll lanes in Orange County, Calif., the desire by the state transportation agency to expand the highway in contravention of a non-compete clause resulted in multiple lawsuits. Ultimately the government bought out the private sector participant. With Canadian PPPs over the past decade, governments have retained flexibility by not attempting to transfer demand risk. For example, in a new PPP contract to extend the existing Highway 407, Ontario pays the facility operator to collect tolls, but retains demand risk.

Government Transaction Costs and Renegotiations

Transaction costs on PPPs can be very high. Reported transaction costs typically range from one to three per cent of project costs. In Ontario, governments have spent around $1.1 billion on PPP transaction costs for 75 projects. This is estimated to be $400 million more than if the same projects had been delivered through traditional procurement.[67] However, it is unclear whether these estimates cover all transactions, particularly those costs associated with monitoring and enforcing the PPP contract during the operating period. These costs can include frequent meetings between the stakeholders, extensive data collection, the application of complex revenue-sharing formulas, and costly dispute-resolution protocols or lawsuits. The line ministry or agency that provides services in a given sector typically takes over the management of the PPP concession from the PPP agency once construction is complete, and may incur costs that are not incurred by the government PPP agency that reports transaction costs.

---

[66] ibid.

[67] Auditor General of Ontario, "Infrastructure Ontario."

Private sector participants frequently try to renegotiate contracts when they see, or can create, an opportunity to do so. For example, Portugal's contract for its suburban rail service (the Fertagus) putatively transferred risk to the private sector participant but, when traffic was lower than projected, the contract had to be renegotiated, with the government assuming more risk.[68] Other examples of disputes and lawsuits include the Canada Line, Highway 407 and State Route 91 Express Toll Lanes, as stakeholders sought to shift the costs of risk events that do occur.

Also, as we discussed above, governments are ultimately the residual risk holder. A number of prominent PPPs outside of Canada have resulted in well-publicized bankruptcies. These include Metronet in the U.K., the South Bay Expressway in San Diego, and the Cross-City Tunnel in Sydney, Australia. When PPP projects get into trouble, governments often, though not always, assume all or a large part of the debts. In the Metronet case, for example, the government guaranteed 95 per cent of the loans (in a project that was 88.3 per cent debt financed).[69] Often, such as with the toll roads in and around Madrid, governments have been inclined to bail out or buy out failed concessionaires, at significant cost. Taken together, such actions increase governments' production costs *and* transaction costs, and diminish the benefits of PPPs. Recent Canadian PPP contracts appear to have been better in this regard. No project procured by a provincial or federal PPP agency over the past decade has gone bankrupt or required a major contract renegotiation once construction had been complete and the operational phase had begun.

Do PPPs Produce Net Additions to Infrastructure?

Due to public sector borrowing restrictions, governments may be unable or unwilling to undertake new PSA projects. However, such projects might be feasible as PPPs. Thus, the question arises: Have PPPs resulted in net additions to infrastructure that would not have occurred otherwise? Australian government executives claim that this is the case in Australia, where road tolls and user fees that cover the full cost of infrastructure service provision are more common than in many other countries.[70] In reviewing the Irish experience, Reeves concludes that PPPs did make a contribution to infrastructure investments over and above that which would have occurred otherwise. However, the stock of Ireland's infrastructure initially lagged that of many other EU countries, and much of this investment took place at a time when the country's economy was booming and private financing was easily available.[71]

---

[68] P. Posner, S. Ryu and A. Tkacenko "Public-Private Partnerships: The Relevance of Budgeting," *OECD Journal on Budgeting* 1 (2009): 1-25.

[69] A. Vining and A. Boardman, "Public-Private Partnerships: Eight Rules for Governments," *Public Works Management and Policy* 13, 2 (2008): 149-161.

[70] Personal communications with authors.

[71] E. Reeves, "The not so good, the bad and the ugly: over twelve years of PPP in Ireland," *Local Government Studies* 39, 3 (2013): 375-395.

Government Myopia or Strategic Behaviour Creating Future Affordability Problems

One feature of PPPs is that governments provide infrastructure today, but pay for it later. This strategy may be politically motivated and may "fit" with the incentives of public sector administrators. Whatever the reasons, the shift in the timing of governments' payments can create significant "affordability" issues for future governments. This problem may be exacerbated by higher future annual payments flowing from higher private financing costs, high private sector margins, or inflation escalation clauses in the contracts. In the United Kingdom, Posner, Ryu and Tkachenko note that U.K. Treasury officials indicate that annual PFI charges for larger local governments have grown to encumber 25 per cent of their future operating costs, and this is beginning to pose a burden on budgets available for public services.[72] In 2012, 22 hospital trusts in England reported that PFI debt payments were crowding out funds for clinical services, and one has since entered into receivership. And in Lesotho, payments made to the private concessionaire that built and now operates a new hospital in the capital, Maseru, now consume 51 per cent of the country's health-care budget, though the hospital serves only a quarter of the country's population.[73]

VfM Analyses

The purported purpose of "value for money" (VfM) studies is to determine whether PPPs have lower whole-life costs to governments than do PSAs, measured in terms of present values. Many studies indicate that PPPs do provide VfM. However, one should be skeptical of these conclusions because they are conducted by government PPP agencies, which are mandated with promoting PPPs. Many scholars have questioned the accuracy, depth and objectivity of VfM studies.[74]

There are many potential problems. First, transaction costs are likely to be underestimated, as PPPs require extensive internal government staff resources to manage and monitor the concession contract once operational. The PPP agencies doing the VfM analyses do not incur these costs and may not reflect them adequately in the VfM calculations. Second, the analyses may not compare "like with like": that is, there may be quality differences between the PPP and the PSA. Third, VfM studies often use inappropriate discount rates.[75] Fourth, VfM studies often inappropriately treat risk transfer as a financial benefit or measure it poorly. In Ontario, risk is critical in tipping the balance of VfM in favour of the

---

72 Posner, Ryu and Tkacenko, "Public-Private Partnerships."

73 Oxfam, "A Dangerous Diversion."

74 D. Heald, "Value for Money Tests and Accounting Treatment in PFI Schemes," *Accounting, Auditing and Accountability Journal* 16, 3 (2003): 342-371; Edwards et al., *Evaluating the Operation*.

75 J. Johnston, "Examining 'Tunnel Vision' in Australian PPPs: Rationales, Rhetoric, Risks and 'Rogues,'" *Australian Journal of Public Administration* 69, S1 (2010): S61-S73.

PPP, but these analyses are rarely based on independent evidence of the actual experience of past projects.[76] Fifth, some VfM studies in the U.K. over-correct for the optimism bias in PSA cost estimates.[77]

Boardman and Hellowell show that, although many different government agencies claim to measure the whole-life cost to government, there are considerable differences in the methodologies used.[78] They cannot all be correct. Indeed, Boardman and Hellowell argue that no jurisdiction adopts the correct method, and they explain how VfM analysis should be done in order to estimate value for money from the government's financial perspective (e.g., Treasury's perspective). Building on Boardman and Vining, they also discuss how VfM analysis should be conducted if the goal is to estimate value for money from the perspective of society as a whole.[79]

Conclusion

Section 6 examines some of the social costs and benefits of PPPs and the distribution of these costs and benefits. It also considers the political impacts of PPPs. Politicians favour PPPs because they can, in effect, rent to own—that is deliver infrastructure now, but pay for it over time. Also, PPPs enable governments to transfer construction risks (in particular) which, when combined with other factors, leads to projects that are more likely to come in "on time and on budget," providing further political benefits. In Canada and many other countries, revenue risk is now rarely transferred to the private sector, but is still often transferred in the U.S. Furthermore, analyses by PPP agencies claim to show that PPPs offer value for money, thereby providing an additional benefit to politicians.

Do PPPs actually cost less than PSAs? In principle, there is no reason why a design-build PPP should cost the government less than a fixed-price, design-build PSA. Also, there is currently no evidence to suggest that PPPs benefit from economies of scope or have lower lifetime costs. Current VfM studies conducted by government agencies neither show correctly whether PPPs actually cost government less than PSAs (in net present value) nor do they show correctly whether PPPs provide more social welfare than PSAs. Indeed most VfM studies are conducted based on ex ante estimates with very little detailed ex post study to confirm the project outcomes. Consumer benefits (or costs) and issues of quality are also rarely taken into account. However, ex ante, there is often relatively little competition among PPP consortia, thus potentially leading to higher costs. And risk transfer is expensive to governments and ultimately to taxpayers. The already-committed future payments to PPPs are substantial. In some situations, government agencies have been unable to pay for PPPs and have declared bankruptcy or have been bailed out. Many citizens are unaware of the growing liabilities and the need for future taxes to pay for the PPPs.

---

[76] M. Siemiatycki and N. Farooqi, "Infrastructure Public-Private Partnerships: Delivering Value for Money?" *Journal of the American Planning Association* 78, 3 (2012): 283-299.

[77] A. Pollock, D. Price and S. Player, "An Examination of the UK Treasury's Evidence Base for Cost and Time Overrun Data in UK Value-for-Money Policy and Appraisal," *Public Money and Management* 27, 2, (2007): 127-134.

[78] A. Boardman and M. Hellowell, "Comparison and Analysis of Specialist PPP Units Methodologies for Conducting Value for Money Analysis" (2015).

[79] A. Boardman and A. Vining, "Assessing the Economic Worth of Public-Private Partnerships" (2010).

Another major downside of PPPs is that they are relatively inflexible, long-term contracts and it is impossible to anticipate, ex ante, all possible contingencies. Thus, transaction costs are high. The impact on employees is mixed: in general, private sector unions are supportive, while public sector unions are not. In contrast, many private sector participants have benefitted from PPPs and, not surprisingly, are highly supportive. This set includes construction companies, bankers and other financiers, consultants, lawyers, etc. In short, the benefits are concentrated among a relatively small number of agents, while the costs are ultimately borne by large numbers of dispersed taxpayers.

7. THE FUTURE OF PPPS IN CANADA AND SUGGESTIONS FOR GOVERNMENTS

PPP projects are still government projects, even though private sector agents deliver and manage them. To reiterate, PPPs inevitably involve principal-agent relationships, as do any form of traditional government procurement. However, the specific nature of the principal-agent problems varies by contract type. PPPs were promoted as the solution to one particular principal-agent problem, namely moral hazard associated with non-fixed-price traditional procurement. But PPPs generate their own, somewhat different, principal-agent problems. First, all PPP contracts are complex and inflexible, which inevitably results in significant transaction costs. These costs do not end with certainty until the end of contract period, sometimes more than 30 years after the project begins. Second, in order to transfer risk through a fixed-price contract, government has to pay for it. We can get a fixed-price contract for our house renovation if we are prepared to pay a high-enough price premium. But, usually, this price premium is so high that we opt for the variable labour-and-materials contract where the price is not fixed. The private sector can be compensated to take on cost risks, but is often not willing to take on revenue risks as well as cost risks. It appears that the cost premium of incremental risk transfer increases more (i.e., non-linearly) as the amount of risk transfer increases. Furthermore, transaction costs may also increase at an increasing rate as more risk is transferred. Third, government can significantly reduce the moral-hazard problem of traditional non-fixed-price contracts by simply using fixed-price contracts (although, of course, government has to pay the certainty premium and may incur higher transaction costs than it would in a non-fixed-price contract).

PPP practice has certainly evolved in Canada and elsewhere. Initially, Canada, like the U.K., engaged in bundled DBFOM or DBFM contracts. There has been a general "unbundling" of various components. One concerns the transfer of revenue risk. Although Canadian governments have rarely transferred a lot of revenue (or demand) risk to the private sector, governments have accepted the reality that revenue-risk transfer is not feasible or is extremely expensive. A second concern is the inclusion of soft services, such as food and cleaning, in contracts. The U.K.'s PF2 model for future PPPs is particularly sensitive to maintaining greater government flexibility over the lifecycle of an asset, and as a result has proposed removing "soft" operational service from many PPP arrangements.[80] The third evolution concerns financing and the timing of payments to the PPP. One of the major disadvantages of PPPs is the higher private sector financing cost and the long-term nature of this financing. One response to this problem is to only tap the private sector for

[80] HM Treasury, *A New Approach to Public-Private Partnerships* (2012).

short-term construction financing, which is repaid by government in full following the completion of the building of the project. In Canada and around the world, governments are becoming more willing to fund part of the upfront capital costs of PPP infrastructure projects or pay significant substantial completion payments to the contractor once the high-risk construction period is over, thereby lowering the overall financing costs of PPP projects. Of course, it is important to ensure that private sector investors have sufficient "skin in the game." In aggregate, these changes reduce the complexity of PPP contracts and make them much more similar to traditional (but fixed-price) government procurement. Indeed, many so-called PPP contracts are substantively indistinguishable from government provision.

Some Policy Recommendations

Based on our above analysis and drawing on the recent work of Boardman and Vining, we summarize some "rules for government" to apply to PPPs.[81]

Establish a Jurisdictional PPP "Regulatory-Governance Constitution." There are two important elements. The first relates directly to the normative goals of government. Evaluation of procurement alternatives should be based on social value. Where a cost-benefit analysis to assess social value is not feasible, governments should use minimization of total social costs as an evaluation criterion. Where possible, social value should be employed to distinguish between policy alternatives, specifically to choose between procuring via a PPP or a PSA. Social value should also be used to structure pricing schemes (including tolling). This would suggest, for example, that roads should have tolls during congested periods, but not during uncongested periods. Existing VfM-evaluation practices should be discontinued. The second element concerns transparency. In particular, there should be consistent and timely budget reporting on anything that has PPP characteristics. Furthermore, all contracts should be publicly available.

Ensure that Evaluators and Contract Administrators have the Appropriate Skills to Evaluate and Manage Contracts. A particular problem with municipalities using PPPs is the lack of contract-management skills at that level of government. These skills are often better at the provincial government level in agencies such as partnerships BC. However, these organizations are also mandated to promote PPPs and are unlikely to provide unbiased evaluations.

Separate the Analysis, Evaluation, Contract Administration and Oversight Agencies. Governments engaged in a program of PPPs should separate the agencies that: (1) analyze the desirability of projects and decide which of the alternative provisioning modes to employ (e.g., PSA or PPP) (2) administer the PPP contracting process and monitor the implementation of the contract, and (3) evaluate the overall success of projects. While it may be inevitable that the administering agency turns into a "political poodle" it needs to be flanked by "junkyard dogs."

[81] Vining and Boardman, "Public-Private Partnerships"; Boardman and Vining, "The Political Economy."

Don't Constrain the Options. Some governments in Canada remain committed to the use of PPPs. In particular, the former federal Conservative government would only provide infrastructure funds to municipalities for certain large infrastructure projects if they utilized PPPs. This requirement is almost certainly an unwise and too-restrictive policy. It might lead to unnecessarily high lifecycle costs, bankruptcy and inefficient use of resources. PPP contracts should be conducted carefully and not forced as the "only game in town," as PPP Canada seems to be inclined to do.

Make Bidding as Competitive as Possible. There are a number of aspects to actually making the bidding process as competitive as possible. Most importantly, governments and agencies should be proactive in generating and encouraging qualified bids. Foreign bidders should be encouraged, not discouraged as is quite often the case. Consortia should consist of firms with the necessary complementary skills, but should have as few members as possible to allow as much ex post contestability as possible.

Provide Partial Own-Government Financing. Governments can borrow money at a lower interest rate than can private sector consortia. Therefore, governments should finance a significant part of the design and construction costs. And, they should alter the payment schedule so that the private sector has less money invested for a long time period. However, it is important for the private sector firms to have some skin in the game throughout the entire contract period.

Dis-intermediate Some of the Financing. Over the past decade, institutional investors have come to see infrastructure as an asset class that matches their investment requirements, providing long-term, stable, inflation-adjusted returns.[82] The large Canadian public sector pension funds, alongside the Australian superannuation funds, are among the leading institutional investors in infrastructure, owning stakes in roads, transit, power, water and telecommunication assets around the world. Many large Canadian funds, such as the Caisse de Dépôt et Placement du Québec, Ontario Teachers' Pension Plan, and the Ontario Municipal Employees Retirement System, have recently reported that they intend to increase their holdings in infrastructure assets, and smaller private sector pension funds are working through intermediaries to pool their funds and access large infrastructure deals. In practice, for the small funds, their investments in PPPs typically arise through the private-sector financial intermediaries that arrange the debt financing in PPPs, such as Macquarie Capital or James Laing Infrastructure. But, many of these institutional investors are quasi-public organizations. This suggests that governments could pool these funds directly and thereby dis-intermediate.

Avoid Stand-Alone Private-Sector-Participant Subsidiary "Shells." The main purpose of this rule is to ensure that the private sector partner or partners have sufficient equity at risk to give them the appropriate incentives to minimize cost and "remain in the game." By forming a SPV for each PPP project, a private company minimizes the amount of its own (equity) capital at risk and increases the chances of opportunistic exit. If a stand-alone organization is formed, then the parent companies should co-sign the contract and accept liability.[83]

---

[82] Siemiatycki, "Canadian pension."

[83] E. Yescombe, *Public-Private Partnerships: Principles of Policy and Finance* (Oxford, U.K.: Elsevier, 2007).

Prohibit a Private Sector Partner from Selling the Contract Too Early. There is a potential "bait and switch" problem. When a PPP operating contract is sold from one provider to another provider then the government may not know what it is really buying. If, for example, problems arise during the operating phase, then it may not be clear which private sector firm or consortium member was at fault. Not knowing who to pin the blame on can seriously increase government transaction costs.

Don't Indemnify the Bondholders. This rule may sound obvious — if only this were true in practice! Of course, no government enters negotiation on a PPP intending to indemnify private sector debt holders, but in practice this has occurred in a number of PPPs, most notably Metronet.

Require Standard, Fast, Low-Cost Dispute Resolution. The purpose of this rule is to reduce the transaction costs from delay, negotiation and lawsuits.

About the Authors

Anthony Boardman studied for his BA at the University of Kent at Canterbury and obtained his PhD from Carnegie-Mellon University. Prior to joining the University of British Columbia, he was on the Faculty of the Wharton School. Boardman's interests are cost-benefit analysis, privatization, contracting out and public-private partnerships. His research has been published in many leading academic journals and he is co-author of *Cost-Benefit Analysis: Concepts and Practice*. Boardman serves on the editorial board of the *Journal of Comparative Policy Analysis and Strategic Outsourcing* and is also on the Board of the Institute for Health System Transformation and Sustainability.

Matti Siemiatycki is the Associate Professor of Geography and Planning at the University of Toronto. His teaching and research focuses on infrastructure planning, financing and project delivery. His recent studies explore the merits of delivering infrastructure mega-projects through public-private partnerships, especially as they relate to value for money, risk transfer, and the meeting of public policy goals. Siemiatycki's research draws on experiences from across Canada and around the world to provide insights into the global state of practice with public-private partnerships.

Aidan R. Vining is the CNABS Professor of Business and Government Relations at the Beedie School of Business, Simon Fraser University, in Vancouver, British Columbia. He obtained his PhD from the University of California, Berkeley. He also holds an LLB (King's College, London) and an MBA and MPP. Much of his recent research has focused on privatization, corporatization and public-private partnerships. Recent articles have appeared in the *Journal of Public Administration Research and Theory*, *Canadian Public Administration*, the *Journal of Policy Analysis and Management*, the *Journal of Management Studies*, *Industrial and Corporate Change*, *Journal of Public Affairs*, *Canadian Public Policy*, *Small Business Economics*, the *Journal of Risk and Insurance*, *Public Administration Review* and *Resources Policy* among others. A number of his articles are reprinted in Edward Elgar's International Library of Critical Writings in Economics series. He has recently co-written and co-edited a volume with David Weimer entitled Investing in the Disadvantaged (Georgetown University Press, 2009). He has served as a consultant to the government of British Columbia and to other governments and related institutions.

ABOUT THE SCHOOL OF PUBLIC POLICY

The School of Public Policy has become the flagship school of its kind in Canada by providing a practical, global and focused perspective on public policy analysis and practice in areas of energy and environmental policy, international policy and economic and social policy that is unique in Canada.

The mission of The School of Public Policy is to strengthen Canada's public service, institutions and economic performance for the betterment of our families, communities and country. We do this by:

- *Building capacity in Government* through the formal training of public servants in degree and non-degree programs, giving the people charged with making public policy work for Canada the hands-on expertise to represent our vital interests both here and abroad;
- *Improving Public Policy Discourse outside Government* through executive and strategic assessment programs, building a stronger understanding of what makes public policy work for those outside of the public sector and helps everyday Canadians make informed decisions on the politics that will shape their futures;
- *Providing a Global Perspective on Public Policy Research* through international collaborations, education, and community outreach programs, bringing global best practices to bear on Canadian public policy, resulting in decisions that benefit all people for the long term, not a few people for the short term.

Our research is conducted to the highest standards of scholarship and objectivity. The decision to pursue research is made by a Research Committee chaired by the Research Director and made up of Area and Program Directors. All research is subject to blind peer-review and the final decision whether or not to publish is made by an independent Director.

The School of Public Policy
University of Calgary, Downtown Campus
906 8th Avenue S.W., 5th Floor
Calgary, Alberta T2P 1H9
Phone: 403 210 3802

DISTRIBUTION
Our publications are available online at www.policyschool.ca.

DISCLAIMER
The opinions expressed in these publications are the authors' alone and therefore do not necessarily reflect the opinions of the supporters, staff, or boards of The School of Public Policy.

ISSN
1919-112x SPP Research Papers (Print)
1919-1138 SPP Research Papers (Online)

DATE OF ISSUE
March 2016

MEDIA INQUIRIES AND INFORMATION
For media inquiries, please contact Morten Paulsen at 403-220-2540. Our web site, www.policyschool.ca, contains more information about The School's events, publications, and staff.

DEVELOPMENT
For information about contributing to The School of Public Policy, please contact Rachael Lehr by telephone at 403-210-7183 or by e-mail at racrocke@ucalgary.ca.

RECENT PUBLICATIONS BY THE SCHOOL OF PUBLIC POLICY

THE COSTLIEST TAX OF ALL: RAISING REVENUE THROUGH CORPORATE TAX HIKES CAN BE COUNTER-PRODUCTIVE FOR THE PROVINCES
http://policyschool.ucalgary.ca/?q=content/costliest-tax-all-raising-revenue-through-corporate-tax-hikes-can-be-counter-productive-prov
Bev Dahlby and Ergete Ferede | March 2016

CUTTING PROVINCIAL CORPORATE INCOME TAX RATES TO PROMOTE INVESTMENT, EMPLOYMENT AND ECONOMIC GROWTH
http://policyschool.ucalgary.ca/?q=content/cutting-provincial-corporate-income-tax-rates-promote-investment-employment-and-economic-gro
Bev Dahlby and Ergete Ferede | March 2016

INTO THE MIRE: A CLOSER LOOK AT FOSSIL FUEL SUBSIDIES
http://policyschool.ucalgary.ca/?q=content/mire-closer-look-fossil-fuel-subsidies
Radoslaw Stefanski | March 2016

THE ISSUE OF SOCIAL LICENCE AND ENERGY UTILITY PLANNING AND INVESTMENT
http://policyschool.ucalgary.ca/?q=content/issue-social-licence-and-energy-utility-planning-and-investment
Michal C. Moore | March 2016

IS SOCIAL LICENCE A LICENCE TO STALL?
http://policyschool.ucalgary.ca/?q=content/social-licence-licence-stall
Mark Lowey | March 2016

A FISCAL FRAMEWORK FOR OFFSHORE OIL AND GAS ACTIVITIES IN ROMANIA
http://policyschool.ucalgary.ca/?q=content/fiscal-framework-offshore-oil-and-gas-activities-romania
Daria Crisan | March 2016

LIFTING THE HOOD ON ALBERTA'S ROYALTY REVIEW
http://policyschool.ucalgary.ca/?q=content/lifting-hood-alberta%E2%80%99s-royalty-review
Blake Shaffer | February 2016

UNDERSTANDING THE NEW PUBLIC OUTLOOK ON THE ECONOMY AND MIDDLE-CLASS DECLINE: HOW FDI ATTITUDES ARE CAUGHT IN A TENTATIVE CLOSING OF THE CANADIAN MIND
http://policyschool.ucalgary.ca/?q=content/understanding-new-public-outlook-economy-and-middle-class-decline-how-fdi-attitudes-are-caug
Frank Graves | February 2016

GIVE CANADA POST A BREAK: ALLOWING MORE PRICING FLEXIBILITY AND COMPETITION COULD HELP THE CORPORATION SUCCEED
http://policyschool.ucalgary.ca/?q=content/give-canada-post-break-allowing-more-pricing-flexibility-and-competition-could-help-corporat
Philippe De Donder | February 2016

RATES OF RETURN ON FLOW-THROUGH SHARES: INVESTORS AND GOVERNMENTS BEWARE
http://policyschool.ucalgary.ca/?q=content/rates-return-flow-through-shares-investors-and-governments-beware
Vijay Jog | February 2016

THE FALSE PANACEA OF CITY CHARTERS? A POLITICAL PERSPECTIVE ON THE CASE OF TORONTO
http://policyschool.ucalgary.ca/?q=content/false-panacea-city-charters-political-perspective-case-toronto-0
Andrew Sancton | January 2016

IS 'CHARTER-CITY STATUS' A SOLUTION FOR FINANCING CITY SERVICES IN CANADA — OR IS THAT A MYTH?
http://policyschool.ucalgary.ca/?q=content/%E2%80%98charter-city-status%E2%80%99-solution-financing-city-services-canada-%E2%80%94-or-myth-0
Harry Kitchen | January 2016