

The Market for Financing of Infrastructure Projects through Public-Private Partnerships: Canadian Developments

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This report examines developments in the market for private financing of public infrastructure projects through public-private partnerships (PPPs). In Canada, as in other G-10 countries, there is a growing need for governments to allocate capital to upgrade aging public infrastructure. At the same time, infrastructure investment is gaining increasing acceptance among institutional investors, particularly life insurers and pension funds; its long-term nature is well suited to their investment horizons. To take advantage of the availability of capital and to draw on the private sector's skills and expertise, some Canadian provinces plan to increase the use of PPPs, which suggests that the market could grow considerably over the next decade or more.

This report begins with a review of recent developments in the PPP market, including a brief discussion of how an increased focus on infrastructure investment is prompting a greater role for PPP. It then outlines the characteristics of a typical PPP; the international experience; the structuring and financing of a PPP, using examples of recently launched projects; PPPs as an investment; and requirements for the development of a viable, efficient PPP financing market in Canada.

Investment in Public Infrastructure Required

The need to address what is perceived to be a large and growing deficit in public infrastructure¹ has become a key public policy

1. The stock of infrastructure includes highways, public transit and transportation facilities, water supply, waste-water-treatment facilities, prisons, ports, schools and universities, hospitals, and utilities, some of which are owned by the private sector (e.g., railways).

issue.² Much of Canada's existing stock of infrastructure requires repair or replacement, partly because of decisions to defer investment during the 1990s, when government spending at all levels was reduced in an effort to eliminate large fiscal deficits (Mirza and Haider 2003; Harchaoui, Tarkhani, and Warren 2004). Investment has also lagged in terms of new facilities to accommodate growth and the specific requirements of an aging population.

Addressing the infrastructure gap is likely to require increased spending over the medium term. To this end, some provincial governments have already increased the share of overall budget expenditures allocated to infrastructure investment. Several provinces are also looking at more efficient and innovative ways to deliver infrastructure and the associated services. One alternative, PPPs, has been shown to offer an efficient and cost-effective method of alternative delivery, provided that PPP contracts are well designed. Some provinces have recently created agencies dedicated to PPPs in order to build the public sector expertise required to develop a more effective, efficient, and transparent process for the implementation of PPPs.³

What Are PPPs?

There is no widely accepted definition of a PPP and, in practice, these arrangements are quite

2. See, for example, TD Bank Financial Group (2004). Estimates of the magnitude of the infrastructure "deficit" vary considerably, partly because of definitional differences and the high level of subjectivity involved in assessing "need" (Dodge 2005).
3. These are Partnerships B.C. (May 2002); Quebec's Agence des partenariats public-privé du Québec (Dec. 2005); and Ontario Infrastructure Projects Corporation (Nov. 2005), which replaces SuperBuild Ontario, created in 1999. Alberta has recently (2003) prepared a framework to evaluate infrastructure projects for PPP potential.

diverse. The Canadian Council for Public-Private Partnerships (CCPPP) defines a PPP as “a cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards.” PPPs permit private financing, design, construction, operation and, possibly, temporary ownership of an asset, while at the same time, the government remains involved as a partner. Such an arrangement offers an alternative to both traditional government delivery and privatization; projects can be structured according to the desired level of private sector involvement and the appropriate level of risk sharing.⁴

One benefit of PPP is that risks can be allocated to the partner best able to manage a particular risk, thus permitting a more efficient process. This requires the formal identification, quantification, and pricing of risk. In practice, the proper pricing of risk presents a considerable challenge, since there is no market for the provision of public goods and services. Ideally, efficient pricing mechanisms would develop over time as more PPP projects are undertaken. Risks that can be transferred to the private sector include those associated with design and construction, financing, operation, maintenance, and changes in technology.

For a PPP to be effective, it must demonstrate that it offers taxpayers value for money (VFM). VFM is complex to measure, since it goes beyond a comparison of the capital cost of a PPP relative to that of traditional procurement. Ideally, a PPP would be structured to put private capital at risk over the project’s full life cycle, which might be from construction through to operation and maintenance. If risk is properly priced and incentives appropriately managed within well-developed contracts, PPP should contribute to greater efficiency and innovation, increasing the likelihood that more projects can be completed on time and within budget. The private sector can add VFM through a PPP in several ways, including exploiting economies of scale from multiple operations; facilitating the introduction of user charges, thereby achieving

4. In traditional government delivery, the private sector is typically engaged on a short-term basis to design and build a project. Its subsequent maintenance and operation are the responsibility of the public sector, although, over the past two decades, contracting out has become more common. See Levac and Wooldridge (1997).

a better balance between supply and demand; integrating operational requirements in the basic design; and utilizing knowledge of and experience with new technologies (Allan 1999, 19).

Not all projects are well suited to PPP. Many projects (such as public transportation) that offer a public good requiring a high level of government subsidy are best handled using traditional government delivery. The international experience demonstrates that PPPs account for only a small fraction of overall capital spending on infrastructure.⁵ Typically the projects felt to be best suited for PPP are large and capital intensive; have identifiable revenue streams; have some risks that can be transferred to the private sector; offer an opportunity for innovation in design, construction, or operation; have defined service specifications that are easily measured; and target areas where sufficient private sector expertise exists to permit a competitive process. From the perspective of the government and taxpayers, it is desirable that PPP projects are in the public interest, demonstrate VFM and, within the constraints of commercial confidentiality, are undertaken within a transparent process with full public accountability.

In Canada, PPPs have been used for a number of years. The best known are large transportation projects, such as Highway 407, an electronic toll highway in southern Ontario, and the Confederation Bridge that links New Brunswick and Prince Edward Island. There have also been numerous smaller projects in areas such as waste-water treatment, education, health care, and municipal facilities, such as courthouses and recreational centres. Although not all provinces have embraced PPPs, their use has recently gained momentum, particularly in British Columbia, where the assessment of projects for PPP potential is becoming a routine aspect of infrastructure development.⁶

5. Even in countries with established PPP markets, such as the United Kingdom, PPPs account for less than 15 per cent of total government capital spending. British Columbia and Ontario plan to use PPPs for about 10 per cent of planned investment.

6. A project tracker maintained by the CCPPP lists 54 PPPs that have been announced over the past few years, most of them in British Columbia and Ontario. Most of these projects are in health care and transportation. See <www.pppcouncil.ca/resources_project_tracker.asp>.

Table 1

Selected Recently Launched PPPs

Project	Province	Model	Value (Can\$ millions)
Sea-to-Sky Highway	B.C.	DBFO 25 yr. (2/3 capital cost)	516.0
Canada Line (rapid transit)	B.C.	DBFO 35 yr.	1,900.0
Kicking Horse Canyon Highway upgrade (Phase 2)	B.C.	DBFO 25 yr.	n/a
William Bennett Bridge	B.C.	DBFOM 27 yr.	157.3
Abbotsford Hospital & Cancer Centre	B.C.	DBFOM	355.0
S.E. Edmonton Ring Road	Alberta	DBFOM 30 yr.	390.0
Bruce A Nuclear Restart Project	Ontario	n/a	4,250.0
Royal Ottawa Hospital	Ontario	DBFO 20+ yr.	148.0
William Osler Health Centre	Ontario	DBFO 25 yr.	550.0
Trans-Canada Highway (final)	N.B.	DBFOM 25 yr.	543.8

International Experience

PPP is gaining increasing acceptance internationally as a model for the alternative delivery of public infrastructure and services, and a growing number of countries have implemented PPP programs. The United Kingdom, which began using PPPs in the 1980s, has the longest track record. Under the Private Finance Initiative (PFI), launched in 1992, nearly 700 projects totalling about £43 billion, have been delivered to date. Australia also has extensive experience with PPPs; the capital value of Australian PPPs has exceeded AUD\$20 billion (Malone 2005). Standard & Poor's (2005) notes that PPPs are on the rise globally, particularly in Europe, where Italy, Spain, Germany, and Portugal have worked to improve the requisite legal and institutional framework to facilitate their development. With more countries making use of PPPs, Canadian governments are likely to face greater competition in the future in their efforts to attract domestic and foreign capital and companies interested in bidding on projects.

Structuring and Financing of Recent Canadian PPPs

Many recently launched PPPs follow models that involve a high level of private sector involvement and risk sharing. Because of the complex, long-term risk-sharing arrangements involved, the terms of each PPP are unique. Nonetheless, most can be classified into various models according to the level of private sector involvement and the allocation of risks to each sector. As indicated in Table 1, many projects have been structured using a "design, build, finance, operate" (DBFO) model or a slight variation that includes maintenance (DBFOM). Under these types of arrangements, the private sector partner—usually a consortium—is responsible for engineering, design, and construction and typically assumes many of the associated risks (e.g., missed deadlines or cost overruns). The private sector usually provides the construction capital. But for many projects, particularly those that are large and capital intensive (e.g., Canada Line), the capital costs are often shared with the public sector. In the DBFO model, the private sector partner assumes operation of the asset upon its completion, under the terms of a long-term contract of,

generally 25 years or more.⁷ The contract is typically structured so that investors receive “availability” payments that commence once construction is completed.⁸ For example, in a number of hospital PPPs, the private sector receives payment for the facility and for the provision of non-clinical services. In all DBFOs, the asset is returned to the public sector at the end of the contract.

PPP financing is structured according to the unique features of each project, including the skills and resources brought together in the project team. Generally, equity represents a small share of the overall financing (between 10 and 15 per cent). It is provided by the project team, which, from a financing perspective, may include individual investors, infrastructure funds that pool the capital of several institutional investors, banks, and the financing arms of engineering/construction firms.

Three main types of debt financing have been used for the recent DBFO PPPs: bank loans, private placements, and broadly marketed bond placements (a type of private placement with a broader distribution). It is difficult to obtain detailed information because of commercial confidentiality, but it would appear that debt financing for most of the projects listed in Table 1 was provided through bank loans—typically from large European banks with broad experience in PPP—or through private placements. At least two projects were financed through broadly marketed bond placements.⁹

Given the long-term nature of PPPs, there has been a limited appetite among Canadian banks to lend to such projects. They have been involved in many aspects of the PPP market, however, including structuring deals and acting as lead underwriters in debt placements. The involvement of domestic banks may change in the future if a liquid, secondary market develops to

provide debt and equity investors with an exit opportunity. In the United Kingdom, where there is a longer history of PPPs and the market has achieved “critical mass,” investors have been able to reduce their PPP debt exposure through sales in the secondary market, most notably in the first-ever securitization of U.K. PPP loans. In November 2004, Depfa Bank Plc securitized 24 PFI loans with a capital value of £392 million.

PPP as an Investment

Over the past few years, there appears to have been a greater appetite among Canadian institutional investors for longer-term investments, such as infrastructure. Defined-benefit pension funds, in particular, are increasingly viewing infrastructure as a distinct asset class with unique properties relative to publicly traded equities and bonds. Infrastructure investment provides relatively stable long-term cash flows, as well as portfolio diversification, owing to its low correlation with publicly traded equities and, in some cases, a positive correlation with inflation (i.e., in regulated industries, where inflation is a key consideration in setting prices). Since the decline in global equity markets in 2000–03, defined-benefit pension funds have been investing more in assets with characteristics that better match their liabilities, which are long term and often indexed to inflation. Since infrastructure, including PPPs, is a long-term financial asset with cash flows that may be linked to inflation, it provides a good match to pension liabilities. Life insurers, whose liabilities are also long term have a much longer history of asset-liability matching. Recent industry consolidation has also given the larger remaining insurers a greater capacity to make the large minimum investment typically required.

Canadian pension funds began targeting infrastructure as a distinct asset class in about 2000. To date, investments have been made by only a handful of the largest public sector funds, partly because the investment required is large and because internal resources must often be developed to manage the asset class.¹⁰ A number of these funds plan to invest as much as 10 to

7. Note that PPPs are often structured to include both construction of the asset (capital costs) and its maintenance and operation (operational costs, including service delivery).

8. Alternatively, some PPPs are structured so that the investors earn revenue from volume-based user charges (e.g., toll highways).

9. In the United Kingdom, 70 per cent of debt financing has been in the form of bank loans, and 30 per cent has been through the bond market. Market participants expect that an increasing share of financing will come from the bond market.

10. Infrastructure funds provide a means by which pension funds can invest without the responsibility of actively managing the investment. This is left to the fund manager.

15 per cent of their aggregate assets in infrastructure, although until recently, opportunities have been limited, particularly in Canada (Tuer and Woodman 2005). Most large investments have been made in foreign infrastructure projects, mainly in the United Kingdom, Australia, and the United States.

Typically, DBFO PPPs provide less potential for the large equity investment preferred by public sector pension funds than, for example, an investment in a privatized utility. Nonetheless, these types of PPPs have similar features, providing investors with stable, long-term cash flows that, ideally, offer returns somewhere between those typically earned on publicly traded equities and bonds. They are priced to take into account full life-cycle costs, including the cost of transferring certain functions and risks to the private sector. In other words, they are structured so that the private sector assumes responsibility and is accountable for delivering the project on schedule and within budget. The private sector will also assume operational and, often, maintenance risks. Investors, particularly equity investors, have a greater level of accountability and accept more risk than they would by simply purchasing a government bond. PPP investments must therefore offer returns commensurate with this risk.

Several of the projects listed in Table 1 were financed with capital from Canadian institutional investors. Public sector pension funds have participated both as equity partners and in debt offerings, although most prefer equity. The Ontario Municipal Employees' Retirement System (OMERS), one of the first pension funds to invest in infrastructure, has recently made its single largest infrastructure investment, as an equity partner, in the Bruce A Nuclear Restart project. Life insurers have typically participated only in debt offerings, both as individual investors and through infrastructure funds.

Developing a Viable PPP Market in Canada

Although a number of PPP projects have been developed in Canada, the market is still considered to be in its infancy relative to established markets. In contrast to the United Kingdom, for example, where there is an established PPP program that has tailored legislation and regulation, as well as ongoing, predictable long-term fund-

ing, Canadian PPPs have tended to be assessed on a case-by-case basis with no overall framework or strategy. As indicated earlier, a more coordinated, strategic approach to PPPs appears to be emerging in some Canadian jurisdictions, and PPPs are gaining wider use.

In practice, establishing a viable PPP market is quite challenging. Long-term political commitment to PPP is required, and the appropriate infrastructure and skills must be put in place to ensure an efficient, effective, and transparent process. Past experience with PPPs, both within Canada and in other jurisdictions, has demonstrated that, from a practical perspective, there is a long learning curve associated with the use of PPPs as a means of alternative asset procurement and service delivery.¹¹ Nonetheless, Canadian governments have the advantage of being able to learn from their own past experiences and from the experiences of other jurisdictions.

The United Kingdom, for example, created a centralized agency to coordinate PPP efforts (Partnerships U.K.) that has subsequently developed a set of best practices for successful PPPs. These include political commitment at a policy level to encourage the private sector to develop the resources needed to bid for contracts, enabling legislation, development of private and public sector PPP expertise, project prioritization, standardized contracts, and a regular and predictable flow of projects (deal flow) (International Finance Services 2003). Since 1997, deal flow in the United Kingdom has been about 70 projects per year, with an aggregate value between £2.5 billion and £5 billion, excluding the very large transportation PPPs, such as the London Underground.

The United Kingdom has identified two fundamental requirements for a PPP: first, the private sector must bear some of the risk of the project, and second, the PPP must demonstrate VFM from a taxpayer perspective.¹² In the United

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11. PPPs are often quite controversial, partly because of fears that greater use of them will result in an erosion of service quality and a loss of public sector jobs. There is an extensive literature on the economics of PPPs and on the benefits to the public sector and taxpayers that have accrued, as well as some of the mistakes that have been made. For a discussion of some of the issues, see Allan (1999) and Poschmann (2003.)
 12. See Allan (1999) for a good discussion of this.

Kingdom and increasingly in Canada, VFM is determined by developing a public sector comparator (PSC) for each project. A PSC is essentially a public sector alternative for delivering the service, and its development requires an explicit identification and quantification of project risks. The comparison of the PSC and PPP is undertaken from the perspective of cost over the full life cycle of the project, in net present-value terms, looking at the costs and benefits of the PPP relative to those of traditional procurement. Government delivery would remain the preferred option if the analysis fails to demonstrate that the PPP offers VFM relative to traditional procurement.

It has been suggested that among the obstacles to the development of the PPP market in Canada are a lack of public knowledge of and support for PPPs. At the forum, “Public-Private Partnerships: Dispelling the Myths,” held in Toronto in October 2005, speakers highlighted the importance of a high level of political support and commitment to PPPs and to building an informed public debate to familiarize citizens with the issues. Other factors were identified as similar to the best practices recognized by Partnerships U.K.

One area where Canada differs from other countries is in the absence of active financial guaranty (monoline) insurers.¹³ Monolines enhance the credit rating of lower-rated investment-grade PPPs through the provision of an unconditional and irrevocable guarantee to continue the payment of interest and principal in the event of a default. Historically, monolines have not been active in Canada,¹⁴ but, to date, this has not been an impediment to financing projects. The large institutional investors that have been investing in PPPs have been able and willing to hold lower-rated, investment-grade debt.

13. These insurers, are referred to as “monolines” because they are restricted to only one business line—insuring the repayment of third-party debt.

14. Regulators have developed a tentative regime to regulate monolines, supporting their entry into the domestic market. But a regime that would meet both the business needs of monolines and the regulator’s prudential mandate has not been finalized. These firms have yet to enter the Canadian insurance market.

In summary, many of the conditions required to support the development of a Canadian PPP market are in place. Governments appear to be committed to investing in infrastructure, including PPPs. Within the private market, there is an appetite for longer-term financial assets, and there is a pent-up demand for those investments in Canada. Adapting lessons learned from earlier experience with PPPs in Canada, and in other jurisdictions, should help to develop a viable, efficient PPP market.

References

- Allan, J. 1999. “Public-Private Partnerships: A Review of Literature and Practice.” Public Policy Paper No. 4. Regina: Saskatchewan Institute of Public Policy, University of Regina.
- Dodge, D. 2005. “Investing in Productivity.” Remarks by David Dodge, Governor of the Bank of Canada, to the Canadian Council for Public-Private Partnerships, Toronto, Ontario.
- Harchaoui, T., F. Tarkhani, and P. Warren. 2004. “Public Infrastructure in Canada, 1961–2002.” *Canadian Public Policy* 30 (3): 303–18.
- International Finance Services. 2003. “Public Private Partnerships: UK Expertise for International Markets.” London.
- Levac, M. and P. Wooldridge. 1997. “The Fiscal Impact of Privatization in Canada.” *Bank of Canada Review* (Summer): 25–40.
- Malone, N. 2005. “The Evolution of Private Financing of Government Infrastructure in Australia—2005 and Beyond.” *The Australian Economic Review* 38 (4): 420–30.
- Mirza, S. and M. Haider. 2003. “The State of Infrastructure in Canada: Implications for Infrastructure Planning and Policy.” Report prepared for Infrastructure Canada Research and Analysis, March.
- Poschmann, F. 2003. “Private Means to Public Ends: The Future of Public-Private Partnerships.” C.D. Howe Institute Commentary No. 183 (June).

- Standard & Poor's. 2005. "Public Private Partnerships: Global Credit Survey." Infrastructure and Public Finance Ratings Group (May).
- TD Bank Financial Group. 2004. "Mind the Gap, Finding the Money to Upgrade Canada's Aging Public Infrastructure." TD Economics Special Report (20 May). Available at <www.td.com/economics>.
- Tuer, E. and E. Woodman. 2005. "Recent Trends in Canadian Defined-Benefit Pension Sector Investment and Risk Management." *Bank of Canada Review* (Summer): 21–35.