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The Real Cost of the Sea-to-Sky P3 A Critical Review of Partnerships BC's Value for Money Assessment

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Partnerships BC, a government agency, uses "Value for Money" reports to estimate and compare the costs of developing public infrastructure through traditional means (government financing and procurement) versus P3s ("public-private partnerships"). The question raised in this paper is whether Partnerships BC's reports fairly and accurately show the difference in costs between P3s and traditional financing and procurement. The conclusion is that they don't.

Partnerships BC incorrectly assumes that the cost of government financing (borrowing) is the exact same as the cost of capital for the P3. It ignores the actual interest rate that government would pay. In the case of the Sea-to-Sky project that results in overstating the actual interest rate that government would pay by over 2.5 percentage points.

Partnerships BC argues that a higher cost of government borrowing must be incorporated to account for the risk it assumes, but there is no reason to assign a risk premium of that magnitude. In any case, to do so double counts the risk premium Partnerships BC separately adds to the cost of traditionally procured and financed projects in its comparison with the P3.

A more transparent analysis, based on the actual interest rate government would pay and giving appropriate weight to future taxpayer obligations, would show that the Sea-to-Sky P3 will cost taxpayers over \$220 million more than a traditionally procured and financed project. There may be some risk transfer and other benefits to the P3, but there is no evidence that those benefits offset this much higher cost taxpayers will face.

Greater transparency and accountability are required in future decision making on P3s. It is essential to know exactly how much more expensive P3s will be for taxpayers on the basis of best estimates of actual costs. Only then can the risk and other trade-offs be clearly shown and the policy debate be properly informed.

For more information about P3s and how they work, see *Value for Money? Cautionary Lessons About P3s from BC* at www.policyalternatives.ca.

Introduction

Partnerships BC undertakes ‘Value for Money’ analyses to estimate whether and to what extent public-private partnerships (P3s) benefit British Columbia taxpayers. In its analyses, Partnerships BC compares the costs government will incur under a P3 contract with the costs that it estimates government would have incurred, and additional risks government would have assumed, under a conventionally government procured and financed project—what it terms the ‘public sector comparator’ (PSC).

Such a Value for Money cost comparison was recently undertaken for the Sea-to-Sky highway project.¹ As shown in Table 1, Partnerships BC estimated that the present value of the costs that government will incur with the P3 contract over a 25-year lease period will total \$790 million. Approximately \$580 million of that will be in lease and other payments to the P3 consortium to design, build, operate/maintain and finance the project; the balance will be for certain project components for which government will retain responsibility.

In comparison, the expected present value cost government would incur if the project were conventionally procured and financed (under the PSC) would total \$744 million. The expected expenditures would be \$660 million. Partnerships BC added \$80 million to the expected expenditures to adjust for the incremental risk and self-insurance requirements government would assume

under the PSC, and another \$4 million to account for differences in tax payments between the P3 and PSC.

Even with Partnerships BC’s \$80 million adjustment for the incremental risk and self-insurance under the PSC, these results indicate that the adjusted PSC cost would in fact be \$46 million less than the total costs with the P3. Nonetheless, Partnerships BC still concluded the P3 would offer better value for money. The P3 includes more improvements than what Partnerships BC specified and costed for the PSC, and the benefits of the additional time savings and reduced accident risk with the additional improvements were estimated to exceed the \$46 million in additional cost.

It is not clear why Partnerships BC didn’t do a cost comparison for similarly specified projects, in order to isolate the cost consequences from how the project is delivered, not what it includes. Partnerships BC could have, for example, considered what additional costs there would be under the PSC to realize the additional improvements—whether it is in fact necessary to spend an additional \$46 million to achieve them. However, the issue raised in this paper is a different and more fundamental one. Regardless how the project is specified under the P3 and PSC, the question is: *Does Partnerships BC’s analysis fairly present the real financial implications to taxpayers of P3s versus conventionally procured and financed arrangements—does the analysis accurately and transparently inform the P3 public policy debate?*

My answer to that question is an unequivocal no. Partnerships BC misrepresents the expected cost

Table 1: Partnerships BC P3 Versus Public Sector Comparator for Sea-to-Sky Project

	P3	Public Sector Comparator
Payments to P3	578.5	—
Capital costs (MoT)	208.1	516.0
O&M costs (MoT)	3.2	107.5
Rehabilitation costs (MoT)	—	36.3
Risk adjustment	—	42.9
Self-insurance adjustment	—	37.1
Tax adjustment	—	4.2
Total adjusted cost (2005 \$ million, PV @ 7.5% disc. rate)	789.8	744.0

Source: Partnerships BC (2005), p.17.

differences between P3s and PSCs, and it exaggerates the cost to taxpayers of the incremental risk that government assumes under the PSC. As discussed below, Partnerships BC errs by ignoring the interest rate government would actually pay on any debt it incurs and under-weighting (overly discounting) the present significance of future payments. As for the valuation of risk, calculating the critical value—the amount that any risk transfer would have to be worth to justify private financing—is proposed as a better, more transparent method for assessing the Value for Money from P3s.

Cost of Capital Under P3 and PSC

The annual costs of the Sea-to-Sky project expected under the P3 arrangement are relatively well-defined. There are the annual lease, incentive and other payments government will make to the P3 consortium as specified in the P3 contract, and the costs of those parts of the overall project for which government will retain responsibility.

The annual costs Partnerships BC estimated for the PSC, however, are quite different.

First, the PSC costs are based on government estimates, not actual bids or contractual arrangements. Even though the estimated PSC costs provide the critical benchmark for assessing the Value for Money from P3s, they are fundamentally different and less reliable. They may over- or understate the bids that would in fact be received for conventionally procured design-build and operating and maintenance (O&M) contracts. There is little that can be done about this, except to note that any differences in the underlying construction and O&M costs between the P3 and PSC should be carefully considered and explained. The work would be done by the private sector under both a P3 and PSC, and contracts would be procured under similar competitive processes.

Second, and of greater methodological concern, the annual costs Partnerships BC assumes for the PSC do not reflect the actual cost of government borrowing. For the purposes of its Value for Money analyses, Partnerships BC explicitly assumes that the cost of government borrowing is exactly equal to the weighted average cost of capital that P3s incorporate into their required lease payments.² In the case of the Sea-to-Sky project, this meant calculating government interest costs as if government borrowed at a rate of 7.5 per cent, instead of

its actual borrowing rate which is currently less than 5 per cent.

This of course has a very significant impact on the cost comparison. For the Sea-to-Sky project, government would have to borrow over \$500 million under the PSC. Overstating the actual interest rate by 2.5 percentage points adds almost \$10 million per year to the PSC costs—almost \$250 million over a 25-year debt repayment period.³

The weighted average cost of capital for P3s is higher than government borrowing rates for two reasons. Firstly, the interest rate P3s pay on the debt portion of their capital is higher than the interest rate governments like that of British Columbia pay. The credit ratings for private firms are generally not as high as for government, and lenders consequently require higher interest rates to compensate for even marginally greater default risk. Secondly, to secure debt financing the P3s must provide some equity, and the rate of return required on the equity portion of their capital is significantly higher than the cost of debt. In addition to tax consequences, there is the greater risk of equity investment as compared to debt that must be offset by a higher expected return.

Partnerships BC recognizes that P3s' cost of capital is greater than government's borrowing rate, but it argues that this is entirely due to the project risk that the P3s assume in their contract.⁴ The interest rate that government pays does not reflect the risk of the projects that the debt is used to finance. Government debt is secured by its ability to raise taxes in order to repay its loans—it doesn't depend on the project performance. That is why it can finance its projects 100 per cent with low-cost debt.

The essence of Partnerships BC's position is that the real cost of government borrowing isn't the interest that is actually paid, but rather that interest cost plus the market-determined compensation required to assume the project risk—the weighted average return that lenders and equity investors in the P3 have to receive to be willing to take on the project. The assumption is that the cost of the project risk assumed by taxpayers is the exact same as the compensation (in excess of government's borrowing rate) that the P3 requires.

There is considerable debate in the literature regarding the risk taxpayers assume when governments invest on their behalf, and the return they should expect in order to justify the investment. In a classic article, Arrow and Lind argue that governments' ability to pool risks over a large number of projects reduces the risk for the portfolio

of projects they undertake. Further, the spreading of any remaining systemic or non-diversifiable risk over large numbers of taxpayers results in the significance of the risk facing individuals being very small. Consequently there is no need to add a risk premium to government borrowing rates in order to measure the true cost of government financing.⁵

For Sea-to-Sky, the decision to invest has already been made, and BC taxpayers will assume the long term liability to repay its costs regardless of whether it is prudent investment or not. The issue here isn't whether the investment should be made, it is how it should be financed—should taxpayers assume a 25-year lease obligation under a P3 or should they instead finance it themselves and thereby assume a 25-year (or other long term) obligation to repay the debt.⁶

It may be that there would be some preference, some willingness of taxpayers to pay a premium for a long term lease under a P3 as opposed to incurring a debt obligation. They both would constitute a long term government liability—there are no accounting advantages for a P3. However, a P3 contract does transfer some risk and long term performance responsibilities that government would otherwise have to assume. And there may be better management of the project by private investors than would be realized by private contractors working more directly for the government under a PSC.

The question is: what risks are in fact transferred, what management benefits can reasonably be expected, and how much of a premium would taxpayers be willing to pay for that?

Partnerships BC's Value for Money report provides a list of the risks that would be transferred under the Sea-to-Sky P3. For the most part they concern design, cost and defect risks that could be transferred under a PSC. They have little to do with financing. There are long term O&M responsibilities and risks transferred under the Sea-to-Sky P3, but these too could be integrated with construction and transferred under design, build, operate contracts, without private financing.

There may be some elements of these risks that couldn't be transferred as easily or effectively, but one thing is clear: the risk transfer relative to what could be done under a PSC is modest. In any event, there is no reason to believe that the value of the risk transfer to taxpayers equals the cost—in this case a 2.5 per cent premium in the P3's cost of capital relative to government's borrow-

ing rate that will be paid to compensate for the risk and responsibility the P3 will assume.

It is important to recognize that the 2.5 per cent premium that the P3 will be paid reflects the circumstances and costs it faces. There are contract risks (concerns about disputes with future governments)—risks that wouldn't exist and that taxpayers wouldn't implicitly incur if government financed the project. The required return on equity relates in part to the alternative investments available to the P3 investors—alternatives which may not be available or relevant to taxpayers. There is the very real likelihood that the premium includes some 'monopoly rents'—returns greater than the minimum necessary to compensate for the risks. There simply aren't the number of bidders or homogeneity of P3 contract terms that would ensure that the minimum necessary prices are in fact bid.

In short, the 2.5 per cent is the cost of the risk transfer under a P3. The value of the risk transfer is what taxpayers would in principle be willing to pay for it. To assume that taxpayers would be willing to pay whatever the P3 is paid is simply incorrect. It assumes the answer to the question that should be explicitly addressed.

An Alternative Approach to Assess Value for Money

Partnerships BC's assessment of Value for Money was based on its calculation and comparison of the net present value costs of a P3 versus PSC for the Sea-to-Sky project. It first estimated the annual costs expected under both contractual arrangements; it adjusted the cost of government financing by adding 2.5 per cent (or more) to the actual government borrowing rate to reflect the private cost of capital; it then applied a 7.5 per cent discount rate (the private cost of capital) to calculate the present value of the annual costs⁷; and finally it made some further adjustments for risk, self-insurance requirements and tax differences between the P3 and PSC.

The adjustment Partnerships BC made to the cost of government borrowing is not only unjustified, it obscures what the estimated annual costs actually represent. In its report, Partnerships BC described its annual PSC costs as "unadjusted for risk."⁸ In fact it included a very significant adjustment for risk (almost \$10 million per year). A more transparent approach, and one that would avoid

double counting for risk,⁹ would require distinguishing the estimated financial costs based on government's actual borrowing rate from the imputed costs for the incremental risk taxpayers assume by government financing of the project.

A related, but additional problem with Partnerships BC's methodology is calculating present values with a discount rate reflective of the private sector's 7.5 per cent cost of capital. The Value for Money assessment is

intended to present the implications to taxpayers, and if one wants to summarize the annual P3 or PSC costs in a single present value number, it should apply a discount rate that produces *equivalent* present values. For taxpayers that would be the money it would have to set aside today in order to meet a lease or debt service obligation in the future. In other words, both the P3 and PSC annual costs should be discounted at government's borrowing rate. The effect of that would be to give much

Table 2: Estimated Actual Costs of the Sea-to-Sky P3 and Public Sector Comparators

Contract year	P3			Public Sector Comparator		
	Partnerships BC estimate	Capital cost adjustment*	Estimated actual	Partnerships BC estimate	Capital cost adjustment*	Estimated actual
	(\$ million)			(\$ million)		
1	63.70	-3.90	59.80	87.80	-9.68	78.12
2	22.80	-3.90	18.90	25.00	-9.68	15.32
3	30.90	-3.90	27.00	45.00	-9.68	35.32
4	43.80	-3.90	39.90	57.90	-9.68	48.22
5	70.80	-3.90	66.90	60.40	-9.68	50.72
6	80.20	-3.90	76.30	60.10	-9.68	50.42
7	80.40	-3.90	76.50	60.10	-9.68	50.42
8	81.00	-3.90	77.10	60.40	-9.68	50.72
9	81.50	-3.90	77.60	60.80	-9.68	51.12
10	81.90	-3.90	78.00	61.10	-9.68	51.42
11	82.50	-3.90	78.60	61.50	-9.68	51.82
12	83.00	-3.90	79.10	66.00	-9.68	56.32
13	83.50	-3.90	79.60	62.20	-9.68	52.52
14	84.10	-3.90	80.20	68.50	-9.68	58.82
15	84.50	-3.90	80.60	69.40	-9.68	59.72
16	85.10	-3.90	81.20	69.80	-9.68	60.12
17	85.70	-3.90	81.80	70.40	-9.68	60.72
18	86.30	-3.90	82.40	71.00	-9.68	61.32
19	86.80	-3.90	82.90	71.70	-9.68	62.02
20	87.50	-3.90	83.60	72.30	-9.68	62.62
21	88.10	-3.90	84.20	75.10	-9.68	65.42
22	88.70	-3.90	84.80	75.90	-9.68	66.22
23	89.40	-3.90	85.50	76.90	-9.68	67.22
24	90.00	-3.90	86.10	82.90	-9.68	73.22
25	140.70	-3.90	136.80	98.50	-9.68	88.82
Total	1,982.90	(97.50)	1,885.40	1,670.70	(242.00)	1,428.70
Present value @ 5% discount rate	\$1,036.10	(\$54.97)	\$981.13	\$899.49	(\$136.43)	\$763.06

*Reflecting the difference in the annual debt service payments for the government capital costs with a 5 per cent as opposed to PBC-assumed 7.5 per cent cost of government borrowing.

greater weight to the future lease and buyback obligations in the P3 contract, in accordance with the significance of future tax obligations that taxpayers would logically make. That in turn would result in a much higher P3 present value cost relative to the PSC.

The fundamental problem with Partnerships BC's methodology for assessing Value for Money from P3s is that it equates the costs of risk and the discount rate that a P3 would apply with the cost of risk and discount rate that are most appropriate from the perspective of taxpayers. Taxpayer costs and opportunities are quite different from P3's, and any assessment of the Value for Money from a taxpayer perspective must focus on the tax obligations taxpayers can expect to incur over the long term.

A taxpayer-focused Value for Money assessment (again, with respect to the question of financing, not the social decision to invest), should estimate expected annual costs on the basis of actual financing rates, and should calculate equivalent present values on the basis of the government's borrowing rate. The resulting present values would then indicate the amount of money government would have to borrow today in order to pay the financial obligations it assumes under a P3 or PSC. That in itself wouldn't account for differences in risk, but such differences can be addressed separately. First, the nature of the risks and uncertainties could be explicitly identified and sensitivity analyses undertaken to determine the range of possible costs taxpayers would face under the range of possible outcomes. This would provide some tangible sense of the magnitude of the risks and how they differ under the P3 and PSC. The difference in the expected present value costs could then be used to define the critical value of the risk—what those differences in risk transfer would have to be worth in order to justify the higher expected cost of the P3.

Calculating the critical value of the risk transfer for the Sea-to-Sky project is complicated by the fact that the project specifications are not the same in the P3 and PSC. Nevertheless, Table 2 shows the estimated annual and present value costs of a P3 and PSC for Sea-to-Sky from a taxpayer perspective, based on actual government borrowing rates. The present value cost of the P3 is \$980 million, almost \$220 million more than the estimated \$760 million present value cost for the PSC. This difference, the \$220 million, represents the critical value for all of the incremental improvement, risk and other non-quantified advantages of the P3—what they would have

to be worth to taxpayers for the P3 to be preferred. To say the same thing another way, \$220 million is the incremental amount government could borrow under the PSC (for additional road improvements and contingencies) and still be a better option for taxpayers than the P3.

The point is, the Sea-to-Sky P3 is costly for taxpayers, as are P3s for most capital-intensive government infrastructure projects. The extent of the incremental costs should be clearly identified in any Value for Money assessment. That is what is required to properly inform the debate, and clarify the judgments and assumptions decision-makers must apply in order to justify the choices they make.

Notes

- ¹ Partnerships BC, *Project Report: Achieving Value for Money – Sea-to-Sky Highway Improvement Project*, December, 2005.
- ² Partnerships BC (2005), p. 14.
- ³ Because there would be government borrowing even under the P3, costs under the P3 are similarly overstated. However, the borrowing requirement is some \$300 million less under the P3 than the PSC and consequently the overstatement of costs is proportionately less. As shown in the table at the end of this paper, the net effect of assuming a 7.5 per cent instead of a 5 per cent cost of capital is to overstate the P3's cost advantage (or in this case understate its cost disadvantage) by some \$5.8 million per year or \$145 million over the 25-year P3 contract period.
- ⁴ Partnerships BC (2005), p.20.
- ⁵ Arrow, K. and R Lind, "Uncertainty and the Evaluation of Public Investment Decisions", *American Economic Review*, 1970.

In a policy paper for the World Bank Private Sector Development Department, M. Klein ("Risk, Taxpayers and the Role of Government in Project Finance," Policy Research Working Paper 1688, December 1996) argues that the private sector too can pool risks, and can also spread them over large numbers of investors. Premiums to compensate risk are still required, however, because typically there remain dominant investors for whom the non-diversifiable risk is significant. While competitive capital markets could generate more risk spreading, less participation by dominant investors and less need for risk premiums, the markets still rely on dominant investors even with the risk premiums they demand. Dominant

investors provide valued control—they help ensure the investments are sound.

Government may be able to pool and spread risk to the point that the non-diversifiable risk is insignificant for individual taxpayers, but it cannot ensure it is investing wisely. P3 proponents like Klein would thus argue that taxpayers should want governments to recognize a premium cost of capital, regardless of their actual borrowing rate in order to offset the risks that are inherent in government decision-making—the risk of bureaucratic or political misjudgment on the returns that different investments offer.

It is quite reasonable to argue that governments should not invest in projects that offer an expected return just sufficient to pay government's actual borrowing costs. It is not just the risk of realizing lower than expected returns, it is the resulting public/private sector distortions in the economy that would be of concern. It is for these reasons that BC and other government benefit-cost guidelines commonly suggest that a higher 'social opportunity cost' rate should be employed when evaluating government investments.

However, P3 proponent counterarguments to Arrow and Lind, and social investment criteria that require a higher expected return than government's borrowing rate, relate primarily to the decision to *invest*.

- ⁶ It is ironic that while the government, through Partnerships BC, has assumed a very high cost of capital with respect to the issue of financing, it implicitly assumed a very low cost of capital with regard to the decision to invest. By Partnerships BC's own calculations the present value of the expected travel time and safety benefits of the Sea-to-Sky improvements are \$100 million less than the costs assuming a 7.5 per cent cost of capital. Partnerships BC (2005), p.22.
- ⁷ The calculation of the present value costs of the PSC is described differently in Partnerships BC's report. For the PSC it applied a 7.5 per cent discount rate to the cash flow capital and O&M expenditures. This is equivalent, however, to assuming the capital expenditures were financed at a 7.5 per cent interest rate and then discounting the resulting annual expenditures at a 7.5 per cent rate.
- ⁸ Partnerships BC (2005), p.14.
- ⁹ Partnerships BC approach double counts for risk by first adjusting government's actual cost of capital to reflect a private valuation of risk and then later adding an additional \$43 million to the estimated PSC cost for a 'risk adjusted' present value comparison.

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