Operational Insurance Benchmarking and its Role in Public-Private Partnerships

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Public-private partnerships (P3s) are cooperative ventures between the public and private sectors that leverage private finance for public infrastructure. P3 projects are increasingly used to deliver complex infrastructure projects in the United States, Canada and the United Kingdom as they not only encompass the design and construction phases, but also the operations and maintenance (O&M) phases of a public works project. The public sector gains value from a P3 project by transferring risk typically assumed by the public sector to the private sector. For the purposes of this paper, we will refer to the public sector party as the “Project Owner” and the private sector party as “Project Co”. This paper will discuss how one particular risk – the risk of a substantial increase in the cost of insurance - is shared between the Project Owner and Project Co during the O&M phase of a P3 project.

Operational Insurance and its Impact on the Maximum Availability Payment

The O&M phase of a P3 project can range from 25 to 50 years after the completion of the asset. Typically, the Project Owner and lenders will require Project Co to put in place a comprehensive insurance program during the O&M phase of a P3 project. This insurance is meant to provide a layer of protection to the O&M operator against damage it may incur, and claims it may suffer, in connection with its responsibilities during the O&M phase. For instance, the O&M operator engaged in a transportation project must provide consistent and high quality roadway maintenance and must also uphold the structural safety of the asset (e.g., the road). Other responsibilities may include managing drainage and stormwater elements, keeping fences and sound abatement in acceptable condition, providing timely and appropriate inclement weather response, and responding to damage to the asset due to emergencies. A risk management program, which also includes insurance coverage, can offer financial protection for losses incurred during the O&M phase.

Understanding and accurately gauging risks during the O&M phase are especially important in P3 projects. As an example, during the procurement phase bidders must assess the risk of the O&M activities and estimate the price of the O&M insurance program for the duration of the concession term. For Project Co, the estimated annual cost of insurance during O&M becomes a component of the final maximum availability payment proposed by Project Co to the Project Owner (for availability payment projects). If Project Co does not accurately forecast the costs of O&M risks and insurance costs, then the predetermined maximum availability payment will not be sufficient for Project Co to cover its payment obligations.

P3 project agreements typically contain a provision that allows Project Co and the Project Owner to share in the risk (or benefit) of insurance premium changes during the O&M phase. This risk sharing provision is referred to as the “insurance benchmarking provision”. The benchmarking provision is a way for the Project Owner and Project Co to share in the risk of unexpected insurance price fluctuations. As insurance premiums change over the course of the O&M phase, the maximum availability payment fluctuates according to the value of rising and falling premiums (subject to certain contractual conditions). This benchmarking provision is essential to Project Co as it protects its financial interests by limiting its exposure to a substantial increase in annual insurance premiums should the insurance market experience abnormal fluctuations that Project Co has no ability to control. For the Project Owner, the benchmarking provision allows the public sector (and consequently the taxpayer) to benefit from a reduction in insurance premiums, which, in turn, should result in a lower project cost.

Risk Sharing during the O&M Phase

Under a typical benchmarking provision in the U.S., the Project Owner will adjust the maximum availability payment that Project Co receives based on changes in insurance pricing. This decision is the result of a review process that considers the current cost of O&M insurance in relation to the estimated cost for the upcoming year. The review process only considers insurance premium changes that are the result of general insurance market changes, not the project experience or project-specific losses attributable to Project Co.

The typical benchmarking provision will also define a “premium threshold” – the point at which the Project Owner and Project Co share in the cost of annual insurance premiums. U.S. project agreements stipulate premium thresholds ranging from 10-40%. For instance, 10% premium threshold
means that the Project Owner would begin sharing in premium changes if premiums increase or decrease more than 10% as compared to the previous insurance review period (typically conducted every three years). If insurance prices have increased or decreased more than a given percentage above or below the premium threshold, then both parties will share in the corresponding cost or benefit.

Most U.S. P3 project agreements, (see Table 1 for a few examples), have a cost-sharing mechanism of “85/15”, which means that the Project Owner is responsible for 85% of the premiums and Project Co is responsible for 15% of premiums above the established premium threshold. Conversely, if premiums decrease, the Project Owner enjoys the benefit of 85% of any lowering of premiums and Project Co enjoys the benefit of 15% of any lowering of premiums below an established premium threshold. As a result of this mechanism, future availability payments are adjusted either upwards or downwards depending on whether the premiums increase or decrease as compared to a premium threshold.

The goal of the benchmarking provision is to ensure that risks are allocated to the party best able to manage the risk. Given that the Project Co is only entitled to a contracted cash flow as defined in the project agreement, in the event that premiums rise dramatically as the result of a catastrophic event and if no benchmarking provision was in place then Project Co would not be able to recoup these costs. As a result, Project Co would suffer a financial impact from increased premiums that may jeopardize the project’s feasibility. With a benchmarking provision, however, the Project Owner shares the risk of an extraordinary rise in insurance premiums for events not related to the project, alleviating some of the potential strain on Project Co’s cash flows.

Table 1: Sample Insurance Benchmark Provisions from U.S. P3 Projects

<table>
<thead>
<tr>
<th>Project Asset Type*</th>
<th>Summarized Insurance Benchmarking Provision</th>
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<tbody>
<tr>
<td>Municipal Facility</td>
<td>The Project Owner will pay (or benefit from) 100% of insurance changes if premiums rise or decline more than 10% from the previous review period. The review period occurs every three years.</td>
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<tr>
<td>Bridge</td>
<td>The Project Owner will pay (or benefit from) 85% of insurance changes if premiums rise or decline more than 30% from the previous review period. The review period occurs every three years.</td>
</tr>
<tr>
<td>Road 1</td>
<td>The Project Owner will pay (or benefit from) 85% of insurance changes if premiums rise or decline from the previous review period. The review period occurs every three years.</td>
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<tr>
<td>Road 2</td>
<td>The Project Owner will pay (or benefit from) 65% of insurance changes if premiums rise or decline more than 40% from the previous review period. There is not a specified review period, so insurance changes can be reviewed annually.</td>
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*Sample projects utilize the availability payment structure and are not demand revenue based projects.

O&M Risk Sharing in Practice

To better understand the benchmarking provision in P3 project agreements, Figure 1 illustrates a typical U.S. insurance benchmarking provision with a premium threshold set at 30% above or below the benchmark premiums (the value of estimated insurance costs for that given year). For illustrative purposes, the starting benchmark is set at $1 million and escalated by CPI (2.3%) annually to establish the benchmark value for future review periods. The exposure and benefit to Project Co is represented by the area above and below the “Benchmarked Premiums” line.
As a comparison, the typical Canadian benchmarking provision for P3 agreements requires that the Project Owner be responsible for any change in insurance premiums that is not due to Project Co’s activities. As another comparison, the U.K. Treasury has instituted standardized P3 contractual language that includes a benchmarking provision (for projects utilizing availability payments) and recommends a premium threshold ranging from 5% to 30%.

Historical Changes in Insurance

Viewing the example benchmarking provision in relation to fluctuations in the insurance market offers insight into the effectiveness of the benchmarking provision. Premium pricing can be difficult to estimate years before the insurance program is placed due to changes in the cost of insurance. Once implemented, O&M insurance is renewed yearly for the entire concession term and the cost of O&M insurance is susceptible to market fluctuations. Catastrophic events, such as significant hurricanes, can greatly influence insurance prices. Two insurance scenarios provided in Figure 2 highlight what a potential insurance market could look like during a typical O&M term. The hypothetical changes to the insurance market shown in Figure 2 are based on historical property and casualty insurance trends from the Council of Insurance Agents and Brokers.

The first scenario considers an average annual insurance premium price growth of 3% with a 3.25% standard deviation. The effects on the insurance market from catastrophic events have been removed from this estimate. A random model using these parameters was created and then overlaid on the previously discussed benchmarking provision. In scenario one, Project Co is exposed to higher than benchmarked premiums for several years over the course of operation. Despite these premium increases throughout the course of the O&M phase, the cost-sharing threshold is never reached.

The second scenario considers the effects of a significant catastrophe, such as the events of September 11, 2001, and its impact on the insurance market. In this scenario, the major catastrophic event occurs in the second year of the O&M phase. Following this event, insurance prices increase by 21%, 18%, and 8% annually as was seen in the insurance market from 2001 to 2003. Following the catastrophic event, the model returns to reflect the random market fluctuations represented by a mean

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2 Mean and standard deviation are based on 1990-2014 property and casualty insurance changes from the Council of Insurance Agents and Brokers with 2001-2007 insurance changes removed due to the catastrophic events.
of 3% and an increased standard deviation of 7%. Under this scenario, Project Co is exposed to over $3,000,000 of increased insurance premiums above the benchmark value, and only $215,000 of that total exposure is shared with the Project Owner.

**Implications of the Benchmarking Provision for Risk Allocation**

Both scenarios highlight a few potential issues with this U.S. benchmarking provision. It takes a catastrophic event of major proportion for there to be any cost-sharing of insurance premiums with the Project Owner. Additionally, Project Co is exposed to the full cost during the first year of the insurance increase when premium changes are greatest (21% in this scenario) because it takes a full year following the major event for the premium threshold to be reached.

If Project Co is required to account for such major events without support from the Project Owner, Project Co may build contingency levels into their financial models at the time of bidding. Project Co must forecast the risk of rising premiums in order to build a financial contingency. If premiums rise above that forecast, Project Co would receive a maximum availability payment that does not cover its financial obligations. If premiums do not rise, then the Project Owner is conceivably paying out an inflated maximum availability payment and the public is not receiving the best value for money. The benchmarking provision, then, arguably does not allocate premium risk to the party best able to manage that risk.

The purpose of a premium threshold is to incentivize Project Co to put forth competitive estimated O&M insurance premiums at the time of bid. A premium threshold impels Project Co to actively work to constrain premium increases because Project Co is responsible for paying a portion of increased premiums. The above model shows that the typical premium threshold should likely be reconsidered; however, some form of premium sharing should likely be maintained in order to hold Project Co responsible for accurate insurance pricing.

As a result of our analysis we respectfully suggest that the typical benchmarking provision in the U.S. might very well transfer too much risk to Project Co for unexpected and drastic fluctuations in insurance prices, over which Project Co has no control. A lower premium threshold might better

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3 7% standard deviation represents the variation in property and casualty insurance from 1990-2014. Data is from the Council of Insurance Agents and Brokers
protect Project Co from financial distress during the O&M term of a P3 project. However, the benefit of establishing a premium threshold is that it encourages Project Co to more accurately and competitively price potential premium increases during the O&M phase. The historical insurance premium data strongly suggests that both the public and private sectors have more to do to arrive at a premium benchmarking provision that generates the optimum value for money and yet achieves balanced risk transfer between the public and private sectors.
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