COMPETITIVE ADVANTAGE OF EQUITY IN BOT TENDER

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ABSTRACT: This paper is concerned with the role of equity and level of equity investment required in a build-operate-transfer (BOT) tender. In times of decreasing ability to raise public funds for infrastructure projects, the BOT concept has been used increasingly by governments to implement privately financed projects such as toll roads and private power plants. This paper shows that high level of equity is necessary in BOT tender if it is specified in the request for proposal, the competition is keen, and financing for the project is uncertain. Governments are often concerned about the high financial charges that may overburden the cash flows of the project and which may subsequently affect the efficient running of the project. It may also be concerned about the availability of debt financing. Governments therefore view high equity as important and necessary. The threshold equity level proposed by the promoters must therefore be high—typically between 20% and 30%—for them to be short-listed and to proceed to the final round of negotiation when the selection will be made. Otherwise they will be dropped from further consideration.

INTRODUCTION

The build-operate-transfer (BOT) concept for the implementation of privatized infrastructure projects may be defined as the granting of a concession by the government to a private promoter, known as the concessionaire, who is responsible for the financing, construction, operation, and maintenance of a facility over the concession period before finally transferring the fully operational facility to the government at no cost. During the concession period, the concessionaire owns and operates the facility such as a toll road or a private power plant, and collects revenues to be able to repay the financing and investment costs, maintain, and operate the facility as well as make a margin of profit (Tiong 1990). The project promoter is therefore wholly responsible to raise the necessary finance, which is often a combination of debt and equity, for the implementation of the project.

Equity finance of privatized infrastructure projects let under the BOT contract represents the injection of risk capital by the promoter and other equity investors into the concession company. The promoter and equity investors will be rewarded with dividends from profits if the project is successful, but no return at all if it creates losses. Since the servicing of debt has priority over dividend payment, the dividends can only be paid after the debt claims have been met. In the event of the company becoming insolvent, equity investors rank last in order of repayment and are very likely to lose their equity investment (Woodward and Chan 1993).

Redwood (1991) has described equity as the most suitable form of capital for all types of commercial ventures; although the bigger the risks, the more appropriate it becomes. In this paper, examination is made of the role of equity and level of equity investment required in a BOT tender, which is increasingly being used to implement privately financed infrastructure projects.

RESEARCH HYPOTHESES AND METHODOLOGIES

The hypotheses proposed for research are: (1) High equity is necessary in a BOT tender; and (2) the higher the equity, the more likely it is to win the concession.

The hypotheses are researched as part of the author's research on the evaluation and competitive tendering of BOT projects. In this research, it was decided to combine case-based research with survey-based research methods. The objective is to combine the strengths of both methods to achieve validity based on continuous research process. Other sources of information include interviews with promoters and government officials as well as request for proposals (RFPs) and the tender proposals as listed in Appendix II. In addition, continuous correspondence is maintained with overseas professionals involved in BOT projects to seek clarifications and to seek their comments on the research findings.

EQUITY IN BOT TENDER

Providers of equity fall into two categories: those with a direct interest in the project operation in addition to their being equity investors (these include contractors, operators, the host government, and recently multilateral agencies); and those who are solely involved as equity investors, such as public shareholders and institutional investors like insurance funds.

In a BOT tender, equity, if not demanded, is often expected of the project promoters by both the governments and lenders. This is because equity has a twofold function. First, it decreases the burden placed on the project to service debt, thereby reducing the risk of repayment and signifying the promoter's faith in the economic viability of the project. Loans are usually rigid instruments that necessitate specified amounts of interest and principal to be paid on specified dates. This characteristic suggests that loans may not provide the necessary grace periods and maturities needed to accommodate the cash flow needs of BOT projects, which are invariably long term in nature. Equity can therefore be used as a balancing item, particularly in the early years of construction.

Second, the government believes that it gives the successful promoter incentive to complete the project on time and on budget by placing its equity at risk. For lenders, they are often not so familiar with the design and construction details of a project so as to have a comprehensive understanding of the proposed investment. They would therefore feel more comfortable if the promoter shows a level of commitment to the project, by taking an equity stake. In circumstances where the project is faced with potential financial losses, the promoter will then not just walk off the project, but will spend time and effort to overcome the crisis (Woodward and Chan 1993).

To the promoters, however, equity means expensive capital. As the costs of equity is higher than debt, high equity needs higher return (and revenues) to give the same rate of

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Note. Discussion open until February 1, 1996. To extend the closing date one month, a written request must be filed with the ASCE Manager of Journals. The manuscript for this paper was submitted for review and possible publication on June 30, 1994. This paper is part of the ***Journal of Construction Engineering and Management***, Vol. 121, No. 3, September, 1995. ©ASCE, ISSN 0733-9364/95/0003-0282–0289/$2.00 + $.25 per page. Paper No. 8778.

return on equity. This means in turn a high return on the project is necessary. The result is a higher level of tolls or higher power rates or some inevitable form of subsidies by government. It also means putting their capital at risk. Promoters are often concerned with how much equity that is necessary to be specified in their financial proposals and whether a substantial amount of equity or a high equity-debt-ratio needs to be proposed to provide the competitive advantage in the BOT tender and to win the concession. The other concern is whether or not increasing the level of equity to a higher level during negotiations will influence the outcome of the tender.

These concerns are reflected in the two research hypotheses and are addressed from the following concepts, based on quantitative analysis of the survey responses, qualitative analysis of RFPs, and studies of the actual cases:

1. The extent of importance of equity as regarded by government during evaluation
2. The degree of difficulty during negotiation relating to the level of equity
3. The level of equity to increase the chances of success in the tender

QUANTITATIVE ANALYSIS OF SURVEY RESPONSES

As part of the research, two sets of questionnaires were developed. One set was "Evaluation of Proposals for BOT Projects" and was targeted at the government officials and their financial advisers. The other set was "Experiences in Tendering BOT Projects" and was targeted at project promoters and their financial and technical advisors. The respondents were asked to respond to the questions with reference to a specific BOT project that they were personally involved in.

For the first survey, sent in February 1992, a total of 30 government officials and their advisers responded out of a total of 75 questionnaires mailed, giving a response rate of 40%. For the second survey, sent in April 1992, a total of 32 project promoters and their advisers responded out of a total of 85 questionnaires mailed, giving a response rate of 38%.

The country distribution of the government officials, promoters, and their advisers who responded to the surveys is as shown in Table 1.

Equity: Importance and Difficulty during Negotiations

In the surveys conducted, both the promoters and government officials were asked about the extent of importance of a high equity and the difficulty in negotiating high equity during the evaluation and negotiations of BOT proposals. In addition to equity, they were also asked to rate the importance and difficulty of 12 other financial and contractual elements such as tolls and construction costs based on a Likert scale of 1 (not important), 2 (quite important), 3 (important), 4 (very important), and 5 (extremely important). The same scale is used for difficulty. The elements were then ranked according to the mean score. The ranking and analysis of all the elements will be presented in another paper. The ranking and mean scores from the surveys on equity are shown in Table 2.

TABLE 1. Country Distribution of Respondents

Country (1)	Government: number of responses (2)	Promoter: number of responses (3)
Australia	4	5
Canada	2	1
Hong Kong	5	4
Indonesia	2	2
Malaysia	5	6
Pakistan	2	1
Philippines	2	2
Thailand	2	2
United Kingdom	3	6
United States	3	4
Total	30	32

TABLE 2. Equity Importance and Difficulty during Negotiations

Equity (1)	Mean score and ranking by governments (2)	Mean score and ranking by promoters (3)
Importance on equity	3.1 (9)	3.0 (10)
Difficulty in negotiation	2.0 (11)	2.4 (5)

TABLE 3. Comparison of Governments' Views versus Promoters' Views on Equity

Element (1)	Ranking (2)	Test statistic (z) (3)	Null hypothesis rejected? (4)	Conclusion (5)
Importance of equity	Different	−0.64	No	No difference
Difficulty of negotiating equity	Different	−1.06	No	No difference

The ranking on importance of equity by governments and the promoters (ninth and 10th, respectively, out of the 12 elements) shows that it is not considered as very important when compared with the other financial elements in winning a BOT tender, but the mean score of 3.1 by governments and 3.0 by promoters shows that it is important and necessary enough to be included in the tender. It can be concluded that both governments and promoters agreed that high equity is important. On the degree of difficulty in negotiating high equity, the governments considered it as quite difficult, while the promoters' response was that of "quite difficult" to "difficult."

Comparing Governments' Views versus Promoters' Views on Negotiating Equity

In this section, the nonparametric Mann-Whitney statistical method, which is described in statistics books such as Mendenhall et al. (1989), is used to compare the ratings of governments versus promoters in the surveys and obtain inferences on importance and difficulty in negotiating high equity.

The hypotheses are the null hypothesis, H_o, that the two distributions by governments and promoters on equity are equal; and the alternative hypothesis, H_a, that the two distributions are not equal. H_o is rejected if the test statistic z falls outside -1.96 to $+1.96$. The results are summarized in Table 3. Table 3 shows that both the null hypotheses are not rejected. This provides evidence that the distributions of the scores of governments and promoters on importance of equity as well as the difficulty in negotiating equity are identical and the implication is that the means are close. Thus, even though the rankings by governments and promoters on both importance and difficulty of equity are different, their identical distributions show that both parties shared similar opinions on importance and difficulty of negotiating equity.

Survey Responses on Higher Level of Equity

The question that remains is whether additional amount of equity affects the chances of a successful outcome in the tender.

This leads to the testing and analysis of the hypothesis that the higher the equity, the more likely it is to win the concession. The respondents were asked whether they agreed or disagreed with the hypothesis. The results are shown in Table 4.

As shown in Table 4, the majority of respondents surveyed disagreed with hypothesis 2. Therefore, the majority of the practitioners (both governments and promoters) surveyed did not believe that as the level of equity is raised higher, the likelihood of winning the BOT concession is increased.

Comparing Governments' Views versus Promoters' Views on Higher Level of Equity

Table 4 shows that there is a high percentage of respondents in rejecting hypothesis 2. The objective here is to test whether there is a positive agreement of views of government and promoters in rejecting hypothesis 2 by using the two-population proportion method, which is described in statistics books.

Calculations

The data are taken from Table 4:

- For government, $n_1 = 30$, $s_1 = 0.76$
- For promoter, $n_2 = 32$, $s_2 = 0.74$
- Null hypothesis, H_0, $p_1 - p_2 = 0$
- Alternative hypothesis, H_1, $p_1 - p_2 > 0$

H_0 is rejected if the test statistic $Z > 1.65$ for $\alpha = 0.05$. Note: S_1 and S_2 refer to the sample proportions, and p_1 and p_2 refer to the population proportions.

Since based on calculations, $z = 0.35$ is not greater than 1.65, we cannot reject H_0. There is therefore evidence to conclude that there is no difference of views between the governments and promoters, i.e., there is a positive agreement of views between both parties in rejecting hypothesis 2 on the level of equity.

The main reasons given by the respondents in disagreeing with hypothesis 2 are as follows:

1. As long as there is a minimum equity to satisfy the requirements and concerns of bankers and government, the hypothesis no longer applies (this minimum can be high!).
2. It is more important to demonstrate commitment of financial resources.
3. Equity is determined by the strength of cash flows. There is no problem in raising equity if economic fundamentals are attractive. In any case, it can be raised through imaginative structuring of financial package.
4. It depends on the risks.

Threshold Equity Participation

Reason 1 indicates that there is a minimum or threshold equity investment to have a potentially successful tender. Once the threshold is met, additional equity investment may not be a selection issue and may not increase the chances of winning the tender. The level of equity, however, may be dictated by the concerns and requirements of the bankers and government, and the threshold may be set high for potential winners. This is addressed in hypothesis 1; that high equity is necessary in a BOT tender, and will be further analyzed through the RFPs and the cases.

TABLE 4. Responses on Hypothesis 2 (Higher Equity)

Response (1)	Government (%) (2)	Promoter (%) (3)
Yes	24	26
No	76	74

QUALITATIVE ANALYSIS

Requirement for Equity in Request for Proposals (RFPs)

The next stage of analyzing hypotheses 1 and 2 is to study the RFPs. The following questions were asked:

- Is requirement of equity and/or equity-to-debt ratio specified in the RFPs?
- Do the RFPs state that the level of equity is an important criterion that government will use in selecting proposals?

To perform the analysis for these questions, the RFPs for 38 BOT projects that were procured through competitive tendering in 10 countries were studied. Table 5 shows which

TABLE 5. Equity Requirements in RFPs

Country (1)	Project (2)	Requirement for equity in RFP? (3)	High equity an important criterion? (4)
Australia	F4 toll road	No	No
Australia	F5 toll road	No	No
Australia	Sydney airport link	Yes	No
Australia	Sydney water-treatment plants	No	No
Australia	Loy Yang power plant, Victoria	No	No
Australia	Collie power plant		No
Australia	Victoria toll road	No	No
Australia	Melbourne tolled bypass	Yes	No
Canada	Northumberland Strait Crossing Bridge	Yes	No
Canada	Toronto International Airport extension	Yes	No
Hong Kong	Eastern Harbour Crossing	Yes	Yes
Hong Kong	Tate's Cairn Tunnel	Yes	Yes
Hong Kong	Western Harbour Crossing	Yes	Yes
Hungary	M1 toll road	Yes	No
Indonesia	Cikampek-Padalarang tollway	Yes	No
Malaysia	Johor water supply	Yes	Yes
Malaysia	North-South Highway	Yes	No
Malaysia	Ipoh water supply	Yes	No
Malaysia	Kuala Lumper toll interchanges	Yes	No
Philippines	Hopewell's gas turbine power plant	Yes	No
Philippines	Hopewell's coal-fired power plant	Yes	No
Philippines	Manila light-rail transit	Yes	No
Thailand	Second Stage Expressway	Yes	No
Thailand	Third Stage Expressway	Yes	No
Thailand	Bankok Metropolitan Administration Light Rail	Yes	No
Thailand	Hopewell's Road/Rail	Yes	No
Thailand	Don Muang Tollway	Yes	No
Thailand	Skytrain	Yes	No
United Kingdom	Channel Tunnel	Yes	Yes
United Kingdom	Dartford Bridge	No	No
United Kingdom	Second Severns Bridge	Yes	No
United Kingdom	Skye Bridge	No	No
United Kingdom	Manchester Metrolink	No	No
United Kingdom	Birmingham Relief Road	Yes	No
United States	Caltrans transport projects	No	No
United States	Florida high-speed rail	No	No
United States	Texas high-speed rail	Yes	No
United States	Honolulu high-speed rail	No	No
United States	Arizona transport projects	No	No

TABLE 6. Summary of Equity Requirements in RFPs

Number of RFPs (1)	Requirement for equity in RFPs (2)	Equity stated as important criterion (3)
Yes	26	5
No	12	33
Total	38	38

RFP specifies the requirement of equity in proposal and which RFP states that the level of equity is an important criterion for evaluation. The results are summarized and tabulated in Table 6.

As can be deduced from the tables for the first question, 68% of the RFPs specified the equity requirements in one form or another while 32% did not do so. Thus, in most of the cases, the promoters are categorically required to include equity or equity-to-debt ratio in their financial proposals.

As seen in the survey responses, equity and/or equity-to-debt ratio are financial elements that are often included in the negotiations. Thus, though there is a large number of RFPs that do not have the equity requirement, governments would still insist on such a requirement during the evaluation and negotiation stages.

For the second question, Tables 5 and 6 show that the majority of the RFPs (33 out of 38) do not require the promoters to include substantial equity or high equity-to-debt ratio in their proposals. The five cases that specify high level of equity will be further analyzed in the following section, followed by analysis of cases whose level of equity is not specified in the RFPs.

Cases where High Level of Equity Is Specified as Important Criterion in RFPs

As Tables 5 and 6 show, there are five RFPs that specify that level of equity is important criterion for evaluation: the competition of the U.K./French Channel fixed link, the Johor Water Privatization Project in Malaysia, and the three tunnel projects in Hong Kong.

BOT Tunnel Projects in Hong Kong

High equity is required in all three BOT projects in Hong Kong: the Eastern Harbour Crossing, the Tate's Cairn tunnel, and the Western Harbour Crossing. In the case of Western Harbour Crossing, the competition was reduced to one promoter after the shortlisted promoters cooperated and formed a single consortium.

That leaves the other two projects, in which the first two RFPs stated that the government "will regard favorably a high level of equity contribution" by the consortia (*Project* 1986, 1987). In both projects, the short-listed promoters recognized government's expectation and proposed large amounts of equity and high equity-to-debt ratio. There were several rounds of intensive negotiations. As a result, the competition was leveled up and there was very little difference in the equity and the equity-to-debt ratio was very close (25% to 75%) for both projects. High equity was therefore an important factor in the tender even though in this case it did not constitute a decisive winning factor in the final decision of concession award.

Johor Water Privatization Project, Malaysia

One tender condition in this M$440,000,000 project is that the successful promoter must be able to demonstrate its commitment to the project by way of injection of substantial equity into the project company. During negotiations, a specified amount of M$100,000,000 (23% equity) was sought by the government to be injected up front, in the form of either equity investment by the promoter or shareholder funds by other investors. The government later agreed to a progressive injection of M$20,000,000 within 1 month of concession agreement execution, and then M$80,000,000 injected within 1 year of execution of concession agreement.

Channel Fixed Link, United Kingdom

In the invitation to promoters issued by the governments in 1985, the requirement for equity capital was as follows (*Invitation* 1985): "It is left to promoters to determine the proportion of equity in their capital structure. However, the Governments expect this proportion to be substantial, and it will be one of their criteria in assessing proposals."

This is the only BOT project in the United Kingdom, however, for which the U.K. government required high equity. In subsequent BOT projects, the issue of high equity was never mentioned as important.

The reasons for the high equity for this project can be deduced as follows:

1. This is a unique, one-off project between the U.K. and French governments. It is also the largest privatized infrastructure project to be financed by private-sector money and without sovereign guarantees in this century
2. Several attempts to build the tunnel had failed under previous U.K. and French governments

The governments were therefore very cautious and high equity was required to serve its two functions as described at the beginning of this paper. Table 7 shows the equity-to-debt ratio of the short-listed promoters for this project: Channel Tunnel Group/France-Manche S.A. (CTG/FM), Eurobridge, Euroroute, and the Channel Expressway. Considering the size of the project, the equity amounts were substantially high, ranging from £500,000,000 to £1.2 billion. The equity-to-debt ratios were moderately high, ranging from 16.7% to 20%.

Given these proposals by the promoters, the questions that need to be addressed then for further analysis of hypotheses 1 and 2 are:

- Did equity constitute one of the main criteria in the assessment of proposals as stated in the RFP for the fixed link?
- Does hypothesis 1 hold true in the selection of the proposals?

On the first question, equity in this case did constitute a main criterion. This is because the government's main concerns were the level of financial commitments, which included equity, and the suitability of the scheme in attracting the necessary finance. The other factors under consideration were construction costs, traffic forecasts, revenues and the overall viability of the project. As a result, the level of equity pro-

TABLE 7. Proposed Equity and Debt for Channel Fixed Link Project[a]

Promoter (1)	Equity (2)	Debt (3)	Equity-to-debt ratio (4)
CTG/FM	£1 bils	£4.3 bils	20%:80%
Euroroute	£1.2 bils	£6 bils	16.7%:83.3%
Expressway	£500 mils	£2 bils	20%:80%

[a]Eurobridge's equity was not indicated in proposal.

posed was high in the four short-listed proposals. This is further discussed in the second question.

On the second question, the competition and the conditions imposed by the bankers had caused the promoters to propose a high equity. The equity amounts proposed by the promoters were very close, particularly between CTG/FM and Euroroute, and in terms of equity-to-debt ratio, it was 20% for both CTG/FM and Channel. In the case of CTG/FM and Euroroute, the closest to win, a strong equity base was in fact the precondition to loans and was therefore a cornerstone of their financial plans. For CTG/FM, the eventual winner, the bank loans of £4 billion were conditional upon the group raising the £1 billion equity and satisfying the terms of a preliminary information memorandum for potential investors (Neal 1988).

Hypothesis 1 is therefore supported for this project as the ability to raise finance is clearly more important to the government and equity enhances that ability and therefore the chances to win the concession. However, there is no evidence that the CTG/FM group tried to increase its equity investment to win the concession. Hypothesis 2 is therefore not supportable.

Cases where Level of Equity Is Not Specified as Important Criterion in RFPs

In this section, hypothesis 1 is further analyzed with respect to cases where level of equity is not specified as important criterion in the RFPs. Table 8 shows the equity of the successful winners of BOT projects. The range is from (near) 0% to 59%. There are two categories of BOT winners as far as equity is concerned: Those projects with low equity (less than 15% equity) form about 28% of the winners, while those with high equity (greater than 15% equity) form about 72%.

TABLE 8. Equity Investment in BOT Projects

BOT project (1)	Equity (%) (2)
Dartford Bridge, United Kingdom	0
Skye Bridge, United Kingdom	0
Second Severn Bridge, United Kingdom	0
Shajiao B power plant, China	3
Dulles toll road, United States	4
Sydney Harbour Tunnel, Australia	5
Florida High Speel Rail, United States	6
North-South Highway, Malaysia	10
Hopewell's road/rail project, Thailand	15
Second Stage Expressway, Thailand	20
Channel Tunnel, United Kingdom/France	20
Cikampek-Padalarang Tollway, Indonesia	20
Paiton power plant, Indonesia	20
Hab River power plant, Pakistan	20
Shajiao C power plant, China	20
Collie power plant, Australia	20
Hopewell's gas turbine plant, Philippines	20
Don Muang Tollway, Thailand	23
Labuan Electricity project, Malaysia	24
Tate's Cairn Tunnel, Hong Kong	25
Eastern Harbour Tunnel, Hong Kong	25
Ipoh Water Supply, Malaysia	25
KL Tolled Interchanges, Malaysia	25
Birmingham Northern Relief Road, United Kingdom	25
Skytrain project, Thailand	25
Hopewell's coal-fired power plant, Philippines	27
Bangkok's light rail project, Thailand	28
Hopewell's Superhighway, China	30
Texas high-speed rail, United States	30
KAFCO fertilizer plant, Bangladesh	30
Labuan Water Supply, Malaysia	33
Perak Water Supply, Malaysia	42
Johor Water Supply, Malaysia	23–59 (eventually)

This categorization demonstrates the strategies used by the project promoters in using equity in winning the BOT concessions.

Category 1: Projects with Low Equity

Sydney Harbour Tunnel Project, Australia

In the Sydney Harbour tunnel, Kumagai-Gumi, a Japanese construction company, was in a 50-50 joint venture with Transfield, a local construction company. The cash flows were certain, because it would be a monopolistic crossing and government support was considerable. Financing was therefore not perceived as a major problem. Kumagai's investment portfolio was already quite high in Australia, and it would not want to be seen as an investor benefitting from the project toll revenues. It therefore kept its equity low.

Shajiao B Power Plant, China

In the Shajiao B power plant in China, Hopewell was in a 50-50 joint venture with the Chinese government (*Information* 1988). The equity in the project was kept low because the Chinese partner could not afford high equity. Instead, the Chinese partner provided various guarantees that would underpin the strength of the cash flows. In addition, Hopewell commenced the earthworks and the preliminary civil engineering work by using its equity and by negotiating for deferred credits from its suppliers (Wu 1991). This was done before the financing was raised. As a result, the bankers were impressed by the progress of the site works and by the risks taken by Hopewell and they provided the foreign loans. Otherwise, they would be very cautious in lending to this first private power-plant project in China without the Chinese government's sovereign guarantee on repayments.

Dartford, Second Severn, and Skye Bridge Crossings, United Kingdom

Of the promoters that used low equity in their projects, the most prominent is the Bank of America's strategy of "pinpoint" equity finance and 100% debt financing for the three BOT projects in United Kingdom: the Dartford Bridge, the Second Severns Bridge, and the Skye Bridge. This was possible because these are esturial crossings and are therefore monopolistic in nature. The revenues are therefore reliable and predictable, and financing is not considered a serious problem.

Category 2: Projects with High Equity

High equity was generally adopted by the winners when financing was perceived to be a problem due to various reasons, as illustrated by the cases here.

Hopewell's Superhighway Project in China and Power Plant in Philippines

For Hopewell, high equity was proposed for its first private power-plant project in the Philippines and the Guangzhou-Shenzhen-Zhuhai Superhighway project in China to generate confidence among the lenders. The equity for the Philippine project was 27% while that for the superhighway was 30%. The high equity was primarily due to the uncertainty of financing. For the Philippine project, the lenders were unsure of the political and economic stability. In the superhighway project, it was political uncertainty due to the June 4, 1989, massacre; high cost of the highway; and uncertainty about the revenues.

IPCO's Projects in Labuan, Malaysia

In Labuan, Malaysia, the IPCO Group proposed 33% of equity for the Labuan Water Supply Project and 24% for the Labuan Electricity Project. The Labuan Water Supply Project was the first privatized project in Malaysia, which was in recession at that time. The Malaysian financial market was uncertain about limited-recourse financing of BOT project and government's offtake agreement was insufficient for robust revenues to be forecast. As a result, IPCO had to propose a high equity to cover the shortfalls of the initial operational years so that the revenues would be enough to cover the debt and interest repayments. The project was a success. As a result, IPCO received stronger support from the financial institutions for its second BOT project, the Labuan Electricity Supply, and the equity was lower at 24%.

Thailand's BOT Projects

Based on the information in the RFPs for the projects in Thailand, high equity constituted an important factor for the winners of the Skytrain and the Second Stage Expressway. The competition was keen for the Skytrain and the equity proposed was 25% for the winner and 20% for the unsuccessful proposal. For the Second Stage Expressway, the equity was 20% versus 10%, a difference that with other factors caused Kumagai Gumi to win the concession. Equity is also very high in the other BOT projects in Thailand—23% in the Don Muang tollway, 28% in the light-rail project, and 15% for Hopewell's elevated road/rail project.

Therefore, in Thailand and Hong Kong, a high level of equity is required for short-listed promoters to proceed to the final round of negotiations before the winner is selected. The government in these two countries will demand a high equity and the intensity of competition among the promoters will cause them to level the equity to the satisfaction of the governments. If any promoter could not match the high level of equity, the chances are that it will be dropped from further negotiations and consideration.

CONCLUSIONS

A high equity is usually desirable and required to form the cornerstone of a sound financial plan for promoters to obtain financial commitments and to subsequently raise the finances.

It is difficult, however, to define the level of high equity. A minimum equity is generally required to (1) convince the lenders that the project is creditworthy and therefore bankable and financeable; and (2) provide confidence to the government that the promoter is serious in the long-term success of the project over the concession period. On the other hand, equity by foreign companies may not be allowed to be too high in developing countries as some governments place limits on foreign investments or equity returns.

From the lender's perspective, a higher level of equity represents a higher level of commitment of the borrower and lower risk exposure for the lenders. For example, the total proportion of loan financing is reduced and high debt coverage ratio should be possible. In the event of cost overrun, the higher proportion of equity permits additional loan finance to be arranged (at least with greater ease).

Conditions for Level of Equity

The analyses and conclusions for hypothesis I can be summarized in Fig. 1, which shows the conditions that will dictate the level of equity in BOT proposals. Hypothesis 1 is supportable if level of equity is specified in the RFPs, competition is keen, and financing of the project is uncertain.

Uncertainty in project financing is often caused by the uncertainty in the viability of the project which is in turn caused by the newness of the BOT concept, the sheer size of the project or inadequate government support. Under these circumstances, government's number-one concern is finance. Even though the private sector is wholly responsible for loan repayments, government is still concerned about the high financial charges that may overburden the cash flows of the project and may subsequently affect the efficient running of the project. They may also be concerned about the availability of debt financing. Government therefore views high equity as important and necessary. The threshold equity level proposed by the promoters must therefore be high, typically between 20% and 30%, for the short-listed promoters to proceed to the final round of negotiations before the selection is made. Otherwise, it will be dropped from further consideration.

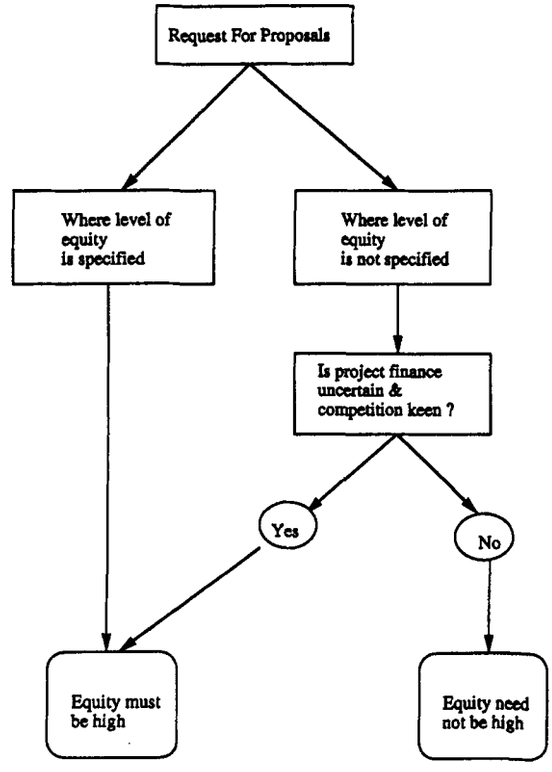

FIG. 1. Conditions for Level of Equity Investment

The level of equity should be determined by the risks inherent in the project (costs and revenues), the credit rating of the promoter, and the strength of banking support secured by the promoter. If the members of the successful consortium are well established and financially strong, guarantees from them could provide similar degree of comfort which would otherwise be provided by equity. The ability to get an underwritten, good financing package from major international banks with lower level of equity and a nominal rate of return reflects the confidence which the financial institutions have on the promoter and the project. This should give better comfort than say a 10% increase in the amount of equity. That is why hypothesis 2 is not supportable.

Hypothesis 2 is not agreeable to the professionals surveyed, and there is no evidence from the case studies to indicate that the winners raised their equity level to a higher level during negotiations and won the concessions.

In Thailand and Hong Kong, a high level of equity is required for short-listed promoters to proceed to the final round of negotiations before the winner is selected. Governments in these two countries demanded a high equity and the in-

tensity of competition among the promoters had caused them to level up the equity to the satisfaction of the governments. In the case of the Channel fixed link, it was shown that the equity is equally high for the short-listed promoters. If any promoter could not propose a high level of equity, it will be considered as not a serious promoter and chances are high for it to be dropped from further negotiations and consideration.

For cases in other countries where the level of equity is not specified in the RFPs, the level of equity may also increase the chances of success in a BOT tender. This is because where level of equity is not specified, the strength of cash flows will determine the ratio. Where cash flows are uncertain, or inadequate in initial operational years, governments and bankers will generally demand high equity. This is also true for projects that were privately initiated and won without competition such as IPCO's projects in Labuan, Malaysia. Most BOT projects proposed or implemented to date have involved a combination of equity provided by the promoters and investors and debt provided by the commercial banks. The percentage of equity seems to fall most often within the range of 15–30%.

However, where cash flows are certain and/or able to meet initial operating costs and debt repayments, the equity component can fall outside this range, notably lower than 10%. It can even be just a nominal amount, i.e., 0%, if government wants the facility back early. It is therefore entirely conceivable to have a BOT project without any substantial true equity, but rather with various levels of senior and subordinated debt. The senior lenders—normally the commercial banks—will want to have a "cushion" to support their senior debt, but may not be too concerned whether that cushion is in the form of subordinated debt or equity especially if the project economics are robust and/or the government support is strong. The lenders have two minimum conditions for high debt or 100% debt financing: the promoter pays the development capital; and the lenders do not have to wait long for revenues to come on stream.

The host government will normally want to have some form of long term financial commitment from the promoters or their bankers throughout the operating period. The precise form of that commitment, whether it is subordinated debt, invested equity, or equity in the form of deferred fees, may not be crucial, especially to the governments in the developed countries such as in the United States and United Kingdom. This is seen in the pinpoint equity financing technique used by Bank of America for the United Kingdom's BOT bridge projects.

ACKNOWLEDGMENTS

The writer is grateful to David Ashley, professor at the University of California at Berkeley, and J. Alum, associate professor at Nanyang Technological University in Singapore for their comments and ideas throughout the course of this research project.

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