# Discussion of "Concessionaire Selection: Methods and Criteria" by Xueqing Zhang

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Infrastructure investment often contains some elements of natural monopoly. When markets are naturally monopolistic ordinary, head-to-head competition does not operate (Kerf et al. 1998). Sir Edwin Chadwick proposed a franchise solution to problems of natural monopoly, introducing the concept of "competition for the field" when competition is not possible within an industry to substitute the concept of "competition within the field" (Dnes 1995). UNIDO (1996) stated that one essential objective of a buildoperate-transfer (BOT) procurement process is to encourage competition of the private sector, a cornerstone of the BOT approach. A number of multinational financial institutions such as the World Bank and the Asian Development Bank strongly recommend the use of competitive selection procedures for privately financed infrastructure projects. In the original paper, the author has presented excellent works on examining and studying methods and criteria applied in public-private-partnership (PPP) infrastructure projects with a focus placed on competitive bidding systems. The author has also provided a wealth of information on international case studies covering practices adopted in some Asian countries, Australia, the United Kingdom, and the United States. The discusser would like to add some information on other criteria applied in selecting concessionaire for private participation in infrastructure (PPI) projects that were not covered in the author's original paper, as well as highlight practices adopted in some countries. The information presented here is primarily derived from technical reports prepared by the World Bank's experts.

# **Evaluation Methods**

#### Least Present Value of Revenue

Three Chilean economists, Eduardo Engel, Ronald Fischer, and Alexander Galetovic, introduced the least present value of revenue (LPRV) model for auctioning highways. The model development is motivated by many of the problems that have plagued highway privatization, which stem form the combined effect of special features of the highway business and the type of contracts—fixed term franchises—that have typically been used. Traffic forecasts are notoriously imprecise and most franchises have been awarded for a fixed term that is independent of demand realization (Engel et al. 1997). In this approach: (a) the regulatory body sets a maximum toll; (b) the franchise is won by the firm bidding the least present value of toll revenue; (c) the franchise ends when when the present value of toll revenues equals the

franchise holder's bid; and (d) toll revenue is discounted at a predetermined rate specified in the franchise contract. The rate should be a good estimate of the loan rate faced by franchise holders. The LRPV approach is somewhat similar to that used in the private construction and operation of the QEII Bridge (Dartford-Thurrock River crossing) in the United Kingdom, where the concession duration is set at a maximum of 20 years or until the company has accumulated revenue equal to the project debt (Kerf et al. 1998; Klein 1998). The Chilean Santiago-Valparíso expressway was awarded using this approach. In this project, bidders had the option of choosing a fixed or variable discount rate based on a risk-free rate in inflation-adjusted monetary units plus a premium. Three bidders, including the winning bidder, chose a fixed discount rate, which was set at an annual rate of 6.5% plus a premium of 400 bps (Lorenzen, Barrientos and Babbar, n.d.). Estache et al. (2000) identified two major limitations of the approach. First, the method may lower the incentive of concessionaires to make demand-enhancing investments such as quality improvements. Second, and more importantly, it does not resolve possible cash flow problems that a concessionaire may face when traffic levels drops.

# Lowest Tariff/Tolls

The evaluation method based on the lowest tariff/tolls has been applied in some private Chilean toll roads. The minimum and maximum toll levels were set by the government. If two or more bidders bid the minimum tolls, the bidder proposing the shortest concession duration wins the contract. The concession of the Route 5 Santiago-Los Vilos project in Chile was awarded using this approach. To deal with problems with lowballing strategies of bidders, the approach was slightly modified for subsequent toll road projects in the country. That is, the contract term is now set fixed and the minimum toll levels are set sufficiently high to guarantee a certain revenue stream to the concessionaire. If two or more bidders bid the minimum tolls, the award goes to the bidder offering the highest transfer directly to the government. The Route 5 Temuco-Rio Bueno Project was procured using this new mechanism (Lobo and Hinojosa 2000). The lowest tolls/tariff has also been the award criterion in the selection of concessionaire in the second wave of concessions in toll roads in Argentina (Estache and Carbajo 1996) as well as in water concessions in Buenos Aires and Manila (Klein 1998). The lowest proposed tariff method does not necessarily result in the same decision with that derived from the lowest NPV of tolls/tariffs because of, for example, different tariff adjustment formulas or different contract terms

#### The Shortest Concession Duration

The evaluation method using the shortest concession duration criterion has been applied in the earlier Mexican toll road program. Nevertheless, the approach resulted in problems with extremely short concession terms (initially 4.5 years in the case of the Mexico City–Toluca toll road), extremely high toll rates (and resulting low traffic levels), and difficulty with servicing debt (Fishbein and Babbar 1996). In addition to resulting toll levels, signifi-

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cant traffic diversions were also aggravated by the fact that in Mexico alternative freeways to each concession is mandatory. This was one of the main causes behind the low financial performances of some Mexican concessions and the subsequent government bailout (Gómez-Ibañez 1999, as cited in Lobo and Hinojosa 2000).

# Others

The other evaluation criteria include the highest fee paid to the government (applied in Argentina's road corridors and the Brazil–Sao Paolo project), the least cost to the government (applied in Colombia's second toll road program), and the minimum required amount of government supports in investment (applied in Peru) (Estache et al. 2000).

#### Private Participation in Infrastructure in Indonesia

According to president Decree No. 7 in 1998 on public–private partnership in infrastructure, the Indonesian government applies the present value method for proposal evaluation. The discount rate used in the analysis is the three-month Bank of Indonesia Note (*Sertifikat Bank Indonesia*) on the opening date or another rate approved by the tender committee. The award goes to the bidder who:

- Bids the lowest present value of proposed tariffs, costs, and rents over the concession period under arrangements of build operate transfer (BOT), build own operate (BOO), develop operate transfer (DOT), rehabilitate operate transfer (ROT), rehabilitate operate own (ROO), and other similar types of projects;
- Bids the lowest present value of the proposed schedule of amortization payments under arrangements of build transfer (BT), build lease and transfer (BLT), build transfer and operate (BTO), and other similar types of projects; and
- Bids the highest present value of the proposed schedule of payments to the contracting authority under a leasing arrangement or other similar types of projects.

In addition to the present value method, the government also adopted multicriteria methods for evaluating proposals in international competitive biddings for some concessions of toll road projects during 1994–1998. The following are criteria applied to qualified bidders (Ramelan 1997):

- Bidder must demonstrate high financial strength required for pursing the project;
- Bidder must be the majority shareholder and well experienced in infrastructure development; and
- Bidder must be supported by experienced contractors in construction of roads and bridges.
  - The following are criteria for awarding the concession:
- Ability to provide a bid bond of 1.5% of the estimated cost and a performance bond of 5% of the estimated cost;
- Proposal's conformity to technical requirements;
- Concession duration;
- Construction duration;
- Attractiveness of partnership schemes with Jasa Marga, the state-owned toll road operator;
- Attractiveness of revenue sharing arrangements with Jasa Marga; and
- Benefits delivered to the government and public.

# **Tendering Methods**

#### Hybrid of Competitive and Negotiated Systems

Some argued that major drawbacks of the use of competitive bidding systems are that a formal competition may take too much time, that the costs of preparing bids may be excessive, and that innovation may be discouraged (Klein 1998). A direct negotiation can expedite the decision-making process and reduce time and costs of preparing proposals, but is often criticized for not fostering competition. Host governments can combine some elements of competition and direct negotiation into competitive negotiation systems. The government solicits proposals from the private sector and shortlists received proposals. Next, the government can conduct a parallel negotiation with shortlisted bidders and select the winning bidder. This model has been applied in the procurement of Hong Kong's East Harbor Tunnel and new power generation in many states and utilities in the United States (Kerf et al. 1998).

# Swiss Challenge

If the host government welcomes unsolicited proposals claiming innovative design or technology or addressing new infrastructure not already identified by the host government, it can conduct a price test or "Swiss challenge" for such proposals. That is, the government invites some competing proposals from other bidders. The original proponent wins the contract if he is willing to match his proposal with a received lower-priced proposal, if any. Otherwise, the lower bidder wins the contract (see details on the application of this method in the Philippines BOT bidding in Kerf et al. 1998). The Malaysian government provides a private entity that initiates an infrastructure project a letter of intent and the status of "preferred concessionaire" (Yaacob and Naidu 1997). Klein (1998) also stated that a combination of incentives for innovation with elements of competition has also long been part of Spanish administrative law. An almost similar approach was also applied in the tender of the Jakarta Outer Ring Road (JORR) project in Indonesia in 2001. The tender was carried out following strong oppositions from the House of Representative on the government decision to appoint a Malaysian consortium to continue constructing and subsequently operating the facility after original investors had been unable to bring the project into realization. Issues of lack of transparency and high toll levels emerged. The House of Representative forced the government to carry out an open international competitive rebidding. In this rebidding, the government applied the right-to-match model with a two-stage procedure. To qualify for the final selection stage, bidders had to satisfy the following requirements:

- Bidder must be a well-reputed firm;
- Bidder is not directly or indirectly associated with the majority share holders of the previous JORR concession holders;
- Bidder is not being under debt restructuring programs of the Indonesian Bank Restructuring Agency (IBRA); and
- Bidder submits a letter of intent.

Out of 55 bidders, five passed the prequalification stage but only four, including the Malaysian consortium, advanced to the final stage because one bidder withdrew its bid. The right-tomatch works as follows: If the government receives a lowerpriced proposal, the government gives the Malaysian consortium the right to match as long as the preference margin of 10% is not exceeded. The consortium wins the contract if it is willing to match its proposal. Otherwise, the award goes to the bidder

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who bids the lower price. Unfortunately, because all prequalified bidders were unable to provide bid bonds in the required amount [about Rp 240 billion or equivalent to \$28 million under the assumption \$1 is rated at Rp 8,500 (Rp=rupiah; i.e., Indonesian currency)], the government had to disqualify them. Then, Jasa Marga bought the JORR asset from the government for approximately Rp 1.1 trillion. As this discussion is written, the project is still under construction.

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# Closure to "Concessionaire Selection: Methods and Criteria" by Xueqing Zhang

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The original paper is intended to generalize the methods and criteria for concessionaire selection based on experience and lessons from international public–private partnership (PPP) practices, and expertise/knowledge from worldwide PPP experts and practitioners. The discusser provides useful information on concessionaire selection practices, methods, and criteria adopted in some countries, from which valuable points may be drawn for improved PPP practices. The writer appreciates the discusser's efforts.

The writer would like to point out that the methods and criteria mentioned by the discusser have been basically covered, in a "general" sense, in the original paper. Details are provided here.

The least present value of revenue (LPVR) method, as mentioned by the discusser, is basically the net present value (NPV) method listed in the original paper, conditional on maximum toll; additionally, the franchise ends when the present value of toll revenues equals the franchise holder's bid. The two conditions relate to the two financial criteria listed in the original paper, "low toll/tariff levels" and "concession period." Similarly, the methods lowest tariff/tolls and the shortest concession duration also relate to the financial criteria low toll/tariff levels, concession period, and tariff/toll setting up and adjustment mechanism listed in the original paper.

The evaluation criteria mentioned by the discusser in the section entitled "Others," including "the highest fee paid to the government," "the least cost to the government," and "the minimum required amount of government supports in investment," are also covered by some financial criteria listed in the original paper, including NPV, total investment schedule, sharing of profits with the client, less financial guarantee required from the client, and minimal financial risks to the client.

The evaluation methods and criteria mentioned by the discusser in the section entitled "PPI in Indonesia" are basically the NPV method conditioned on some criteria that can be covered by some financial criteria listed in the original paper, such as financial strength of the participants in the project company, strong financial commitments from shareholders, concession period, construction period, attractiveness of shareholder agreement, schedule of revenues, and sharing of profits with the client, and by some technical criteria listed in the original paper, such as conforming to design requirements, conforming to client's requirements, and competencies of designer/subdesigners, contractor/subcontractors.

In the section entitled "Hybrid of Competitive and Negotiated Systems," the discusser highlights the competitive negotiation system and its advantages and disadvantages. Still, appropriate evaluation methods and criteria are necessary in this system to select the winning bidder from the shortlisted bidders. Usually, one of the multicriteria evaluation methods listed in the original paper is used.

In the section entitled "Swiss Challenge," the discusser points out the evaluation of unsolicited proposals, which host governments usually welcome to encourage innovations and promote infrastructure development. The methods discussed in this section are basically the NPV method plus some preestablished "must" criteria that can be covered by some technical and financial criteria listed in the original paper, and the right-to-match criterion. This is somewhat similar to the binary method+NPV method listed in the original paper.

The writer would also like to point out that in tailoring these generalized methods and criteria listed in the original paper for a particular PPP project, appropriate adjustments should be made to reflect: (1) the revised risk allocations in a specific project; (2) the uniqueness of a specific concession; (3) the degree of financial and technical complexity of a specific project; (4) the composition of the potential concessionaire; and (5) the social, political, and economic environment where a specific project operates.