

PAPERS

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**The BOT Concept
and Experiences
in Developing
Countries**

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fixed price turnkey contracts, providing for performance bond and liquidated damages, real estate mortgage, default clauses, assignment of insurance contracts etc. Second, by safeguards specific to BOT projects, such as guarantees by governments for the performance of government agencies, agreements on contingency loans for a limited period, escrowing agreements and shareholders and sponsors support agreements. The loan security structure will be included in the Credit Agreement.

Normally the Project Company will enter into an Operating/Management Contract with a professional operating company. The Operating/Management Contract spells out operation specifications, maintenance standards, operating costs, incentives, etc. for the operation period.

An adequate insurance programme (insurance policies) must be arranged for both during the construction and operation of the project. The Project Company usually has little cushion to fall back on in the event of a casualty loss except for insurance proceeds.

The contractual framework of a BOT project as outlined here, is of course not exhaustive. Escrow agreements, service agreements, energy supply agreements, supplementary loan agreements, etc., can also be part of the legal framework governing a BOT infrastructure project.

The phases of a BOT project

The case of a railway project can illustrate the BOT concept and its application. In the first phase a letter of intent is signed by the local railway authorities (agency) and a group of potential private sponsors, followed by a detailed feasibility study of the proposed railway project.

In the second phase a project company is established with the following shareholders:

A consortium of construction and equipment companies, some domestic and foreign commercial banks, IFC and The National Railway Agency.

In the third phase the Implementation Agreements between the Project Company and the Railway Agency is signed as the basis from which the other project agreements are developed and signed.

The fourth phase is raising of funds, where the lenders are banks and the borrower is the Project Company.

The construction of the railway is phase five

Phase six covers the operation period when the railway is run by the Project Company or its operator, and when the company expects to have a return from the railway fares which covers its debts, operating costs and dividends to the shareholders.

Phase seven is the end of the operation period when the shares of the Project Company are transferred to the National Railway Agency, which continues the operation of the railway. Hence the term "Build-Operate-Transfer"

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FIELDS OF APPLICATION: RECENT DEVELOPMENTS

The BOT concept is not a new financial mechanism. Variations on the BOT approach, often known as "concessions" have been in use for a long time in the industrial and mining sectors of Europe, especially in France, Germany and the Scandinavian countries.

In more recent time various models of project financing with BOT characteristics have been applied to infrastructure projects as different as the large EURO-Channel Tunnel and Great Belt Tunnel projects in Europe, power plants in England, the United States and on Greenland, and projects in the petroleum industry. The capital intensive and high risk North Sea projects on the Norwegian sector, have all been successfully financed, built and operated by private sponsors, and are now in the process of being gradually transferred to a government agency. During the BOT process, national technology and skill has been developed to a fairly high and competitive level.

From the early 1980's the BOT concept has been introduced in a number of developing countries as an alternative way to finance infrastructure projects. Such projects include road projects, power plants, port facilities, telecommunications, industrial estates, water supply and treatment systems, airports, metro railway systems, etc.

A pressing need for infrastructure facilities as a condition of economic growth in many developing countries, the third world debt crisis and the present trend to develop the private sector, have been cited as reasons for the interest in the BOT concept in some developing countries. However that may be, let us have a look at some of the advantages and constraints of the BOT concept as a technique of financing infrastructure projects in the developing world.

SOME ADVANTAGES OF THE BOT CONCEPT: PROBLEMS AND CONSTRAINTS

Advantages of the BOT concept

A developing country might adopt the BOT concept with several objectives in mind. Among these are:

- It contributes to expedite the construction and improvement of much needed infrastructural facilities, which would otherwise not have come onstream and whose absence or delay would constrain economic development. In other words: if a developing country is not able to finance its needed infrastructure on the basis of budgetary means or sovereign borrowings, or prefers to use its resources for other needs, such as health and education, the BOT concept is an option to be considered
 - It attracts foreign capital to the country, both equity and loan.
 - Since the borrower is a private company, it shifts the debt burden from the government to the private
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THE BUILD-OPERATE-TRANSFER (BOT) CONCEPT: AN OVERVIEW

*Ole Steen-Olsen**

THE BOT CONCEPT

BOT stands for Build-Operate-Transfer. The BOT concept has a number of variations. All however, involve the establishment of a private sector project company as a vehicle for ownership, financing, construction, maintenance and operation of an infrastructure project for a certain period. Thereafter, ownership is usually transferred to the public sector.

During the operation period the Project Company will charge prices, tolls, fees, etc., sufficient to pay back the project debt and provide dividends to the shareholders of the Project Company. Financing is raised by the Project Company from commercial banks, sometimes backed by export credit agencies, and by multilateral and bilateral lenders. The financing of BOT projects are normally on "a project financing" or "non-recourse" basis. The lenders are supposed to look at the cash flows and earnings of the Project Company as the only source of funds from which the loans will be repaid (and to the assets of the Project Company as collateral for the loans). Relatively few BOT projects, however, are so completely self-supporting that they can be financed without any guarantees and safeguard undertakings by the interested parties including the Host Government. Normally, governments will not provide sovereign guarantees or borrow any money on behalf of the sponsors, but support from host governments may include assurance of minimum revenues, sharing of project risks, guarantees of the performance of government agencies involved in the project, etc.

THE STRUCTURE AND PHASES OF A BOT PROJECT

The BOT contract package

The structure of a typical BOT project can be described through the building blocks of the BOT contract package as shown in table 1.

The primary contract is the Project Agreement (Implementation Agreement – Concession Agreement). This is the contract between the Host Government and the Project

Company. It entitles the Project Company to build and operate the project facility, and imposes a number of conditions as to design, construction, operation, maintenance, etc. of the project. It fixes the operation period, the payment for the usage of the facility, the way in which payment should be effected and so on. In short: the Project Agreement is the key contract of a BOT project, and the contractual basis from which the other contracts are developed.

The subscription of the share capital and the contractual arrangements between the shareholders are contained in a Shareholders Agreement. The majority shareholders of the Project Company are normally the private project sponsors, who in turn might be private construction companies, equipment suppliers, international trading companies and the lenders. The participation of the Host Government as a shareholder (equity investor) is not unusual in some countries and in some fields such as the petroleum industry.

The Construction Contract is normally a fixed price turnkey construction contract covering all the work. If the BOT infrastructure project involves large construction work and the supply of heavy machinery and equipment, the Project Company will negotiate the construction contract with a consortium of experienced building companies and equipment suppliers to assure the timely and proper completion of the project facilities. Effectiveness of the turnkey arrangement might be a condition precedent to lenders.

In case the Host Government or a government agency is the only customer of the infrastructure project, the Project Company will negotiate a separate Purchase Agreement with the government. The agreement provides the company with an assurance of a minimum purchase by the government and arranges the price structure — often on a take or pay basis. That means that as long as the government pays the fees, the Project Company is assured of sufficient funds to service its debt, cover its projected costs and make a profit.

A fifth major contract of a BOT project is the Credit Agreement between the Project Company and the lenders. There is an almost infinite number of conditions, types of loan and instruments used in BOT financing.

The risk of non-repayment of loans is usually covered in two ways. First, by standard types of safeguard, such as

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A supporting legal and administrative environment

In the absence of legislation for private participation in public sector projects, numerous approvals, permits, licences etc. from government agencies and local authorities are essential for the development and operation of a BOT project. In some cases even time-consuming legislation in the National Parliament has been required to implement a BOT project.

The Host Government, therefore, must provide a competent administrative team with decision making authority to ensure and expedite passage of necessary planning approvals, permits and regulations throughout the operation period. The Host Government must also ensure that approvals, permits, licences, etc. will be granted in a fair and objective manner, based on laws and regulations ascertainable at the outset of the project development.

A general legislation to adopt a suitable policy framework for private sector investment in public sector projects, might however streamline the development of BOT projects considerably.

The financial viability of the infrastructure project within a BOT structure must be shown to potential equity investors and the lenders

A feasibility study must conclusively demonstrate that the project is technically feasible and financially and economically viable. The study must show an assured and reasonably certain source of revenue over the projected operation period, sufficient to cover the debt and operating expenses, and to provide a fair rate of return for equity investors. The cash flow projections must be sufficient to service any debt contemplated, provide for cash needs, pay operating expenses and still provide an adequate cushion for contingencies.

Assumptions used in the feasibility study must, of course, be realistic. The feasibility study can be conducted by a government agency, the bidder or an outside consultant. The study will reflect the professional ability of the government and the degree of seriousness the government assigns to the project.

A BOT project must have a satisfactory economic incentive for the private sponsors

The private sponsors should be entitled to a return commensurate with their long term project risk if they succeed in meeting the BOT projects economic and contractual objectives. The Host Government should always remember that there is no better incentive for the success of a BOT project than to give the private sponsors the possibility of an attractive return on their investment. Potential lenders certainly want to make sure that the project has a satisfactory economic incentive for the Project Company.

Assurance of logistical support — at a cost consistent with the financial projections

In most BOT projects host governments will provide the project site, energy supplies, supplies of raw materials and building materials, adequate communications, etc. Such logistical support must be assured through the whole operation period, and at a cost consistent with the financial projections. A BOT project might get into serious financial trouble if the project agreement fails to protect the Project Company against rising logistical costs.

An efficient risk allocation: pricing of risks

At all stages BOT infrastructure projects are exposed to risks, some of which can have serious consequences for the project.

The risks are normally divided into time frames in which the risk exposure assume different characteristics. The engineering and construction phase, the test period or start-up phase and the final operating phase, are the traditional time frames. A wide range of safeguards and undertakings by different contractors and contracts, are used in each time frame to handle the risks.

It is advisable to address the risk exposure problems at an early stage of the BOT proceedings. What tends to happen is that when the project risks have been identified, the private sector is so concerned to reduce its exposure risks and the Host Government so concerned to transfer all risks to the private sector, that the parties are unaware of how much the project in its entirety is paying for a particular risk allocation.

A fair and objective bidding procedure

A private company cannot be expected to invest considerable time and resources to prepare a BOT project if the process for rewarding proposals is not reasonably orderly and based on normal competitive criteria. Lack of integrity or too much shopping around after the initial bids might have hurt the credibility, and thus the BOT perspectives of at least one country, considerably.

Selection of experienced and reliable sponsors and operators

It is commonplace, but very important that the experience, financial strength and good reputation of the private sponsors are well established. Lenders to a BOT project seem to be extremely concerned about the choice of sponsors and their ability to manage and support a BOT project. The contract in a BOT project should therefore not be awarded on the basis of the lowest bid unless the low bidder satisfies this criteria.

Lenders also seem to prefer that at least one of the sponsors has the technical expertise to operate the BOT facility. If, alternatively, an independent company is employed to operate the facility, the Operating Agreement must be structured to provide the operator with strong financial incentives to achieve the guaranteed performance.

Adequate equity contribution and assurance of commitment

Attracting an adequate amount of equity is one of the key issues of a BOT project. Normally the long term debt/equity ratio varies from 90:10 to 60:40. Governments and lenders will require the private sponsors to have a sufficient financial interest in the project throughout the operation period or life of the loan (e.g. a minimum paid-up capital in the Project Company), so that it will be difficult for the sponsors to abandon or ignore the BOT project. Sponsors of BOT projects are often international construction companies. Such companies are constantly seeking new opportunities. Should one of their investments not work as well as expected, the temptation to neglect the project in order to concentrate on a new one, could be strong. Governments and lenders should not give the sponsors that option.

It is also of particular concern to governments and lenders that the Shareholders Agreement contains satisfactory provisions on transfer of shares, obligations of shareholders to each other, etc.

Independent partners in the Project Company in case of conflicts of interest

As noted, international construction companies and suppliers of equipment, machinery, etc. have a natural business interest and ability to promote BOT infrastructure projects. Their dual roles of sponsors and contractors, however, presents the Host Government (and the lenders) with the problem of handling the resulting conflicts of interest.

Equity participation by the host governments or by "independent" private investors not otherwise engaged in the projects, an obligation for the shareholders to appoint at least one government nominee to the board of the Project Company or the appointment of an independent engineering financial consultant to the board are mechanisms to reduce the very real concern on conflicts of interest.

Adequate insurance arrangements

Adequate insurance coverage, including assignment of relevant insurance policies to lenders, must be available both during the construction phase, the start-up phase and the operation phase of the project. An uninsured casualty loss can be a disaster for all concerned.

Note that the traditional industry insurance policies, including standard business interruption insurance, is not fully appropriate for insuring a BOT project.

Anticipated default arrangements and safeguards

One of the challenges of developing a BOT project is to provide adequate security to the lenders under a project financing concept. If the Project Company defaults the lenders will have no recourse to the shareholders or the government. Few lenders will consider security in a

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partly built road on Greenland, or in a slightly defective space rocket system, as adequate.

Various techniques designed to anticipate or prevent companies' default should therefore be baked into the BOT arrangement with the support of the Host Government. Such techniques might include off-shore escrow accounts, assignment of the benefits of various contracts (e.g. turnkey contracts with performance bond, insurance contracts, suppliers warranties, etc.) to the lenders and the right to take over and exercise the right of the Project Company well in advance of a default under the loan agreements.

The operation period — buy-out terms

The operation period must be for a fixed term sufficient to pay back the project debt and equity investment with a reasonable return. The Project Agreement should contain satisfactory provisions on extension of the operation period, for example if the projected return to the sponsors have not been reached because of the Host Government's default on its contractual obligations.

The Host Government might reserve a right to buy out the private sponsors before the end of the operation period or to adjust certain terms in the Project Agreement. This touches on the very tricky problems of windfall profits.

A careful structuring and drafting of the contractual framework

The contractual framework governing a BOT project is very complex. The development and integration of the legal documents and tailoring their terms and conditions to meet the objectives of the Host Government, while satisfying the need of the sponsors and lenders, is a time-consuming and sophisticated challenge with many pitfalls along the road. That the Host Government must use qualified legal counsel on this journey goes without saying. Normally, it is advisable that the basic terms and conditions of the Project Agreement are outlined as early as possible in the BOT process, preferably in the offering proposals from the government, subject, of course, to negotiation and clarification.

At all stages and at all contractual levels it is essential to avoid surprise terms in the contracts.

These are some of the issues that have to be satisfactorily resolved if a BOT project is to move beyond the planning stage.

Discussions of the BOT concept sometimes tend to focus on large and complex infrastructure projects. This might lead one to the conclusion that the BOT concept and the criteria discussed in this paper, have little relevance for small, ordinary infrastructure projects. This, however, is not the case. The BOT concept can be used to finance and operate a major channel tunnel project as well as a minor road project. Indeed, a government should be cautious about selecting a very large scheme as its first BOT project.

SOME CONCLUDING REMARKS

The BOT concept is a relatively new formula for financing infrastructure projects in developing countries. Being a new concept, its advantages and limitations — and criteria for a successful development — have not always been well understood or adopted.

A few unsuccessful and very expensive attempts to negotiate BOT deals in some western parts of Asia, however, hardly deserve to be canonized as typical of the BOT approach. As noted earlier, BOT projects have been successfully implemented and are operating well in other parts of Asia, as has been the case in Europe and in the United States of America.

For countries with a reasonable credit worthiness and a willingness to apply financial, administrative and legal criteria as outlined above, the BOT concept appears to be a workable option to conventional financing and operation of infrastructure projects.

The implementation of a BOT project is certainly more complicated and time-consuming than the more traditional approach. Mainly because all project financings tend to be complex.

In some cases the cost of borrowing funds may also be somewhat higher than financing of infrastructure projects

with sovereign borrowings.

However, the advantages of the BOT concept might justify the problems in structuring, financing and operating these projects.

A government considering a BOT infrastructure project should also learn from financing methods with BOT characteristics used in other industries. Some industries, such as the petroleum industry, have successfully been using various project financing methods with BOT characteristics for many years. Despite important differences it appears that some techniques used in the petroleum industry, for instance such as technology transfer, have not yet been fully exploited in BOT infrastructure projects in the developing countries. The private sponsor's commitment of substantial equity and operational management to the host country over a long period provides an excellent platform in some fields for technology cooperation between the sponsors and the Host Government.

All new creations have teething troubles. As the structures, issues and potentials of BOT projects are better understood, i.e. systematically identified and analysed, and guidelines for solution of common issues are developed, the BOT concept should become somewhat easier to implement and a useful alternative tool for financing needed infrastructure projects in the developing world.

MALAYSIA'S EXPERIENCE IN THE BUILD OPERATE AND TRANSFER (BOT) METHOD OF PROJECT DEVELOPMENT

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INTRODUCTION

BOTs represent an important feature in Malaysia's privatization programme. Before elaborating Malaysia's experience in undertaking BOT projects in more detail, an appreciation of the background to the privatization policy in Malaysia is perhaps quite useful.

PRIVATIZATION POLICY/PROGRAMME

The Malaysian Government enunciated its privatization policy in 1983 and began to implement it in a concerted manner in 1985. The policy was adopted with several objectives in mind. Among these are the following:

- (i) Relieving the financial and administrative burden of the Government;
- (ii) Reducing the size of the public sector;
- (iii) Raising efficiency and privatization, and
- (iv) Accelerating growth.

The Government's commitment in meeting development targets and economic growth has imposed a heavy strain on its financial resources. This has prompted the Government to find new approaches in relieving its financial burden. Privatization was considered one of the most feasible alternatives.

Public sector expenditure, both operating and development, rose rapidly since the 1970's to meet the overall development objectives and public sector revenue was never sufficient to finance both these expenditures. In 1986, revenue fell short of expectation, thereby making it necessary for Government to borrow to finance even part of its operating expenditures.

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There has been widespread dissatisfaction with the efficiency of State agencies and enterprises. Protection of several public enterprises from market forces has bred complacency and resulted in inefficiency and low productivity. The disciplines of the financial marketplace and the need to provide satisfactory returns to investors impose a more economically rational check on performance of a company, compared to the often inconsistent lending and investment policy of the Government, which are sometimes influenced by short term factors rather than long term economic rationality. Efficiency will be further promoted by introducing competition where possible.

The privatization policy also aims to reduce the size of the public sector through the withdrawal by Government from active and direct participation in economic activities. Government's participation in the economy has increased rapidly as a result of its goal to redress the economic imbalances in the country. Its involvement extended beyond the traditional areas of public good and social services. It increasingly expanded into the area of commerce and industry, resulting in a huge public sector and to a certain extent, crowding out private sector investments. In addition, many of these Government undertakings have met with rather miserable failures. It was felt that this trend was not healthy for the economy as a whole and the strategy of Government rollback was seen to provide a better alternative, since the services will not be terminated or reduced, the workers will not lose their jobs and prices will not be allowed to increase freely in the case of privatization of monopolies.

An important consideration behind the policy is the need for the country to attain higher growth. Increasing the role of the private sector in development would contribute towards achieving this objective. The commercial and profit orientation of private enterprises is expected to provide the thrust for further growth. In the case of privatization of existing projects, further growth will be effected through efficiency gains and further innovations. In addition, privatization of new projects will, it is envisaged, result in further growth. Without giving the private sector the opportunity to undertake projects are traditionally undertaken by the public sector, these projects might have to be shelved for the time being due to financial constraints faced by the Government, and will deprive the country of the benefits therefrom.

For implementation purposes, the Malaysian Government defines privatization rather broadly. It is defined as the transfer of the Government's obligations in providing goods and services that are traditionally within its domain to the private sector. In the process, the Government transfers its ownership of assets or right to use thereof to the private sector together with its concomitant other rights and liabilities, as the case may be. Based on this definition, various modes of privatization are being considered by the Government. Generally, the acceptable modes include divestment of Government's interest, leasing, contracting out and the management of Government entities. These modes are generally implemented for existing projects or activities. For new projects, the Government is amenable to the idea of 'Build-Operate-Transfer' or 'Build-Operate-Own' modes.

As to the beneficiaries of the policy, although the Malaysian Government encourages widespread ownership by the Malaysian public through 'offer-for-sale' mode of divestment, it does not preclude foreigners from participating in privatization projects.

Thus far, the Government has privatized 19 projects. These include among others, a container terminal, the national airline company, a national shipping company, road projects, a new television station, the Air Force's aircraft overhauling depot, a water supply project and a power transmission project.

ELEMENTS OF BOT

(a) General

BOT renders governments the opportunity of financing their developmental projects off its balance sheet. These projects, which are essential to the development of the country, can be realised without increasing the sovereign debt of the government.

This method of project development is generally applicable to infrastructural projects traditionally undertaken by the public sector. It involves private sector companies not only in building, but also in designing, operating and owning such projects. Usually, these processes, which may be undertaken by several entities, are integrated and handled by one company, often known as a concession company, to which a concession will be granted by the government to operate the project. A normal BOT arrangement is shown in Figure 1. At the end of the concession period, the ownership of the project and the right to operate it reverts to the government, which may then choose either to let a new concession or to operate the project itself. A number of variations of the method are possible, e.g. Build-Own-Operate, Build-Own-Sell, etc.

(b) Financing

Unlike traditional public sector projects whose capital costs are financed by loans raised on the creditworthiness of the borrowing country (particularly in the case of budget-deficit governments), BOT projects are normally financed by a combination of debt and equity capital. The ratio between the two types of capital varies from project

to project. The providers of these two forms of capital are paid solely from the project revenues so that capital costs are normally financed with recourse normally limited to the project's revenue stream. Hence, the private sector bears a greater share of the risks. The revenues can either be contract-led or market-led. Market-led revenues are revenues of a service directly delivered to the customer. Contract-led revenues are revenues of a service not directly delivered to a specific consumer, but through an intermediary, usually a public sector agency operating a network of service. The latter will have to underwrite a minimum delivery. This form of contract is generally known as a 'take-or pay contract'. Compared to contract-led revenues, market-led revenues impose higher risks to the concession company.

Financing of BOT has the following characteristics:

- mainly the responsibility of the concession company;
- the shareholders of the concession company will provide a portion of the finance of the project in terms of its equity contribution;
- the lenders will provide a portion of the finance of the project; the financial commitment of the shareholders will depend on the amount of lending to be given by the lender, i.e. the gearing for the project will depend on the lender;
- in addition to that the repayment of the loan to lenders and the payment of dividend to shareholders depends on the revenue cashflow of the project.

(c) Risks

BOT projects are exposed to several types of risks, for instance, project commercial risks, country commercial risks and political risks.

(i) Project commercial risks

Project commercial risks are risks that are directly related to the project. Under this broad category, three further types can be distinguished, i.e., development risks, realisation risks and operating risks, each related to a different stage in the project process.

Development risks are risks associated with competition occurring in the initial stage of the process, i.e., risk of losing the tender to another competitor or failure to sign the concession contract resulting in the loss of development expenditures. Hence, such expenditures must be kept to a minimum.

Realization risks are risks related to actual construction of the project, e.g., failure to complete the project as scheduled, in accordance with the terms of the construction contract, force majeure, etc.

(ii) Operating risks

Operating risks are risks resulting from variations in

revenue, costs of operation, material supply, etc. As mentioned above, market-led revenues are more risky compared to contract-led revenues. Cost risks are related to the technical and managerial aspects. Supply risks depend on the availability and price of raw materials.

(iii) Country commercial risks

Country commercial risks are risks related to convertibility of revenue from the project into hard currencies and risks of foreign exchange and interest rate fluctuations.

(iv) Political risks

Political risks are related to the internal and external political stability, the government's attitude towards paying profits on infrastructural projects, repatriation of profits, changes in regulation, integrity of governments, etc.

(d) Allocation of risks

These risks need to be allocated efficiently to ensure the success of the BOT project. The concession company represents a mechanism to allow for such efficient allocation. Figure 2 illustrates a typical risk allocation solution for a BOT project. The contractor constructing the project will only be willing to bear the construction risks, while the operator, the operating risk. They are unlikely to agree to bear joint and several liability. The government will also not accept several liability, since this will lead to multiple agreements for the operation and construction of the concession. The creation of the concession company provides a solution to all three parties.

Similarly, neither the authority nor contractor, nor the operator, will agree to underwrite the concession company's financial liabilities. While the burden of payment for the capital expenditure is shifted from the government to the concession company, which relies on the project revenue stream as its source of payment, the government or consumers may still bear some or all of the risk on the level and attainment of that revenue stream.

Many of these risks, such as construction risk and operating risks, can be contained by various safeguards, such as performance guarantees, completion guarantees, warranties from equipment manufacturers, operating guarantees, inspection of the facility by the government authority, etc.

The private sector entities will normally accept risks that are familiar to them, but will be hesitant to accept risks which are unquantifiable and which are outside their control, such as unlimited demand risk, force majeure, etc. If the government still wishes to transfer the latter group of risks to the private sector, it must be prepared to accept the consequent higher cost of services.

(e) Advantages of BOT

The BOT mode of project development is mutually beneficial to both the government and the private sector. From the government's perspective, BOT allows it to freeze its position, particularly in terms of capital and

operating expenditure, on a project due to the fact that the private sector is normally solely responsible for the project commercial risks and bears the brunt of the operating risks. The experience of governments in developing a project through the traditional way, has many a time been marred by serious cost overrun. Such problems, under the BOT concept are no longer the concern of the government, thereby allowing government budgeting to be more specific and definite. In addition, the disciplines of the private sector will normally result in more efficient and better quality services. From the private sector's point of view, BOTs offer a new opportunity for investment, which normally gives a more steady and definite return.

MALAYSIA'S EXPERIENCE

(a) Objectives

As mentioned earlier, BOTs form an integral part of Malaysia's privatization programme. The Government's objectives in pursuing the development of projects via BOT are couched in the objectives of the privatization policy itself mentioned above. Apart from these objectives, others that are peculiar to BOTs may be added. These are:

(i) Risk transfer and better risk management

The Government is able to transfer a substantial portion of risks to the private sector, particularly those that lie within the latter's control. In addition, the closer and more direct identification of risk-taking with return possible through private financing will encourage especially careful risk management.

(ii) Comparative benchmark

BOT projects allow the Government to establish a benchmark, which can be used to measure the cost of its own project implementation and management and thereby encourage the spread of best practices in the public sector, if the private sector proves to be more effective in particular areas.

(iii) Creation of pioneering equity

Being new to the private sector, BOT infrastructural projects help to create pioneering equity and to stimulate investor interest in such opportunities.

(b) Problems and constraints

In implementing BOT projects, several constraints have been encountered. These are as follows:

(i) Lack of understanding

Being a relative novelty, the BOT method of project development has not been well understood and therefore not well received, particularly by government agencies. The fear of losing authority over such projects is another reason for resentment

(ii) Acceptable tariff levels

The success of BOT projects depends on the revenue stream generated by the project in question and hence ultimately in the tariff structure proposed. Frequently, the project will operate as a monopoly, thus the Government will have to regulate the tariff and ensure that it is justifiable. Tariffs need to be reasonable from the point of view of consumers so that they are not burdened by the tariffs, as well as investors so that the company in question is viable enough to keep going. Balancing the interests of these two groups is very a delicate task for the Government. However, the Government may decide to subsidise the service so that the consumer does not bear the full cost of the charge. Nevertheless, the decision to subsidise should be taken on broad social and economic grounds and should be independent of the decision to privatize.

(iii) Reliability of service

Projects that lend to the BOT mode of development are normally infrastructural projects serving the public. The service must be continuously available to the consumer. Hence, the government must be sure that a private sector proposal will allow continuous supply to acceptable standards.

(iv) Economic distortion

Private sector resources are finite. If BOTs are seen to offer more attractive earning opportunities than other opportunities, resources may be diverted from other priority areas of investments, such as manufacturing and agriculture, which are crucial to the development of the country.

(v) Risk allocation

Problems have been faced in allocating risks between the government and the concession company. Transferring all risks invariably will result in increase in price of services, thereby jeopardising interests of consumers. Searching for the right balance poses some difficulties. There are no strict guidelines that can be followed, thereby resulting in decisions to be arrived at on a judgemental basis.

(vi) Financing

Being new, the BOT mode of project development is also not well understood by local investors and banks. Local banks particularly, practice very conservative banking policies, always insisting on collaterals. The fact that BOT projects are actually temporarily owned by the private sector companies makes this kind of security irrelevant.

(vii) Land

The laws on land in the country render the transfer of the right to use a certain category of land to the private sector improbable. This is land that needs to be compulsorily acquired for the BOT project. No legal decisions have been made so far on such cases.

(c) Involvement of the Government

From our experience, the lenders would like to see the commitment and involvement of the project.

Lenders require certain commitments from the Government:

1. Support loan in cases where the concession company faces a deficit in revenue collection and cannot meet the annual payment schedule to the lenders; in cases where there is a shortfall in the revenue collection the Government will give a loan to the concession company to enable it to repay the loan; this support loan is repaid by the concession company to the Government before the company pays dividend to its shareholders;

2. The Government looks at these requests objectively:

(i) the Government wants the project without incurring any expenses;

(ii) to ensure that the project will proceed;

(iii) dilutes part of the risk to the lenders.

(d) Project implementation in Malaysia

1. Competitive bidding for projects already identified by the Government.

2. Private sector proposal, provided the private sector meets the following requirements:

a. The proposal possesses a unique solution to an economic problem and offers a cost-effective solution;

b. Possesses patent rights on technical know-how, which becomes essential to the BOT privatization proposal;

c. The privatization project would not be viable if privatised on its own and its viability depends on being linked to another component of which the private sector is already in possession. In such a case, the BOT privatization project would be granted to the private party in possession of the main component.

(e) Progress

As of 1988, of the 19 projects that have been privatized, six are of the BOT type. Some of these projects have been completed while others are still under construction. The details of these projects are shown in Table 1. Through this mode of privatization, the Government had avoided a total of \$4,913 million, in terms of capital expenditure.

The debt equity ratio of capital funding for these projects varies from 99:1 to 65:35. Equity holders are derived from within and outside the country. The largest extent of foreign participation is found in the Labuan Water Supply project. The guidelines on the privatization policy allows foreign participation to a maximum extent of 30 per cent. Like equity capital, loan capital to finance these projects

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is also drawn from both sources. Since revenues are in Ringgit, projects with a high content of foreign debt are exposed to foreign exchange risk during the life of the concession or loan repayment period.

Risk allocation varies from project to project. While for some, the Government underwrites the foreign exchange risk, for others it does not. For all projects, the project operating risks are borne by the respective concession companies. Some projects, particularly the road projects bear higher operating risks from the revenue side due to the fact that revenues are market-led instead of contracted. However, for most of the road projects, the downside of the revenue risk is fixed at a specified minimum level through minimum traffic guarantees by the Government. Most of the utility projects, however, depend on contracted revenue streams. For most of the projects, inflation risks are being ameliorated through tariff escalation clauses being built into the concession contract. However, the escalation clauses vary from project to project. As can be seen, there is no consistent treatment of risk allocation. This is mainly due to the limited experience gained in respect of BOT projects. Guidelines on BOT projects are being drawn up in order to ensure consistency in the implementation of these projects.

(f) Malaysia's standing on risks

Several of the risks involved in BOT projects are country specific. Project commercial risks for example, are affected by labour market conditions, efficiency of external trade, particularly where projects involve imports of equipment and supplies. Malaysia can boast of having one of the most peaceful industrial climates in the world. Industrial disputes are relatively small in number and labour strikes are rare, so that the number of man days cost is relatively small. Malaysia possesses a relatively efficient infrastructure system, particularly transport and communication, thereby rendering risks in delivery of goods to be minimal.

As to country commercial risks, relating to convertibility of revenues into hard currencies, Malaysia enjoys a very liberal exchange control regime that is applied uniformly to transactions with all countries except South Africa and Israel. As to foreign exchange risk, since 1985 the Ringgit suffered rather steep depreciation against the

major currencies. Since then, to the present day, the Ringgit has depreciated 11.7 per cent against the US Dollar, 69.1 per cent against the Japanese Yen, 31.2 per cent against the German Deutschmark and 46.3 per cent against the Pound Sterling. However, the value of the Ringgit at the moment is showing signs of recovery, as the balance of payments position strengthens. Malaysia has been able to keep inflation at very low levels. Inflation rates since 1980 ranged from 0.4 per cent in 1985 to 5.7 per cent in 1982.

Malaysia is politically stable, despite its cosmopolitan population. It has a strong and creditable Government. The policies of the Government are stable and reasonable.

Elements of a BOT Privatization Agreement:

- definitions
- contract documents
- construction of the interconnection concession, land rights, license and authority
- commencement date
- acquisition of land rights
- permits
- finance
- operation, maintenance and repair
- liability in the event of breakdown
- insurance
- payment to the company
- customs duties and taxes
- tax allowances
- termination clauses
- force majeure
- settlement of dispute
- vesting
- future expansion of demand
- appointment of Government agent

CONCLUSION

Being a developing country, Malaysia offers vast opportunities for BOT projects, particularly utility projects. The Government welcomes foreign participation in the development of these projects, particularly in areas where technical expertise is scarce or not available in the country.

BUILD OPERATE TRANSFER (BOT) AND BUILD OPERATE OWN AND TRANSFER (BOOT) EXPERIENCES IN PAKISTAN

*Dr. S. M. Junaid Zaidi**

INTRODUCTION

The changing international economic environment, excessive reliance on debt instrument, combined with a number of other factors gave rise to the debt crisis in 1982. Since then the level of commercial bank lending to developing countries has been sharply decreasing. As a result, governments in the developing countries are faced with an adverse economic situation. They have therefore been trying various options to attract the direct foreign investment and have been making strong efforts to attract new money through new project financing.

Pakistan has been able to maintain a steady growth rate of around five per cent during the last five years. The level of domestic investment and savings however, are not compatible with this rate of growth. In fact, these are far too low for the ensuing annual GDP rise. One important implication is that considerable capital inflow has been supplementing domestic investments. This, in turn, has created a number of complications, such as a heavy debt burden. To combat these, the Government has been trying to change the entire economic environment through major policy announcements. These range from privatisation and deregulation of economy to relaxation of exchange and payments controls and greater incentives for investment to domestic and foreign investors.

PAKISTAN IS OPEN FOR BUSINESS

Today, Pakistan offers probably the most attractive terms anywhere in the developing world to foreign investors and entrepreneurs. It is the first country in southern Asia to bring about:

- Denationalization of industry and privatization of public utilities;
- Removal of all restrictions on dealings in foreign exchange, including banking, for both individuals and companies, foreign or local;

- Dismantling of state capitalism.

The invitation extended by Pakistan to the outside world to invest in its economy and share in its growth and development is backed by a package of measures tailored to bring about rapid privatization, deregulation and denationalization.

Recently the Government freed the system of debilitating state controls, providing unprecedented incentives to private foreign and domestic enterprises, guaranteeing investment security, rolling back nationalization, privatizing state-held business and industry, including banking, on a massive scale and allowing the private sector complete freedom to realize its full potential.

These revolutionary steps are without precedent in the Third World, which is why the Pakistan experience is being followed with such interest in many developing countries.

Pakistan has realized that the involvement of the private sector is essential for the speedy industrial development of the country. At present, the private sector is accorded highest priority. All policy initiatives are directed towards developing the private sector. The public sector is restricting its role to only providing necessary support services and developing the necessary infrastructure. Under these initiatives, all the room which was previously occupied by the public sector to install, operate and manage the industrial units have been left open for the private sector and a massive programme for the privatization of state-owned industries and commercial units is underway. The private sector has also been offered the opportunity to set up hydro-electric power stations and thermal power plants using indigenous coal and gas, furnace oil, imported coal and other economically viable resources.

PRIVATIZATION IN PAKISTAN

The privatization commission set up by the Government is working hard at disposing of a vast range of state-run enterprises — from banks and insurance companies to textile mills, cement manufacturing plants, hotels and telecommunications facilities. Thirty of these units are up for sale on the market.

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Two banks held in the public sector have already been privatized. While the Muslim Commercial Bank, the fourth largest in the country, has been sold to a private consortium of 12 entrepreneurs, the ownership of the Allied Bank, a comparatively smaller entity, has been transferred to its employees. Over 7,500 of them have thus become shareholders in a unique arrangement which has all the elements of success.

Next in line to go will be two of the country's largest banks — United and Habib. As someone said, "Privatisation Programme is opening up the market to enable business to grow without interference from the Government."

In the aviation sector, in June 1991, the Paris-based Agha Khan Fund for Economic Development has been chosen from a host of foreign and domestic bidders to set up an airline in Pakistan. This airline in the private sector will compete with the state-owned Pakistan International Airlines (PIA)

Twenty-two private shipping companies have already been granted operating licences, with the numbers expected to grow. These will be competing with the major state-run organization, Pakistan National Shipping Corporation (PNSC). Licences have also been issued to 19 pay-phone card operating companies, thus opening the telephone network to the private sector. Two cellular mobile telephone companies are working in the private sector. Bids have already been invited by the Pakistan Telecommunication Corporation (PTC) from companies to supply and install 200,000 telephone exchange lines on the basis of Build Operate and Transfer (BOT)

BOT MECHANISM

(a) General

Build-Operate-Transfer (BOT) is an innovative way of financing projects. It is a form of limited recourse project financing. In recent years, it has been applied in many developing countries for infrastructural projects. BOT renders governments the opportunity of financing its developmental projects outside its budget allocation. These projects, which are essential to the development of the country, can be realized without increasing the sovereign debt of government.

(b) Characteristic

The main characteristic of BOT is that financing of the project is broken down into separate elements and the risk associated with the project is distributed to the participants, usually in rough proportion to their financial contribution. Natural candidates for BOT financing are those projects in which ownership of fixed assets and the right to earn revenue from them, is vested in the government. The model therefore works best for infrastructural projects, i.e., link roads, tunnels, bridges, power stations, etc.

The BOT concept and structure as given in Figure 1, implies the following stages of the project cycle. First, a joint venture (concession company) is established with the following shareholders: a consortium of construction and

supply companies, the operator of the plant and the government through its authority. Second, the implementation agreement, which sets out the concession and sales agreement and determines the terms under which the revenue will be generated, must be signed. Third, raising of funds where the lenders are banks and export credit agencies while the borrower is the concession company. Fourth, construction of the plant and start up of the operation. Fifth, a period during which the project operates under the management of the concession company and the company hopes to receive sufficient money to pay operating costs, debt service commitments and dividends to shareholders. Sixth, after the concession period, the concession company is dissolved and the ownership of the project is transferred to the government, which continues its operation. Hence the term "build-operate-transfer" (BOT).

(c) Financing

Unlike traditional public sector projects whose capital costs are largely financed by loans raised by the Government, particularly in the case of budget deficits, BOT projects are normally financed by a combination of debt and equity capital. The ratio between the two types of capital varies according to the project. The providers of these two forms of capital are compensated solely from the project revenues, so that capital costs are generally financed with recourse normally limited to the project revenue stream. Hence, the private sector bears a greater share of the risks. The revenues can either be contract-tied or market-tied. Market-tied revenues are revenues of a service which is directly delivered to the customer. Contract-tied revenues are revenues of a service which is not directly delivered to a specific consumer, but through an intermediary, usually a public sector agency operating a network of services. The latter will have to underwrite a minimum delivery. This form of contract is generally known as a "take-or pay contract". Compared to contract tied revenues, market-tied revenues impose higher risks to the concession company.

(d) Advantages

There are three main advantages of a BOT scheme. First, infrastructure projects are built with the mobilization of private sector resources and without the direct involvement of scarce budget resources; second, the government does not have to issue a formal guarantee of repayment of the debt and therefore the project debt does not appear as a public sector debt, and third, BOT is an innovative mechanism for increasing private sector involvement in economic development in general and within this context also for increasing the role of the private sector as a provider of infrastructure services, which have traditionally been a public sector monopoly.

(e) Disadvantages

The main disadvantages of the BOT scheme are: first, it normally implies higher costs than if financed through government credit, and second, due to the extremely complex financial structure (risk sharing problem), negotiations for arranging the whole financial package are often

very lengthy.

BOT — PAKISTAN'S EXPERIENCE

(a) Energy Sector

Private Sector Energy Development Fund (PSEDF)

As a cornerstone of Pakistan's energy programme, the Private Sector Energy Development Fund (PSEDF) was set up with World Bank assistance. The Fund was established with money from the following contributors: the World Bank (lending worth US\$ 150 million), Japan's Export Import (lending worth US\$ 54 million), Italian government (lending worth US\$ 50 million), Canadian-CIDA (US\$ 30 million loan) and USAID (US\$ 125 million grant). By the middle of 1989 the Fund had mobilized around US\$ 700 million.

The Fund was created to provide long-term financing, covering up to 30 per cent of the total costs of the projects to be built on a BOT basis. It is administered by the National Development Finance Corporation, Pakistan's principal development finance institution.

The resources of the fund are lent at prevailing market rates to BOT projects, with repayment terms of up to 23 years, including an eight-year grace period. The remaining 70 per cent is to be provided in equity form (up to 25 per cent: half from overseas investors and half from domestic sources) and in local and offshore financing in the form of export credits and commercial loans as suppliers credits (45 per cent). The structure therefore implies that for every US dollar provided by the Fund, two will be raised by equity and debt financing. With such a financing structure, Pakistan is hoping to implement its energy development programme (eight power generation projects). Together they would be worth US\$ 2 billion and have a production capacity of 2,000 megawatts.

The 23 years repayment period has a significant positive effect on the cash-flow of the project, which is extremely important, at least for the period of construction and the first year of operation. Quite a few foreign suppliers and financial institutions have entered into the Pakistan BOT energy project scheme. The Fund seems to be an innovative way to mobilize additional resources for energy sector financing in Pakistan, which under traditional schemes, it would not be possible to raise and therefore the implementation of the Pakistani energy development programme would be prolonged far into the future.

(b) Telecommunication sector

The importance of an effective communication system for the community development and economic progress cannot be denied. In Pakistan, the responsibility for providing and maintaining inland and overseas telecommunication facilities is assigned to the Pakistan Telegraph and Telephone (T&T) Department, which became the Pakistan Telecommunication Corporation (PTC) in 1991.

As of 30 June 1989, there were 2,070 telephone exchanges and 812,872 working telephones and 3,017 pub-

lic call offices. The telephone density per 1000 population was 7:1 in 1988. Under a crash programme the PTC decided to increase its capacity.

Telephone exchange lines

In April 1991, PTC invited bids to supply and install 200,000 telephone exchange lines, including local cable networks and local junctions (hereinafter collectively called exchanges) in the cities of Lahore, Faisalabad, Rawalpindi and Islamabad on the basis of BOT. The terms and conditions of the bids were:

1. The exchanges were to be built in accordance with the PTC's standard and specification, for which a comprehensive survey was necessary.
2. The BOT contractor, before execution of the project, was to get his plan approved by the PTC.
3. The contractor was to transfer the possession and ownership of the exchanges in good working order and condition to the PTC, free of any charge or encumbrance at the end of the specified period.
4. The contractor was allowed to interconnect his exchanges with PTC's system and to operate them in accordance with Pakistan law, for the period agreed upon in the contract with PTC. The quality of service provided by the contractor to his subscribers had to be international standards.
5. The contractor was allowed to charge the same tariff from his subscribers as was being charged by PTC. In order not to put an extra load on PTC's system, it was not permissible for the contractor to charge a lower tariff than PTC's, nor the contractor was to subsidise the calls made by his subscribers in cash or kind, or by way of rebate or discount, or in any manner whatsoever. In case of any abnormal increase in traffic passing through PTC's system, PTC was to have the right to investigate the matter and to ask for such rectification as may be reasonable under the circumstances. The contractor was at all times to conduct himself with honesty in his dealings with PTC and the public.
6. In multi-exchange areas, junctions between his own exchanges was the responsibility of the contractor, without any cost to PTC.
7. To meet the requirements of the contractor's exchanges, junctions and corresponding interface equipment in PTC's exchanges was also to be supplied and installed by the contractor at his own cost. No modification in PTC's exchanges was to be required.
8. The contractor's exchanges were to be located at independent sites (not on PTC's land or in PTC's buildings). The cable network was also to be independent of PTC's cable network and duct routes. Without any contractual obligation, PTC was to assist the contractor in finding land for his buildings.
9. All exchange buildings of the contractor were sup-

posed to have enough space to accommodate three times the initially installed exchange capacity.

10. The contractor was to provide to PTC every month traffic and billing data, and such other information as may from time to time be required by PTC. PTC also desired to have the right, from time to time, to inspect the contractor's balance sheets.

11. In case of any material breach of the contract, of which the Secretary, Ministry of Communications was the sole judge, PTC was to have the right to disconnect the contractor's exchanges from its system till such time that the cause of the complaint is removed, or to take possession of the contractor's exchanges forthwith. If possession of the contractor's exchanges was taken by PTC under this clause, such compensation was to be paid to the contractor as may be reasonable under the circumstances, provided that the compensation did not exceed the depreciated value of the assets calculated at the rate of 10 per cent straight-line depreciation per annum. For the purpose of the above calculation, the initial capital cost per exchange line, including switching, cable network and junctions, was taken to be Rs. 20,000. Thereafter, title to the exchanges were to pass to PTC.

12. The contractor was allowed to keep 100 per cent of the revenue from outward calls from his exchanges, provided that he paid to PTC such amount as would have been payable by PTC to foreign telecom administrations or carriers, on account of outward international traffic, originating from the contractor's exchanges.

13. No payment was to be due from PTC to the contractor on account of incoming traffic, including international traffic.

14. All exchanges included in this tender were to be ready for cutover latest by 31 December 1992. Bids seeking extended time for cutover were not to be considered.

15. The bidders were to specify the date on which the exchanges were to be transferred to PTC. Any bidder who was not willing to transfer the exchanges within eight years of 31 December 1992 was not allowed to participate in this tender.

Result

The project could not be given out on a BOT basis for many reasons, however agreements were made in principle with reputed foreign suppliers to supply and install exchanges on a Build-Lease and Transfer (BLT) basis.

(c) Communication sector

Economic development and the consequent demand for mobility increases pressure on the communication system, so that it requires continuous expansion, maintenance, replacement and modernization. Yet this sector did not receive adequate priority in the past due to pressure from other competing programmes.

Roads

Pakistan has about 115,800 kms. of all types of roads, with an average density of about 0.2 km. per sq. km. of area, which is less than one third of the generally accepted standard of 0.5 km. per sq. km. for developing countries with similar topography and levels of economic development. Even on existing roads, overloading, rapid growth of traffic and induction of heavy duty trucks have necessitated large expenditure on road maintenance and development.

The Government is now according top priority to optimal utilization of existing road system through proper maintenance, capacity improvement and rehabilitation; construction of a second carriageway along the National Highway N-5 from Karachi to Peshawar; concept of financing roads through tolls and the auction of franchises for service centres along highways; development of a modern road construction industry and improvement in road construction technology; involvement of the private sector in infrastructure development and adaption of new and innovative mechanisms of financing, such as BOT, BOO and BOOT, etc. Some of the projects under consideration by the Government, for which bids have already been collected, are as follows:

Additional carriageway between Kharian and Rawalpindi

The National Highway Authority (NHA) has a plan to construct an additional carriageway between Kharian and Rawalpindi (123 kms.) along the existing National Highway N-5, (i.e. Kharian-Jhelum-Gujar Khan-Rawalpindi Highway). The project includes construction of all structures en route, including one major bridge over the Jhelum river at Jhelum. Pavement width of this carriageway will be 7.3 metres. This asphalt concrete highway has an estimated value of Rs. 1,200 million.

The project will be implemented on the following basis:

Build-Own-Operate-Transfer (BOOT)

Finance-cum-Construction: Government guarantee shall be available for repayment of the loan in both cases as hereunder:

1. Self Financing: If the consortium arranges financing for itself, the GOP will guarantee the repayments.

2. MOC/NHA as principal borrower: If the Company/Consortium provides a loan to MOC/NHA, then also a GOP guarantee will be available.

Lahore-Islamabad Motorway

The National Highway Authority have floated a tender to construct a four lane, access controlled motorway from Lahore (by-passing Sheikhpura, Pindi Bhattian, Bhera, Kalar Kahar and Balkasar) to Islamabad.

Project length: 315 kms (four lane divided motor-

way)

Estimated Cost: Rs. 8,512 million

Completion period: 30 months

Financing:

Private sector parties have been asked to arrange the funding on competitive terms.

The Government of Pakistan would contribute a maximum of 50 per cent of the project cost.

Repayment:

The following methods are being considered for repayment:

Tolls to be collected by the bidder on the entire motorway (BOOT concept).

The NHA to collect the tolls itself and guarantee repayment of the loan. In this eventuality, however, no repayment would be possible by the NHA or the Government of Pakistan until completion of the project; a minimum of ten years are required for repayment of the loan.

The project proposals from the interested parties (both domestic and foreign) have been collected. The contract for construction shall be awarded on a design-cum-construct basis. Designs and specifications that conform to internationally accepted norms are being studied. These designs will then be put forward for formal NHA's approval.

Proposals have also been collected to construct this motorway on turn-key basis. The proposals thus collected also include the financing and operating methodology and details of the firm or joint venture, including their experience, capability, machinery holding, financial status and staff proposed for the project.

Lahore By-pass

The Lahore By-pass project (estimated at US\$ 142.56 million) is planned to be completed in two phases over a period of seven years and will generally comprise the provision of a dual two lane highway with a 7.3 metre wide carriageway, a two metre wide central median and three metre wide shoulders. Under this project flyovers, additional bridges at Ravi and improved functions will be constructed, so as to ensure a smooth flow of traffic and relieve the congestion on existing roads. The project has been awarded to a private concern.

Since the Lahore By-pass project is structured as a Build-Own-Operate and Transfer (BOOT) project, it was therefore necessary to incorporate a privately owned limited liability company. The company would be capitalized to the extent of 25 per cent of the total project costs. The contractual structure is given in Figure 2.

The project company would have as its objectives the

purchase of the existing bridge over the river Ravi, in phase I, the construction of a new bridge over the river Ravi, together with the construction of a new by-pass around Lahore crossing the river Ravi at the bridge and connecting with the Jaranwala Road; a total of approximately 18 kilometres of new roads; phase II will comprise the construction of a second new bridge adjacent to the existing one, upgrading of the Bund Road, flyovers on each side of the new bridge and a flyover over the railway crossing on the N-5, plus upgrading of the N-5 Highway through Shahdara town. The project would seek a concession to own and operate the bridges and by-pass for a minimum period of 20 years, with the estimated construction period of phase I being 36 months from assigning of the Concession Agreement, with phase II commencing on completion of phase I and being completed at the end of the seventh year.

Ports

Pakistan has two main sea ports: (i) Karachi port and (ii) Port Mohammed Bin Qasim. Karachi Port handles 14.5 million tonnes of cargo, while Port Qasim handles 4.4 million tonnes. For further expansion and improvement in port facilities, the Government has formulated some modernization projects, which also involve the private sector. Some of the expansion programmes at Port Qasim proposed for financing under BOT/BOOT schemes are as follows:

Container terminal

The Port Qasim Authority has collected expressions of interest from experienced container terminal operators for the financing, maintenance and operation of a container terminal at Port Qasim, Karachi, on a Build-Operate-Own-and-Transfer (BOOT) basis.

The existing 600-metre long multi-purpose berths Nos. 5 to 7 are proposed for conversion to an integrated container terminal to be fitted with unloaders/loaders, modern gantries, cranes, transtainers, fork lift trucks, etc., with handling facilities for Panamax-class container ships.

The project envisages civil works, procurement, installation of equipment, operation and maintenance.

Fertilizer Terminal

The Port Qasim Authority is also considering expressions of interest submitted by experienced fertilizer terminal operators to finance, construct, maintain and operate a fertilizer terminal under the Build-Operate-Own and Transfer (BOOT) concept, at Port Qasim, Karachi.

The facilities would have a maximum (import and export) capacity of handling about 3.0 millions tons of fertilizers per annum and would be capable of handling vessels up to 50,000 DWT. The project would consist of a specialized berth with a design capacity for 50,000/75,000 DWT ships for fertilizer handling, unloaders/loaders, conveyers, storage sheds and allied equipment and infrastructure. The project is estimated to cost US\$ 60 million.

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Grain Terminal

The Port Qasim Authority has invited yet another expression of interest: this time from experienced grain terminal operators, to finance, construct, maintain and operate a grain terminal under the Build-Operate-Own and Transfer (BOOT) concept at Port Qasim, Karachi.

The facilities would have a maximum capacity to handle 3.0 million tons of grain per annum and would be capable of handling vessels up to 50,000 DWT. The project would consist of a specialised berth with a design capacity for 50,000/75,000/DWT ships for grain handling unloaders/loaders, conveyers, automatic bagging plants, silos/sheds for grain storage, etc. together with ancillary equipment and infrastructure. The project is estimated to cost US\$ 60 million.

Sports and recreational facilities at Port Qasim:

Port Qasim provides a unique constellation of factors that favour the location of tourist industries: vast areas along the shore with a network of creeks and mangroves, offer themselves as potential sites for development of tourist and recreational facilities such as:

- Marinas
- Scuba Diving
- Beaches and Playland
- Boating/Cruise in creeks and sight-seeing of ruins of Old Forts.
- National Park
- Hotels and Restaurants for tourists
- Aquarium, Dolphinarium
- Tourist Huts

The Port Qasim Authority has collected expressions of interest from experienced industrialists, entrepreneurs, tour operators and hoteliers who were interested in financing building, maintaining and operating sports and recrea-

tion facilities at Port Qasim, Karachi on BOOT (Build-Operate-Own-Transfer), BOT (Build-Operate-Transfer) or BOL (Build-Operate-Lease) bases.

CONCLUSION

Although the BOT/BOOT mechanism of project financing is a fairly new idea, it has been well received in Pakistan. It still generates considerable interest in the country, both in the public and private sectors. The response from the private sector (domestic and foreign) to bids called by the Government has been quite encouraging and shows the interest of the private sector to participate in limited recourse financing. It also shows the Government's intention to boost the economy through the involvement of the private sector to use the BOT/BOOT mechanism. The ultimate success/failure of BOT/BOOT will depend very much on the triangular relationship of the public, the private sector company and the Government.

Projects that will be implemented under BOT/BOOT are normally infrastructural projects serving the public. The Government would like the service to be available to the public on a continuous basis. Hence, the Government needs to ensure that the private sector proposal allows a continuous supply at acceptable standards.

Also, being new, BOT is not well understood by local investors and banks. Local banks, in particular, practise traditional banking policies and insist on collaterals. The fact that BOT projects are actually temporarily owned by the private sector companies makes this kind of security irrelevant.

To conclude, "BOT/BOOT is not a one line answer to a series of problems faced by present day Pakistan's economy, nor it is a substitute for more conventional means of financing. It can be applied on a highly selective basis — but that where it is appropriate it should certainly provide some well-run, well-managed projects, which would benefit Pakistan's economy".

PHILIPPINE EXPERIENCE IN BUILD-OPERATE-TRANSFER (BOT) PROJECT IMPLEMENTATION AND FINANCING

*Evaristo M. Medina**

The Build-Operate-Transfer (BOT) scheme for the development and operation of infrastructure projects was adopted in the Philippines about 20 years ago, but the present concept of implementing BOT projects was not applied. The first two projects under the BOT arrangement were two expressways, which were funded and constructed by a private construction company. Although the firm still manages the operation of these projects, it is expected that they will soon be turned over to the control of the Government.

During 1989 and 1990, the private sector has been advised and widely informed on the Build-Operate-Transfer scheme, which the present administration has chosen as a vehicle for private participation in the construction and operation of physical infrastructure projects. It was only in 1990, however, that the Philippine Government decided to adopt the scheme on a larger scale because many of the much needed infrastructure projects proposed for foreign funding, may not be implemented due to the shortage of Peso-counterpart funds and inadequate financial guarantees. Foreign lending institutions require the Philippine Government to put up a counterpart fund equivalent to 20 to 25 per cent of the cost of a project to be financed by their loans. Hence, by adopting the BOT scheme, the Government will be unburdened with these requirements, since private sector funds will be used to complete these infrastructure projects. Also, it can result in lower capital and operating costs and less risk for the Government.

Having fully realized the importance of the BOT scheme in the implementation of infrastructure projects, the Philippine Congress enacted a law, known as Republic Act No. 6957, tasked with authorizing the financing, construction, operation and maintenance of infrastructure projects by the private sector.

Under this Act, the BOT scheme is defined as a contractual arrangement whereby the contractor undertakes the construction, including financing, of a given infra-

structure facility, and the operation and maintenance thereof. Among the provisions of this act are the following:

- The contractor operates the facility over a fixed term during which it is allowed to charge facility users appropriate tolls, fees, rentals and charges sufficient to enable the contractor to recover its operating and maintenance expenses and its investment in the project, plus a reasonable rate of return thereon. The contractor transfers the facility to the concerned government agency or local government unit (LGU) at the end of a fixed term, which shall not exceed fifty (50) years.
- For the construction stage, the contractor may obtain financing from foreign and/or domestic sources and/or engage the services of a foreign and/or Filipino contractor.
- The ownership structure of a contractor engaged in infrastructure, where the operation requires a public utility franchise, must be in accordance with the Constitution. Thus, at least 60 per cent of the capital of the contractor applicant must be owned by Filipino citizens.
- In the case of corporate investors in the Build-Operate-Transfer operations, the citizenship of each stockholder in the corporate investors shall be the basis for the computation of Filipino equity.
- In the case of foreign contractors, Filipino labour shall be employed or hired during the different phases of the construction where Filipino skills are available.
- The BOT scheme shall include a supply-and-operate situation. This is a contractual arrangement whereby the supplier of equipment and machinery for a given infrastructure facility, if the interest of the Government so requires, operate the facility, provides process technology transfer and training to Filipino nationals.
- Financing from foreign sources shall not require a

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guarantee by the Government or government-owned or controlled corporations.

- The financing of a foreign or foreign-controlled contractor from Philippine government institutions shall not exceed 20 per cent of the total cost of the infrastructure facility or project.

The National Power Corporation, a government agency authorized to handle BOT projects, is not, however, governed by this provision, but is separately regulated by Executive Order No. 215, which allows a 100 per cent financing from the private sector. This is due to the very big capital requirements of power generating projects.

PROBLEMS ENCOUNTERED IN PACKAGING BOT PROJECTS

In packaging BOT projects, the following problems were encountered:

1. Unavailability of experienced equity investors and experienced project developers.
2. The inability of the Government to provide the necessary level of cooperation and support. This is due to the reluctance of some government officials to accept project risks.
3. The scarcity of appropriate sources of cash equity. Although investment funds for sound projects are available, development capital is scarce.

Authorized contracting government agencies

The Philippine government infrastructure entities authorized to enter into contracts for BOT projects are as follows:

1. Department of Public Works and Highways (DPWH)
 2. Department of Transportation and Communication (DOTC)
 3. National Irrigation Administration (NIA)
 4. Metropolitan Waterworks and Sewerage System (MWSS)
 5. Local Water Utilities Administration (LWUA)
 6. Philippine National Railways (PNR)
 7. Light Rail Transit Authority (LRTA)
 8. Philippine Ports Authority (PPA)
 9. Manila International Airport Authority (MIAA)
 10. National Power Corporation (NAPOCOR)
 11. National Electrification Administration (NEA)
- BOT Concept & Experiences in Developing Countries*

12. Philippine National Oil Company (PNOC)

13. Export Processing Zone Authority (EPZA)

14. Public Estates Authority

15. Local Governments Units (LGUs)

The Department of Science and Technology (DOST), though not an infrastructure entity, might adopt the BOT scheme in the near future when implementing science-related infrastructure projects.

ELIGIBLE INFRASTRUCTURE PROJECTS

Infrastructure projects that are financially viable and can meet the other provisions of the Implementing Rules and Regulations (IRR) can be undertaken through BOT schemes, including but not limited to, construction. Construction includes engineering rehabilitation, improvement, extension and modernization, supply of equipment and machinery, operation and maintenance of the following:

1. Highways, including expressways, roads, bridges, interchanges, tunnels and related facilities;
2. Rail-based projects packaged with commercial development opportunities, e.g., use of government facilities;
3. Non-rail based mass transit facilities, navigable inland waterways and related facilities;
4. Port infrastructure such as piers, quays, storage, handling, ferry services, wharves and related facilities;
5. Airports, air navigation and related facilities;
6. Power generation, distribution of electrification and related facilities;
7. Telecommunications, backbone network, terrestrial and satellite facilities and related service facilities;
8. Irrigation and related facilities;
9. Water supply, sewage, drainage and related facilities;
10. Educational and health infrastructure;
11. Land reclamation, dredging and other related facilities and utilities;
12. Industrial estates, including infrastructure facilities and utilities;
13. Markets, slaughter houses and related facilities;
14. Warehouses and post-harvest facilities;
15. Public fishports and fishponds, including storage and processing facilities; and

16. Environmental and solid waste management related facilities, such as collection equipment, composting plants, incinerators, landfill and tidal barriers.

APPROVAL OF PROPOSED BOT PROJECTS

The head of the concerned agency sees to it that the list of national projects proposed for BOT schemes must be part of the medium-term infrastructure programmes and must be duly approved by the Congress prior to the call for implementation bids. For this purpose, the agency submits such a list to Congress as the need for a BOT project arises, preferably once every six months.

MINIMUM STANDARDS AND BASIC PARAMETERS

The agency/LGU lay down the minimum design and performance standards and specifications, as well as economic parameters to be observed by the bidder/contractor in preparing bids and, if successful, in building and operating the facility.

ECONOMIC PARAMETERS

To provide a uniform basis for the preparation by the contractors of their bids and the comparison by the tendering agency (LGU) of their bids on a "Present Value" basis, the agency (LGU) prescribes the following economic parameters:

- a. Inflation and discounting rate
- b. Foreign exchange rate
- c. Maximum period of project construction.
- d. Fixed term for project and collection of tolls/fees/rentals/charges.

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Upon approval by Congress of a proposed BOT project, a notice inviting all duly qualified infrastructure contractors to participate in bidding for the approved project is published in at least two newspapers of general circulation once a week for three consecutive weeks.

PUBLIC BIDDING FOR PROJECTS

In the case of BOT, the contract will be awarded to the lowest complying bidder based on the present value of its proposed tolls, fees, rentals and charges over a fixed term for the facility to be constructed, operated and maintained according to the prescribed minimum design and performance standards, plans and specifications.

REPAYMENT SCHEME

For the financing, construction, operation and maintenance of any infrastructure project, the contractor is entitled to a reasonable return on investment, and the operating and maintenance costs are in accordance with the bid proposal as accepted by the concerned contracting

infrastructure agency and incorporated in the contract's terms and conditions.

The repayment scheme is affected by authorizing the contractor to charge and collect reasonable toll fees, rentals and charges for the use of the project facility not exceeding those proposed in the bid.

PROJECT SUPERVISION

The concerned government agency is responsible for handling the technical supervision of the construction operations and maintenance of all BOT projects. However, the Coordinating Council for the Philippine Assistance Program (CCPAP), a government agency under the Office of the President, is the coordinating body to oversee all infrastructure projects under the BOT scheme in the country. It is directly involved in the packaging of BOT projects.

So far, the CCPAP is responsible for the identification of demonstration projects for local government units that may be constructed under a BOT scheme. In this manner, the Government will be helping not only the donor community in addressing the problems of implementation in Official development Assistance (ODA) projects, but also the local users of the ODA.

Hopewell Energy International Ltd. of Hong Kong signed an agreement in 1991 with the Government to construct two 300 megawatt coal-fired power plants in Quezon province, 115 kms. South of Manila. The plant, which will supply electricity to Luzon, will be the country's biggest. Construction began in 1992 under a BOT scheme.

Under the agreement, Hopewell will finance the construction of the two plants at a cost of \$109.5 million over a three-year period. NAPOCOR will supply the plant coal requirements. Hopewell, on the other hand, will operate the power station for 25 years, handing it over to NAPOCOR at no cost.

Another similar project to be constructed by Hopewell is a two 300 megawatt, coal-fired electric plants in Zambales. The first phase of the project will cost \$441 million. Financing is expected from ADB and Japan Eximbank. The Philippine Government will raise \$91 million as the local counterpart.

The following demonstration projects, submitted to the CCPAP by the Construction Contract Services Corporation as consultants to the Philippine Assistance Programme Support (PAPS) projects are now ready to start the BOT process. The pre-feasibility studies/feasibility studies of these projects have already been completed and announced in the media.

The Manila North Harbour Grain Terminal

The project involves the creation of a modern grain handling terminal for the purpose of reducing waste, ship waiting time and consumer prices of basic commodities.

The General Santos Agricultural Processing Centre

This project involves the creation of a 32 hectare agricultural processing complex in General Santos City and in South Cotabato, Mindanao. The project will provide fish, livestock and agricultural storage, marketing and processing facilities designed to add value to locally harvested products.

The Philvidec Industrial Estate

This involves the creation of a 313.19 hectare industrial estate in Misamis Oriental Province. The 144 million Peso project will promote industrial development in the region.

The following are the **Medium Term Projects** that require pre-feasibility study or additional authorization in order to start:

The South Harbour Bulk Handling Terminal

The project will lower the cost of bulk commodities by reducing ship waiting time, lower shipping costs and faster redistribution.

Manila-Bataan Coastal Road

This project involves the construction of a two-lane road of 30.05 kilometres from Bulacan through Pampanga to Bataan.

The Alabang President Quirino Avenue Elevated Expressways

The project involves the creation of a 16.6 kms. ex-

pressway in Metro Manila from Alabang to President Quirino Avenue. The project will alleviate severe congestion in this corridor.

Ninoy International Airport — Miscellaneous Projects

These projects involve the creation of various service facilities at the present Manila International Airport.

The following are **potential projects** reflecting private sector interest attractive to infrastructure privatization. Only concept papers have been completed.

1. New Manila International Airport
2. Metro Manila Composting Plant: this is a \$25 million plant to process organic material into compost to be sold locally or abroad.
3. Lipa-Batangas Road
4. Manila Light Rail III
5. Miscellaneous Power Projects
6. General Santos Airport

With all these infrastructures, the Government hopes to tap some \$200 millions worth of projects from the private sector using the BOT scheme over the next two years. The amount represents 20 per cent of the total \$1 billion worth of projects eligible under the BOT scheme. The ADB and the International Finance Corporation are reportedly willing to put up the needed funding to carry out these BOT projects.

THE PRIVATIZATION OF THE SECOND STAGE EXPRESSWAY SYSTEM OF THAILAND

*Somchai Jarukasemratana**

ABSTRACT

The transportation study two decades ago initiated the development of the expressway system in Bangkok, Thailand. The First Stage Expressway System, 27.1 kms in length, was opened to traffic in December 1987. The implementation of the FES, the Feasibility Study of the Second Stage Expressway System (SES), was finished in November 1983, followed by the Detailed Design and Environmental Impact Assessment of the SES, which was concluded in May 1986. Due to the impact of the world economic recession in 1982, the Government adopted a policy to privatize mega infrastructure projects, including the SES. The implementation plan of the SES was studied for both alternatives, i.e. by government and private funding. Finally, private funding was chosen, in accordance with government policy. At present, the construction of the SES is in its final stages.

INTRODUCTION

This paper presents the development of the Second Stage Expressway System. The traffic congestion problem was noticed about two decades ago, when the population of the Greater Bangkok Area (GBA) was approximately 4.3 million, with 318,000 vehicles (175,000 passenger cars; 75,000 motorcycles; 9,000 taxis; 7,000 tuk-tuks; 50,000 trucks and 2,800 buses). At present, the population of the GBA is about 8 million, with approximately two million vehicles (946,000 passenger cars; 831,000 motorcycles; 25,600 taxis and tuk-tuks; 227,000 trucks and 59,000 buses). Traffic congestion problems in the city are very serious as vehicle speeds on main roads are lower than 10 kilometres per hour during rush hours. The major causes are the results of poor town planning and the lack of efficient public transportation and road network systems. Considering the road network system, it was found that the ratio of the road surface area to the inner area of the city is only 6 per cent, which is lower than the 20 per cent standard of other big cities in the world. The lack of road surface and an efficient road network

system cause chronic traffic congestion in Bangkok resulting in economic loss and an adverse environment. The traffic congestion is now widely considered as one of the most important national problems.

FEASIBILITY STUDY OF THE SECOND STAGE EXPRESSWAY SYSTEM IN GREATER BANGKOK, 1982-1983

In 1982 the Expressway and Rapid Transit Authority of Thailand (ETA), with the cooperation of the Japan International Cooperation Agency, conducted an economic and engineering feasibility study of the SES. The study recommended two routes for the expressway, namely the North-South route and the East route. The North-South route starts from Vibhavadi-Rangsit highway in the North and joins the existing FES in the South with the length of 19.17 kms. In addition, the East route connects with the North-South route at Phaya-Thai Interchange and runs to the East, terminating at Ramkhamheang Road with the length of 8.72 kms. The total length of the SES is 27.89 kms with the investment cost of 16,118.82 million Baht (1983), Net Present Value of 6,090 million Baht, benefit/cost ratio 1.65 and internal rate of return 17.0 per cent at 12 per cent discount rate.

SPECIAL REPORT ON A REVIEW OF THE PREVIOUS STUDY, DETAILED DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT OF THE SECOND STAGE EXPRESSWAY SYSTEM IN GREATER BANGKOK, 1986-1987

An engineering consultant was hired to review the JICA's study and conduct the Engineering Detailed Design and Environment Impact Assessment of the Second Stage Expressway System. The route alignment was modified slightly with the extension of the North-South route to the north at Chaeng Wattana Road, the extension of the East route further East and a Collector/Distributor Road connecting the main line of the expressway with the central business area of Bangkok. The total length of the reviewed SES is 39.05 kms, with an investment cost of 17,620 Million Baht (1986), benefit/cost ratio 2.32 and internal rate of return 22.60 per cent at 12 per cent discount rate.

* Director of Technical Department, The Expressway and Rapid Transit Authority of Thailand

THE DEVELOPMENT OF THE SES PRIVATIZATION

After completion of the JICA's study, the Cabinet approved the SES project on 12 March 1985. For economic recession, the Cabinet advised the ETA to look to the private sector for investment in the SES project for a period of 30 years.

On 14 August 1987, the ETA made an announcement inviting the private sector to submit investment proposals for the SES project. The main conditions and requirements for the investment proposal as stated in the distributed Terms of Reference by the ETA are briefly detailed as follows:

1. The ETA shall acquire all land required for the SES project construction.

2. The Government shall not make any grant or subsidy to the investor in any event apart from those specified in point 1.

3. The investor shall be responsible for the construction, procurement and installation of equipment for operation and maintenance of the SES. The Government shall not guarantee any loan.

4. The investor shall reimburse the land acquisition cost paid by the ETA or the Government, together with interest and conditions of such repayment, as well as propose other benefits beneficial to the Government.

On 1 February 1988, two proposals were submitted to the ETA for evaluation, both technically and financially. On 14 March 1988 the winner was selected based on the followings:

1. The proposal conformed with the conditions and requirements.

2. The registered capital (equity) was equal to 20 per cent of the project cost as required by the conditions, while the other party's equity was 10 per cent.

3. The implementation plan offered full project construction with a specific period.

4. A cheaper construction cost on the same base year

5. Better land utilization and environmental mitigation plan proposal.

After the Cabinet's approval on 20 September 1988, the ETA signed a contract with the successful investor on 22 December 1988 for the implementation, operation and maintenance of the SES for 30 years.

At present, the construction of the SES is under way, with the first part expected to be opened to the public by mid-1993.

CONCLUSIONS

The privatization of the SES project is regarded as being a pioneer in the implementation of mega infrastructure projects by sharing the role between the Government and private sectors. This strategy is expected to make advance the completion of the infrastructure projects and create foreign investment which will reflect a good economic environment in the country. Following the privatization of the SES, many mega other projects have materialized, such as the Third Stage Expressway System Project, the Mass Transit System Project, etc. Most of these projects are under negotiation with the interested proposers.

THE ADVANTAGES AND DISADVANTAGES OF THE TWO INVESTMENT POLICIES

Private Sector

Government Sector

Advantages

1. Efficient management

1. Full governmental control policy

2. Government savings

2. Maximum social and economic benefit

3. Increase private sector role in developing country

3. Better coordination among government agencies during construction

4. Definite implementation plants

4. Available soft loan with lower interest rate

Disadvantages

1. No soft loan causing higher toll rate

1. More procedures in decision making

2. Maximum profit

2. Limited government budget

3. Negotiating time 3. -

MAIN FEATURES OF THE CONTRACT AGREEMENT (SES)

1. Land acquisition by the ETA
2. No grant or subsidy to the investor
3. Reimbursement of cost of land by the investor beginning at the 15th year of the 30-year investment period
4. The investor is responsible for construction, operation and maintenance costs
5. The investor is subjected to the support of BOI privileges
6. The proposer shares registered capital of 20 per cent of the SES project, but not less than 1,800 Million Baht
7. The investment period may be extended for two further periods of 10 years
8. The investor has priority to utilize the land within the right of way
9. The FES revenue is included in the revenue sharing between the ETA and the investor

MAIN FEATURES OF THE CONDITIONS AND REQUIREMENTS OF THE TES INVESTMENT

1. Land acquisition by the ETA
2. No grant or subsidy to the investor
3. Reimbursement of cost of land by the investor beginning at the 21st year of the 30-year investment period
4. The investor is responsible for construction, operation and maintenance costs
5. The investor is subjected to the support of B-I privilege
6. The proposer shares registered capital of 20 per cent of the project cost
7. The investment period may be extended for two further periods of 10 years

8. The investor has priority to utilize the land within the right of way

9. The investor collects all toll revenues and other revenues from land utilization

No revenue sharing

MAIN FEATURES OF THE CONDITIONS & REQUIREMENTS OF THE MTS PROJECT

1. Government invests not more than 25 per cent equity
2. No loan guarantee from the Government
3. Land acquisition by the Government
4. The investor reimburses for land cost or rents the land from the Government
5. No fare rate control and low-level riderships guarantee
6. The investor collects all revenues for the 30-year investment period
7. The investor has priority to utilize the land within the right of way
8. The investment period may be extended for two further periods of 10 years

THE MAIN FEATURES OF THE FES

1. All governmental investment
2. Capital cost 8,518.9 million Baht (2,258.4 M.B. government subsidy, 1,039.85 M.B. ETA's revenue and 1,400.32 M.B. local loan, 3,820.34 M.B. foreign loan)
3. The ETA collects all toll revenue and revenue from land utilization

THE MAIN FEATURE OF THE ARE

1. All government investment
2. Capital cost 26,617 million Baht (16,000 M.B. government subsidy, 1,123 M.B. government loan, 3,978 M.B. local loan and 5,466 foreign loan)
3. The ETA collects all toll revenue and revenue from land utilization