Survey, the necessity of use and risk identification in BOT contracts

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Abstract. By considering that the investment in infrastructure sector which is mostly done by the government has faced with very serious financial and low efficiency problems, the necessity of using the private sector participation in infrastructure projects is felt. Providing the necessary conditions for the private sector participation is the most important point in this regard which leads to investing with more confidence and security for the internal or external private sector. The contract of Build - Operate - Transfer (BOT) is one of the main approaches of private sector participation in infrastructure projects. In order to increase the involvement of the private sector, it is necessary to include the conditions and main factors of success in both investee and investor sides. In this paper, after investigating the structure and the necessity of using this contract, suitable projects were presented for usage and finally, the risk of these types of contracts will be evaluated.

Keywords: Construction contracts, BOT, build-operate-transfer, risk management

INTRODUCTION

Due to the urgent need of development and implementation for infrastructure projects in the coming years and the necessity of using private sector participation in infrastructure parts of energy (producing the electrical energy), transport and telecommunication, local and foreign investment are needed to realize the objectives set forth in the law. Like most other developing countries, electrical energy in Iran has a monopolistic structure. The parts of producing, transmission and electricity distribution are managed seamlessly and the ownership of all the installation belongs to the government. Growth and development of the transport sector have a significant impact on development and economic prosperity of the countries. Due to the geographical features, transportation in our country is possible through all roads, rail, air and sea.

Saving fuel consumption, increase the speed of passengers transport, saving time and reducing the amortization, doubles the importance of highway construction. Roads and free roads are the infrastructural matters and the main context of economical and social development which can provide many job opportunities. Rail transport is one of the most important, safest and cheapest chain rings for supply of goods and transportation in most countries. Nowadays, infrastructural development of telecommunication and communications and the power of using the related facilities is one of the most important economical development indicators of countries. In today's world it would not be possible to step towards economical development and participation in global competitions without having appropriate information and communication mechanisms.

Presenting the method of build - operation - transfer (BOT)

This method which is usually known as BOT in most developing countries has an organizational structure and the specific contractual relationships. According to the law and the government approvals, an executive apparatus (the government) has the implementation license for projects based on BOT method. Regardless of the reasons for choosing this method, the government (executive apparatus), who is the head of the project is known as the principal (the investee),

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announces the list of approved projects based on the method of BOT and invites the internal & external private sector companies in different fields of construction to provide their proposal for the implementation of the projects. After performing the tender formalities which are in detailed and long process, eventually the winner will be announced and selected by the private sector. According to this method the government grants the advantage of design - financing - construction and operation of the project to the chosen private sector (the executive or plan investor) for a specific period of time and in form of a contract. The plan executive establishes a single-purpose company in the host country which is called the Project Company in order to carry out the project and it’s financing is performed through a combination of Debt and Equity. After completing the construction until the end of the contract term the project manager is responsible for the exploitation of the project and from the proceeds of product sale or project services, will repay the principal and interest of the received loan. An acceptable profit will be paid to the investors of the project from what remains of earnings. The Project Company could be responsible for all the stages or can entrust the project to their partners or others by an internal contract. Based on the specified standard in the contract and without any cost, after the end of the contract period the project company transfers all the project assets (financial, physical-legal) to the government and the life of the contract comes to an end [1]. It is possible that during the contract the project still owned by the state and not be transferred to the executive. As it is expected from the definition of this type of projects the main contract of BOT method was signed between the government and the executive. Also all the basic issues, obligations and responsibilities of both sides were inserted in the contract.

It is obvious that this method is a big jump from the common contracts of the government (three factors) to a package deal which the risk of the project was transferred to the private sector. Maybe it can be said that this jump is a move from “Acquisition of capital assets” contracts or "Making - led" contrasts to "service - led" contract. In other words, because of this method the merely contractor contracts (design - construction or operation) were converted to a business trade. In table 1, the government’s role in common projects has been compared with the method of BOT.

**Table 1.** Comparing the government’s responsibility in routine methods with the method of BOT.

<table>
<thead>
<tr>
<th><strong>BOT method</strong></th>
<th><strong>Infrastructure Project implementation by the government</strong></th>
<th><strong>Activity</strong></th>
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<td>the government or private sector</td>
<td>the government</td>
<td>The Proposal and project definition</td>
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<td>the government or private sector</td>
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<td>the government and private sector</td>
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<td>private sector</td>
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The necessity of using the method of BOT

BOT method has numerous advantages which the most important ones are as follows [1, 2, 5].

- Protecting the government’s control on the infrastructure projects and using private sector participation in these projects at the same time
- Increase the efficiency of the state sector in the executive and managerial fields
- The reimbursement of investment costs from the consumer’s payments in the project.
- The possibility to attract foreign investment in these projects
- The possibility of accelerating the infrastructure projects construction, regardless of the lack of the government’s funds
- The possibility of providing more financial resources for implementing the infrastructure projects and transferring foreign currency into the country.
- Technology transfer, training the local staff and increasing the efficiency and development of the internal capital markets is one of the major advantages of the BOT method.
- Long term turnover in these projects causes the boom and progress in the internal markets.

Despite the advantages of using the method of BOT, there are some considerations for implementing them [1, 2, 5]:

- This approach is not a solution for all the financial problems of infrastructure projects in developing countries.
- In comparing the government sector with the private sector, private sector will face with more complex problems.
- Due to the absence of criteria and uniform standards for the bottlenecks of these contracts, the results of the negotiations are not predictable.
- The strict stances of public sector about the costs, the standard of the equipments and the buildings will lead to long and complex negotiations.
- New laws and regulations or some reforms in the existing legal structures of each country are essential in order to facilitate the development and completion of these projects.

BOT contracts in terms of revenue

One of the most determining factors in the structure of the project, determine the relationships, responsibilities of the government and private sectors and relevant requirements is how to earn money during the operation of the project. Depending on the profitability, BOT projects can be divided into two broad categories [6]:

A) Market-oriented projects (Market-Led): the group of market-led projects includes transport projects such as roads, bridges, tunnels, etc. the customers and the final buyers of the project services are the real customers of the project and the project revenue will be gained from the users direct payments for the services of the project. Thus the profitability of the project is influenced by economic factors in this specific market.

B) Contract- oriented projects (Contract-Led): in the Contract-Led projects such as power plant projects, water and wastewater, the earning of the project is from the contract with the host government and on behalf of the consumers. In this model of BOT the project company is not dealing directly with real consumers. Contract - Led BOT projects have lower risk in comparing with the Market-Led projects because their profitability in the contract has been included with more certainty [1, 4, 7].
The role of the host government in BOT projects

The government or executive agency for investment is the most important and main side of each BOT project. The idiom of Host Government is usually refers to the Employer, Principal, Client or the implementing applicant of any project. By considering the unavoidable presence of the government in BOT projects, this is the government that organize the environment which each BOT project is formed and will continue its life history in it [3]. Although BOT projects are appealing for the government, but they should be followed by the essentials of the whole project and know their role in success or failure of the project [1].

The successful implementation of these projects requires the government’s precise legislation. But it’s always probable that the government changes the rules or intervenes in the projects or takes another path in order to make an adjustment with the sides that are influencing the profitability of the project. Therefore, one can explain the dual role of the government in this case; one has the role of the score assignor and the other has the contract role of it which these two roles of the government can intersect with each other in many cases. Controlling this intersection is very important in order to prevent remonstrate the state sovereignty benefits on one hand and to contract essentials on the other hand. Successful progress of a BOT project will be possible when first, the government policies are explicitly specified and secondly, the real responsibility for advancing the project be transferred to the implementation sector which acts as the principal applicant of the project [7].

Suitable projects for implementing based on BOT methods

Suitable projects for infrastructure projects implementation with participation of private sector are those kinds of projects which have a relatively stable political condition with a safe and logical income. According to studies, the following features are essential for BOT projects in developing countries [2, 4, 5]:

- An extensive and increasing demand for services or products of the project
- Severe financial needs of the government for the improvement and development caused by the project implementation and a tendency to increase investment in this sector
- The possibility of taking advantage from international capital markets which are seeking for investment opportunities under the criteria and conditions of the country
- Government's willingness and the private sector's ability in the path of reducing the tasks related to the government's tenure.
- The ability to repay the expenditures after implementing and receiving an acceptable profit for the investor

Therefore, important factors in diagnosing the suitable projects for implementation based on BOT can be categorized as follows:

A) The nature of the project: one of the most attractive factors in the model of BOT is the character and technical, economical, financial and social nature of the mentioned model which is known by the following key indicators:
- Appropriate income
- Manageable technical and operational characteristics
- Ability to export and sale surplus to requirements or services of the project
- Strategic importance and the project's priorities in the state developing programs
- Ability to share and transfer the risks of the project to the parties involved in it
- Multitudes and permanent customers or stable and loyal buyers
- Technical characters of the project after ending the implementation term and transferring the project to the government have to be usable and operational.
B) **The condition of the host country**: the government's role is one of the most important issues related to the host country which the political-social stability, the existence of suitable rules and generating practical mechanisms in investee executive agencies are the most important ones.

**The risks of the BOT projects**

What is very important in BOT projects is the suitable and logical allocation of risks between both sides. The risks of the BOT projects are divided in two general groups based on organizational and contractual structure of these projects.

**Country Risks**

These risks are known as Global Risks, External Risks and Project-Unrelated Risks are related to factors such as prevailing political conditions, economy and legal frameworks [1,5,7].

Country risks are out of the control of the project company and the host government has to determine a solution for managing and controlling them and represent required guaranties for covering the financial and temporal effects of these risks. Four general groups of these risks are included:

**Political Risks**: effective factors in this regard included: the internal and external political stability, the government opinion in relation to the benefits of infrastructure projects for the private sector, changes in the country’s financial system, especially taxes, nationalization risk and other matters related to the acquisition, license cancellation and similar factors.

**Commercial Risks**: these risks are related to the conversion of project revenues to foreign currency and how to convert them and also the fluctuations of inflation and interest rates.

**Legal Risks**: implementing BOT projects considerably depends on the related contracts and legal framework of protecting the investment agreements and financing the mentioned projects. Important risks which are attractive for investors and lenders are related to the changes that might be created after the start of these projects in related legal framework, for instance: environmental laws, financial rules and ownership and etc. These kinds of changes might have a considerable impact on the project’s success in long terms, of course in case of ignoring the related items in related agreements and when no strategies have been considered for compensation and solving the problems.

**Environmental Risks**: this group of risks recently has a significant influence on implementing the construction projects. According to the environmental rules of the host country which changes permanently, increase the project costs and revenues reduction is probable and the expected financial process might not be realized. Therefore, these risks, their consequence, the responsible hand in the agreement of the project and contents have to be clear and identified.
The risks of the project

These risks are known as Elemental Risks and Internal Risks which comes from the projective nature of BOT method and can be grouped into three categories:

a) **Development Risks:** the manager of BOT projects will incur considerable expenses in this stage, including the costs of planning and preparing the necessary documents of proposed plan. Therefore, the risks of this stage have been presented in case of the proposal’s failure or failure in signing the related agreements and consequently the futility of the conducted expenditures are very considerable that can be due to the delays in the planning process and confirming the proposal from the government [1].

b) **Construction Risks:** the most important risks of this step includes the following items:
- Maybe real costs of implementing the project are much more than planned expenditures(increasing costs)
- The implementation time is more than determined time (delay in completing the project)
- Failure to complete the project (operations remain incomplete)
- Risk of force majeure

c) **O&M Risks:** These risks are caused by factors such as the lack of proper implementation of the project, reduce the project revenues, increased operating costs, unavailability of materials and required equipment, etc. These risks have been divided into six main groups[1]:

- Risks related to the infrastructure installation associated with the project
- Risks of Technical Engineering
- Risks related to the market demand for the products or the project service
- Risks related to the availability of raw materials required
- Risks related to the quality of operation management
- Risk of force majeure

**CONCLUSION**

Infrastructure projects of the country in infrastructure sectors of energy, transport and telecommunications needs are large development and investment. In the meantime, using BOT method and attracting foreign investment could unravel the status quo. Principles and bases of BOT method, financial and risky characteristics and the vast complexity of these projects were explained. Correct understanding and accurate management of relationships by the project company on one hand and the government’s support and required guarantees on the other hand are the important points of these contracts. Legal and philosophical essentials of these projects, necessitates the project company to face with project risks and the country risks which are the share of the government. The most affecting factors of the country’s current atmosphere are related to the state sector and until the necessary condition is not provided by this section and until the private sector investment, according to a “comprehensive and developed policy” is not legitimate, we should not wait for a major investment in the private sector. Rather investors are waiting for suitable conditions and appropriate projects in the country and in an environment like this, the investing will be an obvious matter.
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