

The Impact of Financing and Investment Cost on BOT Projects in Egypt

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Abstract— With the emergence of globalization in the middle of the 20th century & the massive increase of population all over the world, governments faced a problem in financing the infrastructure projects needed for the expansions of societies, with suitable quality and distribution to serve the largest part of society. Governments are lacking financial supports provided by international institutions that used to provide financial loans to governments due to the increase of societies that fund can cover. These circumstances forced the international financial society to search for a solution to finance infrastructure projects, and finally recommended the participation of private sector accompanied by the supervision of governmental authorities, to guarantee the interests of all parties, customers, private sector entities and governments' entities. This paper will discuss the historical development of financing infrastructure projects from beginning of 19th century till now; it will discuss the objectives of different parties in privatization movement of financing infrastructure projects .it will also discuss the different types of agreements for financing infrastructure projects by private sector according to type of agreement and according to role of government entities.

Keywords— *Financing, Infrastructure Projects, Private Sector, Public Sector, government*

I. INTRODUCTION

Infrastructure is defined by the basic physical and organizational structures needed for the operation of a society or enterprise, or the services and facilities necessary for an economy to function. The term typically refers to the technical structures that support a society, such as roads, water supply, sewers, power grids, and telecommunications. In some contexts, the term may also include basic social services such as schools and hospitals. [1]

It also defined by "...both specific functional modes - highways, streets, roads, bridges; mass transit; airports and airways; solid-waste treatment and disposal; electric power generation and transmission; telecommunications. [2] "Infrastructure projects are defined by group of buildings, networks & services found in cities & civilized regions, social & economical and it is represented in products and services characterized by monopolization. [3]

Infrastructure global definition includes all services& buildings, the government usually take responsibility of affording such services & construction those buildings & operating those services. World Bank report for year 1994 [4] stated that developed countries invest at present 200 billion dollar per year in infrastructure projects; this represent 4% of total GNP and fifth its total investments. Through last two decades, large accomplishments are achieved in construction field in different countries.

By the early 1980's, large numbers of developing countries were having trouble financing their foreign debt; because the 2nd half of 20th century witnessed population grew even faster than ever before reaching 6 billion in 2000 [5]. In addition, the International Funding Monetary stated that for 1981 the total balance of payments deficit of the non-oil-producing developing countries will rise to \$ 97 million, from \$ 86 million in 1980.

According to Amex, the London unit of the American Express International Banking Cooperation, lending by Arab banks in the first seven months of 1981 jumped by 78 percent over 1980 levels. In 1984, many of the world's developing nations continued to grapple with problem of repayment of staggering foreign debts; due to rise of oil prices all over the world, strong relation between dollar and world economy, high increase of inflation rates [6].

II. HISTORY OF FINANCING INFRASTRUCTURE PROJECTS

The appearance of contemporary infrastructure projects is related to the appearance of industrial revolution at the beginning of nineteenth century, this period witnessed the usage of technology provided by industrial revolution in construction of infrastructure projects.

Financing infrastructure projects have gone through different regular stages in most world countries under the influence of economic theories, we can summarize stages of financing infrastructure projects to four main stages as shown in Figure 1 [7].

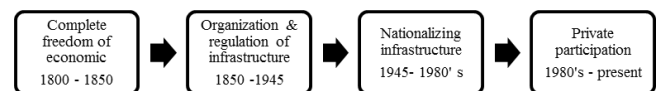


Fig. 1: Development stages of financing infrastructure projects

A. Complete freedom of economic stage

This stage started at the beginning of nineteenth century until the middle of nineteenth century, since it started by individual initiatives and evolution of small projects financed by personnel and families, infrastructure projects & providing countries by power using gas and coals through small institutions.

This stage is characterized by complete economics and total financial for infrastructure by private sector, especially in UK where the industrial revolution started [7].

B. Organization and regulation of infrastructure stage

This stage started in the middle of nineteenth century until World War II. Government of most countries realized the importance of infrastructure and its relation to economic revolution and welfare of society, they also realized the transfer of infrastructure providers into monopolists, and their dominance of services provided to public and control of service price at the expense of public.

Governments of different countries at this stage aimed to regulate and organize infrastructure projects, in order to direct infrastructure projects to guarantee the benefit of all society consumers. Some of governments started to facilitate proceedings for investors in order to construct more infrastructure projects in different regions [8].

In Egypt, before 1952 the private sector was dominating a lot of economic activities besides foreign investments in different fields, private sector were dominating financially and administratively on most public facilities [9].

C. Nationalizing infrastructure Stage

This stage started at the end of World War II and ended in the middle of 1970's. In Europe where the war destroyed large sector of its infrastructure, and government was responsible for the reconstruction of infrastructure system to rebuild the country infrastructure all over again.

In the third world like Egypt, this period witnessed the nationalizing of private sector investments in Egypt after 1952 revolution. Egypt started to minimize the role of private sector in Egypt especially the foreign investments, such as nationalizing Suez Canal. Egyptian government was directed towards the construction of national projects; such as high dam, iron and steel companies, sugar companies, etc...

All facilities and companies were operated by public sector between years 1961 to 1973. They were characterized by mismanagement and inefficient management systems causing the loss of most companies and inappropriate use of these infrastructure projects [9].

D. Private participation stage

This stage started by increasing private participation in infrastructure projects at the middle of seventeenth, as privatization was first used in the united states of America where they started restructuring infrastructure then followed by privatization in Great Britain, Chile, New Zealand, and turkey at the beginning of eighteenth.

In Egypt and after war of 1973, government started liberalization of the economy and take legal actions necessary for such policy. Privatization system started to be used at the middle of eighteenth by selling public sector companies that faced obstacles and problems in operation [10].

Egyptian government declared in the middle of 1991 its commitment to-wards economic and financial reform program after it reached an agreement with International Monetary Fund about privatization program in Egypt [11].

III. TYPES OF INFRASTRUCTURE FINANCE

Infrastructure projects are characterized by being large complicated projects with large cost, these forced governments to finance these projects for two reasons; firstly financial capital required to construct infrastructure projects; secondly ways to cover these costs. Types of infrastructure finance system can be classified as shown in Figure 2 [12].

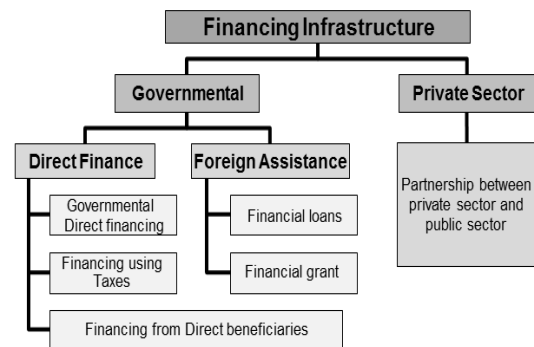


Fig. 2: Types of Infrastructure Finance

A. Government's direct financing:

Governments are responsible for financing infrastructure projects directly from the government general budget. Governments impose taxes on citizens related to infrastructure projects.

B. Government financing through foreign assistance:

Governmental is financing infrastructure projects through loans from other countries or international organizations or local financial bodies due to increase of cost of infrastructure projects that exceed the ability of the government general budget.

C. Financing by private sector:

This system is characterized by providing governments to the private sector different types of partnership contracts between public & private sectors; in order to provide infrastructure projects to citizens by guaranteeing outcomes of such projects over the public sector from quality and cost of service provided.

IV. PRIVATIZATION

Privatization definition is considered one of the most confusing definitions despite world wide spread usage of it. Privatization is just like other large definitions, it may contain content in more than one definition, and there is no agreed definition for privatization. It is defined as the transfer of enterprise ownership – in whole or in part – from the state to private hands. While there is a general agreement that stated the sale of government represents privatization. It is also defined as the act of reducing the role of government or increasing the role of the private institutions of society in satisfying people's needs; it means relying more on the private sector and less government [13].

Developed countries faced large stresses at the middle of 1980 because of debts crisis, followed by decreasing the external funding for these countries, so that they are obligated to apply a developing program in order to change economic policies followed at these days, they followed a system of decreasing expenses and increasing of revenues, this where privatization system took place to minimize financial burdens. [14].

A. Privatization objectives:

There are a lot of objectives that government and private sector aim when they started to use privatization system, these objectives must be achieved in order to guarantee the success of privatization system as shown in figure 3 [15].

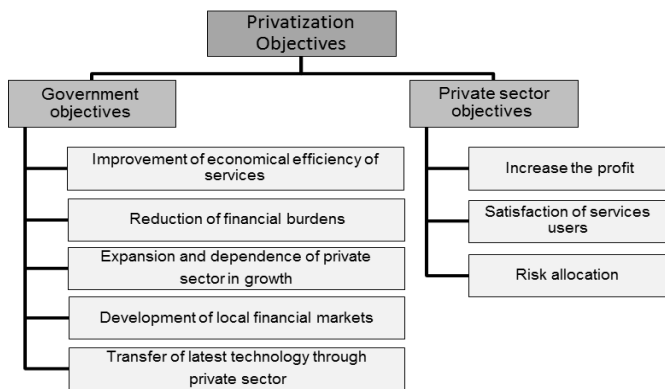


Fig. 3: Privatization System Objectives

There are a lot of principles that must be achieved to guarantee the success of partnership between government and private sector such as commitment, continuity & transparency. These principles determine the main aspects need to be achieved in Public Private Partnership that leads to the enrichment of relation between government and private sector. These principles guarantee the efficiency of services provided to customers and protect the investments spent in such projects. [16].

V. PRIVATIZATION SYSTEM

Privatization systems in different countries are classified into different classifications according to the role of government in privatization system and according to the types of agreements between parties of private sector and public sector.

A. According to the role of government

Government participation in society and economy in various forms is necessary. It aims to establish rules for an increasingly interactive urbanized nation; and to regulate natural monopolies. There are three main systems of privatization classified according to the role of government in privatization systems [17].

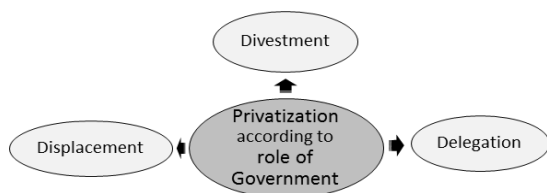


Fig. 4: Types of Privatization system according to role of government

1) *Delegation*: This system is recognized that government has the responsibility and oversight but uses private sector for service delivery. It requires a continuing active role for government as shown in figure 5 [18].

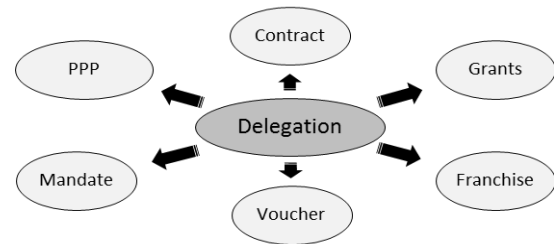


Fig. 5: Delegation Privatization system

2) *Divestment*: Divestment can be identified that government abandons its responsibilities of infrastructure projects to the private sector. It requires a direct act by government but it is a one-time event. The asset is either sold or given away. Divestment system is divided into three categories as shown in Figure 6 [19].

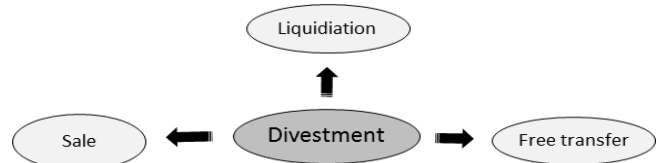


Fig. 6: Divestment Privatization system

3) *Displacement*: Displacement is identified that private sector grows and displaces a government activity. Displacement is a more passive or indirect process that leads to government being displaced more or less gradually by the private sector [20]. Displacement can be classified as shown in Figure 7 [21].

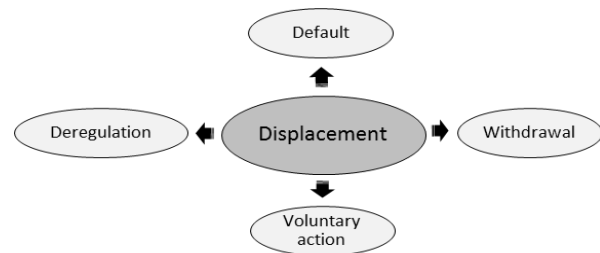


Fig. 7: Displacement Privatization system

B. According to type of agreement:

The provision of infrastructures and public utilities has under gone major changes through last two decades with many developing countries choosing to move away from the traditional public sector model of service and to introduce private sector participation. As the role of public sector decreases and role of private sector increases, the role of public sector changes into a provision in an agreement between public & private sectors, in order to provide services to customers. Privatization systems differ according the type of agreements between public & private sector. The agreements between public-private sectors can be classified into six forms [22].

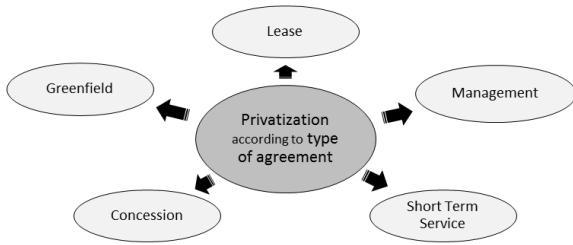


Fig. 8: Privatization systems according to type of agreement [23].

1) *Short term service contracts*: It has atypical duration from 6 months to 2 years; specific tasks are contracted to private sector. Service contracts are characterized by providing the opportunity to benefit from private sector [24].

2) *Management contract*: This contract has a typical duration from 3 to 5 years. Management contract is an arrangement by which a private company is authorized with various types of tasks [25].

3) *Lease contract*: This contract has a typical duration from 10 to 15 years; private company can lease the asset of a utility, and maintains and operate them, in return for the right of revenues.

4) *Greenfield projects*: This contract has a typical duration from 15 to 30 years and varies according to the agreement between parties, depending on the satisfying period of payback period of the private sector, who takes on the commercial risks [26].

5) *Concession*: This contract has a typical duration from 25 to 30 years. Public sector owns the assets, but it contracts with private sector for operations, maintenance and investment. it is considered an older form of BOT idea where the private sector contracts with host government to build and operate an infrastructure project for an agreed period could be called Concession period where Private sector is responsible for full commercial risks [26].

VI. CASE STUDY-AL TAHRIR GARAGE

The Egyptian government represented in Cairo governorate signed in 1998 a BOT agreement with EICUDE consortium for 25 years concession, in order to design, build, and operate two underground multi-storey garage and entertaining center at the Tahrir Square. The two garages are Tahrir Garage and Omar Makram Garage; this paper will discuss Tahrir Garage only. The project consortium for Tahrir Garage contains the project Consultant “Moharm Bakhom”, main Construction contractor “Arab Contractors”, group of national banks as the financiers for the project and investment companies “Artok Group and Green Valley Company”. Error! Reference source not found. shows the contractual skeleton for the Tahrir Garage between different parties.

Tahrir project is located in front of the Egyptian museum downtown at Tahrir Square, the garage has total area 21,000 m2, it consists of 4 underground levels, first and second floors contains entertainment center and car parking, while third and fourth floor contains car parking only. Total capacity of garage reaches 1550 vehicle, 48 buses. The entertainment center contains 4 cinemas, large number of stores, besides that restaurants and cafeterias.

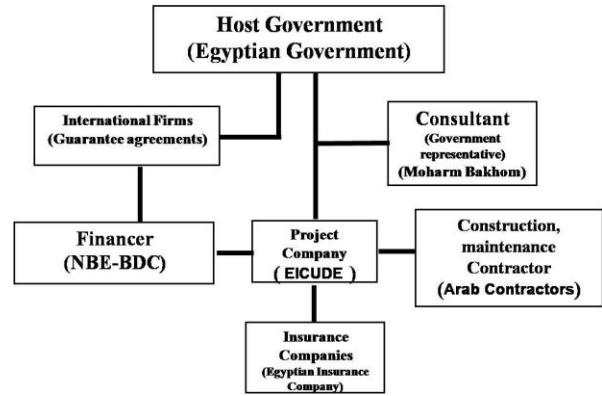


Fig. 9: Contractual skeleton for Tahrir Garage.

This project faced a lot of problems; Cairo governor was changed after signing the contract in 1998 with the project company. This caused the delay of delivery of land to project company for five years till 2003. The governor started new negotiations with Project Company to change some terms that was not clear in the previous agreement. This lead to change of prices and feasibility studies prepared for the project that raised the project cost from 300 million Egyptian Pounds in 1998 to 593 million Egyptian Pounds in 2006 after finalizing the negotiations and updating of the feasibility studies as shown in table 1.

TABLE I

TOTAL INVESTMENT COST OF TAHRIR GARAGE IN 2006 [27]

	Items	Total Cost	Percentage
Fixed Investment Cost	Construction Works	302,066,945	50.95%
	Architectural Works	40,000,000	6.75%
	Electrical Works	68,245,209	11.51%
	HVAC Works	23,622,199	3.98%
	Sanitary Works	27,071,100	4.57%
	Road Works	6,900,000	1.16%
	Landscape Works	5,770,655	0.97%
	Total fixed Investment Cost	473,676,108	79.89%
Pre-Operation Cost	Studies, Design, Build, Construction Supervision	12,875,000	2.17%
	Pre-Operation Expenses	10,863,431	1.83%
	Working Capital	2,298,500	0.39%
	Interest Rate During Const.	93,187,990	15.72%
	Total Pre-Operation Cost	119,224,921	20.11%
Total Investment		592,901,029	100.00%

The project company faced a great problem when the project was delayed as the revenues and expenses expected in the feasibility study were changed due to the increase of price change and inflation rate in the Egyptian market. The government started new negotiations with the project company to compensate them the price change, the project capital raised form 300 million to 593 million. It was agreed to extend the concession period for 9 year and 6 months as a compensation of price change through these years

TABLE 2
COMPARISON BETWEEN INVESTMENT COST IN 1998 AND 2006[27]

Investment Cost	1998	2006	Difference
Constructions Works	198,600	342,067	143,467
Electromechanical Works	32,600	91,867	59,267
Plumbing Works	23,500	27,071	3,571
Roads and Landscape	-	12,671	12,671
Total Construction Work	254,700	473,676	218,976
Emergency Reserve	7,641	-	-7,641
Total Fixed Investment Cost	262,341	473,676	211,335
Working Capital	750	2,299	1,549
Pre-Construction Cost	22,447	23,738	1,291
Interest Rate During Construction	13,455	93,188	79,733
Total Investment Cost	298,993	592,901	293,908

As shown in Table 2, the investment cost at the beginning of the project was expected to be 300 million; the investment cost was raised to 593 million after delay of the project. The project cost increased almost the double the cost was expected at the beginning of the project.

TABLE 3
COMPARISON BETWEEN INVESTMENT COST IN 1998 AND 2006 [27]

Expenses and Revenues	1998	2006	difference
Total Revenues	4,345,175	4,656,575	311,400
Operation Expenses	330,659	618,347	287,688
Other Expenses	395,861	886,821	490,960
Financing Expenses	67,273	74,304	7,031
Depreciation Expenses	284,795	590,603	305,808
Total Expenses	1,078,588	2,170,075	1,091,487
Net Revenue Before Tax	3,266,587	2,486,500	-780,087
Tax	1,334,332	496,252	-838,080
Net Revenue	1,932,255	1,990,248	57,993

As shown in Table 3, the revenues of the project slightly increased after the delay of the project, this lead to difficulties in finding financial support for the project. The revenues of this project will be collected through car waiting fees, renting fees of commercial stores, cafeterias and restaurants.

The project started the construction phase after updating feasibility studies in 2006, the project was expected to be complete in 3 years but till now [2010] the project is not completed due to difficulties in financing the project, The Tahrir Garage is partially opened for users in its first stage of operation. The compensation agreement between the government and Project Company is not enough to overcome the increase of price and inflation rates.

VII. CONCLUSIONS

Government must have accurate record for its infrastructure projects required to achieve strategic planning for developing the society needs in different phases and it should be forecasting future development required.

Executive decision makers should have awareness of different types of financing infrastructure projects by participation of private sector in order to achieve the aims of strategic planning for the development in different aspects.

As a result of economic crisis facing the world, financing infrastructure projects by participation of private sector is recommended for different countries as Egypt, United Arab Emirates, Middle east countries: in order to achieve the economic revival for society and cope with the international community.

Table 4 shows allocation of responsibilities facing public and private sectors with respect to different types of agreement for financing infrastructure projects by private sector.

TABLE 4
PUBLIC AND PRIVATE RESPONSIBILITIES ALLOCATION FOR INFRASTRUCTURE AGREEMENTS

Responsibility	Ownership	Investment financing	Revenue risk	Execution investment	Operation & maintenance
contract					
Service	Public	Public	Public	Public	Private
Management	Public	Public	Public	Private	Private
Lease	Public	Public	Private	Private	Private
Concession	Public	Private	Private	Private	Private
Greenfield	Private	Private	Private	Private	Private
Sale	Private	Private	Private	Private	Private

This paper mentioned some defects in BOT project implemented in Egypt through the discuss of a case study for underground multi-storey garage in Tahrir Square due to delay in project construction and delivery scheduled; that lead to rise of project cost rather than planned earlier. Recommendations for improving the methodology of Egyptian government concerning BOT projects can mentioned as follows:

Coordination between governmental authorities concerned with investors, and activating "One Window" system created to unify the entity dealing with the investor, leading to facilitation of investment environment to increase investments in Egypt as planned in main strategy.

Legislation framework must be issued for BOT projects in Egypt in order to regulate BOT system in Egypt in different fields, in addition to announcing these laws to investors in order to facilitate the investment environment process.

Attention to train Egyptian governmental staff to prepare, evaluates, operates, and supervises BOT projects in Egypt, and attention to increase the awareness for decision makers in government towards the private sector participation in infrastructure projects.

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