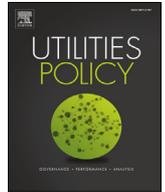




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# The build-operate-transfer model as an infrastructure privatisation strategy for Turkmenistan

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## ABSTRACT

Turkmenistan is in the process of privatising the state-owned enterprises that help to provide infrastructure for economic development. Build-operate-transfer (BOT) has become a popular mechanism in developing countries for infrastructural privatisation. A Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis is provided whilst the factors for successful BOT implementation are discussed. To evaluate BOT application in Turkmenistan, a descriptive survey of stakeholders is conducted and the results are used to identify and rank the most significant factors affecting BOT implementation. Recommendations to address future challenges faced by both the private and public sectors are provided.

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## 1. Introduction

Since the break up of the Soviet Union, Turkmenistan experienced an economic boom that has outpaced infrastructure development (Durdyev and Ismail, 2012). As with other Central Asian countries, lagging infrastructure investment threatens continued economic growth. In central Asian countries, especially those that were previously members of the Soviet Union, financing for infrastructure (as well as for all other development) was historically provided by the public sector. However, according to (Gociyev, 2012), Turkmenistan is preparing for large-scale privatisation in the building and maintenance of transportation and communication infrastructure. In light of the limited public financial resources and the purported inefficiencies of public sector services, Turkmenistan policymakers must find new ways to identify the alternatives in funding the country's infrastructure needs. This they hope to achieve through the involvement of the private sector in terms of providing financial assistance of private finance initiatives in the development of these projects.

One goal of privatisation is to maximize performance and efficiency of the enterprise (Tatahi, 2012). Privatisation of infrastructure development and management may be desirable and necessary in some situations, especially in developing countries

with financial and managerial constraints (Pheko, 2013).

Policymakers may draw on the experiences of other emerging market economies for different approaches to privatisation. Among the most common approaches are (i) joint venture structures (JVS) and (ii) build-operate-transfer (BOT) (Browder et al., 2007). In comparison with the traditional JVS, BOT requires a higher degree of private-sector participation and has the potential to provide benefits to both developers and host governments. As a result, it has attracted extensive attention from a wide range of parties from industry, government, and academia (Wang et al., 2000; Qiao et al., 2002).

Nevertheless, the private sector faces significant challenges to the implementation of BOT in Turkmenistan, primarily due to uncertainty and risk (Jackson, 2002), namely financing, political and technical risks (Syed Kamarul Bakri et al., 2010), but also due to varying legal and financial considerations. A well-planned BOT project requires the involvement and support of the host government, political stability, a stable legal and regulatory environment, and a sound economic climate as well as a freely convertible currency (Sharaffudin and Al-Mutairi, 2015).

Advocates anticipate that BOT in Turkmenistan can be a catalytic privatisation instrument and play a very significant role in improving project success. However, considering the successes and failures of BOT projects in both developed and developing countries (Tekin, 2010; Sharaffudin and Al-Mutairi, 2015), Turkmenistan must conduct a detailed feasibility study of the BOT model before its application. This study seeks to identify the driving and

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impeding factors of the BOT application in Turkmenistan through both a literature review and unstructured interviews with those at the forefront of project implementation.

Questionnaire surveys were conducted among the infrastructure developers, government agencies, contractors, consultants, and investors. The results were used to evaluate the significance of various factors in BOT implementation. By improving their mutual understanding in development, planning, and implementation of BOT projects, it is hoped that this study will help improve outcomes for projects as well as all of the involved parties.

## 2. Build-operate-transfer scheme

BOT is not a new concept yet relatively an innovative approach by enabling direct private sector investment in large-scale infrastructure projects (Khan et al., 2008). BOT is seen as an option to outsource public infrastructure projects to the private sector, which takes charge of design, financing, construction, operation and maintenance of the facility under a concession agreement (Llanto, 2008). Since the mid-1980s, the idea has been used to develop electrical power generation, information technology, water and sewage and treatment, and in the construction of highways and bridges. BOT projects have been implemented in the United States of America, Europe, and several Asian nations (Wang et al., 2000; Khan et al., 2008). The Eurotunnel, currently the largest BOT project constructed in 1988 and started the operation in 1994, demonstrates the complexity and risks of the BOT scheme to stakeholders, who financially impacted by time and cost overruns (Li and Wearing, 2000). In Thailand, a BOT project proffered by American sponsors of a new airport project was cancelled due to corruption in the purchase of x-ray baggage scanning devices for the airport (Ahmad et al., 2014).

During the BOT concession period, the sponsor can charge the users of the facility and is also responsible for management of the facility, as well capital investment as required. The project can be operated by the sponsor for any period, as defined by the contract. Power-generating facilities are often in operated by the sponsor in the 10–20 year range and toll roads in the 20–30 year range; the Eurotunnel will be operated by the sponsor for 55 years (Ahmad et al., 2014). Financial complexity presents the biggest challenge to the BOT model as compared to infrastructural projects financed by traditional means (Auriol and Picard, 2013).

Various participants – bankers, suppliers, contractors, and managers – may be involved in the operation of a BOT facility. Not only does this complicate operational decision-making, it also leads to a moral hazard problem where participants find their personal incentives at odds with the best interest of the project. As a common example, the main sponsors may also act as a supplier of equipment or services, perhaps resulting in decisions that do not fully maximize long-term cost control or income potential. Project bankers who stand to gain from lucrative financing deals, have incentives to upsell the project to government officials, emphasizing the benefits and downplaying the risks (Tekin, 2010).

State-owned enterprises can be important centres of political power. A frequently cited benefit of privatisation is that it removes control over infrastructure development or management from politicians and consequently reduces political instability (Mansour, 2008). The moral hazard problem, however, still extends to the political class, especial during project negotiations. Powerful officials often also have significant interests in the private sector. Attempts to promote their private interests through the development and operations of a project can result in competition and conflicts between public sector representatives and other powerful participants, adding complexity and instability to the initial negotiation process. Inappropriate political influence may damage and

destabilize a project, hurting its chances for success overall or even preventing it from ever getting started. Problems such as these are particularly common and pronounced when it is the first large BOT project of a nation or other political unit.

Risk allocation is a major issue in any type of construction contract (Bobotek, 2010). A key problem with BOT as a regulated concession contract, however, is that risks may not be adequately shared with the private sector. Often, BOT projects contain substantial risks that private interests are unwilling to bear, with the result that the major risks in concession arrangement are primarily born by the public sector (Marques and Berg, 2011). Hence, it is critical that proper risk management is in place to ensure a systematic examination at the risks entailed in the construction contract and how they will be managed (Jackson, 2002). As suggested by (Bagui and Ghosh, 2011), the major risks in the BOT model are political and regulatory, force majeure, physical losses, financial, revenue, procurement, development, construction and operating risks. Examples of these risks are further elaborated in Table 1 based on an evaluation of more 20 BOT projects by Marques and Berg (2011); risk also depends on the particular project, context, and geography.

Table 2 provides an analysis of the Strengths-Weaknesses-Opportunities-Threats (SWOT) associated with the BOT model based on the review of some cases of BOT, both in developed and developing countries.

Based on the general SWOT analysis of the BOT delivery method, the strengths and opportunities appear to overcome the weaknesses and threats. If planned, designed, and implemented well, the BOT model has the potential to contribute to economic development and may have advantages over conventional financial strategies.

## 3. Drivers and impediments for BOT identified in the literature

The SWOT analysis suggests that BOT approach has potential to provide an alternative for infrastructure financing and management, improve infrastructure efficiency and promote reform in infrastructure policy. However, deficiencies in the BOT approach could impede project implementation and performance. In Turkmenistan, key stakeholders (government agencies, international investors, developers and contractors) in BOT projects must face country-specific factors affecting the implementation of BOT, namely legal and regulatory systems, minimal BOT experience and lack of experienced labour. A brief literature review allowed this paper to identify factors (Khan et al., 2008; Chen and Doloi, 2008; Tekin, 2010; Ahmad et al., 2014; Sharaffudin and Al-Mutairi, 2015) that could impede private sector participation in Turkmenistan infrastructure development. Driving factors, impeding factors, and country-specific factors.

In the following sub-sections, the drivers, general impediments, and Turkmenistan-specific factors affecting BOT summarized in Table 3 are further interpreted. Additional details on the impeding factors can also be found in previous studies (Chen and Doloi, 2008; Llanto, 2010; Yusof and Salami, 2013; Ahmad et al., 2014; Sharaffudin and Al-Mutairi, 2015).

## 4. Driving factors

### 4.1. Need for infrastructure development capital

Better infrastructure plays a key role in sustaining rapid economic growth and in the improvement of social welfare (Zhang and Kumaraswamy, 2001). Considering its fast but unsustainable growth, Turkmenistan needs more and better infrastructure. Before

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