

# **Responsibility Shifts in Infrastructure Development in the Developing World**

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For decades, infrastructure development has always been one of the top priorities in the agenda of developing countries, which has empirically been proved to support economic growth, reduce poverty, and make development environmentally sustainable (Annez, 2006; Serageldin, Kim and Wahba, 2000; WB, 1994 and 1995). The need for infrastructure investment in the developing world is vast and way beyond the financing capacity of governments. This is why since the mid-1990s many developing countries have experienced two significant shifts of responsibility for infrastructure development and service provision: from central government to both the private sector and local government. The shift to the private sector refers to the active involvement of the private sector in infrastructure development in the forms of private financing, operation and management. The shift to local government indicates the fact that local government has increasingly taken the responsibility to provide infrastructure services and used its own capacity to mobilize resources for local infrastructure investment, instead of waiting for state government to do the job (Serageldin, Kim and Wahba, 2000).

The article starts with the discussion of private infrastructure development along with its potential benefits and negative consequences, and then turns to the increased role for local government in infrastructure development, analyzing its potential benefits and possible problems. It concludes that there is interdependence between the two shifts and developing countries should further integrate the private sector and local government to promote more efficient and rational infrastructure development.

## **An Increased Role for the Private Sector**

Ever since the mid-1990s, no discussion about infrastructure development would be complete without discussing private participation. In the developing world, the intense fiscal pressures and dissatisfaction with the quantity and quality of public-provided infrastructure services were the two forces that pushed government to look for new alternatives for infrastructure development, and under the circumstances private sector participation appeared to be very attractive. Specifically, private participation has mainly been driven by three goals: (1) using private financing to expand the quantity and quality of infrastructure; (2) raising fiscal revenue for government through privately developed and managed infrastructure; and (3) achieving greater efficiency in infrastructure operations and investment through private service contracts (WB, 1995). The rest of the

session will discuss three types of private participation in infrastructure development, and then talk about the potential benefits and possible negative consequences.

## **TYPES**

Private sector participation in infrastructure development takes three major forms. The simplest is contracting out service or management of infrastructure, where private contractors assume responsibility for operation and maintenance. Contracting-out offers the advantages of cost savings, better level of service and higher efficiency (Allen, 1999; WB, 1995). The second and most common form is concession, by which the private partner not only finances the new infrastructures but also constructs and operates them for a certain period of time. Based on the different responsibilities of the private sector, concession has three major operation models: the build-transfer-operate (BTO) model, the build-operate-transfer (BOT) model, and the build-own-operate (BOO) model (Allen, 1999; Kopp, 1997). The third form of private participation is divestiture, under which the entire public utilities are sold to the private sector by auction, private negotiation, or outright grant to a private entity that assumes operating responsibilities (Adams, Young and Wu, 2006; WB, 1995).

## **POTENTIAL BENEFITS**

Proponents believe that there are many advantages of private participation in infrastructure development over the traditionally public-dominated approach. The following will discuss the major benefits in detail. First of all, private participation in infrastructure development, just like other public-private partnerships, has good opportunities for cost savings and efficiency gains. The greatest potential source of cost savings is that private developers are exempt from traditional public procurement rules, such as prevailing wage scales and union work rules (Kopp, 1997). Another potential efficiency gain is that the private developers may enjoy significant economies of scale, scope and experience in infrastructure development and management, which is usually not found in the public sector operating within limited jurisdictions (Seader, 1991; Gomez-Ibanez et al.; 1991). This brings macro-level efficiency gains to the entire society.

Secondly, private participation can reduce capital demands on the public sector for infrastructure investment. It may permit infrastructure projects to proceed when there are no enough public finances available. Or with private capital coming in, government can devote its finite finances to other high-priority areas of expenditure (Allen, 1999).

Furthermore, privately developed projects are usually planned and constructed more quickly than publicly developed projects because private developers have strong incentives to recover investment and generate revenue as soon as possible (Loveday and Morris, 1988). Even though the negotiation process before getting the contract from government might be complex and time-consuming, private sector's construction efficiencies and rush for revenue can shorten the time period between project initiation and completion (Allport, 1992).

Also, the private sector can gain a better insight into the market through private collection of user fees, and further implement innovative price structures to meet the market needs and serve the public with high flexibility (DRI/McGraw-Hill, 1994). Since government does not have as much pressure to collect revenue as the private sector, the traditional public-developed infrastructures are usually insensitive to the market, which set a fixed fee once for all or change it once a while. But private developers have pressures and incentives to make return as quickly as possible, so they are very sensitive to the market and tend to maintain high flexibility of the charging level (Kopp, 1997).

Additionally, in most cases, privately developed infrastructure pays taxes to government like any other business. As a result, government is not only relieved from the fiscal burden of infrastructure investment but also entitled to collect revenue from private infrastructure.

## **POSSIBLE NEGATIVE CONSEQUENCES**

Even though there are many promising benefits of the increased role for the private sector in developing countries' infrastructure development, scholars have been concerned about the potential negative consequences that might be caused by private participation. First, private accountability is always the biggest concern regarding private participation in public affairs (Allen, 1999; DiLullo and Stainback, 2001; Domberger and Jensen 1997). In infrastructure development, this concern is attached to the quality of the projects. With the incentive to save costs and make benefits as quickly as possible, private developers might take short cuts in construction materials and processes, for example shortening the required time period between construction activities. Unlike direct public service delivery, these deficiencies are relatively difficult to discover, and in some cases problems would not show up until a few years later. But the outcomes could be disastrous. We have witnessed some catastrophic breakdowns of low quality infrastructures, in both developing and developed countries. From 1995 to 1999, there was a wave of infrastructure breakdowns in China, mainly bridges and highways, which were called by Chinese "projects made of Tofu sediment".

Secondly, observers have been concerned about the negative effects of private infrastructure on the poor. Private participation in such infrastructure industries as electricity, water, and telecommunications is suspected to be harmful to the poor in two ways. On one hand, the private sector uses a more commercial approach to run business, which might increase the possibility that private actors tend to serve the most profitable customers, ignore the unprofitable ones, and be reluctant to connect new customers unless they are profitable. In a word, it could hurt the poor and rural consumers (Irwin and Brook, 2003). On the other hand, private infrastructure in many cases will need tariff rebalancing, which means an increase in prices in order to cover costs. This will make services increasingly unaffordable to the poor (Clarke and Wallsten, 2003).

Also, private-managed infrastructure development might neglect environmental risks. In fact, environmental risks associated with large infrastructure projects have always been

underestimated in developing countries (WB, 1995). Environmentally sustainable development demands the ability to understand, the best science, engineering and information management. Dealing with environmental risks associated with infrastructure development requires appropriate technologies, quantification of externalities, and processing time (Annez, 2006). None of these is readily available in most developing countries, which is the reason why some countries are experiencing “development at the expense of environment”. This problem becomes more serious when private sector participation is being promoted, because compared to the public sector, private developers are more unwilling and unable to deal with environmental risks (WB, 1995). Last but not least, private developers might conduct some short-term behaviors for fast return while hurting the public interest. For example, in order to achieve a high return on investment, private developers might try to charge a high fee for the facilities and services they provide, and sometimes request government for land use without paying any charges. Consequently, the financial risks and burdens are shifted to the local public, who face a higher price without getting extra services and lose valuable land resource to the private sector (Ho, 2006). In such a case, private developers only focus on short-term return without a spirit of long-term cooperation with the public sector.

## **An Increased Role for Local Government**

Another important shift of responsibility for infrastructure service provision in developing countries is from state government to provinces or municipalities with the expected outcomes of more efficient services in tune with local needs and preferences (Xie and Stough, 2002). This shift was mainly caused by the fiscal decentralization starting in the developing world since the late 1970s (Serageldin, Kim and Wahba, 2000). With the new fiscal policies, central government has reduced its resource provision to local government, and local government is left facing increasing financial pressures and has to seek revenues or other financial sources to meet the increasing needs for infrastructure investment. In such a case, partnering with the private sector for private capital and resources becomes a promising alternative approach to local infrastructure development (Serageldin, Kim and Wahba, 2000). This is why the work of local government in infrastructure development is always and must be associated with private participation in the field. This session will first discuss the major expected benefits of the increased role for local government in infrastructure development with an emphasis on its impact on private participation and then talk about potential negative consequences caused by local government’s increased role.

### **EXPECTED BENEFITS**

With the fiscal decentralization, local government has started to play a more and more important role in local infrastructure development, which brings several crucial benefits to the field. Three general benefits will be discussed and then attention will be paid to the positive impact of local government on private participation in infrastructure development. First of all, local government that takes more responsibilities in infrastructure development tends to build infrastructure more in tune with local needs and preferences (Xie and Stough, 2002). Local government is familiar with local people,

communities and civil societies and has good knowledge about what kind of infrastructure services they need, where and how much. With more responsibilities and authorities, local government could flexibly design, develop and manage infrastructure that best serves the local needs, which is unusually seen in rigid state-directed projects.

Secondly, local government with more responsibilities in infrastructure development has more impetus and pressures to assure the accountability of the infrastructure. Here accountability can be explained in three dimensions: quality of infrastructure facilities and services, environmental accountability and social equity. Most local government employees are personally tied with local people and business and some of them even grew up locally. They usually have strong emotional connection with the locality, which makes them feel personally responsible to assure the quality of the infrastructure they work on. Also, as local, they tend to be more concerned about the living environment and more willing to deal with environmental risks associated with infrastructure development. Furthermore, they know the local poor and have more sympathy for them, so they tend to be more obligated to protect the poor and promote social equity by providing fair access to infrastructure for the people (Serageldin, Kim and Wahba, 2000).

Moreover, local government with more responsibilities in infrastructure development could strategically integrate infrastructure into the big picture of local development. With an integrated strategic development plan for the locality, local government could sophisticatedly determine the scope and scale of new infrastructure and the needed repairs or expansions for the existing infrastructure, based on the needs of other social aspects, such as social welfare, economic development, entrepreneurial activities and even the development of cultural tourism (Serageldin, Kim and Wahba, 2000). In such a case, infrastructure development is a powerful tool for local government to assist distressed localities, respond to the challenges of economic downturn, and promote local economy. The dynamic leadership of local government promotes a strategic integration between infrastructure and other social aspects, which can make the best use of infrastructure and guarantee the least waste in the field.

Last but not least, local government with more responsibilities in infrastructure development would promote private participation in the field and provide crucial social, political and policy supports for the private sector. First, under the intense fiscal pressures, local government has to find other financial sources, and with the local knowledge, they know where to find private capital and other resources for local infrastructure development. Secondly, private infrastructure development is relatively new to private investors in developing countries, who have a lack of experience on the commercial, technical, legal and political aspects of this practice (Ho, 2006). Even foreign developers with substantial oversea experience might still have difficulty to understand all relevant local practices and procedures. This is where local government can play a significant role by helping the private sector get familiar with the local conditions and providing necessary information and other help. Thirdly, local government can provide preferential policy to help privately developed projects take off. For example, local government allocates some urban land to private developers at

favorite prices or for free for construction of roadways in rural areas (Wang and Xu, 2004).

## **POTENTIAL NEGATIVE CONSEQUENCES**

With the decentralized fiscal policy, local government needs to use its own capacity to mobilize resources for local infrastructure development. What if the local government is incompetent in doing so? This is not unusual in some economically backward remote areas in developing countries, where local government can't afford the infrastructure investment on its fiscal revenue and the locality doesn't have things to offer to attract private investors. Then what happens?

Likewise, another problem rises when local government places too much emphasis on attracting private investment by offering more than it can afford (Ho, 2006). Eventually government might fail to comply with the agreement because of serious financial pressure. Or a government official who newly came into the office finds the contract unfair or unreasonable, and wants to terminate it (Wang and Xu, 2004). All the possibilities will seriously harm not only the local government's credit status but also the private sector's profits and eventually harm the local infrastructure development. One typical example is "fixed return", which refers to a phenomenon that local government neglects market conditions and the profitability of developed infrastructure, and offers private partners a high price for their products, or charging level, or other income to guarantee fixed return for private investment. Specifically, "fixed return" has three characteristics: (1) it infringes the principles of risk-sharing and benefit-sharing in cooperation; (2) the source of the return goes beyond the earnings scope of the infrastructure itself; (3) local government makes commitments on the price or charging level of the infrastructure as a way of return (Wang and Xu, 2004).

## **A Synthesis of the Two Shifts for the Future**

The discussion above has showed there is apparent tight interdependence between the two shifts: the more responsibility local government takes to provide infrastructure services, the more it has to rely on the private sector for private finances, operation and management in infrastructure development; the more the private sector participates in the field, the more supports and cooperation it needs from local government for local knowledge, preferential policies and treatments. For the future infrastructure development in developing countries, the interdependence between the two shifts must be realized and the connection between the private sector and local government must be reinforced. Reinforced connection between the private sector and local government will integrate the strengths of both sides and build a rational system for infrastructure development. For the private sector, closer connection with local government helps it make rational investment based on the local needs, the market conditions and possible supports from the public sector. In such a case, the private sector would realize it is not stable to take advantage of their competence and information to seek exorbitant return, which will eventually breach the contracts (Wang and Xu, 2004). For the local government, closer cooperation with the private sector forces it to form a more open,

transparent and fair system under the supervision of the public, and consequently promotes rational and scientific decision-making and risk management.

Let us take “providing services to the poor” as an example to show how reinforced cooperation between the private sector and local government have provided more affordable infrastructure services to poor people in Latin America and the Caribbean. In Latin America and the Caribbean, there are many people, especially among the poor, still lack basic infrastructure services. This is mainly caused by three factors: (1) local government could not afford the investment; (2) the private sector has little incentive to expand coverage to the poor or rural customers; and (3) a hidden fact is that even though some households have connection to service, such as electricity and water, they can not afford it. With a tighter connection and cooperation between government and the private sector, some Latin American countries have been able to mitigate the impacts of the three factors mentioned above and managed to provide more affordable services to the poorest. First of all, local government includes universal service obligations in concession contracts, which indicates the numbers and groups of customers to be served. Secondly, out of consideration of the private sector’s benefits, local government agrees to provide output-based aid, a kind of subsidy, to the private sector for expanding rural networks. Subsidy is usually paid only after services have been delivered. Such output-based aid is crucial to increasing services for poor households (Fay and Morrison, 2007). Thirdly, in order to assure the affordability of services to poor households, local government agrees private developers to use cheaper technologies and a range of service levels that can lower the costs of network expansion and make services more affordable. Private developers are given some flexibility on the technology they use and allowed to use community labor to install the system (Fay and Morrison, 2007). Local government avoids prescribing universal quality standards and requiring specific technologies, but leaves flexibility and discretion to the private sector. With the three solutions, several countries in Latin America and the Caribbean have successfully provided more affordable services to many poor and rural customers.

In the past decades, the two shifts of responsibility for infrastructure development: from the state government to both the private sector and local government, have gotten much attention and unstoppable momentum in the developing world. In order to achieve efficient and rational infrastructure development in the future, developing countries should synthesize the two shifts and build closer connection and tighter cooperation between the private sector and local government.

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