

INFRASTRUCTURE FINANCING AND URBAN DEVELOPMENT IN NIGERIA

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The availability of adequate infrastructure facilities is imperative for the overall economic development of any country. However, developing countries like Nigeria are particularly bedeviled by issues of adequate infrastructure financing and this has great consequences on its citizenry. The aim of this study is to evaluate infrastructure financing strategies and its effect on urban development in Nigeria with a view to providing information that will guide policy makers in the country particularly and similar developing economies in general in making informed decisions on their infrastructure investment strategies. The theoretical research approach was adopted for this study. The study revealed that inadequate investment in basic infrastructure (due to severe budget constraints) and the rapid rate of urbanization in Nigeria is putting considerable strain on the nation's limited infrastructure. Hence, there is a need for large and continuing amounts of investments in almost all areas of infrastructure in Nigeria. Similarly, investment in maintaining existing infrastructure has suffered gross neglect, leaving the country with degraded and inefficient infrastructure services; this is compounded by unprecedented urban growth in major urban centers such as Lagos, Abuja and Port-Harcourt. This has resulted into the explosion of informal settlements (slums) in and around these major cities. This ugly situation is occasioned by mainly lack of long-term funds for infrastructure financing; uncertain political/ economic environment; fear of policy reversals by successive governments as typical infrastructure projects span over long periods, etc. In Nigeria, the government has been the sole financier of infrastructural projects and has often taken responsibility for implementation, operations and maintenance as well. There is a need for paradigm shift in this respect as this may not be the best way to execute/finance these projects. It is obvious that the government alone cannot adequately shoulder the responsibility of infrastructure financing, therefore, to ensure urban development in Nigeria; this study recommends the involvement of the private sector in infrastructure financing. Public-Private Partnerships (PPP) offer a promising solution to the financing needs of the country as it could attract foreign investments. It is recommended that infrastructure investments should be made in such a way as to recover the invested resources

through a system of user charges. This means that the services of investment projects in the country should no more be continued as a free good.

Keywords: Development, Facilities, Funds, Infrastructure, Urbanization.

Introduction

Infrastructure is generally seen as the physical framework of facilities through which goods and services are provided to the public (Dabara, Okorie, Ankel, & Alabi, 2012a). The infrastructure sector covers a wide spectrum of services such as telecommunication, sewage disposal, roads, energy, water supply, agricultural, medical, educational and other facilities, etc. Most of these services have a direct impact on man's life from his health, safety, wellbeing and societal point of view. Similarly, it contributes to economic development by increasing productivity and by providing amenities that enhances the quality of life.

Infrastructure financing is a subset of project finance and refers to a limited recourse or non-recourse finance that consists of financing very specific assets or projects, with repayment coming only from the cash flow generated by the project asset, without claims on the investors that own the company (World Bank, 1994; Ogun, 2010; UN-HABITAT, 2011). According to Andrew (2001) and Blanc-Brude (2010), project finance has been employed in almost all capital intensive industries particularly in transportation (aircraft, rail and shipping), independent power projects (electricity), mineral and other natural resource exploration, water projects etc. It has been observed that infrastructure financing is also mostly used in countries whose domestic capital markets are small relative to their project development requirements or are relatively immature, especially in developing countries like Nigeria.

Kingsley (2010) posited that infrastructure finance involves a combination of both equity and debt where the split between the two usually depends on the individual project and most importantly, on the risk profile of each project. Similarly, successful infrastructure finance generally requires finances with tenors ranging from 7 - 25 or even longer maturity periods (Estache and Wodon, 2010; Kingsley, 2011).

The adequate supply of infrastructure services has long been perceived as essential for urban development both in developing and developed economies. In both the investment and academic realms, investors and researchers all over the world are putting in considerable efforts in the evaluation of the contribution of infrastructure to growth and economic development (Ariyo and Jerome, 2004; Calderon, 2008; Estache and Wodon, 2010; Ogun, 2010). While existing literature on these two topics is far from being unanimous, on the whole, a consensus has emerged that, under the right conditions, infrastructure development can play a major role in promoting growth and urban development (Dabara, Ankeli, Odewande, & Oluwasegun, 2014).

In Africa, apart from financing basic infrastructure, one of the major challenges associated with infrastructures is investment in maintaining existing infrastructure. The research carried out by UN-HABITAT (2011) showed that there exists a poor maintenance culture in most African countries which leaves the said countries with degraded and inefficient infrastructure services. The case of Nigeria particularly poses great concern to stakeholders in the investment sector as well as the Nigerian government and its people. The bleak picture of infrastructure deficiencies in the country, most especially in major cities such as Lagos, Port-Harcourt, Jos etc is compounded by unprecedented urban growth whose consequences are reflected in the explosion of informal settlements (slums) all over the country (Dabara, Okunola, Odewande, & Okorie, 2012a). Due to inadequate investment in basic infrastructure, the unprecedented urban growth in Nigeria is putting considerable strain on the region's limited infrastructure (Dabara et al. 2012a; Arimah, 2010).

There is a need for large and continuing amounts of investment in almost all areas of infrastructure in Nigeria. This includes: agriculture (provision of loans to farmers, mechanization of agriculture,

processing industries, etc); transportation (airports, railways, sea ports and roads); electricity (generation, transmission and distribution), communications (mobile and satellite); water (dams, purification, distribution) etc. The key issue is, while the need exists, how these projects will get financed. In the past the government has been the sole financier of these projects and has often taken responsibility for implementation, operations and maintenance as well. There is a gradual recognition that this may not be the best way to execute/finance these projects (Dabara et al. 2012b). Hence, there is a need to identify and utilized other viable options, taking into consideration the basic infrastructure project characteristics (huge capital outlay, longer maturity period, rate of returns and level of risk).

The aim of this study is to evaluate infrastructure financing strategies and its effect on urban development in Nigeria with a view to providing information that will guide policy makers in the country particularly and similar developing economies in general in making informed decisions on their infrastructure investment strategies. In order to achieve the aim of this study the researchers seek to find answers to the following questions: What is the present state of basic infrastructure in Nigeria? Is there any relationship between infrastructure financing and urban development? What is the best strategy for financing infrastructure in Nigeria? The paper is organized as follows: the next section critically reviews related literature; the section after presents the conclusion of the study.

Review of Related Literature

The State Of Basic Infrastructure In Nigeria

The availability of adequate infrastructure facilities is imperative for the overall economic development of a country. Infrastructure adequacy helps determine success in diversifying production, expanding trade, coping with population growth, reducing poverty and improving environmental conditions (Kohli, 1995; Nayak, 1999; Andrew, 2001; Dabara et al, 2012b).

Possible types of major infrastructure projects may include: Airports – including new runways, runway extensions and airport terminals; Power stations – including thermal, nuclear and renewable energy sources and overhead electricity lines; Nuclear facilities – including facilities for fuel fabrication, spent fuel reprocessing, waste storage or disposal; Ports and piers; Dams and reservoirs; Major roads; Railway lines; Oil and gas facilities – including extraction facilities, pipelines, terminals, storage facilities and refineries; Chemical works; Quarries and mines; Government developments such as large military projects etc (Nayak,1999; Ndulu, 2006; Lee, 2010; Kingley, 2011)

With infrastructure as a key driver of economic growth, developing countries are particularly aware of their infrastructure needs. Lee (2010) observed that for developing countries infrastructure investment providing access to energy, clean water and basic transport may mean the difference between life and death. However, it has been observed that in developed nations, not only is the stock of infrastructure capital much greater than in developing countries, but there also exist sustainability measures for the vast infrastructure.

A World Bank study has estimated that developing countries as a whole invest about \$200 billion per year in physical infrastructure facilities (World Bank, 1994). This is about 4 percent of their GDP. The study further revealed that about \$160 billion (80%) is financed through domestic public resources and \$25 billion (12.5%) through international development assistance and the remaining \$15 billion (7.5%) through private capital. The private sector's share in infrastructure investment is still small though rising at a faster rate in many developing countries. Perhaps the challenges encountered in these developing nations is due to the fact that basic infrastructure are provided and maintained by the government solely (Andrew, 2001; Gunatilake, 2010; Lee, 2010).

The state of infrastructure in Nigeria particularly is pitiable. A survey carried out by the World Bank (2002), found that the Nigeria's infrastructure in terms of quality and quantity, is grossly inferior to that existing in other parts of the world; this has been found to exert a negative effect on the cost of doing business in the country. Out of 102 countries assessed in the global competitiveness report in 2004, the

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Nigeria's quality of infrastructure was ranked 3rd to the last; this is consistent with the world bank survey results where manufacturing firms listed infrastructure as their most severe business constraint (World Bank, 2002). The infrastructures listed as lacking include: Insufficient or lack of provision of pipe borne or portable drinking water, where 50% of the city dwellers lack access, as a result 44 percent of households have their own private boreholes and very many rely on water vendors whose high prices amount to more than 30 percent of the household income for the poorest, as a result large proportion of households have resorted to drawing water from unhygienic sources (Hall, 2006).

Poor road network is also another infrastructure in a very poor state, the Nigerian roads, eg Lagos, Gombe and Ibadan have been found to be the lowest in density in Africa, where only 31% of the roads are paved as compared to 50% in the middle income countries, and even where roads are provided only 40% of these roads can be said to be in good condition (World Bank, 2002).

Waste management, especially solid waste, Nigeria is said to be generating 80,000 metric tons of solid waste daily, but only 30% of this is collected for proper disposal. This has build up the unsavory cultural habits that encourage the indiscriminate disposal of solid wastes in any available open spaces, including main streets and open drains (Omuta, 1988; Odemerho, 2005). This assertion is congruent with the findings of Dabara et al. (2012a) the researchers found that Gombe township drains now form the final destination of unclear refuses. The blockage of these drains and natural drainage routes has been attributed to the causes of flooding in Gombe, Lagos and other Nigerian cities.

Electricity, Power Holding Company of Nigeria (PHCN), which was recently privatized for efficiency, is yet to be impressive in performance. Mainly due to maintenance inefficiency, the transmission system is unable to deliver power to a major part of the country and its performance is unreliable. There are transmission losses of 30-35%. Currently only 10% of rural households and approximately 40% of Nigeria's total population have access to electricity. The aforementioned weaknesses in infrastructure provision have been found to be a reflection of factors such as lack of involvement of the private sector in infrastructure provision, dissemination; negligence of the duty of the maintenance units and mostly misguided policies, weak selection of administrative projects and political interference and corruption (Obiegbu, 2005).

Infrastructure and Urban Development

A recent body of research confirms the importance of infrastructure service provision to sustainable development (Blank-Brude, 2010). In the same vein, the World Bank's (1994) *World Development Report* landmark study on infrastructure highlighted the critical role of infrastructure in the development process. The evidence in the World Bank report on the vital role of infrastructure services in growth has been reinforced by subsequent research, especially that focusing on Africa's economic performance (Ndulu, 2006). Not only does the development of infrastructure services contribute to growth, but growth also contributes to infrastructure development, in a virtuous circle. DFID (2002) identified the various channels through which investment in infrastructure can contribute to sustainable growth and development as follows:

• Reducing transaction costs and facilitating trade flows within and across borders.

• Enabling economic actors – individuals, firms, governments – to respond to new types of demand in different places;

• Lowering the costs of inputs for entrepreneurs, or making existing businesses more profitable;

• Creating employment, including in public works (both as social protection and as a counter-cyclical policy in times of recession);

• Enhancing human capital, for example by improving access to schools and health centres; and,

• Improving environmental conditions, which link to improved livelihoods, better health and reduced vulnerability of the poor. From the foregoing, it is evident that there exist a positive relationship between infrastructure investment and urban development.

Models of Infrastructure Financing

Dabara et al. (2014) posited that infrastructure projects typically involve large capital expenditures which are translated subsequently into physical assets that will be used for the production of economic and social services in the long term. Similarly infrastructure provision are generally complex activities requiring specific expertise and resources for both the construction and operating phases, significant financial outlays, and the need for some parties to bear the risks associated with the project (Blank-Brude, 2010). Historically, the tendency has been for infrastructure financing, construction and operation to be primarily within the public sector, although contracting out some specific construction or operational tasks was undertaken by the private sector.

Recent studies have shown a profound reassessment of public policy towards the infrastructure sectors as a result of technological change, better appreciation of the linkages between incentive structures and operational efficiency, and greater acceptance of a "user pays" philosophy (UN-HABITAT, 2011). Consequently, there has been a shift towards private management (private sector participation) and private ownership (privatization) of these industries, as well as the competitive provision of services within parts or all of these sectors (liberalization) for two major reasons. First, because of the generally poor performance of state-owned monopolies and second, because of the rapid globalization of world economies, which has brought into sharp focus the economic costs of inadequate infrastructure, prompting several developing countries to seek new initiatives to promote competition, involving private and foreign interests in the provision of infrastructure (Alabi and Ocholi, 2010; Kingsley, 2011).

According to Kingsley (2011) the following are sources of infrastructure finance:

1. Budgetary support via Public Private Partnership (PPP): various forms of PPP models such as: Build–Transfer (BT) – government contracts with a private partner to design and build a facility in accordance with the requirements set by the government. Upon completion the government assumes responsibility for operating and maintaining the facility.

Build-Lease-Transfer (BLT) – under this model, the facility is leased to the public sector until the lease is fully paid, at which time the asset is transferred to the public sector at no additional cost. The public sector retains responsibility for operations during the lease period.

Build-Transfer-Operate (BTO) – the private sector designs and builds a facility. Once the facility is completed, the title for the new facility is transferred to the public sector, while the private sector operates the facility for a specified period.

Build-Operate-Transfer (BOT) – this model combines the responsibilities of BT with those of facility operations and maintenance by private sector partner for a specified period. At the end of the period, the public assumes operating responsibility.

Build-Own-Operate-Transfer (BOOT) – the government grants a private partner a franchise to finance, design, build and operate a facility for a specific period of time. The ownership of the facility goes back to the public at the end of that period.

Build-Own-Operate (BOO) – in this model, the government grants a private entity the right to finance, design, build, operate and maintain a project. This entity retains ownership of the project.

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Design-Build-Finance-Operate/Maintain (DBFO/M) – Under this model the private sector designs, builds, finances, operates and and/or maintains a new facility under a long term lease. At the end of the lease term the facility is transferred to the public sector.

2. Internal Generation (owners' equity)

3. Viability Gap Funding – can take various forms, including but not limited to capital grants (one time or deferred), subordinated loans, operations and management support grants, or interest subsidy.

4. Debt/Borrowings - from possible sources such as bank credit, non-bank finance companies, pension/insurance companies, external commercial borrowings, etc

5. Specialized Institutions such as Bank of Industry, Urban Development Bank of Nigeria, Bank of Agriculture and Nigeria Export-Import Bank (NEXIM), etc.

6. International/Multilateral Institutions: International Bond Markets (e.g. Nigeria Sovereign Debt Bond), the World Bank – the Partial Risk Guarantee, International Finance Corporation (IFC), African Development Bank (AfDB), Africa Finance Corporation, etc

In the face of extraordinarily weak performance in the provision of infrastructure, the debt and fiscal crises that emerged in the early 1980s in many developing and transition economies, and the recognition that infrastructure is a critical tool in sustainable economic growth and international competitiveness, many African countries began to consider alternative means of infrastructure development.

Despite the wide and varied alternatives of infrastructure financing, developing economies such as Nigeria is still experiencing difficulties in financing its infrastructure needs. According to Alabi & Ocholi (2010), Kingsley (2011), and Dabara et al. (2012b) the major challenges confronting infrastructure financing in Nigeria include: Lack of long-term funds for infrastructure financing; Uncertain political/ economic environment; Non-existence of risk sharing structures; Lack of a refinancing facility to assist banks and other firms engaged in infrastructure financing to boost their liquidity; Inadequate capacity building for stakeholders; Fear of policy reversals by government as typical infrastructure projects span periods of 15 - 20 years which represents 4 -5 regimes; The CBN prudential guidelines were too restrictive to allow for long term lending; Absence of developed bond market in the economy; Absence of incentives for long term financing by the banks; Paucity of commercially bankable projects and The unavailability of equity capital.

The way forward

The above discussion has shown that most Nigerian cities have faulted in their duty for provision and maintenance of infrastructure. There is therefore a need for a shift in government policy to a sustainable urban development and infrastructural financing and the involving of the private sector in service provision and management (Alabi and Ocholi, 2010).

It is a fact that investment in infrastructure is a key enabler of a nation's economic development (Selih et al, 2008). Infrastructures present public interest for the government and financial interest for private investors, also referred to as the concept of value for money (Grimsey and Lewis, 2005). On the one hand public organizations suffice with nil return, because they are non-for-profit organizations (Micheli and Kennerley, 2005). On the other hand private organizations most likely set their required return on investment above 0%. They approach financial interests with a commercial perspective. According to Andrew (2001), some responsibility for making infrastructure investment decisions rests

with the federal, state and local authorities. Financing, meanwhile, is mostly shouldered by the government. The need of the hour in the present phase of economic development is the commercialization of infrastructure projects. Investment must be made on those infrastructure projects which can recover its invested resources through a system of user charges. The services of investment projects should no more be continued as a free good. Such user charges should bear a direct relation to the specific benefits that the facility provides the user. Since the infrastructure projects have a tremendous positive externality, which come in the form of secondary and tertiary benefits to the people and society, it provides the essential rationale for the governments to provide fiscal incentives to investors setting up these projects. Commercialization would involve giving service providers, whether in the public or private, well-defined budgets based on revenues from users, and managerial and financial autonomy, while at the same time, holding them accountable for their performance. Many private companies prepare themselves to adopt the finance and maintenance tasks for infrastructure. This seems a good solution to the public funding gap.

Conclusion

This study evaluated infrastructure financing and urban development in Nigeria. The study showed that the infrastructure sector covers a wide spectrum of services most of which have a direct impact on man's life and wellbeing. Similarly, it contributes to economic development by increasing productivity and by providing amenities that lead to urban development. The study found that there exist great needs for infrastructure facilities in Nigeria. This need included transportation, water, waste disposal, electricity etc. It is obvious that the government alone cannot adequately shoulder the responsibility of infrastructure financing in the country. Hence, to ensure urban development of Nigerian cities, the involvement of the private sector in infrastructure financing is imperative.

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