

Analytical Comparison of Foreign Direct Investment (FDI) in Telecommunications Before and Within the Introduction of GSM

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ABSTRACT

Foreign direct investment plays a vital role to make substantial contribution to the economic growth by investing in sectors such as telecommunications and bringing along with other indirect positive impacts including transfer of technology, training, skills, employment, to name just a few, which all contribute to the long term development of the recipient countries. This study examines the impact of Foreign Direct Investment in Telecommunications before and within the Global System for Mobile Communication era. The study uses data covering between 1985 to 1999 as the Pre GSM era and 2001 to 2015 as within GSM era. It employs the paired t-test statistics to determine whether there is a significant difference between FDI in Telecommunications sector before and within the introduction of GSM in Nigeria. The study finds that there is a significant difference between the FDI in Telecommunications Sector before and within the GSM era. The study recommends that Government should provide enabling environment for the investors in order to sustain the trend of inflow of FDI into the economy.

Keywords: Foreign Direct Investment (FDI), Telecommunications, Economic Growth & GSM

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1. INTRODUCTION

The current pace of globalization has made virtually no nation of the world totally self-dependent without having to rely on other nations. The reality of this development, over the years has made interaction through communication paramount in human development endeavour. This means that the ability to communicate over a wider range of distance has in one way or the other engendered business growth all over the world. It is in relation to this perception that the current age is termed the JET age where digital world is taking the lead. The telecommunications aspects of the global ICTs are driven by various gadgets that facilitate the exchange of information between a given set of people. The telecommunications sector, or telecom as aptly called, is the transmission of signals, messages, writings, images, and sound or intelligence of any nature by wire, radio, optical or other electromagnetic systems within a range of distance. It began with the invention of the telegraph using analogue signals in 1837, followed by the telephone in 1876.

Since both analog and digital communications are based on electrical signals, transmitted data is received almost instantaneously, regardless of the distance, people communicate with each other faster than before at the national or global front. At independence, the control of Nigeria's telecommunications sector, was vested in the Nigerian Post and Telecommunications (P&T) owned by the Federal Government. In the early 1980s, Nigerian External Telecommunications (NET) was formed to provide external communications services. Following increased demand for the commercialization of telecommunications services, the Federal Government initiated the merger of NET with the telecommunications arm of P&T to form the Nigerian Telecommunications Limited (NITEL) in 1985, saddled with the sole responsibility of meeting the telecommunications needs of Nigeria. At this time, the telephone system was unreliable, congested, expensive and unfriendly to customers. The main objective of establishing the NITEL was to harmonize the planning and coordination of the internal and external telecommunications services, rationalize investments in telecom development, provides accessible, efficient and affordable services.

Regrettably, NITEL which held a monopoly in the market for more than a decade was unable to meet the growing demand for telecommunications services by Nigerians. The company's ascendancy was marked by frustratingly long queue for connections as well as poorly maintained and scanty infrastructure. At independence, the country had only 18,724 telephone lines (Ndukwe, 2003). Up till 2001 when telecom was fully deregulated, NITEL could not expand its capacity beyond 700,000 lines, thus limiting access to information and communications technology (ICT) in Nigeria. More than 50 per cent of the lines were in federal and state government offices, Multinational oil companies and other large corporations. The situation was so bad that even with the reportedly connected lines 35% were not functioning (Afeikhena, 2002).

However, Decree 75 of 1992 allowed private sector participation in the sector and expanded the nation's communication facilities. (Onakoya, 2013). NITEL, the monopolistic state-owned enterprise was commercialized and floated as Public Limited Company (PLC) in 1992, although its shares were fully owned by the government. The Nigerian Communications Commission (NCC) was established by statute in 1992. The agency was given a mandate to issue license to private companies to participate in telecommunications business in Nigeria. It also encouraged Foreign Direct Investments (FDI) into the telecommunications sector in order to beef up healthy competitions among providers and create new employment opportunities and enable the springing up of indigenous telecommunications companies. Consequently many telephony service providers emerged; such as MTN and AIRTEL.

The main research question is ; what are the differences between FDI in the telecom sector in Nigeria before and within GSM period. The objective of this paper , therefore, is to examine the difference between Nigeria's FDI in the telecom sector before and within the GSM period.

2. LITERATURE REVIEW

2.1 Concept and development of telecommunications

Telecommunications have been recognized as a crucial element in economic development. The United Nations Millennium Declaration identified access to Information and Communication Technologies (ICT) in general and telecommunications in particular as a fundamental to achieving greater goals (International Telecommunications Union -ITU) (2004). Thus, access to information and communication is considered important to a sustainable agenda of poverty reduction because it increases the efficiency and competitiveness of a country in the global economy, enables better delivery of health and education services and creates new sources of income and employment generation (World Bank, 2006). An effective telecommunications system, in one way or the other, enhances development as it also boosts investor confidence and promotes business transactions. Thus, the importance of telecommunications development to economic growth and development especially in the developing countries cannot be understated (Gyimah-Brempong & Karikari, 2007).

In this era, telecommunications is an indispensable tool in the entire process of globalization (Asogwa & Kelechi, 2013). The emergence of Telecommunications has brought about a new era in communication industry; the internet, mobile phone and computer, have brought about a fundamental shift in patterns of communication and human relationships. Communication revolution has also brought about amazing social, economic, cultural and psychological transformation. It has reduced the globe into a village through reduction of time and space (Keil & Johnson, 2005; Offurum, 2009). These transformations were spurred by technological innovations. Innovations in telecommunications technology have immensely influenced the development of mobile telecommunications services.

Actually, worldwide breakthrough in mobile technology is associated with the commercial introduction of digital technologies in the 1990s. Several reasons accounted for the success of digital mobile telephony. Firstly, by using limited radio spectrum, digital technology made the current levels of mobile telephony usage technically possible. Secondly, “combine with other industry development, digital telephony offered end users a more attractive bundle in terms of price, quality and services. The Digital mobile telephony had advanced data transmission (short messaging service etc) and improved voice quality over the years (Rouvinen, 2006). Also, with lower power consumption of digital mobile telephony, smaller and lighter end user terminal (handsets) became available. Thirdly, with expanding user base, network effects and economies of scale in both production and use accumulated rapidly. In short, with digitalization, mobile telephony truly became a worldwide consumer market (Rouvinen, 2006).

According to Izuchukwu (2014), telecommunications facilities in Nigeria were first established in 1886 by the colonial administration and that since independence in 1960, with an estimated population of roughly 40 million people, the country only had about 18,724 phone lines for use. This translated to a teledensity of about 0.5 telephone lines per 1,000 people. As at that time, the telephone network consisted of 121 exchanges of which 116 were of the manual (magneto) type and only 5 were automatic. Between 1960 and 1985, the telecommunications sector consisted of the Department of Posts and Telecommunications (P&T) in charge of the internal network and a limited liability company, the Nigerian External Telecommunications (NET) Limited, responsible for the external telecommunications service provided the gateway to the outside world. At this time, the telephone system was unreliable, congested, expensive and unfriendly to customers. The Nigeria Telecommunications Ltd. (NITEL) was established in 1985, and held a monopoly in the market for more than a decade.

The company's ascendancy was marked by a long wait times for connections and poorly maintained and scanty infrastructure. The main objective of establishing NITEL was to harmonize the planning and co-ordination of the internal and external telecommunications services, rationalize investments in telecommunications development and provide accessible, efficient and affordable services. Furthermore, the government, in November 1992, established an independent regulator the Nigeria Communications Commission (NCC) that oversees the telecoms sector, but it was the inauguration of the board of the NCC under Ernest Ndukwe in 2000 that saw the NCC delivers its promise as a dynamic actor in the sector. In 2003, the Nigerian Communication Act gave powers previously residing with the Ministry of Information and Communication to the NCC, reducing the role of the Ministry to policy-making and giving the NCC a free hand in regulating the industry.

The NCC introduced a new licensing framework in the sector in 2006, with the introduction of technology-neutral Unified Access Service Licenses (UASL), which allow providers to offer fixed, mobile and data services using the technology of their choice. The market was transformed by the government decision to issue GSM licenses. Awarded in an open auction, the licenses were given to NITEL, operating as M-Tel, South African telecoms company, MTN and consortium led by Zimbabwe's Econet wireless. Consumers immediately flocked to the new technology which provided a way to leapfrog the limited fixed-line infrastructure, and within a year, there were over 1.5 million mobile subscribers in the country, as compared to just 702,000 fixed-line subscribers (Izuchukwu, 2014).

Currently the major players in the Nigeria mobile market are MTN, Globacom, Airtel Nigeria and 9 mobile (formally Etisalat). Nitel's dominance of the fixed-line market came under siege in 2002, when the government awarded a second National Operator license to Globacom, which also received a GSM license. To protect the national fixed-line operators, the government embarked on privatizing the parastatal. The first effort in this direction involved the firm Pentascope, partly funded by the consortium of Nigeria banks, which acquired 51% of Nitel in 2003 (Izuchukwu, 2014). But the company was unable to stop Nitel shedding customers to the mobile operators, and even as other mobile networks boomed, Nitel's mobile arm lost market share. So, the government turned to Transnational Corporation of Nigeria (Transcorp), which acquired 51% of Nitel in 2006, such privatization warranted other foreign investors.

In this present world, a modern telecommunications infrastructural development is not only essential for domestic economic growth, but is a prerequisite for participation in increasingly competitive world markets and for attracting new investments. Thus, Nigeria today has not been left out of rapid development of telecommunications industry in the world. The nation's telecommunication industry was liberated with the return of democracy in 1999. This led to the granting of Global System for Mobile Telecommunications (GSM) licenses by the Nigerian Communication Commission (NCC) to three providers: Econet, MTN, and M-tel. This was followed by the licensing of the Second National Operator (SNO), in 2003; that is, Globacom and Universal Access Service licenses of 2006 which include fixed telephony, VSAT and internet service providers. Also, in March 2008, the NCC gave license to another GSM operator known as Etisalat (Aigbinode, 2008).

2.2 Concept of Foreign Direct Investment (FDI)

FDI is the movement of capital across national frontiers in a manner that grants the investor control over the acquired assets. Firms that use FDI are known as Multi-National Enterprises (MNEs). Production in the host country is largely financed by multinationals and profits accrue to the multinationals through sales made by foreign affiliate. It refers to long term participation by one country into another and this comes in form of management, joint ventures or transfer of technology and expertise.

The preference for FDI stems from its acknowledged advantages (Sjoholm 1999; Obwona, 2001, 2004). The efforts by several African countries to improve their business climate stem from the desire to attract FDI. In fact, one of the pillars on which the New Partnership for Africa's Development (NEPAD) was launched was to increase available capital to US\$64 billion through a combination of reforms, resource mobilization and conducive environment for FDI (Funke and Nsouli, 2003), even in Sub-Saharan Africa as a region, Asiedu (2002) shows that most countries now depend very much on FDI for so many significant number of reasons.

2.3 Determinants of FDI

With the increasing awareness of incessant inflow of FDI to Nigeria and other developing countries, it is pertinent to examine conceptual issues on various factors that attract FDI to a country.

1) Size of the market

Economic studies comprising a cross section of countries indicate a well-established connection between FDI and the size of the market (proxied by the size of the GDP) as well as some of its characteristics (for example, average income levels and growth rate). Some studies found GDP growth rate to be a significant explanatory variable, while GDP was not, probably indicating that where the current size of national income is very small, increments may have less relevance to FDI decisions than growth performance, as an indicator of market potential. Though Bhattacharya, Montiel, and Sharma, (1998) identified GDP growth as a major factor of attraction of FDI in sub-Saharan Africa, small market size need not be a constraint in the case of resource-endowed, export oriented economies like Nigeria, even the experience of India, Pakistan and, to an extent, Bangladesh, have shown that market size notwithstanding, they receive proportionately relative small (below 1%) FDI flows.

2) Openness

Whilst access to specific market based on their size and growth is important, domestic market factors are predictably much less relevant in export-oriented foreign firms. A range of research suggests a widespread perception that "open" economies encourage more foreign investment. One indicator of openness is the relative size of the export sector. Singh and Jun (1995) indicates that exports, particularly manufacturing exports, are a significant determinant of FDI flows and their tests show that there is strong evidence that exports precede FDI flows.

3) Low cost of Productivity

Empirical research has also found relative labour costs to be statistically significant, particularly for foreign investment in labour-intensive industries and for export-oriented subsidiaries. The rapid growth of FDI in Vietnam has also been attributed primarily to the availability of low-cost labour. In India, in contrast, labour market rigidities and relatively high wage in the formal sector have been reported as deterring any significant inflows into the export sector in particular. However, when the cost of labour is relatively insignificant (when wage rates vary little from country to country), the skills of the labour force are expected to have an impact on decisions about FDI location. Productivity levels in sub-Saharan Africa are generally lower than other low-income countries, hence, the low flow of FDI. Indeed, other factors that can account for inflow of FDI to a particular country include political risk or the institutional and governance factor, state of infrastructure, incentives, and privatization policy.

2.4 Evidence of impact of FDI on Telecommunication Performance

Indeed, most studies focused on the empirical nexus between FDI and economic growth than the linkage between FDI and telecommunications performance. Few studies that concentrated on the latter are reviewed herein. Opaluwa, Abdullahi, Abdul Mohammed, Okpanachi and Edogbanya (2013) examined the effect of FDI on the growth of the telecommunications sector in Nigeria from 1997 to 2011 using Ordinary Least Square (OLS) method and found that FDI has positive effect on the productivity of the telecommunications sector and it is statistically significant. Similarly, Ezeanyieji and Ifebi (2016) focused on the role played by FDI in the development of the Telecommunications of Nigeria using OLS method. The result showed that FDI has contributed significantly to the performance of the telecom sector in terms of its contribution to the GDP of Nigeria. He recommended that government should focus on maintaining political stability to serve as key to sustainable growth and development of telecom sector in Nigeria.

On the part of Izuchukwu (2014) researched on the empirical relationship between FDI and telecommunications growth in Nigeria between 2001- 2008 using OLS method. He came out with the fact that all variables- consumer, subscribers, private investment and technology have a positive and significant relationship with FDI and concluded that government should improve on the standard of infrastructural facilities to attract more FDI into Nigeria and provide relevant social amenities. Obi (2014) examined telecommunications reform in china and Nigeria: same result, different strategies where he compared telecom reforms in China and Nigeria. He argued that China's reform started in late 1970's and made sufficient impact to change the country's economic history while Nigeria commenced gradual reform of the industry in the early 1990's with its dramatic transformation peaking by 2010. Evidently he concluded that the sector in both economies was drastically transformed in a space of two decades with sufficient telecom facilities. Although the results were similar, the strategy adopted by each county was different.

2.5 Theoretical Framework

This aspect deals with the explanation of the theoretical framework that establishes the nexus among foreign direct investment (FDI), telecommunications and economic growth in Nigeria. In this case, both the theoretical and conceptual frameworks that connect the variables are described. Consequently, the specification of the deterministic and econometric model for establishing the growth effects of FDI on Nigerian telecommunications sector and economy is put in perspective. In accounting for the level of economic growth in any country, various sectors cumulatively work together to determine the growth process of the economy. The telecommunications sector is one of such sector. With the global observation that the more or the faster at which people communicates, the more exchange of resources and market expansion, developments of the telecommunications industry have the potential of causing the economy to grow.

However, considering the level of low growth and technical inefficiencies, coupled with low domestic investment in the telecommunications in Nigeria, the need for external sources of finance to augment the growth of the sector occupies a paramount position. In other word, the demand for foreign direct investment (FDI) to change the course of various factors that have hindered the pace of economic development in Nigeria, especially the telecommunications is necessary. Inflow of FDI is therefore seen as an important catalyst for economic growth in the developing countries because it affects the economic growth by stimulating domestic investment, increase in capital formation and also, facilitating the technology transfer in the host countries (Falki, 2009). This believe that FDI along other important variables are growth enhancing as Falki (2009) and other scholars observed is consistent with the modern theoretical framework anchored in endogenous growth model.

The proponents of this growth model assert that it is the efficiency of the use of investments that matters in growth accounting, not just the physical investment. Using this framework, Romer (1990) argues that FDI propels economic growth through strengthening human capital through Research and Development (R&D). Similarly, Barro (1991) found a significant effect of FDI on economic growth through the diffusion of technology, while Grossman and Helpman (1991) emphasize that an increase in competition and innovation will result in technological progress and increase productivity and, thus, promote economic growth in the long run.

3. METHOD OF DATA ANALYSIS

This paper employs the paired t-test statistics in examining whether there is a significant difference between Foreign Direct Investment in Telecommunications sector before, and within the introduction of GSM in Nigeria. The paired sample t-test, sometimes called the dependent sample t-test, is a statistical procedure used to determine whether the mean difference between two sets of observations is zero. In a paired sample t-test, each subject or entity is measured twice, resulting in *pairs* of observations.

For analytical purpose the t -statistics is specified as:

The statistic is described as Student's t with n degrees of freedom

Where, \bar{d} = mean differences

s_d = standard deviation of the sample differences

n = number of pairs

3.1 Sources of Data

Data for this study were obtained mainly from secondary sources, particularly from Central Bank of Nigeria (CBN) and other publications such as the CBN statistical Bulletin, CBN Annual Reports and Statements of Accounts of various years. Also consulted was the National Bureau of Statistics annual report for various years. The data covers the period 1985-2015.

4. RESULT.

Table 1 presents a paired sample t-test analysis result on Foreign Direct Investment in Telecommunications (FDI_{tel}) in Nigeria between 1985 to 1999 (pre-GSM era) and 2001 to 2015 (within-GSM era) There is strong evidence ($|t| = 2.690$) that the introduction of GSM significantly affects Nigeria's Foreign Direct Investment inflow in telecommunications sector. The result shows average values of N361.17m and N18,900.70m before and within the introduction of GSM respectively with corresponding standard deviations of N239.21m and N26,833.76m respectively.

These indicate that the sector has experienced speedy change overtime. The result suggests and concludes that there is significant difference between Foreign Direct Investment in Telecommunications (FDI_{tel}) in Nigeria between pre and within- GSM era.

TABLE 1: Paired t-test Result

Variable	Obs	Mean	Std. Err.	Std. Dev.
FDI_Before GSM	15	361.1733	61.76611	239.2191
FDI_Within GSM	15	18900.7	6928.447	26833.76
Diff.	15	-18539.53	6891.687	26691.39
Degree of Freedom	14			
t-Statistic	-2.690			

Source: Author's Computation, 2017.

5. CONCLUSION

The development in ICT, especially GSM has motivated attention of researchers to critically examine the contribution of the telecom sector on economic growth in Nigeria like other countries of the world. Many researchers are of the view that the FDI in telecommunications will mostly contribute to the growth of the economy.

This paper attempts to address the question; whether there is statistical differences between FDI in telecommunication sector before and within the GSM period in Nigeria. It made use of extensive data covering 1985-2015. Based on the findings there has been a great improvement in the contribution of FDI in telecommunications to the economic growth within GSM period when compared with before GSM when the sector could not fully achieved her statutory function in Nigeria. The study, therefore, concludes that there is significant difference between FDI in the telecommunication sector and within the GSM period.

The study recommends that:

- (i) Government should be at her best to ensure that the environment is made conducive for investors. Also, the issue of currency fluctuation should be properly addressed to avoid losing most of these Multinational Companies who has contributed a large quota to the economy growth. By doing this, the increase trend of FDI inflow will be sustained.
- (ii) Government should provide an enabling environment for the investors in order to sustain the trend of inflow of FDI into the economy.
- (iii) Government should take advantage of advancement in technology which the telecom sector brought about by injection of FDI into the economy within the GSM period.

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