

Full Length Research Paper

Impact of foreign direct investment (FDI) in telecommunications on Nigeria's economic growth: A descriptive analysis

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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. This study examines the impact of Foreign Direct Investment (FDI) in telecommunications on economic growth. The study uses data covering between 1985 to 2015. It employs the use of trend and descriptive analysis to show whether FDI in telecommunications has impact on the Nigeria's economic growth or not. The study finds that FDI in telecommunications has a positive impact on the Nigerian economy. 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.

Key words: Foreign direct investment, telecommunications, Nigeria and economic growth.

INTRODUCTION

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 and Karikari, 2007). 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

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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.

In Nigeria today, daily activities such as shopping, entertainment, banking, manufacturing, office work, education, medical care, governance and even commuting have become increasingly dependent on information and communication network. It has not also been left out of rapid development of telecommunication industry in the world. 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 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.

The nation's telecommunication industry was liberated with the return of democracy in 1999. This led to the granting of Global System for Mobile Telecommunication (GSM) licenses by the Nigerian Communication Commission (NCC). 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. As a result of this, many telephone companies emerged.

The main research question is; how has inflow of FDI to

the telecom sector in Nigeria improved the performance of the sector? The objective of this paper, therefore, is to determine the impact of FDI inflow in telecom sector on economic growth.

LITERATURE REVIEW

Conceptual review

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. In this era, telecommunications is an indispensable tool in the entire process of globalization (Asogwa and 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 and 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.

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 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).

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.

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.

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.

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.

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.

Theoretical review

Theories relating to FDI with growth of communications sector and economic growth generally are reviewed.

Theories of economic growth

The neoclassical growth theory: Harrod-Domar growth model

When it comes to the issue of classical growth model, Harrod (1939) and Domar (1946) assign a key role to investment in the process of economic growth. To these authors, investments create incomes (demand effects of investment) and increase the productive capacity of the economy by increasing its capital stock (supply effect of investment) in as much as net investment continue to expand. One of the tenets of Harrod-Domar (H-D) theory is that to maintain a full employment equilibrium level of income from yearly, it is necessary that both real income and output should keep expanding. Otherwise, any divergence between the two will lead to excess or idle capacity, thus forcing entrepreneurs to curtail their investment expenditures. Ultimately, it will adversely affect the equilibrium path of the steady state of growth of the economy. Also, for full employment to be maintained in the long run, net investment should expand continuously. This further requires continuous growth in real income at a rate sufficient enough to ensure full capacity use of a growing stock of capital.

The neoclassical growth theory: The Solow growth model

In the neo-classical growth fashion, the Solow Growth Model expanded the Harrod-Domar Model which stressed the critical role of savings, investment and capital accumulation. Solow-Swan Model (SSM) basically formalized and expanded the Harrod Model by adding labor, capital, and technology. Technology sought to explain the "residual" factor, and was assumed to be determined *exogenously*. In this model, based on diminishing returns to capital, economies will eventually reach a point where any increase in capital will no longer create economic growth. This point is called a "steady

state". The model also notes that countries can overcome this steady state and continue growing by inventing new technologies. In the long run, output per capita depends on the rate of saving, but the rate of output growth should be equal for any saving rate. In this model, the process by which countries continue to grow despite the diminishing returns is "exogenous" and represents the creation of new technology that allows production with fewer resources. Some of the key development Policy implications of the SSM is that output (GDP) grows as a result of three (3) factors:

- (1) Increase in labor quantity and quality
- (2) Increase in capital (by saving and investment), and
- (3) By technological progress.

By implication as well, closed economies grow more slowly than open economies, and overall, impeding free trade and foreign investment will slow economic growth.

The big push and the Schumpeterian growth model

Contrary to SSM however, the Big Push Theory (BPT) suggests that countries needed to jump from one stage of development to another through a virtuous cycle, in which large investments in infrastructure and education coupled with private investments would move the economy to a more productive stage, breaking free from economic paradigms appropriate to a lower productivity stage. On this note also, Schumpeterian growth model sees growth as a process of creative destruction, which captures the dual nature of technological progress. To achieve this, they make old technologies or products obsolete. This destruction is referred as the annulment of previous technologies which makes them obsolete. Theoretically, the aggregate improvement will translate into economic growth.

Theoretical framework

This aspect deals with the explanation of the theoretical framework that establishes the nexus among 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 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.

METHODOLOGY

This paper employs the trend and descriptive analysis in examining the impact of FDI on the economic growth of Nigeria with the use of the E-views Statistical package

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.

Model specification

$$\Delta \ln RGDP = a_0 + a_1 \ln RGDP_{t-1} + a_2 \ln GDPTel + a_3 \ln FDI_{tel} + a_4 (\ln GDPTel * FDI_{tel}) + a_5 \ln GCF + a_6 \ln EXCHR + a_7 \ln INFL + a_8 \ln OPEN + a_9 \ln CRF + a_{10} \ln GSDum + a_{11} ECT_{t-1} + e$$

Where;

RGDP = Real Gross Domestic Product

GDPTel=Gross Domestic Product in telecommunications sector/
Share of telecoms in total GDP

FDI_{tel}= Foreign Direct Investment inflow to the telecommunications sector

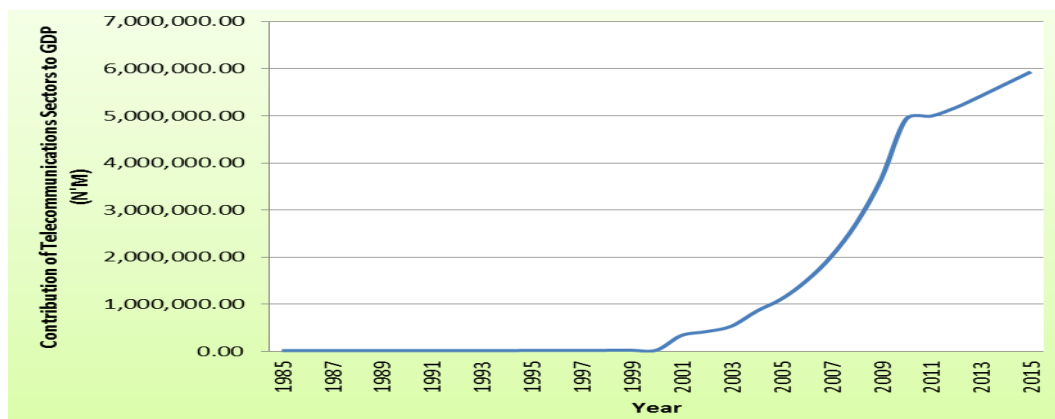


Figure 1. Trend of contribution of telecommunications sectors to GDP.

Source: Author's computation (2017).

Table 1. Descriptive result.

Variable	Count	Minimum	Maximum	Mean	Standard deviation
RGDP	31	14,953,913.05	69,023,929.94	32,821,097.29	17,311,753.22
FDItel	31	39.10	85,606.60	9,346.72	20,602.99
GDPtel	31	18,329.74	5,933,089.01	1,472,057.38	2,123,729.77
EXCHR	31	0.89	196.99	88.55	61.07
INFL	31	0.22	76.76	20.14	19.76
GCF	31	8,799.48	4,254,488.23	1,203,689.52	1,529,538.05
OPEN	31	0.07	31.45	10.41	9.64
CRF	31	13,070.34	18,674,147.78	3,794,313.51	5,870,433.17

Source: Author's computation (2017).

GCF= Gross Capital Formation

EXCHR= Exchange Rate

INFL= Inflation

OPEN= Trade Openness

CRF= Credit Facilities to Private Sectors

GSMDum= Dummy for Global System of Mobile Communication

ECT (-1)= Lagged Error Correction Term

α_0 is the constant

While α_1 - α_n represents the parameter estimates and e represent the stochastic term.

RESULT

Trend of contribution of telecommunications sector to gross domestic product (GDP)

Figure 1 presents the trend of contribution of telecommunications sectors to GDP for the period of study. Figure 1 shows that the contribution of telecommunications sector to GDP rises from N18, 452.43 million in 1985 to N5,933, 089.01 billion in 2015. However, the trend depicts a relatively steady movement between the years 2010 and 2011 with the values of N4, 931, 991.14 billion and N4, 992, 420.11 billion respectively.

Descriptive result

Descriptive result of the variables used in this study is presented in Table 1. From the table, Real Gross Domestic Product (RGDP) has a minimum value of N14,953,913.05b and a maximum of N69,023,929.94b, with the mean value of N32, 821,097.29b and a standard deviation of N17, 311,753.22b. Foreign Direct Investment in telecommunication sector (FDItel) ranges from N39.10m to N85,606.60m with an average value of N9,346.72m and a standard deviation of N20,602.99m. Contribution of Telecommunications sector to Gross Domestic Product (GDPtel) has a minimum value of N18,329.74m with maximum at N5,933,089.01b. The mean value is found to be N1,472,057.38b while the standard deviation is N2,123,729.77b. The Exchange Rate (Exchr) is found to be between 0.89 and 196.99 with a mean value of 88.55 and standard deviation of 61.07. Inflation (Infl) is minimum at 0.22 and maximum at 76.76. The mean inflation value is found to be 20.14 and the standard deviation is 19.76. Gross Capital Formation (GCF) is found to be between N8,799.48m and N4,254,488.23b with a mean value of N1,203,689.52b and standard deviation of N1,529,538.05b. Trade Openness (OPEN) ranges from 0.07 to 31.45 with a

mean value of 10.41 and standard deviation of 9.54. Credit Facilities to Private Sector (CRF) has a minimum value of N13,070.34m and maximum value of N18,674,147.78b. The mean value was found to be N3,794,313.51b and standard deviation of N5,870,433.17b.

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 FDI in Telecommunications have contributed to the growth of the Nigerian economy. It made use of extensive data covering 1985 to 2015 using trend and descriptive analysis. Based on the findings, there has been a great improvement in the contribution of FDI in telecommunications to the economic growth of Nigeria.. The study, therefore, concludes that there is a significant and positive relationship between FDI in telecommunications and the economic growth. The study recommends that:

- (1) 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.
- (2) There should be stable economic policies directly or indirectly that will attract foreign investors.
- (3) 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.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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