

External Capital Inflows and Telecommunication Sector in Nigeria

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Abstract: - The study examined the impact of external capital inflows on telecommunication sector in Nigeria. The objectives of the study were to examine the impact of, foreign portfolio investment, trade openness and foreign direct investment on telecommunication output. Thus, to achieve the stated objectives, data from the CBN statistical bulletin was collected and the econometric method of co-integration and Error Correction Mechanism were used to analyse the data. The ADF unit test result showed that the variables; foreign portfolio investment, trade openness, foreign direct investment and telecommunication output were stationary at first difference. Also, the Johansen co-integration result showed that there exist two co-integrating equations among the variables. The ECM results showed a percentage increase in FDI will cause an increase in telecommunication output by 1.01905%. Also, a percentage increase in foreign portfolio investment will increase telecommunication output by 0.966238%. The coefficient of trade openness showed that a percentage increase in trade openness will increase telecommunication output by 0.629302%. The study asserts that foreign direct investment, trade openness and foreign portfolio investment are vital to the inflow of external capital in the telecommunication sector. Thus, it is recommended that government must create a conducive business environment by improving its infrastructural facilities assuring security of life and property and maintains policy consistency in order to boost investment in the country.

Key Words: External Capital, Inflow, Tele-communication, Sector, Trade Openness, FDI

I. INTRODUCTION

There is no nation in the world without the aim of accomplishing economic growth and development. However, this can only be possible if a country has adequate resources at its disposal (Chimobi and Igwe, 2010). In many developing countries, the resources to finance the optimal level of economic development are in short supply. Thus, the need for external source of finance. External capital inflows involve the increase in the amount of money available from external or foreign sources for the purchase of local capital assets such buildings, land, machines. External inflow could be in the form of portfolio investment and FDI (Udensi, 2015).

Nigeria for the past two to three decades has witnessed influx of external capital in all the vital sectors of the economy. (Udensi, 2015). To this end, successive governments in Nigerian have viewed external capital inflows in the form of portfolio investment and foreign direct investment as a vehicle

for political and economic domination of Nigeria and hence the thrust of government indigenization policy through the Nigeria Enterprise Promotion Decree (NEPD) has been to regulate the inflow of foreign capital, with a maximum of 40% foreign participation allowed. This has resulted in a decline in both private and foreign investment and has therefore slowed down growth in all sectors of the economy including the telecommunications sector.

The trend had been attributed to the debt crisis and global shocks which affected the country in the 1980s, and which has set off a protracted period of macroeconomic instability with an eventual drop in external financing. This therefore, discouraged foreign participation in the economy as external capital inflows formed only a small percentage of the nation's gross domestic product (GDP) though marginally rising from -0.80% in 1980, to 1.80% in 1990 (Ezeayeji and Ifebi, 2016).

In an attempt to create a suitable climate for inflow of external capital investment and growth within the economy, and to stimulate her economic recovery efforts from a prolonged and severe recession, Nigerian government introduced the Structural Adjustment Programme (SAP) in 1986. The programme incorporates trade and exchange reforms reinforced by monetary and fiscal measures, which are geared towards diversifying the mono export base by stimulating domestic production and discouraging use of improved inputs for local production. The supply side of the package seeks to enhance aggregate output with special emphasis on agro/agro-allied and manufacturing sectors for which specific policy measures were designed. The implementation of SAP was expected to bring about some improvements in the economy. For instance, the sharp exchange rate depreciation was expected to discourage importation and make multinationals to prefer investment in the domestic economy if they were to maintain their established trade links. But all these were not achieved due to improper implementation of the programme (Ezeanyeji and Ifebi, 2016).

Moreover, the volume of investment inflow is far lower than the annual population growth rate. This low inflow of foreign investment particularly in the telecommunication sector has not been able to solve macroeconomic hills such as reduction in unemployment and increase in output (Asiebu 2003). Given the above state of affair, the following questions were addressed: What is the impact of foreign portfolio investment

on telecommunication sector in Nigeria? Does trade openness lead to increase in telecommunication sector output in Nigeria? Does inflow of Foreign Direct Investment increase telecommunication sector output in Nigeria? It is the answers to these relevant questions that necessitated this paper. The remaining section therefore discussed, literature review, methodology, result and discussion as well as summary and conclusion.

II. LITERATURE REVIEW

2.1 *The Neoclassical Theory*

The neoclassical economists argue that external inflow influences economic growth by increasing the amount of capital per person. However, because of diminishing returns to capital, it does not influence long-run economic growth. Bengos and Sanchez-Robles (2003) assert that even though external inflow is positively correlated with economic growth, host countries require minimum human capital, economic stability and liberalized markets in order to benefit from long-term external inflows. Growth in neoclassical theory is brought about by increases in the quantity of factors of production and in the efficiency of their allocation. In a simple world of two factors (labour and capital), it is often presumed that low-income countries have abundant labour but scarce capital.

This situation arises owing to shortage of domestic savings in these countries, which places constraint on capital formation and hence growth. Even where domestic inputs in addition to labour are readily available and hence no problem of input supply, increased production may be limited by scarcity of imported inputs upon which production processes in low-income countries are based. International capital flows (ICFs) readily become an important means of helping developing countries to overcome their capital shortage problems. One of the components of international capital flows is foreign private direct investment (FDI). Other components are Official flows from bilateral sources, multilateral sources (such as the World Bank and its two affiliates, the international Development Association IDA, and the international finance corporation).

Economic theory suggests that in free market economies capital will move from countries where it is abundant to countries where it is scarce. This pattern of movement will be informed by the returns on new investment opportunities, which are considered higher where capital is limited. The resultant capital relocation will boost investment in the recipient country and, as Summers (2000) suggests, brings enormous social benefits. Underlying this theory is the premise that returns on capital decreases as more machinery is installed and new structures are built, although, in practice this is not always or even generally true. Although economic theory and empirical investigations have much to say about where FDI may flow, both the theory and the evidence are less definitive about the impact of such flows. Like trade, FDI is regarded as a two-way flow, with most of the major

providers also being the major recipient. FDI is supposed at least theoretically, to be a positive sum game.

2.2 *Empirical Literature*

Adeboye, Ogbebor and Egharvba (2014) used Vector Error Correction Mechanism to examine the effects of external capital inflow on the Nigerian economy from 1981 to 2012. The results from the empirical analysis showed that the categorization of foreign capital inflows into direct and portfolio has significant relevance in terms of their effects on economic growth in Nigeria. It is also shown that external debt has the strongest impact on economic growth in Nigeria among the foreign capital factors. Similarly, Baghebo and Apere (2014) examined the impact of foreign portfolio investment on economic growth in Nigeria over the period 1986-2011 with the use of parsimonious error correction method. The variables considered are foreign portfolio investment, inflation rate, market capitalization, trade openness. It discovers that foreign portfolio investment; market capitalization and trade openness has a positive long-run relationship with real gross domestic product in Nigeria.

Ezeanyej and Ifebi (2016) examined the impact of foreign direct investment on sectoral performance in the Nigerian economy with special reference to the telecommunications sector. The Ordinary Least Square result showed that FDI has contributed significantly to the performance of the telecommunications sector in terms of its contribution to the Gross Domestic Product of Nigeria. Also, Nayyara and Muhammad (2014) examined the empirical role of telecommunication infrastructure and Foreign Direct Investment in Pakistan from 1990 to 2012. Ordinary Least Square technique has been applied to estimate the coefficients of all the variables. Mobile cellular subscription is taken as a proxy variable for infrastructure along with market size, labor force and trade openness as explanatory variables. The results of empirical analysis indicate the positive significant effect of infrastructure in attracting FDI to Pakistan.

Udensi (2015) examined the influence of multi-national co-operations in the economic development of Nigeria. The study analyses how MNCs has served as agents of imperialism in any economy where they operate. It argues however that in spite of the negative activities of MNCs however, they contribute positively in the areas of technological development and creation of employment opportunities. Adegbelemi, Sheriffdeen and Osoba (2012) investigated the impact of investment in telecommunications infrastructure on economic growth in Nigeria. A multivariate model of simultaneous equations was deployed. The study also deploys Three-Stage Least Squares method to capture the transmission channels through which telecommunications infrastructure promotes growth. The finding shows that telecommunications infrastructural investment has a significant impact on output of the economy directly through its industrial output and indirectly through the output of other sectors such as agriculture, manufacturing, oil and other services. The results

also show a bi-directional causal relationship between telecommunications infrastructure and economic growth.

Alleman, Hunt, Michaels, Mueller, Rappoport and Taylor (1997) examined the relationship between investment in telecommunications infrastructural investment and economic growth with respect to the Southern African countries and concluded that investment in telecommunications and will take one period to manifest this impact. Hameed (2008) in their analysis examined the impact of external finances on productivity and business growth in Pakistan for the period 1970-2003. They applied co-integration and error correction model on the annual data. Their results showed that debt servicing has a negative relation with labor and capital, hence affects economic growth adversely. It was also observed that a negative relationship exists between debt servicing and GDP, which reduces the debt servicing ability of the country in the long run.

III. METHODOLOGY

Secondary data sourced mainly from Central Bank of Nigeria statistical bulletin and National Bureau of statistics relating to the dependent and independent variables from 1980 to 2015 was used for the analysis. The data were analyzed using the Error Correction Modeling technique. The essence of the error correction model was to adjust the short run error to long run equilibrium relationship. Also, the unit root test to test for stationarity of the variables and co-integration test proposed by Johansen (1988) to examine the long run relationship among the variables.

Model Specification

The functional and econometrics specification of the model is provided in the equations below:

$$GDPT = F (FDI, FPI, TOP) \tag{3.1}$$

$$GDPT = \theta_0 + \theta_1 FDI_t + \theta_2 FPI_t + \theta_3 TOP_t + U_t \tag{3.2}$$

In other to put the variables and the estimated result on the same scale, we carry out the log form of the model. Thus,

$$LogGDPT = \theta_0 + \theta_1 LogFDI_t + \theta_2 LogFPI_t + \theta_3 LogTOP_t + U_t \tag{3.3}$$

Equation (3.3) was represented in an error correction form that allows for inclusion of long-run information thus, the ECM can be formulated as follows:

$$GDPT_t = \beta_0 + \sum \beta_{1t} FPI_{t-1} + \sum \beta_{2t} FDI_{t-1} + \sum \beta_{3t} TOP_{t-1} + \pi_1 ECM_{t-1} + U_{1-t} \tag{3.4}$$

Where; FPI= Foreign Portfolio Investment in Telecommunication Sector, TOP= Trade Openness, FDI= Foreign Direct Investment, GDPT= Telecommunication Sector Output (Proxy for Contribution of the Telecommunications Sector to the Gross Domestic Product of Nigeria) U = Error Term, t= Time/Period and π = coefficient of ECM

On the apriori, we expect $\theta_1 > 0$, $\theta_2 > 0$ and $\theta_3 > 0$

IV. RESULTS AND DISCUSSION

Table 1: Unit Root Test of Stationarity

Variables	ADF Test	Critical Value			Level of Stationarity
		1% critical value	5% critical value	10% critical value	
FDI	-6.700279	-3.699871	-2.976263	-2.627420	1(1) 1 st Difference
TOP	-5.733862	-3.711457	-2.981038	-2.629906	1(1) 1 st Difference
FPI	-4.460377	-3.711457	-2.981038	-2.629906	1(1) 1 st Difference
GDPF	-7.441153	-4.339330	-3.587527	-3.229230	1(1) 1 st Difference

Source: Author's Computation from (E- view 9.0)

Note: *** represent the rejection of the null hypothesis at alpha 1%, 5% and 10% respectively.

The result of the augmented dickey fuller test of stationarity shows that the time series is presented in Table 1 explained that all the variables has identical of order of integration. Meaning that all the variables were stationary at first

difference. Since the variables were made stationary, then the best regression results will be obtained in the subsequent model estimation

Table 2: Co-integration Result for the Estimated Model

(Trace Statistics) k=2, r=2	Critical Values (5 %)	Prob	(Max-Eigen Statistics) k=2, r=2	Critical Values (5%)	Prob
83.28699	47.85613	0.0000	52.59817	27.58434	0.0000
30.68882	29.79707	0.0394	22.78474	21.13162	0.0290
7.904079	15.49471	0.4757	6.361236	14.26460	0.5673
1.542842	3.841466	0.2142	1.542842	3.841466	0.2142

Source: Author's Computation from (E- view 9.0)

Note: r = number of co-integrating vectors and k = number of lags in model.

The analysis of co-integration results using the Johansen matrix showed that there are two co-integrating equations in the model. This is because trace and max- Eigen statistics values were greater than the 5% critical value. Thus, the null

hypothesis of no co-integration, among the variables was rejected. Meaning that there is long-run equilibrium relationship among the variables.

Table 3: Error Correction Result

Dependent Variable: DLOG(GDPF)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.309723	0.282552	1.096162	0.2915
DLOG(GDPF(-1))	0.066863	0.220128	0.303747	0.7658
DLOG(GDPF(-2))	0.828761	0.232463	3.565123	0.0031
DLOG(GDPF(-3))	-0.255847	0.241289	-1.060336	0.3069
DLOG(FDI(-2))	1.019056	0.397014	2.566801	0.0014
DLOG(FPI(-2))	0.966238	0.334988	2.884392	0.0014
DLOG(TOP(-2))	0.629302	0.237541	2.649237	0.0013
ECM(-1)	-0.024793	0.084919	-2.919607	0.0016
R-squared	0.701611	Mean dependent var		0.424137
Adjusted R-squared	0.639905	S.D. dependent var		0.811392
F-statistic	4.816316	Durbin-Watson stat		2.005143
Prob(F-statistic)	0.011452			

Source: Author's Computation from (E- view 9.0)

The results of the parsimonious Error Correction Model (ECM) in Table 3 indicated that the R^2 is 70%, meaning that the estimated ECM model shows a good fit. Thus, changes in the telecommunication output for 70% combined variation of the three independent variables. The Durbin Watson (DW) value of 2.02, which is approximately 2.0, suggested a level of lesser serial autocorrelation in the model. Thus, the estimated model is valid for policy formation.

Also, the result in Table 3 shows that the coefficient of foreign direct investment (FDI) is positively signed with telecommunication output and statistically significant at 5% level. Meaning that a percentage increase in exchange rate will cause an increase in telecommunication output by 1.01905%. Also, given that the t-stat of 2.566 is greater than t-table of 2.034, the alternative hypothesis is accepted. The coefficient of foreign portfolio investment is positively signed with telecommunication sector output and statistically significant at 5% level. This means that a percentage increase in foreign portfolio investment will increase telecommunication output by 0.966238%. Also, the t-statistic value of 2.88 > t-table of 2.03. Thus, the study accepts the alternative hypothesis which states affirms a significant relationship between foreign portfolio investment and telecommunication sector output in Nigeria. The coefficient of trade openness is positively signed with telecommunication sector output and statistically significant at 5% level. Thus, a percentage increase in trade openness will increase telecommunication output by 0.629302%. Since the t-calculate value of trade openness at 2.649 is greater than t-table at 2.03, the study accept the alternative hypothesis and conclude that there is a significant relationship between trade

openness and telecommunication output in Nigeria during the period of study.

V. SUMMARY AND CONCLUSION

The study examined the impact of external capital inflows on telecommunication sector in Nigeria. The objectives of the study are to examine the impact of, foreign direct investment, foreign portfolio investment and trade openness on telecommunication output. Thus, to achieve the stated objectives, data from the CBN statistical bulletin was collected and the econometric method of co-integration and Error Correction Mechanism were used to analyse the data. The ECM results show that foreign direct investment is positively signed with telecommunication output and statistically significant at 5% level.

The study asserted that foreign direct investment, trade openness and foreign portfolio investment are vital to the inflow of capital in the telecommunication sector. Thus, Nigerian government must create an enabling environment for foreign investors to thrive. Therefore, government should focus on maintaining formulating favourable policies that will attract long-term funds into the country.

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