DOES TRANSPORTATION SECTOR HAVE ANY IMPACT ON ECONOMIC DEVELOPMENT? A TIME SERIES ASSESSMENT WITH NIGERIA IN FOCUS

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Abstract

The paper examined the effect of transportation network in Nigeria over the years using sub-sector output time series data (road transport, rail transport, air transport and water way) ranging from 1981-2009. We ascertain the impact of the sub-sectors outputs on the real gross domestic product, a measure of economic development. The time series property was ascertained using Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests. Almost all the variables were integrated of order two as shown by the ADF statistic, which led to the examination for long-run relationship using Johansen rank co-integration test. The outcome implies a long-run relationship. Ordinary least square approach was employed in the data analysis. The results revealed that only road transport impacted significantly on the real gross domestic product (RGDP). However, the joint effect of the variables on the economy was statistical significant based on the F-statistic. Hence, we made the following recommendations, among others: sufficient and consistent resources should be budgeted and allocated to transportation capital expenditure; private domestic and foreign investors can be contracted to establish transport infrastructure and given a period of time to recoup cost of investment and profit margin.

Keywords: Economic development, impact, transport sector, infrastructure

INTRODUCTION

Many scholars have delved into the study of transportation as an essential sector which its development is required for moving an economy forward. This is because transportation is crucial to national and international competitiveness. It is believed that the sector plays significant role in ensuring economic growth and development, and the life wire of any society (Ellis et al, 2012; Somuyiwa, et al, 2011; Olukoju, 1996; Olanrewaju and Falola, 1986). A good number of researchers focused on the transport infrastructure as essential for effective economic growth (Olubomehin, 2012; Ighodaro, 2009; Olubomehin, 2001). Economic activity in a country requires easy movement of resources like manpower, raw materials, capital assets and other variable inputs from one point to the other. It equally includes evacuation of outputs and food items from point of production to both domestic and foreign markets; from place of abundance to place of scarcity and other points of need. Transportation involves motor transport with good road network, railway with functional railway lines, water transport with well dredged water channel, and Airways with standard aviation facilities. Besides, effective transportation enhances efficient distribution of resources and proper management of commerce, government business and international transaction.

Capital overhead is a prerequisite for economic development. Scholars advocated that a certain quantum of capital overheads is imperative for economic development to occur. This is because of interdependence of sectors of an economy. Transport infrastructure is essential for effective conveyance of information, raw materials and finished product from point of abundance to point of scarcity, and this usually assist greatly to build and maintain the society and consequently, contributes to economic growth. Really, the economic development of Nigeria is associated with the development of transportation network (Ozoh, 2006; Ighodaro, 2009).

Nigeria as a developing country, since independence has made various plans and programmes aimed at improving the transportation sector. This intention is mainly to ensure effectiveness in employment of idle resources and improvement in aggregate economic activity, which has been expected to lead to economic advancement and welfare of the society. The First National Development Plan of 1962-68 incorporated the improvement of transportation and huge expenditure was incurred. Total allocation for road development for all the regions (East, West, North and Federal) at the period was N150.6 million. Onokala (2012) points out that the percentage share of the transport sector in the First National Development Plan was 21%. This resulted to improving some trunk A roads, construction of Niger bridge from Onitsha to Asaba, and Mainland bridge in Lagos. In a similar vein, still with the intention to encourage transportation development, in the Second National Development Plan 1970-74, the government allocated N485.189 million on transportation development and percentage share of transport stood at 23.7%. Meaningful results were achieved. Apart from other investment by the

government, there was establishment of Automobile industries such as Peugeot Automobile plant in Kaduna, Volkswagen Assembly plant in Lagos came up mainly to make it easy to have vehicles required to enhance production in the country. Besides, there was roads construction at the period. For instance, 2200 miles (3520 kilometers) of road was constructed; the Enugu Airport was reconstructed while contracts were awarded for the construction of Airports in Kano, Lagos, Jos, Ilorin, and Calabar. The desire for balanced development compelled the pioneer leaders of the country to establish varieties of industries and improving the efficiency of public investment. Still with the desire to reposition transportation in Nigeria, the third and forth National Development Plan had a total percentage share of public expenditure of 22.5 and 15% respectively. Even in the Rolling plans of 1990-1993, 1994-1996 and 1996-1998, transport share of public expenditure were respectively 11.6%, 6.65 and 10.1%. (Onokala, 2012; Osuka, 2006; Ighodaro, 2009).

The intention has been mainly to improve and advance economic development of the country. Consequently, Nigerian transportation system was potentially one of the best in 1990 as it featured well designed highways, railway lines, waterways, airways and ports. The oil boom of the 1970s empowered the leaders to put a lot of things in place in the transport sector, but lack of maintenance culture over the years gradually led to the worsening of some of the constructed transportation infrastructure (www.mongbay.com/history/nigeria/nigeria-transportation). This situation made some of Nigerian roads a death trap from automobile accidents and plane crash as witnessed in recent periods of time.

Filani (2012) posits that the average proportional allocation of capital expenditure to the transport sub-sectors in million from 1962-2000 to highway (road infrastructure) was 66.14, railway, 12.54, port (sea), 10.57, port (air), 6.07 and 3.37 to waterways. This shows that much attention has been given to road transport in Nigeria, and so the development of other sub-sectors in the transportation sector has been very, very slow due to inadequate allocation over the years. This can be substantiated by Oyesiku (2013) who points that in spite of remarkable efforts made in the development of the transport sector, the sector's infrastructure in Nigeria is still lopsided and uni-modal as over 95% of domestic freight and passengers are moved by road.

However, in spite of all efforts and actions over the years, the situation of the overall transportation infrastructure is yet to improve greatly. FRN (2000) notes that the poor state of transport infrastructure in Nigeria, specifically, roads, rail, air and water transport systems which have been in terrible state for so many years. This situation was drastical that many regions of the country were cut off and a large chunk of rural areas were inaccessible as there were no link roads, and there have been no proper linkage of other transportation modes. Over 75 percent of existing roads in the rural areas are terribly poor while over 30 percent of federal roads are in a

deplorable condition due to lack of maintenance in the recent past. As at 2000, Nigeria has 3,505 km made up of 3 feet 6 inches narrow-gauge single-track lanes streamlined from South-West to North East and from South East to North West and there was no East-West link. No link for 14 states and the Federal Capital Territory. There has been great underdevelopment of this mode of transportation as attention was not given to it after the colonial masters left. Facilities in use are outdated and most of the railway stations are no longer functional.

In addition, the high potential for water transport in Nigeria is yet to be developed. This has retarded efficient use of resources in the Niger Delta. Nigeria has about 3,300km of navigable inland waterways in its natural state which is suppose to provide easy access to coast areas, but this has remain unnavigable because of the inability to dredge sufficiently and non-availability of modern river vessels. The existing seaports in Lagos, Calabar, Warri, Sapele, Opobo, among others lack maintenance and the infrastructure were in very poor condition, thereby affecting economic activities, consequently low patronage and underutilization of existing facilities. The aviation industry is not left behind in terms of poor infrastructure over the years (FRN, 2000), especially during the military regime.

Prior to the recent changes introduced by the civilian regime, pioneered by Olusegun Obasanjo, the status of Nigerian transportation sector was a serious problem in terms of doing business in Nigeria vis-à-vis other developing countries. This actually affected both domestic and foreign investors, and the cost of doing business in Nigeria has been relatively high.

The situation of transportation in Nigeria has never been friendly for quite a long time notwithstanding governments' efforts. This is why we frequently have auto-crash and air flight disaster. The major transport in use is road, but the deplorable road network has been highly demoralising and devastating. Reforms in Airlines have not been able to attain the international standard in spite of its pursuant by Federal Airport Authority (FAAN), Nigerian Airspace Management Authority (NAMA) and the Nigerian Civil Aviation Authority (NCAA). The modernization of the railway services has not been consistent and vigorously pursued in spite contracts awarded. The use of railways as an alternative mode of transportation in Nigeria is yet to be attained because of lack of functional railways. Although the maritime services are receiving serious attention by the government, nevertheless, much is needed to boost the sector. CBN (2009) reported that private domestic airlines recorded improvements in 2009, and operation performance of international airlines fell significantly; and that the nation's transport infrastructure received a major boost.

Given the above stated, the main objective of this study is to investigate the impacts of road, railways, air, and water transport on economic development (proxied by real gross domestic product) in Nigeria.

LITERATURE REVIEW

Actually, every member of a society wants improvement in living standard, and so aspires for rise income from production, which is creation of utility. Conveying goods to the final consumer in many cases involves one form of transportation or the other. Improvement in transportation system is really a means of maintaining or advancing economic opportunities, better living and improved income within the economy. Members of a country and visitors have direct benefit in various types of transportation in operation within an economy (Weisbrod and Weisbrod, 1997). Income generation and attainment of personal aspiration depends so much on transportation. Movement of inputs and outputs of production necessitates efficient transport system. Business cannot function effectively without sufficient means of transportation. Resources management, distribution, allocation and utilization involves functional transportation network.

Rodan (1943) in his balance growth thesis discourages piece meal developmental strategy as inadequate to push an economy to the path of development and so postulated simultaneous and harmonious development of all the sectors of the economy due to linkages that brings about positive externalities in terms of use of resources, thereby promoting aggregate economic activity and economic development. In a similar vein, Rodan (1947) in his Big Push theory stressed on the need for establishing minimum level of investment in industries and infrastructure as a necessary condition for development and growth. The two postulates require putting necessary infrastructure on ground in order to advance the course of societal improvement.

Ozoh (2010) posits that the balance growth thesis does not presupposes equal distribution of resources to all the sectors, rather a proportional allocation of resources capable of sustaining the required interdependence among sectors so as to have the presence of complementarily and externalities in the economies of scale among the various sectors, so as to secure optimum pattern of investment of resources. Adequate investment in the various components of transportation (road, rail, waterways and air) in Nigeria is a sine qua non for economic development.

Researchers have laid great emphasis on the indisputable role transportation plays in an economy and advocated for its proper positioning, adequate provision, accessibility and efficiency. Ladan (2012) in his analysis of air transportation in Nigeria notes that efficient air transport is expected to convey people and commodities to their destination without any hitch, delay or cancellation and that a well functional air transport contributes significantly to economic growth and development. But regrettably, Nigeria suffers poor reputation for operation and safety, which stemmed from absence of coherent air transport policy, bad management, decaying facilities, closure of airports and occasional air crash, among others. This is a critical factor in our aviation industry. The high demand of air transport in recent time has not been

matched with supply, hence, there is high pressure on the use of road transport, which brought about many deaths due to poor roads and congestion of vehicles.

Weisbrod and Reno (2009) in their study of economic impact of public transportation investment arrived at some desirable economic effects, which includes, among others the creation of jobs and income by supporting manufacturing, construction and public transportation activities; enables various economic efficiency and productivity.

In their study of economic impact of transportation infrastructure improvements in Virginia, the Economic Development Research Group (2009) found among others the long run benefit of capital investment in transportation facilities is improved travel condition with associated costs saving and productivity improvement for economic agents in Virginia; creation of jobs for various sector of the economy; minimize leakage of income and saving that usually flow to businesses outside the country; business efficiency and increased tax revenue generation for the government.

Canning and Fay (1993) studied the effects of transportation network on economic growth using panel data to estimate the marginal product of transportation infrastructure for 96 countries and found that transportation infrastructure have normal rates of return in developing countries, huge rates of return in industrializing countries, and moderate rates of return in underdeveloped countries. In addition, the study revealed that transportation infrastructure has little short-run effect on output, however, it encourages higher growth rate and higher output in the long-run. This implies that transportation infrastructure is indispensable in ensuring smooth economic operation, and its sufficient establishment is the genesis of economic advancement of a developing economy.

Ighodaro (2009) studied transport infrastructure and economic growth in Nigeria using vector error correction model and found, among others that road transport was given more attention in the early three national development planning in Nigeria, followed by water and air; local government authority controls about 67% of total road network in Nigeria; the contribution of road transport to the gross domestic product has been declining notwithstanding that 20% of annual budget is devoted on road projects at both state and federal level and the estimated loss in the country due to deplorable road condition is about N450 billion yearly. Oyesiku et al (2013) examined the effect of public sector investment in transport on economic growth in Nigeria employing ordinary least square method and found that transportation contributes an insignificantly role in the determination of economic growth.

Abioye (2013) in his report notes that Professor Kayode Oyesiku stressed that efficient transport system, covering rail, waterways, air and road is a catalyst for economic growth and development in that a well-developed transport network would have a positive impact on socio-economic life of the people, among others. In a similar vein, Rodrigue (2013) posits that the

relationship between quantity and quality of transport infrastructure and the level of economic development is quite glaring. In the sense that efficient transport system provides both economic and social opportunities and benefits that gives positive multiplier effects like better accessibility to markets, employment and additional investments. But its deficiency   is associated with high cost of doing business, reduced opportunity and retard quality of life. Transportation system enhances mobility. Countries with greater mobility are in better position to develop than others with scarce mobility. Greater mobility is really a catalyst for development while reduced mobility retards development. In this respect, mobility is an indicator for development, given that transportation links together the various factors of production in a complex web of relationships between producers and consumers.

It can be pointed that in Nigeria, low income generation by some business establishments and poor aggregate income vis-a-vis other economies can be attributed to poor transportation system. At macroeconomic level, the deficiency is reflecting on low contribution to gross domestic product and at microeconomic level, it affects producers and consumers in terms of costs.

Zahir et al (2011) in their study of transportation, telecommunication and economic development of Pakistan employed the technique of autoregressive model in the analysis of time series data. The outcome shows univariate association in terms of labor and gross domestic product (GDP); labor and capital; labor and telecommunication and capital and telecommunication. Bivariate relationships are exposed between capital and GDP and telecommunication and GDP. Multivariate analysis shows that capital (gross fixed capital formation) and transport infrastructure (roads) are significant cause of higher GDP in Pakistan.

Egert et al (2009) empirically examined the relationship between infrastructure and economic growth. The time series results showed, among others a positive effect of infrastructure investment on growth. The result also varies across countries and sectors and further showed infrastructure investment in telecommunication and the electricity sectors has robust positive effect on long-run growth unlike railways and road network.

Zou et al (2008) employed panel and time series data to investigate the effect of transport infrastructure on economic growth and poverty alleviation in China, and found that high growth rate in East and Central China was to a great extent from improved transport infrastructure. Besides, transport investment on road was a good source of growth; in comparison of road and railways public investment in region, they also found that public investment on road construction in poor areas is of great importance to growth and poverty alleviation.

Adegbemi et al (2012) investigated the effect of infrastructure on economic growth of Nigeria using a multivariate model of simultaneous equations. The results revealed that

infrastructural investment has significant impact on output of the economy directly through its industrial output and indirectly through the output of other sectors. Agricultural sector was not affected by infrastructure, but there was a bi-directional causal relationship between infrastructure and economic growth.

From the above literature, it is obvious that most studies focused on transportation infrastructure in assessment of economic growth, and actually showed various impacts on reforming an economy. Many showed that a positive economic effect is witnessed when there is adequate transport infrastructure. In this paper, we want to deviate a little by dwelling on the effect of the output of transportation sub-sectors on economic growth, measured by the real gross domestic product.

METHODOLOGY

Model Specification

Obvious, sufficient investment in transportation has a multiplier effect to increase effective transportation and better mobility of factors of production, thereby raising efficient resources allocation, increased economic activity and positively impact on aggregate output of the country. Invariably, the output of sub-sectors of transport such as road (RT), railways (RW), airway (AW) and waterways (WW) will become robust and contribute significantly to real gross domestic product (RGDP). Increase in employment of resources of a country resulting from improved transportation has the tendency to increase output, income and reduction of unemployment. Changes in macroeconomic variables have the potentiality to reposition an emerging economy for acquisition of new features required for further advancement. In this regard, we can establish the relationship thus: real gross domestic (RGDP) is a function of output on road transport (RT), railway (RW), airway (AW) and waterways (WW). Mathematically, it can be stated thus: RGDP = f(RT, RW, AW, WW)

That is RGDP= β_0 + $\beta_1 RT_t$ + $\beta_2 RW_t$ + $\beta_3 AW_t$ + $\beta_4 WW_t$ + μ_t-------------1

$\Delta RGDP_t$ = a_0 + $a_1\Delta RTt$ + $a_2 \Delta RW_t$ + $a_3\Delta AW_t$ + $a_4\Delta WW_t$ + $\square$ ECM_{1+} e_t-----2

Where RGDP = real gross domestic product

RT= road transport output

RW = railway output

AW = airway output

WW = waterway output

β_0 is the intercept while $\beta_1, \beta_2, \beta_3$ and β_4 are the co-efficients of the independent variables; μ_t is white noise error term, while $_t$ is time trend. Δ is the first difference and $\square$ $\square$ $\square$ is the coefficient of the error correction term.

The apriori expectation is that β_1, β_2 β_3 and $\beta_4 > 0$. This is on the basis that if the products of these sub-sectors are impacting meaningfully and desirably on the economy, they will have a positive impact on real gross domestic product, which is a measure of economic development.

Data

The empirical data for this study is secondary time series data that is obtained from Central Bank of Nigeria Statistical bulletin of 2009. It is our intention to cover the period 1981 to 2009. The reason for this coverage is because of intensified activity in the sector at the period. However, non- availability of data for the sub-sectors from 1973 to 1980 impeded us from widening the scope.

The study assumed that the allocation expenditure made in transportation over the time period has impact on the economy. Impact studies often involves establishment of relationship. This relationship is multiple as we intend to investigate how the sub-sector four independent variables affect the dependent variable (RGDP). The study relies on the method of Ighodaro (2009) and Oyesiku (2013) involving ordinary least square (ols) method, but with little variation. The estimation of time series involving ordinary least square technique is still very popular and reliable. Equation one above will be analysed using ordinary least square. Equation two will be very relevant if we suspect a long-run relationship.

ANALYSIS

The starting point is to examine the time series property of our data so as to find out the unit root status. In this respect, we employ the Augmented Dickey-Fuller (ADF) unit root test which is derived from Dickey and Fuller (1979, 1981). In other to be very sure of the result of the ADF test, we also employ Phillips-Perron (PP) unit root test (introduced by Phillips 1987, Perron 1988 and Phillips and Perron (1988) to confirm its reliability. It has been noted that the Augmented Dickey- Fuller takes care of the autocorrelation of the first differences of a series in a parametric fashion by estimating additional nuisance parameters (Obioma and Ozughalu, 2010), whereas the Phillips-Perron (PP) unit root test applies non-parametric statistical methods that takes care of the serial correlation in the error terms without adding lagged difference terms (Gujarati and Porter, 2009). Using ADF test, the null hypothesis is that the variables have unit root (that is not stationary) while the alternative hypothesis is that there is no unit root in the variable (that is, Stationary). The decision rule is to reject the null hypothesis if the absolute value of the ADF statistic value is greater than the critical value at a determined significance level.

Table 1 Augmented Dickey-Fuller and Phillips-Perron Unit Root Test E-view Results

Variable	ADF Statistic Level	PP Statistic Level	ADF Statistic 1st difference	PP Statistic 1st difference	ADF Statistic 2ND difference	PP Statistic 2ND difference	Order of integration	
							ADF	PP
RGDP	-3.699871* -2.076263** -2.627420*** (1.664569)	-3.689194* -2.971853** -2.625121*** (4.714318)	-3.699871* -2.976263** -2.627420*** (-2.075251)	-3.699871* -2.076263** -2.627420*** (-1.923353)	-3.711457* -2.981038** -2.629905*** (-6.984675)	-3.711457* -2.981038** -2.629905*** (-6.978340)	I(2)	I(2)
RT	-3.689194* -2.971853** -2.625121*** (2.028173)	-3.689194* -2.971853** -2.625121*** (2.028173)	-3.699871* -2.976263** -2.627420*** (-4.400831)	-3.699871* -2.076263** -2.627420*** (-4.393507)			I(1)	I(1)
RW	-3.689184* -2.971853** -2.625121*** (-2.491232)	-3.689194* -2.971853** -2.625121*** (-2.469015)	-3.711457* -2.981038** -2.629905*** (-1.534040)	-3.699871* -2.976263** -2.627420*** (-5.316309)	-3.711457* -2.981038** -2.629905*** (-15.29675)		I(2)	I(1)
AW	-3.699871* -2.976263** -2.627420*** (0.078610)	-3.689194* -2.971853** -2.625121*** (0.167644)	-3.699871* -2.976263** -2.627420*** (-3.209045)	-3.699871* -2.976263** -2.627420*** (-3.223923)	-3.711457* -2.981038** -2.629906*** (-7.943725)	-3.711457* -2.981038** -2.629906*** (-9.284955)	I(2)	I(2)
WW	-3.699871* -2.076263** -2.627420*** (-1.886189)	-3.689184* -2.971853** -2.625121*** (-2754691)	-3.724070* -2.986225** -2.632604*** (-3.602300)	-3.699871* -2.076263** -2.627420*** (-3.223923)	3.724070* -2.986225** -2.632604*** (-8.904375)	-3.711457* -2.981038** -2.629906*** (-9.284955)	I(2)	I(2)

*(**) *** denote Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) statistic at 1%, 5% and 10% level of significance. Figures in brackets are the critical values of ADF and PP respectively.

The two unit root tests show a little variation as the order of integration of railway is integrated of different order. None of the variable was stationary at level form. Only road transport (RT) value is integrated of same order one in both Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) since the absolute value of the critical value in both is greater than the ADF and PP statistic at 1%, 5% and 10%. All the other variables are integrated of other two considering the absolute critical value at 1%, 5% and 10% of ADF and PP statistic, except railway (RW) output value in the case of Phillips Perron. However, it is our intention to focus on Augmented Dickey-Fuller which is more consistent. In consideration of the fact that most of the variables are stationary (have no unit roots) at second difference, we suspect the presence of long-run relationship. Hence, we test for co-integration so as to ascertain the long-run relationship between the dependent variable, real gross domestic product (RGDP) and the independent variables road transport output (RT), railway output (RW), airway output (AW) and water way (WW).

Co-Integration Test Result

The Johansen co-integration test makes use of two tests statistic namely: the trace test and the maximum Eigenvalue test. The first row in each of the table tests the hypotheses of no co-integrating relationship while the second row tests the hypothesis of one co-integrating relation and so on, against the alternative of full rank of co-integration. We present the results in table 2

Table 2: Co-integrating Test Result between RGDP and Components of Agric. output

Eigenvalue	Trace Statistic	0.05 critical value	Probability	Hypothesized No of CE (s)
0.859890	135.1660	69.81889	0.0000	None*
0.815975	82.10205	47.85613	0.0000	At most 1***
0.615290	36.39955	29.79707	0.0075	At most 2***
0.289952	10.60741	15.49471	0.2368	At most 3
0.049194	1.362008	3.841466	0.2432	At most 4

*(**) (***) denotes rejection of the hypothesis of no co-integration at 5% significance level.

Trace Statistic test, Eigenvalue and the probability indicate 3 co-integrating equation(s) at 5% level of significance

The table shows the existence of co-integration between the real gross domestic product (rgdp) and most of the variables. The results show the rejection of null hypothesis of no co-integration and acceptance of the alternative of co-integration. Actually, the results imply the existence of a stable long run relationship between real gross domestic product and sub-sectors outputs of transportation. Given this situation, we employ the second equation in our methodology

Table 3 Result of Estimation of Equation 1: Dependent Variable Log(D(RGDP))

Variable	Co-efficient	Std error	T-statistic	Probability
D(Log(RT)	0.214500	0.057716	3.716456	0.0013
D(Log(RW)	0.014428	0.013686	1.054186	0.3033
D(Log(AW)	0.001835	0.119678	0.015329	0.9879
D(Log(WW)	-0.075693	0.050507	-1.498660	0.1488
ECM-1	1.20E-6	4.37E-07	2.748232	0.0120
C	0.039290	0.008355	4.702370	
F-statistic	6.630041			0.000754
R-square	0.612190	Durbin Watson =		
Adjusted R-squared	0.519854	1.920102		

The co-efficients of the explanatory variables meet the apriori expectation as they are positive except output of water way (ww) which is contrary to expectation. From the result, the transportation sub-sectors have effect in the economy, but at an insignificant level as shown by the probability of railway, airway, and waterway outputs which is greater than 5% level of

significant. Only road transport output impact significantly on the economy as the probability which is 0.0013 is less than 5%, the critical value. The co-efficient of correlation (R-squared) and the co-efficient of determination (Adjusted R-squared) are respectively 61% and 52%. This implies that variables other than the independent variables account for about 39% and 48% of variation on the dependent variable. However, the values show a goodness of fit of the regression equation. The error correction model shows the degree of adjustment from deviation from path of equilibrium. The error correction term (ECM) for the estimated equation is statistically significant as shown by the probability value, which implies that the adjustment rate is significant. However, the sign is contrary to our expectation. The combined effect of all the explanatory variables impact significantly on the economy as shown by the probability of F-statistic. The Durbin Watson test for autocorrelation is 1.920102 which approximates to 2, and it means the absence of any serial positive autocorrelation in the model.

DISCUSSIONS

The result has statistically shown that transportation sector is playing significant role in accelerating the Nigerian economy. However, the attention given to road transport over the years should be adequately extended to all other sub-sectors so as to reap better effect. Again, road transport situation is highly in bad state, and yet still contributing significantly to the economy. This means if adequate good road exists all over the country, the country would have more positive effects. The statistical result of the co-efficient of water way output seems unrealistic in consideration of the fact that less attention to this mode of transportation does not mean absolutely adverse effect in the economy.

But, it can equally be seen differently in the sense that oil theft in Nigeria is mostly done through waterway, which in a way a source of negative effect in the economy. The other independent variables such as railway and airway are yet to impact significantly simply because they are limited to a few areas in the country. A large chunk of the population of Nigeria is yet to begin to have access to this mode of transportation due to inadequate availability in all the nook and cranny of the country. The available ones are deficient of necessary infrastructure. Besides, the positive and multiplier effects expected there from cannot hold at present.

Although the federal government is making frantic efforts to reposition the transport sector considering the agenda of the present government and programmes that have taken off, much is still needed to be done in order to enhance the activeness of this important sector. More so, the environment of the country in recent time has not be encouraging to investors and prospective investors given the actions of the Niger Delta Militia, 'Boko Hara' and insecurity in the country.

RECOMMENDATIONS

From the foregoing, it is obvious that urgent actions are needed to revive the transportation sector in Nigeria so that it can contribute meaningfully to the development of the economy. Nigeria has all it takes to reposition any sector so desired. It is a matter of determination. At this period of global competitiveness, poverty eradication and societal welfare aspiration, intensified efforts are imperative in reforming and over hauling the transport sector now. Be that as it may, it is our sincere believe that some of the right steps required to achieve that are as follows:

(i) Sufficient and consistent resources should be budgeted and allocated to transportation capital expenditure. Even if it means deficit financing since the sector is capable of repaying debt obligation as a highly productive sector. The service of the sector is always in demand. This also implies the reduction of recurrent expenditure.

(ii) Domestic and foreign investors need be given a chance to operate now in the transport sector. Many investors are highly discouraged from investment in the country due to non-conducive environment. It is absolutely necessary that the insecurity always experienced in the country has to be addressed so as to encourage, attract and sustain investment in the transport sector. In other words, the private investors can be contracted to establish transport infrastructure and given a period of time to recoup cost of investment and profit margin. This will benefit the people of the area as it will accelerate economic activity with its multiplier effect.

(iii) There is urgent need to put in order the bad road network existing in the country and connect the rural areas that do not have access to other regions. The Local, State and Federal government have to harmoniously work in common to tackle this road problem existing in various jurisdictions. Many federal roads in deplorable conditions are left by the states on the ground of not being states' responsibility. This has retarded smooth movement of factors of production and outputs in the area.

(iv) Rail way line, water way and airports should be evenly distributed in the country to facilitate and promote economic activity in the country. Limiting such facilities to urban areas does not help in the efficient productivity in a large economy like Nigeria. This in line with Rodan (1947) who posits that a certain minimum quantum of investment in infrastructure is a *sine qua non* for positive economic development.

(v) Maintenance culture should be adopted and implemented at all the time. The leaders in most cases would execute transportation project but would not have provision or mandate to ensure regular maintenance. This led to worsening of so many trunk A and highway roads constructed few decades ago. There is need for attitudinal change at this period by the Local, State and Federal governments.

CONCLUSION

The study has shown the indispensable need to reform the transport sector as a panacea for enhancing and accelerating the Nigerian economy. The neglect of the needful in the sector over the years, the insufficient attention to sub-sectors like railway and water way has contributed to their poor state Nigerians are experiencing at the moment. In addition, the inadequate availability of all modes of transportation in both the rural and urban areas has retarded effective transportation system in the country. A large proportion of the populace resides in the rural areas, and as such to enhance rural development, reduces excessive rural-urban migration, and promotes efficient inputs and outputs distribution requires sufficient transportation network to be extended to the region. The paper has some limitations among which include: lack of sufficient data on yearly funding and its utilisation for each sector; the scope of the study is limited to 1981 -2009 due to paucity of relevant data and comparison between rural and urban areas transportation would have given more clarity of the situation in the country but data availability imposed a constraint.

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