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# IMPACT OF PUBLIC EXPENDITURE FOR TRANSPORT ON ECONOMIC GROWTH IN NIGERIA: AN EMPIRICAL ANALYSIS FROM 1984-2024

**BY**

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## Abstract

*The study analysed the impact of public expenditure on transport on economic growth in Nigeria, using time series data from 1984 to 2024. To ascertain the stationarity condition of the variables, a unit root test was conducted and found that the variables under study were integrated of order one I (1). This allowed conducting the cointegration test. The study employed ECM and Granger causality techniques. The findings showed that real GDP with (0.24) found to be positive and statistically significant at 0.038. CEXP is positive and statistically significant at 0.0836, indicating that an increase in CEXP will lead to an increase in economic growth. The coefficient of GEXT 2785.68 is positive and statistically significant at 0.057, suggesting that an increase in GEXT will lead to an increase in economic growth. Also, the coefficient of DIV 4675.23 is positive and statistically significant at 0.076 showed increase in DIV will result in a rise in economic growth. It also showed that public spending for the transport sector will increase the gross domestic product. It further revealed that ECM -0.058 was negative with a p value of0.00) showed the long run relationship. Based on this result, the study recommends that the government allocate more funds to capital expenditure and recurrent expenditure to the transport sector. Doing this will decrease the cost of doing business and accelerate the nation's production capacity.*

***Keywords:*** *Public Expenditure, Transportation, Economic Growth, and Empirical Analysis*

## *Introduction*

*For many years, the discussion on the impact of public spending and economic growth nexuses becomes issues among scholars and researchers. There are two main positions in the literature. These are: the Keynesian and neoclassical economists. Keynesians believe that government expenditure is a catalyst for economic growth. Keynes (1936) pioneered the importance of public spending for growing the economy and expanding welfare benefits, observing that government spending boosts general economic activity for development purposes. This approach believes that state intervention boosts economic activity when the demand is depressed and slows it down when it is high, and may lead to internal and external imbalances (Yovo, 2017b). This means that public expenditure stimulates demand and increases economic growth. The argument in favour of public spending shows that public spending on roads, electricity, transport, telecommunications, education, and health generates externalities that improve the productivity of enterprises and can therefore support economic growth (Blejer & Khan, 1984).*

*Another position which is contrary to the Keynesian approach is the view of the neoclassical economists. They argue that expansionary fiscal policy does not positively impact economic growth. They also believed that economic policy reform of the government through its spending will results negative effects. These negative effects stem from the fact that economic agents anticipate the future consequences of fiscal policy and adjust their consumption and savings behaviour accordingly (Feldstein, 1982; Barro, 1990). The debate had results to many works, with different results.*

*The impact of public spending also varies across countries or regions according to the nature of spending. Nigeria has witnessed an increase in government expenditure, particularly in the transport sector. Despite this increase, less economic growth is achieved. The government allocated a huge amount to various sectors such as transportation, agriculture, and defence, among others. Economically, economic growth is assumed to grow if more expenditure is allocated to the stated sectors, but in Nigeria. perhaps is due to corruptions and mismanagement of public funds. Hence, the matter of government expenditures to speed up permanent growth in an economy is very crucial and needs to be assessed (NketiahAmponsah, 2009). The country has overtime witnessed a series of economic growth instability. In literature, many empirical Studies have been carried out on growth-public expenditure nexuses. Current work attempted to analyse the relationship between public spending for transport and economic growth.*

## *Theoretical Review*

*The Harrod–Domar model is an economic growth model, which stresses that economic growth is achieved or depends on the level of savings and capital output ratio within the economy (Cypher & Dietz, 2008). The endogenous growth theory bridges the gap of the Solow growth model, which assumes that technology is external in explaining economic growth (Rajiv, 2010). The endogenous growth model, which is mathematically presented as Y =AK, assumes that A is assumed to be positive and shows the level of technology used. The subscript K is capital stock; however, unlike in the Solow model, where capital K indicated only equipment and fixed or physical capital (Mankiw, 2014, 2019).*

## *Empirical Literature*

*From the empirical literature, Phiri (2019) used the logistic smooth transition regression (LSTR) model and found an inverted U-shaped*

*relationship between military spending (especially on logistics and transport) and economic growth. Mishra and Mohanty (2021) revealed that government expenditure has a favourable and statistically significant influence on economic growth. Shkodra et al. (2022) found support for the positive impact of government expenditure on economic growth. The study used OLS. The study found that a rise in public expenditure increases GDP. Kirikkaleli and Ozbeser (2022) findings showed that in the long-run, economic growth leads to government spending, while in the short term, especially during recessions, government spending merely serves to boost economic growth. Nartea and Hernandez (2020) analyse a panel of data from 12 provinces to determine the breakdown of government spending on economic growth. The study establish positive relationship among the variables. The investigation of the impact of productive and non-productive government expenditure on economic growth was undertaken by Chu et al. (2020) based on OLS fixed effects and the Generalised Methods of Moments (GMM) system approach. It is suggested that increased productivity and non-productivity spending will increase and reduce GDP.*

### *Methodology*

*The work used annual time series data from 1984 to 2024. The dependent variable of the study is economic growth proxy by real GDP (RGDP), Capital Expenditure (CEXP) Proxy with annual percentage growth in government final expenditure, Government Expenditure on Transportation (GEXT), Domestic Investment (DIV) as measured by annual growth of gross capital formation (Van et al., 2021). The data were CBN.*

*The general econometric model is specified as follows:*

$$RGDP = \beta 0 + \beta 1 CEXP + \beta 2\ GEXT + \beta 3\ DIV + \mu t$$

*Where β0 represents the intercept parameter and β1, β2, and β3 represent the slope coefficients, μt error term. The study used unit root test analysis, cointegration test analysis, ECM and granger causality test.*

### *Results and Discussions*

### *Unit Root Tests Results*

*The study carried out a unit root test to determine the stationarity of variables by employing the Augmented Dickey Fuller (ADF). The results of the test were shown in the table. From the results, the series became stationary at first difference at 5%. After ascertaining the unit-root properties of the variables, the study carryout co-integration test to determine long run properties of the variables, i.e., government expenditure and GDP*

***Table 1 ADF Test Results***

| *Series* | *1st dif* | *Critical sig. value* | *Order of int.* |
|---|---|---|---|
| *rgdp* | *-6.137718* | *-3.544284* | *I(I)* |

| | | | |
|---|---|---|---|
| *cexp* | *-5.575344* | *-3.544284* | *I(I)* |
| *gext* | *-4.706290* | *-3.544284* | *I(I)* |
| *div* | *-6.225971* | *-3.548490* | *I(I)* |

*Source: Researcher work (2025)*

*Table: 2*

| *Eigen. Values* | *TS* | *C. values 5%* | *Pvalues* |
|---|---|---|---|
| *0.559625* | *45.30825* | *47.85613* | *0.0051* |

| *Eigen. Values* | *Max eigen values* | *Critical. values* | *Pvalues* |
|---|---|---|---|
| *0.559625* | *28.70450* | *27.58434* | *0.0358* |

*Source: Author work (2025)*

*The table above shows that the trace statistics of 45.30825 and below the critical value at 1% 47.85613, with probability of 0.0851, the Max-Eigen showed a trace statistics of 28.70450 that greater than the critical value at 5% significance level is 27.58434, with the p-value of 0.0358 showed that the variables are cointegrated.*

| *Hypotheses* | *F. Statistics* | *Probability* |
|---|---|---|
| *RGDP does not granger causes GEXT* | *1.44* | *0.25* |

| | | |
|---|---|---|
| *GEXT does not granger causes RGDP* | *3.35* | *0.048* |
| *RGDP does not granger causes RGDP CEXP* | *0.79* | *0.46* |
| *CEXP does not granger causes RGDP* | *4.016* | *0.028* |
| *RGDP does not Granger Cause DIV* | *2.21* | *0.13* |
| *DIV does not granger causes RGDP* | *0.16* | *0.85* |
| *RGDP does not granger causes GEXT* | *2.10* | *0.14* |

*Source: Researcher's work (2025)*

*Table 3, showed real gross domestic product (RGDP) does not granger causes government expenditure on transportation (GEXT), there exists causality between government expenditure on transportation and real gross domestic product (RGDP). This showed that there is unidirectional causality among the variables.*

| *VARIABLES* | *CO-FFICIENTS* | *STD. ERROR* | *T-STAT* | *PROBABILITY* |
|---|---|---|---|---|
| *C* | *14673.12* | *12834.23* | *1.46* | *0.29* |
| *RGDP(-1)* | *0.24* | *0.09* | *3.46* | *0.038* |
| *CEXP* | *2813.18* | *134563.06* | *0.21* | *0.08* |
| *GEXT* | *2785.68* | *14756.68* | *1.67* | *0.057* |
| *DIV* | *4675.23* | *1293.12* | *3.73* | *0.076* |
| *ECM (-1)* | *-0.58* | *0.087* | *-8.17* | *0.031* |

*Source: Author's Computation (2025)*

*The table above presents the coefficients of the lag value of the RGDP (0.24), which was found to be positive and statistically significant at 0.038. This shows that past RGDP influences*

*the current RGDP. CEXP is positive, and statistically significant at 0.084, indicating that CEXP increases RGDP. Coefficient of GEXT 2785.68 was positive and significant at significance 0.057 suggested that GEXT would increase RGDP. The coefficient of DIV 4675.23 was positive and statistically significant at 0.076 showed that an increase in DIV would increase RGDP. The ECM -0.58 found to be negative at 0.000 shows that there exists a long-run relationship among the variables. The adjusted R-square measures the goodness of the fit of the model, which is 89%, which means that 78% variation of the RGDP is a result of CEXP, GEXT & DIV, and the DW is 1.8, this indicated that there is no autocorrelation. The F statistic 60.93 measures the collective significance of the parameters and was found to be statistically significant at 0.000. This indicates that the predictors' variables were jointly significant in determining RGDP.*

***Summary and Conclusion***

*The study analysed the impact of public spending for transport on economic growth in Nigeria using time series from 1984-2024. The study carried out a unit root test to determine the stationarity of variables by employing the Augmented Dickey Fuller (ADF). The results of the test were shown in the table. From the results, the series became stationary at first difference at 5%. After ascertaining the unit-root properties of the variables, the study carried out a co-integration test to determine long run properties of the variables, i.e government expenditure and GDP. The study employed the ECM and Granger causality test. The results, it showed that government expenditure for the transport sector will increase the gross domestic product. It further revealed that ECM -0.576) with p value of 0.000) shows that there existed long run relationship amongst the variables. The study finally recommended that the government should allocate more funds to capital expenditure and recurrent expenditure to the transport sector, as doing so will reduce the cost of doing business. This will accelerate the nation's economic growth and production capacity.*

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