

## **An Empirical Evaluation of Budget Implementation on Economic Development in Nigeria**

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### **Abstract**

One of the primary goals of this study was to explore how a budget review approach may affect Nigeria's economic development. The reasoning was that the Nigerian economy was being challenged by a variety of imbalances in budget creation and implementation. The study strategy was based on events that occurred after the study was completed, and the data used in the study came from the Central Bank Statistical Bulletin and the Federal Ministry of Finance. A model was constructed based on both empirical and theoretical investigations in order to achieve this broad goal. The HDI, which was utilized as a measure of development, was the dependent variable in the model. The government's capital budget, recurrent budget, and the speed of annual budget implementation were the other independent variables in the model. They examined data using the Auto Regressive Distributed Lag (ARDL) Model, diagnostic tests such as the test of normality, auto correlation test, and heteroskedasticity test, which proved the validity and reliability of the model they chose; inferential results reveal that the use of budget evaluation had a positive and significant impact on the Nigerian economy. According to the study's suggestions, Nigeria's government should try to increase capital and recurrent expenditures in its annual budget, both of which have a significant impact on economic development. Finally, the government should work to build budget monitoring and review infrastructure that will aid in the effective implementation of large budget expenditures while also ensuring compliance with legal procedures.

**Keywords:** Budget Evaluation, Recurrent Expenditure, Capital Expenditure, Budget Implementation Rate, Human Development Index and Economic Development

### **Introduction**

Fiscal policy is a fundamental instrument that may be utilized to reduce short-term volatility in GDP and employment. While this is going on, policymakers on both sides of the Atlantic are acknowledging that fiscal policy is still at the forefront of macroeconomic issues including high unemployment, inadequate national savings, unsustainable budget deficits, and excessive public debt loads. While the global economic depression of the 1930s was in full swing, governments in both developed and developing countries played a critical role in promoting economic growth and development. When governments are under financial stress, they will utilize any and all means at their disposal to enhance the flow of money into the economy and lower taxes.

Public spending is a crucial tool that has a strong impact on the sustainability of government finances since it has an impact on both fiscal balances and government debt. The conventional view is that budgets are most often reduced, with increasing spending targets, whereas other views regard them as often increased, with shrinking spending budgets. This phenomena may

be used to predict that the goal income would be reduced because of the reality of the target region.

Nigeria's budgeting process is in a state of flux since both planning and implementation are troublesome, and this means that a level of control targeted at enhancing the efficient use of resources is required throughout the budget implementation stage. Budgeting is the process of forecasting revenues and expenses over a certain time, and making assumptions about future financial circumstances and objectives, to produce an estimate of how much money the company will have. Budget as a framework of government is implemented to deal with fiscal policy instruments. It is here that we see the array of policies and programs with the intention of helping the economy grow and prosper.

Government endeavors to attain macro-economic aims and objectives of price stability, stable and full employment, economic growth, infrastructural development, as well as Balance of Payments equilibrium, issues the demand for significant budgetary figures such as Deficit, surplus, balanced, development, and supplemental budget. Government pursues a number of social and economic goals that it wants to advance. In order to do this, the government has used budgetary instruments such as a funding mechanism to implement these objectives. Because of this, this instrument converts policies, campaign pledges, political commitments, and objectives into choices on how income will be generated, where it will be allocated, and how it will be spent.

To finance the government budget, the main source of income is derived from petroleum products and taxes. Budget is calculated as the total anticipated income from the sale of petroleum, as well as any taxes that are expected to be paid. Due to this, when there are variations in the market price of petroleum products, there is going to be an adjustment on the estimate, which will account for the current market conditions. Aregbeyen (2007) pointed up four main principles that affect the success of a budget in their ability to be adequately created, effectively and efficiently executed, along with proper monitoring and, lastly, an assessment of their effectiveness. While we identified the several aspects from above, the most important purpose of a budget is not in its formation or in its beginning, but rather in its execution, since citizens have a higher expectation from their budgetary provision.

Olomola (2004) claims that no matter how many times there have been flaws and constraints, the budgeting process has always been seen as "endless flaws and constraints." The budget process in Nigeria consists of the drafting of the budget by the executive, the adoption of the budget by the legislature, and the execution of the budget by various ministries, departments, and state corporations. The employment of warrants issued by the Ministry of Finance to achieve a budget implementation strategy is a way for ministries and spending agencies to incur costs and spend money in line with government mandates. This warrant permits the officers in charge of the ballot to incur expenditures specified in the approved estimates that are subject to any pre-authorized spending categories. Under a temporary General Warrant, which hasn't been enacted yet for the current year, if the Appropriation Act hasn't come into action, an unrestricted general warrant may be issued to assure services of government, which are equal to or below those of the previous year. Although the hurdles to effective budget implementation are mostly due to partial release or delayed funding, it is also because there are many unfinished tasks and projects to be completed prior to the release of authorized money for budgetary expenditures.

Without a doubt, these bottlenecks plainly have negative effects on the implementation of government campaign promises, policies, and programs, with the ultimate goal of delivering superior people' welfare. It is possible to adopt a well-designed budget, which will help ensure provision of job possibilities, together with a significant decrease in poverty, which can then

be sustained by sustaining infrastructure development. It is recorded that since Nigeria attained full independence over five decades ago, the country has been using yearly budgeting strategies to accelerate the development in the economy's production by means of increased public spending, but with no positive effect. It has been shown before that the performance analysis of Nigeria's past and present budgetary forecasts reveals the state's inability to establish or maintain a stable economic environment owing to deficits in most budgets as projected to be balanced or surplus. This issue has made things worse, since it has contributed to the socio-economic difficulties in Nigeria such as unemployment, poverty, income disparity, high inflation, and poor standard of life as well as a credit balance that is unfavourable.

However, governments may elect to use deficit financing as a method to boost the economy and to foster the growth of existing sectors, helping to reduce unemployment and offer a wider range of social services to the people. Additionally, in Nigeria, things work out in reverse because of the aforementioned circumstances. Deficits are difficult to get a handle on both when it comes to figuring out how much money to set aside and then actually getting the cash. Among the macroeconomic concerns such as insufficient national savings, unsustainable budget deficits, high unemployment, and enormous public debt loads, several governments have joined in a discussion on fiscal policy in both established and emerging countries such as Nigeria. It is important to improve socioeconomic conditions of the population, and to do so, it is essential to develop programs and policies. Projected spending of the government and the expected usage of the income tends to lead to higher economic performance that is seen in both the Real Gross Domestic Product (RGDP) and the Human Development Index (HDI) of a nation.

Because her capital expenditure and recurrent spending for an improved economic infrastructure fluctuations' affect in these performance proxies (real gross domestic product and human development index), the capital expenditure and recurrent expenditure for an expanded economic infrastructure is the crucially important variable for this nation (Faloyin and Famoloya, 2015). Lately, several countries, even emerging nations, have discovered that a country's Human Development Index (H.D.I.) matters when it comes to gauging a nation's overall economic health (Peterson, 2015). For an economy to be developed and maintained, being a part of the Human Development Index (HDI) is a better indicator than having gross domestic product (GDP) as a larger measure of the economic health of the country. Due to the fact that growth and development in an economy are both dependent on evaluation of the above measurement parameters and the application of government fiscal policies that are correctly organized with effective and efficient mechanisms for execution, improvements in these growth and development metrics may be seen when government fiscal policies are constructed well. It is very crucial to underline that one of the yardsticks for judging a nation on either the "developed" or "developing" scale is how the nation's resources are efficiently and effectively employed to spur her economic growth

### **Statement of the Problem**

The Nigerian economy is in a state of several imbalances, mostly due to differences in budget preparation and execution. Budgeting is an essential economic policy tool in the hands of the government, since it provides a means to pursue long-term goals like macroeconomic stability and prosperity of the people, yet in most instances, the opposite is true; it is clouded by a multitude of myths and illusions, and thus might be detrimental to the country's long-term growth and development. But it has, nevertheless, been a severe worry to scholars and Nigerians alike because the gap between the commencement of the project and its execution is still wide. Proposing a budget is one thing, but actually implementing the budget is a very another process that has to meet three primary goals: macroeconomic objectives like economic

growth and development, as well as individual goals like bettering the financial status of citizens.

In contemporary times, budgetary attention has risen to the fore as a result of a dramatic rise in democratic and civil society engagement, and to that end, in order to deal with the problems of poverty, increased public interest and government response have all recently converged.

Research examining the effect of budget execution and review on economic development have emphasized industrialized economies and excluded poor nations from cross-country comparisons, since most studies do not allow for adequate degrees of freedom in statistical analysis. The purpose of this study is to examine the effect of budget review on economic growth in Nigeria by examining the impact of three budget components (Public Capital Expenditure, Public Recurrent Expenditure, and Implementation Rate) on the Human Growth Index (HDI) as a proxy for economic growth from 2000 to 2019.

When it comes to Nigeria's financial difficulties, the most perplexing element is how they are executed. As the information above indicates, presenting, recommending, and proposing budget projections does not necessarily equate to or reflect real implementation, especially in rising economies such as Nigeria, and so there is an urgent need to examine budget implementation in order to ascertain the progress of economic development in Nigeria. Thus, the objective of this study is to conduct an empirical examination of the various components of the budget and their rate of execution in order to establish if they have a significant impact on economic development in Nigeria.

### **Objectives of the Study**

The main objective of the study is to investigate the impact of budget evaluation on economic development in Nigeria. Specifically, the objectives are to; examine the impact of public capital budget expenditure on economic development in Nigeria; ascertain the impact of public recurrent budget expenditure on economic development in Nigeria; evaluate the impact of budget implementation rate on economic development in Nigeria.

### **Hypotheses of the Study**

The following null hypotheses have been developed with a view to achieving the research objectives:

H01: There is no significant impact of public capital budget expenditure on economic development in Nigeria.

H02: Public recurrent budget expenditure has no significant impact on economic development in Nigeria.

H03: There is no significant impact of Budget implementation rate on economic development in Nigeria.

### **Empirical Review**

Based on data taken from secondary sources dating back to 1993, a research paper written by MO, (2013) explored the ways in which budget implementation influences economic growth in Nigeria. Public total expenditure (PEX), public recurrent expenditure (PRE), public capital expenditure (PCE), and foreign debt were the factors to be examined on the dependent variable, GDP (EXD). Going back OLS studies indicate that the implementation of the budget had a positive effect on the country's economic growth in Nigeria. The results in this most recent research, which finds a positive correlation between GDP and public total expenditure (PEX), public recurrent expenditure (PRE), public capital expenditure, foreign debt (EXD), while showing a negative correlation between public capital expenditure (PCE) and GDP, bolster the earlier results, which found a positive link between GDP and PEX, PRE, capital expenditure,

external debt (EXD), while finding a negative link between capital expenditure (PCE) and GDP.

Using data collected from Nigeria, Iheanacho (2016) researched how much of the money that was spent on economic development benefitted the Nigerian economy. In order to ascertain the connection between public expenditures and economic growth in Nigeria, this study covered the period from 1986 to 2014, commencing in 1986 and concluding in 2014. The two output elements of Cobb-Douglas production function were employed to analyze two aspects of public sector expenditures and gross capital formation ratio, and the Error Correlation (EC) approach was applied. The discovery of a conclusion (i.e., that recurring spending is a key driver of economic development, but that capital expenditure has a significant long-term effect on economic development in Nigeria) revealed that although recurring spending is an important catalyst for economic development, a lack of capital investments hinders long-term growth in Nigeria.

In a study titled "Capital Flight and Fiscal Policy Implementation in Nigeria" (Ohanele, 2010), Ohanele (2010) researched how capital flight affects Nigeria's budgetary policy implementation. All of the data that dates back to 1986 was included into secondary analysis. The budget implementation dependent variable was calculated by using government expenditures as a proxy. Other factors affecting the independence of a variable include currency depreciation, debt levels, government revenue, economic openness, and the real exchange rate. As the analysis progressed, the variables' long-term equilibrium connection was found. A positive and large influence on government expenditures was seen in Nigeria as a result of capital flight. While there is a significant short-run cause-and-effect relation between capital flight and government expenditure in Nigeria, the data showed that Nigeria saw an outflow of capital and increased government expenditures from 2002 to 2006.

To help shed light on the economic impact of budget reviews, the authors evaluated the effectiveness of budget review and the Nigerian economy's performance in this respect. Secondary sources, such as financial and economic data from Nigeria, were used for this study. An in-depth investigation and testing were done with regard to the data. The financial credibility of the budget was gauged by the imposed limit on the country's budget deficit or GDP. Good economic performance on the computation of the budget deficit or GDP was at least necessary for every nation to get a performance grade of 50 percent or above. Although Nigeria's fiscal rankings classified the country's fiscal performance as sub-optimal, the country's fiscal position was relatively solid.

Capital expenditure budgets may have a significant impact on economic growth in Nigeria, as researchers have discovered (2017) using Olatunji et al. (2017) investigations. The researchers' major purpose was to look into the influence of investment in capital expenditures on administration, the economy, and society. Secondary sources provided the data. To go along with the results, it was determined that sustaining and maintaining economic progress in Nigeria necessitates capital spending.

Nurudeen & Usman, (2010) did a preliminary research and discovered that increasing capital budget expenditures had a discernible impact on the Nigerian economy dating back to 1981. Capital investment on administration, economic services, and socio-community services has been proven to be very important in the growth of the Nigerian economy. Data from elsewhere were utilised in the study. In the long term, there is a big negative effect on the economy with the implementation of capital expenditure, but a little positive influence in the long term. Once the researchers were done their examination, they found that over the long run, both investment in capital projects and economic development negatively affect the Nigerian economy.

A team consisting of Ogbonna and Azubike (2018) collaborated with the Nigerian government to investigate the association between public sector spending and the country's economic progress (1981-2015). The data suggest that increased education expenditures has a considerable impact on GDP. Despite a negative link between health care spending and GDP, the provision of community services has no impact on GDP.

The Ilemona & Sunday, (2018) study looks on the progress and performance of Nigeria's budget and economic growth plans from 2014 to 2018. Data was derived from secondary sources, where PCE, PRE, and PDEX explained public capital expenditures, while GDP was the dependent variable in the model. Multiple regression analyses revealed that GDP was greatly affected by the three petroleum products (namely, PCE, PRE, and PDEX), but not the other merchandise industries (MOS).

As part of her project, Orji (2019) evaluated the influence of the Nigerian government's implementation of a budget on the country's economy. GDP, which is a proxy for economic growth, was used to indicate the economy's total progress. This contrasts with budget execution, which includes government capital investment, budget recurring costs, and the government's debt commitments (PDS). CBN is the main source of secondary data in this case, since the bulletin that compiles data since 1999 follows a market from that time until 2018. All of the variables tested had no affect on growth in the short run, but in the long run, they had no affect on growth. Nigeria's capital budget execution has been characterized by consistent difficulties over the last three years, according to researchers from Effiom & Edet (2019). This data was acquired from primary sources, which included mailing out a survey to 200 federal employees in two southern states in the South-South geopolitical zone. Using multiple regression analysis, researchers discovered that the president's delay in presenting a budget, as well as the national parliament's delay in approving it, corruption, and leaks associated with it, and below-par budget monitoring and evaluation all contributed to the inability of the federal government to carry out effective capital budget execution in Nigeria.

Several African experts, notably Adah & Akogu, (2019), have investigated the relationship between national budgets and economic development (2019). When GDP per capita was the dependent variable in the model, it was determined by three other variables: government capital budget, recurring budget, and the pace of execution of yearly budgets. In the data analysis, the Ordinary Least Square (OLS) model was applied. These results show that, in the short term, a decline in capital expenditures yields a considerable decrease in per capita GDP. This change is balanced out by an increase in per capita GDP over time. The short-term effects on the economy include both the formulation of government budgets and the implementation of those budgets. However, only the former approach proved successful in the long run.

In order to study the diminishing influence of budgetary execution on the nation's economic health, experts discovered that they had to research all the way back to 1999. In regression analysis, government capital expenditures and government recurrent expenditure were shown to be mutually inverse; hence, when both decreased, the economy's performance decreased. Nigeria's fiscal policy had a significant influence on the country's economic performance throughout the studied period.

Nwala & Bameyi, (2020) used an Ex-post facto research technique and secondary data obtained from varied sources to evaluate the execution of Nigeria's fiscal budget from 1981 to 2018. In order to compute Gross Domestic Product (GDP), the dependent proxy (GDP) was employed, whilst the independent proxies (Capital expenditure, Recurrent expenditures, and Debt) were employed. Using regression analysis, it was shown that investment in capital had a significant and large impact on the GDP of Nigeria. Additionally, recurring expenses and GDP are

positively and significantly linked, but government debt and GDP are negatively and significantly linked.

**Methods**

**Research Design**

In this situation, the research employed the use of an ex-post facto study design due to the fact that the event had already occurred and secondary data were readily available for collection. To quantify human development, researchers utilize the Human Development Index (HDI), which takes into account the level of a person's total development. It is possible to identify independent components such as capital spending, recurrent spending, and budget implementation rate, all of which enhance the evaluation of total human development. This model was created by employing the Auto Regressive Distributed Lag (ARDL) model. For this inquiry, we employed annualized time-series data and employed a long-term dataset; as a result, we were certain that our data were not affected by the presence of unit roots; as a result, we applied for stationarity of the series using the Augmented Dickey-Fuller test (ADF).

the Ministry of Finance and the Federal Inland Revenue Service (FIRS) were responsible for the majority of the dataset and population used in this study Data used in this study were obtained from several organizations and government agencies, such as the Central Bank of Nigeria's Bulletin, the United Nations Development Programme (UNDP), the Federal Ministry of Finance, and the National Bureau of Statistics (NBS). This is an examination of the period from 2000 to 2019. The methodology used in this study includes descriptive statistics, unit root tests, correlation, and the Auto Regressive Distributed Lag (ARDL) model to assess the study hypotheses. Furthermore, along with the aforementioned tests, numerous more diagnostic tests such as the Normality Test, the Auto Correlation Test, and the Heteroskedasticity Test were also conducted. Shown on the electronic viewfinder The research is conducted using a dependable, economical, and statistically rigorous 9.0 econometric software package.

**Model Specification**

MO, (2013) previously examined the impact of budget implementation on economic development in Nigeria between 1993 and 2010, and so this research amended the econometric model to make it relevant to this time period. The following section details the econometric model used in this study, which was previously evaluated:

$$GDP = f(PEX, PRE, PCE, EXD) \dots\dots\dots (3.1)$$

Where

GDP = Gross Domestic Product

PEX =Public Total Expenditure

PRE = Public Recurrent Expenditure

PCE = Public Capital Expenditure

EXD = External debt

From the above function, they derived the statistical model as follows:

$$GDP = \beta_0 + \beta_1PEX + \beta_2PRE + \beta_3PCE + \beta_4EXD + \mu \dots\dots\dots (3.2)$$

Where

$\mu$  - Stochastic variable

f - Functional notation

$\beta_0 - \beta_4$  = coefficient of estimates

This research, however, modified the experts' work by substituting the GDP, the standard measure of economic growth, with the Human Development Index (HDI), which was used as the regressed in order to track socioeconomic development. In addition, the former Public Total Expenditure and External Debt were substituted with the Budget Implementation Rate since this eliminated multicollinearity and did not result in overgrowth of the model due to the variables that were removed exhibiting the same coefficient of correlation with the Budget Implementation Rate.

The regression model for this is study is specified thus:

$$\text{HDI} = \beta_0 + \beta_1\text{PCEX} + \beta_2\text{PREX} + \beta_3\text{IR} + \varepsilon \dots\dots\dots (3.3)$$

Where:

HDI = Human development Index

$\beta_0$  = intercept;

PCEX = Public Capital Expenditure;

PREX = Public Recurrent Expenditure;

IR = Budget Implementation Rate;

$\varepsilon$  = Error term.

### **Dependent Variable**

Human Development Index (HDI) is a composite index that measures the degree of human development by considering several indices of education, life expectancy, and gross domestic product per capita income. To serve as the dependent variable for this investigation, it is assumed that economic growth is the desired outcome. The Human Progress Index is often employed as a metric for measuring economic development. Human Development Index as a measure of economic development is a complete measurement of assessing economic growth and development as opposed to Nominal or real Gross Domestic Product.

### **Independent Variables**

The Public Recurrent Expenditure (PREX) is a major component of government expenditures; it covers all types of expenses except for capital expenses. In addition to the amounts already specified, recurring spending comprises payments on goods and services as well as interest and subsidies.

Public Capital Spending (PCEX) expenditure is mostly directed towards the purchase of fixed assets and on the purchase of land, buildings, and intangible assets.

This is known as the budget implementation rate, and represents the point in time at which the budget was put into place. It is a measure of the extent to which budget goals have been implemented.

### **Decision Rule for Acceptance or Rejection of Hypotheses**

Deciding on whether or not to reject the null hypothesis should be based on whether or not the p-value is below 5% of the significance threshold. The contradictory point of view is to accept the null hypothesis if the p-value is more than 5 percent but still deemed to be non-significant.

### **A priori Expected Results**

<b>Variables</b>	<b>Measure</b>	<b>Notation</b>	<b>Expected Impact</b>
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<b>Dependent Variable:</b> Human Development Index	Composite measurement	HDI	
<b>Independent Variables:</b>			
Public Capital Expenditure	Total Capital Expenditure	PCEX	+
Public Recurrent Expenditure	Total Recurrent expenditure	PREX	+
Budget Implementation Rate		BIR	+

Source: Researcher's compilation

## Data Analysis and Interpretation of Results

Pre-Estimation Test Result (Unit Root Test)

Table 1. Unit Root Test

Variables	Augmented Dickey-Fuller test statistic	Probability Value	ADF Critical at 5%	Inference
HDI	-4.749831	0.0018	-3.052169	I(1)
PCEX	-3.247887	0.0347	-3.052169	I(1)
PREX	-5.694789	0.0002	-3.040391	I(1)
BIR	-3.234776	0.0336	-3.029970	I(0)

Source: Researcher's analysis using e-view 9 output with data in Appendix

The stationarity of the variables may be shown by the unit root test in table 4.1 where the coefficients for the various factors are summed (0). Arbitrary sampling was used to generate observations, so the best method for estimating is the Auto Regressive Distributed Lag (ARDL) model (Pesaran et al., 2001).

## Descriptive Statistics

Table 2. Descriptive Statistics

	HDI	PCEX	PREX	BIR
Mean	0.491350	733.9685	2549.415	83.11450
Median	0.499500	697.0250	2618.705	85.50000
Maximum	0.546000	2031.890	5675.190	99.86000
Minimum	0.445000	239.4500	461.6000	53.76000
Std. Dev.	0.032592	410.1053	1506.271	14.04197
Skewness	-0.270766	1.496203	0.241622	-0.884174
Kurtosis	1.883390	6.026179	2.013072	2.751205
Jarque-Bera	1.283396	15.09355	1.006293	2.657463
Probability	0.526398	0.000528	0.604625	0.264813
Sum	9.827000	14679.37	50988.30	1662.290
Sum Sq. Dev.	0.020183	3195541.	43108207	3746.361
Observations	20	20	20	20

Source: Researcher's analysis using e-view 9 output with data in Appendix

The data shown in Table 4.2 shows that PREX (i.e., with the highest mean value of N2549.42 billion) has the greatest mean N value. PCEX (i.e., with a value of N733.97 billion) is next in line, while BIR (i.e., with a value of N83.12) and HDI (i.e., with a value of 0.49) have smaller mean values. It is important to note that the Mean describes the average value for each data

series in the model. In order to draw the most conclusive conclusion, it is necessary to do an in-depth examination of the data. From the study, it was found that PREX had the largest standard deviation (by recording 1506.27) and is thus the most volatile variable in the model. We can also see from the data that two variables, HDI and BIR, which have a mean value of -0.271 and -0.884 respectively, are skewed to the left, while PREX and PCEX, which have a mean value of 0.242 and 1.496 respectively, are skewed to the right.

Kurtosis is used to determine if a distribution of a series is more peaked or flatter. The kurtosis of a normal distribution is equal to 3. If it reaches 3, it signifies that the distribution is leptokurtic (has just one peak) compared to the normal distribution. Conversely, if it is less than 3, it means that the distribution is either flat or platykurtic with respect to the normal distribution. By looking at the results in Table 4.2, we can see that PCEX with a Kurtosis value of 6.03 has a peaked or leptokurtic distribution. While HDI, PREX, and BIR are both flat or platykurtic, HDI, PREX, and BIR each have Kurtosis values of 1.88, 2.01, and 2.75 correspondingly.

The Jarque-Bera (JB) test is used to see whether the series is regularly distributed or not. The test statistic analyzes the difference between the skewness and kurtosis of the series, and that difference is compared to a normal distribution. A common null hypothesis in JB statistics is that the distribution is normal. However, when using a 5% significance threshold, this null hypothesis is rejected. Only PCEX with a Jarque-Bera statistic of 15.09 and a Probability of 0.000528 is rejected as having a normal distribution since its p-value is less than 5 percent significance, whereas other variables are declared to be normally distributed because their p-values are above 5 percent significance. This research has been running for 20 years, thus the number of observations that have been made is equal to the scope of the investigation.

The skewness and kurtosis do suggest departure from normalcy, but as the points are not strong enough to invalidate the dataset, these deviations are irrelevant for the task at hand.

### Correlation Analysis

Table 3. Correlation Matrix

	HDI	PCEX	PREX	BIR
HDI	1.000000			
PCEX	0.624974	1.000000		
PREX	0.849169	0.468209	1.000000	
BIR	-0.249383	-0.292010	-0.385327	1.000000

Source: Researcher’s analysis using e-view 9 output with data in Appendix

The correlation analysis in table 4.3 above indicates that all other variables were favorably associated amongst themselves, but BIR recorded a negative connection with all other variables in the model, resulting in HDI having a 62.5 percent positive correlation with PCEX, an 84.9 percent positive correlation with PREX, and a 24.9 percent negative correlation with BIR. PCEX, on the other hand, has a 46.8 percent positive connection with PREX and a 29 percent negative association with BIR. Then, PREX has a roughly 39% negative connection with BIR.

### Results and Discussion

#### Inferential Result

##### *Results of ARDL Model*

Table 4. Results of ARDL Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
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HDI(-1)	0.876581	0.012656	69.26001	0.0092
PCEX(-1)	2.62E-05	5.23E-07	50.03023	0.0127
PREX(-1)	3.82E-05	2.12E-07	180.0277	0.0035
BIR(-1)	0.000761	1.44E-05	52.95597	0.0120
C	-0.116783	0.005734	-20.36807	0.0312
R-squared	0.999999	Mean dependent var		0.499529
Adjusted R-squared	0.999980	S.D. dependent var		0.028063
S.E. of regression	0.000125	Akaike info criterion		-16.08385
Sum squared resid	1.57E-08	Schwarz criterion		-15.29965
Log likelihood	152.7127	Hannan-Quinn criter.		-16.00590
F-statistic	53571.73	Durbin-Watson stat		2.979756
Prob(F-statistic)	0.003390			

Source: Researcher's analysis using e-view 9 output with data in Appendix

As seen in the table above, the ARDL result indicates that all explanatory factors have a positive effect on the explained variable. That is, the model's independent variables had a beneficial effect on the dependent variable. Additionally, the finding indicated that increasing public capital expenditure by one unit would result in a 2.6 unit rise in the Human Development Index, while increasing public recurrent expenditure by one unit would result in a 3.8 unit rise in the Human Development Index. Additionally, a unit rise in the Budget Execution Rate results in a 0.00076 unit rise in the Human Development Index.

A careful examination of the findings revealed that the Adjusted R-squared value was close to 0.99. This indicates that the explanatory factors explained almost 99 percent of the variance in the explained variable. In other words, about 99 percent of the variance in the Human Development Index may be ascribed to independent factors, whereas the remaining 1% may be ascribed to factors not included in the model (stochastic variables).

The F-statistic of 53571.73 indicated that the model fit well, as shown by the probability value of 0.003390, which indicates that the model is significant at both the 1% and 5% levels of significance.

A Durbin-Watson statistic of around 2.9 indicates that the variables were uncorrelated, since the Durbin-Watson value is in the neighborhood of 2.

## Diagnostic Test

### *Test for Heteroskedasticity*

Table 5. Test for Heteroskedasticity

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	121.6285	Prob. F(15,1)	0.0710
Obs*R-squared	16.99069	Prob. Chi-Square(15)	0.3194
Scaled explained SS	0.047373	Prob. Chi-Square(15)	1.0000

Source: Researcher's analysis using e-view 9 output with data in Appendix

This test of heteroskedasticity reveals that the variables are free from the issue of heteroskedasticity since the p-values of F-stat. and Obs\*R-squared of 0.7 and 0.32 are > 5% significant threshold. This conclusion is further substantiated by the p-value of roughly 1.0 for the Scaled explained SS, which lends more credence to the conclusion that Heteroskedasticity does not exist.

## Test for Auto Correlation

Table 6. Correlogram Q-statistic

Q-statistic probabilities adjusted for 3 dynamic regressors						
Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob*
****  .	****  .	1	-0.503	-0.503	5.1139	0.024
.   .	. **  .	2	0.052	-0.270	5.1718	0.075
. *  .	. **  .	3	-0.123	-0.326	5.5210	0.137
.  * .	. *  .	4	0.122	-0.172	5.8914	0.207
.   .	. *  .	5	-0.053	-0.150	5.9683	0.309
.   .	. **  .	6	-0.060	-0.261	6.0752	0.415
.  ** .	.  * .	7	0.249	0.135	8.0749	0.326
. ****  .	. **  .	8	-0.368	-0.281	12.930	0.114
.  * .	. **  .	9	0.177	-0.253	14.192	0.116
.   .	. *  .	10	-0.009	-0.153	14.196	0.164
.  * .	. *  .	11	0.110	-0.106	14.846	0.190
. *  .	.   .	12	-0.092	-0.013	15.391	0.221

Source: Researcher's analysis using e-view 9 output with data in Appendix

The procedure used to do this test is to further test for auto correlation and to further consolidate on the result of Durbin Watson Stat, seen in table 4.4. This is supported by the correlogram Q-Stat, shown in table 4.5.2, which reveals that all p-values were more than 5%, which is to say that the variables do not auto-correlate.

## Test of Normality

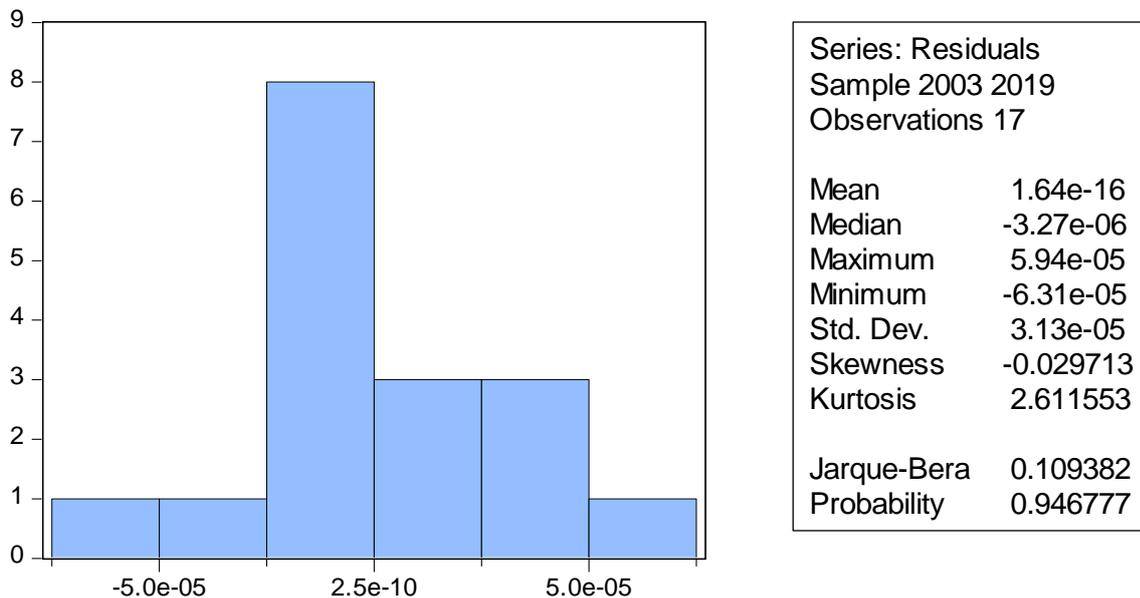


Figure 1. Normality Chart

Source: Researcher's analysis using e-view 9 output with data in Appendix

This test is used to determine the normal distribution of the data used in this investigation. The normality diagram in figure 4.5.3, as well as the Jarque-Bera value of 0.11 and its accompanying p-value of 95 percent, demonstrate that the data are normally distributed.

## Test of Hypotheses

### *Test of Hypothesis One*

H01: There is no significant impact of public capital budget expenditure on economic development in Nigeria.

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
HDI(-1)	0.876581	0.012656	69.26001	0.0092
PCEX(-1)	2.62E-05	5.23E-07	50.03023	0.0127

Source: Extracted from table 4

The null hypothesis that public capital budget spending (PCEX) has no significant influence on economic growth in Nigeria is rejected since the p-value of 0.0127 (1.27 percent) is less than the 5% threshold of significance.

### *Test of Hypothesis Two*

H02: There is no significant impact of public recurrent budget expenditure on economic development in Nigeria.

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
HDI(-1)	0.876581	0.012656	69.26001	0.0092
PREX(-1)	3.82E-05	2.12E-07	180.0277	0.0035

Source: Extracted from table 4

Since the p-value of public recurrent budget expenditure (PREX) of 0.0035 (0.35%) is <5% level of significance, the null hypothesis that public recurrent budget expenditure has no significant impact on economic development in Nigeria is rejected.

### *Test of Hypothesis Three*

H03: There is no significant impact of effect of Budget implementation rate on economic development in Nigeria.

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
HDI(-1)	0.876581	0.012656	69.26001	0.0092
BIR(-1)	0.000761	1.44E-05	52.95597	0.0120

Source: Extracted from table 4.4

Since the p-value of Budget implementation rate (BIR) of 0.0120 (1.2%) is <5% level of significance, the null hypothesis that Budget implementation rate has no significant impact on economic development in Nigeria is rejected.

## **A priori Expectation Result**

The result is evaluated based on economic theories and literatures inline with what is obtainable in Nigeria and the world over.

Table 7. A priori Expectation Result

Variables	Expected Signs	Actual Signs	Remark
PCEX	Positive (+)	Positive (+)	Conform
PREX	Positive (+)	Positive (+)	Conform
BIR	Positive (+)	positive (+)	Conform

Source: Researcher's compilation

Between 2000 and 2019, this research looked at the effects of capital budget assessment on Nigeria's economic progress. The following conclusions may be drawn from the data analysis: In the same way that public capital budget spending had a positive substantial influence on Nigeria's human development index, public recurrent budget spending had a positive and substantial influence on Nigeria's human development index. In Nigeria, the rate of budget implementation was also shown to have a positive and considerable influence on the human development index. Budget implementation rate had the smallest influence on human development index among the three explanatory variables, with a coefficient value of 0.000761 compared to 2.6 and 3.8 for public capital budget spending and public recurrent budget spending, respectively. This finding may be ascribed to Nigeria's weak and ineffective budget execution. The pace of budget implementation should be enhanced if Nigeria is to achieve sustained economic growth in terms of human development. It's also worth noting that all of the variables met a priori predictions, which were previously reported in table 3.7 and verified in this section in table 4.7. The outcomes of this study were consistent with previous research on this topic, such as MO, (2013), Ilemona & Sunday, (2018) and Olaoye, Olaoye, and Afolabi (2017). (2017). The conclusions of this research, on the other hand, contradicted those of Orji (2019), who claimed that budget implementation had a detrimental influence on Nigeria's economic development. Furthermore, in his research, Contribution of Government Spending on Economic Development in Nigeria, Iheanacho (2016) found a mixed result, with recurrent spending having a positive influence on economic growth in Nigeria and capital expenditure having a negative influence.

## Conclusion

The influence of capital budget assessment on Nigerian economic growth was studied experimentally in this study. According to previous studies, scholars have not reached an agreement on the effects of budget review on Nigeria's economic progress. As a result, the effect is yet to be determined. This research has contributed to the body of knowledge on the issue and provides a new viewpoint on budget appraisal and economic growth in Nigeria. The research utilized the human development index as a proxy for Nigeria's economic progress, with independent variables including public capital budget spending, public recurrent budget spending, and budget implementation rate. Various tests and analyses were carried out, including pre-estimation tests, diagnostic tests such as heteroskedasticity tests, normality tests, and auto correlation tests, among others. The findings of the ARDL model revealed that capital budget evaluation had a considerable beneficial influence on Nigeria's economic growth; the diagnostic test also confirmed the model's reliability and validity, as well as the variables and estimating procedures used. The results of this research matched those of MO, (2013), Ilemona et al., (2018).

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