

Non-Oil Revenue and Economic Growth of Nigeria (1981 to 2019)



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ABSTRACT: The study investigated the impact of non-oil revenue on the economic growth of Nigeria for the period 1981 to 2019. The Autoregressive Distributed Lags (ARDL) technique was adopted alongside the unit root test, which showed that in all cases, the variables in level form were non-stationary but their first differences were found to be stationary. This shows that all the variables (including economic growth) are co-integrated at order 1. The short run diagnostic tests in the result are generally impressive since the adjusted R-squared value of 0.68 is relatively high and indicates that 68 percent of the short-term changes in economic growth is explained by the explanatory variables. The Durbin-Watson statistics is also impressive at 1.95, indicating the complete absence of autocorrelation in the model. However, in the long run the coefficient of tax revenue (TAXR) is significant among the non-oil revenue variables. This coefficient is positive and passes the significance test at the 5 percent level. This means that increased tax revenue leads to economic growth in the long run. A one percent rise in tax revenue in the current period will lead to a 0.656 percent growth in the economy over a long period. The coefficient of the other non-oil revenue variable (NTAXR) fails the test at the 5% level of significance. However, given that tax revenue is the main non-oil revenue, the result shows that non-oil revenue will most likely improve economic growth in Nigeria. For the other variables, only the coefficient of human capital (HUC) passes the significance test at the 5 percent level. The results of the study show that economic growth Granger causes nontax revenue inflow, rather than the other way around. This clarifies why NTAXR did not pass the significance test in the regression result. On the other hand, tax revenue Granger causes economic growth. These results indicate that a reverse relationship exists between economic growth and non-oil revenue, through the component of non-tax revenues. Finally, the study recommends that development of policies that will increase tax revenue is key to economic growth. Similarly, the researcher also recommends that investment in human capital development will boost economic growth of Nigeria both in the short and long run.

KEYWORDS: Nigerian economy, Non-Tax Revenue, Economic Growth, Tax Revenue, Non-oil Revenue.

1. INTRODUCTION

Non-oil revenue can be identified as all taxes, fees, commissions, charges and monies received by Government with exception of dues from oil, while Internally generated revenue (IGR) of a country can be defined as all moneys realized from taxes and services accruable to the government of that country for a specific period of time. In Nigeria, internally generated revenue can be tax based or service based. The tax-based IGR are those revenues that accrues to the Government based on compulsory levies paid by the citizens of the country. These categories of revenues are backed up by law and are clearly stated how they should be calculated and collected and are not subject to any change by the authorities without amending the laws creating them. Example of tax-based IGR includes, Company Income Tax, Personal Income Tax, Petroleum Profit Tax, etc. On the other hand, the service-based IGR are moneys paid by the citizens seeking the services of Government in their transactions. These types of revenue can be administratively determined, though some states are trying to organize these areas by passing laws guiding the administration and collection of this type of revenue. Example of these revenues are fees for land registration, fees for approval of building plans, fees for registration of private schools, fees for registration of private hospitals etc. These revenues when collected becomes what helps the government to pilot its affairs be it capital or recurrent expenditure based.

Over the years, these moneys have accrued to the Government and has been utilized for one thing or the other. The economy of Nigeria has been in comatose recently, not minding all these revenues collected and channeled into various sectors of the economy. As a result of the State of the economy, there has been more emphasis on Internally generated revenue. States and Federal Governments have been embarking on various strategies to increase their revenues which includes the use of external bodies (consultants) in the business of revenue generation (Kiabel and Nwokah-2009). Various tiers of government over the years

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has reported general increase in revenue which is claimed to have been employed in one developmental project or the other. However, this paper empirically attempts to examine the impact of these nonoil revenue on economic growth in Nigeria.

2. REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

Ahmed(2010) defined revenue as all amounts of money received by a government from external sources for instance those originating from “outside the government” net of refunds and different correcting transactions, proceeds from raising of funds through borrowing, the discharge of investments, deed trust transactions, and government transfers. Non-oil revenue is the amount of money realised from the goods and services that are sold to nations which does not include petroleum products. Non-oil exports on the other hand are those commodities (excluding crude oil) that are sold abroad in order to generate revenue. These non- oil exports include manufactured products, agricultural goods, hospitality etc. Non-oil export can also be seen as a sector; therefore, non-oil sector comprises all sectors of the Nigerian economy with the exemption of oil and gas sub-sector. All the proceeds generated from these non-oil sectors constitute the non-oil revenue.

Ochejele (2007) defines economic growth as the quantitative and sustained increase in the country's per capital output or income accompanied by expansion in labour force, consumption, capital and volume of trade”. Accordingly, Anyanwu et al (1997) simply defined economic growth as the increase overtime of a country's or an economic capacity to produce those goods and services needed to improve the well-being of the citizens in increasing numbers and diversity.

Olopade and Olopade (2010), defined growth as a process whereby there is an improvement in economic activities. It is on the other hand an increase in the commodities produced by a country. It indicates a rise in the capability of a country to produce goods and services, compared from one period to another.

Economic growth, being the growth in output per capital, is an important objective of government since it is associated with rising average real incomes and living standard. It is normally determined as the percentage rate of increase on Real Gross Domestic Product (RGDP). Growth is usually calculated in real terms, that is, inflation- adjusted terms, in order to net out the effect of inflation on the price of goods and services produced. It is on record that between 2004 and 2008, Non-oil revenue helped in the increase of Nigeria's GDP CBN (2008).

Onuoha, et al (2015), defines Gross Domestic Product as the most detailed and widely acceptable measure of total output or performance of an economy. According to the Central Bank of Nigeria (2010), GDP is defined as the monetary value of goods and services produced within a period of time in an economy regardless of the ethnic nationality of those who produced the goods and services. Ruffin (1998) posits that Gross Domestic Product broadly measures the total output of the economy which includes only the final goods and services to avoid double counting of products.

GDP is calculated by measuring the total income value. Nominal GDP measures the monetary value of final goods and services in current market prices and rises either because of increasing output or rise in the price of products.

Real GDP measures the quantity of real goods and services by removing the effect of inflation in prices. However, some categories of goods and services such as illegal goods, non-market goods, and leisure value are excluded from Gross Domestic Product since GDP merely measures economic welfare to the people and not a measure of economic “bads” (Ruffin, 1998).

2.2 Theoretical Frame Work

2.2.1Wagner's law of Increasing State Activity

Wagner (1911) was a German political economist who based his law on increasing state activities and historical facts, primarily in Germany. His investigation of the economy of Germany revealed that there was a relationship which existed between public expenditure and national output. He opined that there was an intrinsic likelihood for the enterprise of different tiers of government (such as central and state governments) to increase both vigorously. That is, there is a functional relationship between the growth of an economy and the growth of government activities, so that the government sector grows faster than the economy.

2.2.2 Keynesian Hypothesis- Economic Growth Theory

Keynes (1936) is of the view that Government's intervention will eliminate the inefficiencies of demand and supply. He suggested that Government expenditure on public works will bring money into the economy which will in return, stimulate demand. Consequently, this idea brought about fiscal policy and government involvement in the monitoring and regulation of economic activities.

2.2.3 Peacock-Wiseman Hypothesis or Displacement Effect

In their study of the U.K economy between 1890 and 1955, Peacock and Wiseman (1961) concluded that public expenditure do not increase in a smooth and continuous manner but in jerks or step-like fashion. Peacock and Wiseman's hypothesis is popularly

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referred to as displacement effect hypothesis. This school of thought feels that the expenditure of Britain is irregular when compared to Wagner's proposal.

2.2.4 Endogenous growth theory developed by Economist Paul Romer in 1986 Endogenous growth theory is an economic theory which argues that economic growth is generated from within a system as a direct result of internal processes. The theory states that it only internal forces that fosters economic growth of a country. Further more, the endogenous theory opines that when institutions(including government and public) invests in human development and innovations, that there will be increased productivity. However, Romer(1986) feels that it is the number of people that work in the knowledge sector that determines growth of the economy. He opines that his "endogenous" technological change depends on population growth and capital accumulation.

The theory which explains that long-run economic growth is achievable emanates from forces that are internal to the economic system such as economic institutions, policies, institutional quality, and the accumulation of human capital, particularly, those forces governing the opportunities and incentives to create technological knowledge.

The application of the endogenous growth theory emerged not too long ago from the works of Barro (2010), he made use of the endogenous growth model to find a linkage between public revenues / spending and economic growth which was linked with the relationship between non-oil export and economic growth in Nigeria. Tsoukis and Miller(2003) research study centred on endogenous growth theory. An econometric analysis performed by Akinlo and Odusola (2007); Levine and Zervos (2013); revealed that rate of growth of gross labour and/or the rate of growth of its quality, multiplied by the labour income share; the rate of growth of gross capital input and/or the rate of growth of its quality, multiplied by the capital income share; and Change in technology or total factor productivity (TFP) determine growth rate of output (GDP).

This research consequently, is anchored on Endogenous growth theory which is the appropriate theory for this study because, it is the theory that talks about taking advantage of the internal opportunities available to a nation like technology, human resources capital and population to grow the nation's economy. Premised on this, the application of the endogenous growth theory is considered the most suitable theory for investigating non-oil revenue and economic growth of Nigeria.

2.3 Empirical Framework

Ogbonna and Ebimobowei (2011) examined the impact of tax reform on economic growth of Nigeria during the period of 1970-2009. They used Pearson correlation to analyse primary and secondary data and descriptive statistics to explain evidence and events. The results of the analysis showed that non-oil revenue affected the gross domestic product and per capita income of Nigeria, positively. The study however, revealed that there was a negative relationship between petroleum revenue and inflation. They suggested proper utilisation and management of non-oil revenue to achieve long-run growth and development of the country.

Adeusi and Uniamikogbo (2020) investigated the effect of non-oil revenue on economic growth in Nigeria deploying the use of Ordinary least square method, alongside descriptive statistics. The study revealed that there was significant and positive relationship between indirect taxes (Custom & Excise Duties and Value Added Tax) and the Nigerian economic growth. Furthermore, the study revealed that direct taxes have a long run significant but negative effect on the economic growth of Nigeria.

Olurankinse and Fatukasi (2012) seeking to establish the Impact of Non-oil sector on economic growth found out that non-oil export had a positive impact on the economic growth of the Nigeria within the period under review. They however decry the low performances in terms of output level and revenue generation which was below expectation. The ordinary least square (OLS) statistical tool was used to analyse the data. They recommended an increase in the productive sector of the economy to ensure product availability for local and export purposes.

Ude and Agodi (2014) employed the co-integration methodology alongside error correction mechanism to investigate the impact of non-oil revenue on the growth of Nigeria's economy. They employed annual observations from 1980 to 2013. The non-oil revenue variables analysed were agricultural revenue and manufacturing revenue. The outcome revealed that Non oil revenue which includes, agricultural, manufacturing and interest rate have significant relationship with the economic growth of Nigeria. They concluded that non-oil revenue has the potential to unlock the economy of Nigeria.

Akwe (2014) studied the impact of non-oil tax revenue on economic growth in Nigeria from 1993-2012. He found that there exist a positive impact of non-oil tax revenue on economic growth. Since non-oil tax revenue is one of the major base through which non-oil revenue accrues, he suggested that government at all tiers should intensify effort to make sure that the collection of non-oil taxes will increase since it has been proved that it has the ability to influence economic growth positively. He further recommended that government should strengthen its administrative machinery with a view eliminating weaknesses and internal control lapses in the assessment and collection of Non-oil Taxes in Nigeria.

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Abiola and Asiweh (2012) used the case of Nigeria to research the effect of tax administration on government revenues in a developing economy. In conclusion, the study concluded that diversification of revenue streams is essential for economic development if Nigeria wants to rank among equals in improving the lives of its people. It is of their view that focusing on oil and gas revenues in Nigeria means placing all eggs in one basket. The further said that the rate at which technology is developing may one day replace oil and gas with another type of energy.

Awe and Ajayi (2009), assessed influence of the non-oil sector on the economic growth of the Nigeria. Agricultural sector revenue, solid mineral sector revenue and manufacturing sector revenue served as proxies for non-oil sector and they were adopted as the independent variables while gross domestic product was adopted as the dependent variable. The study was carried out using unit root test to ascertain the stationarity of the variables and co-integration test to determine the existence or otherwise of long run equilibrium relationship among the variables. Thereafter, the study employed the Ordinary Least Squares (OLS) method to determine impact of the independent variables on the dependent variable. Findings from the study revealed that agricultural sector revenue and solid minerals sector revenue had positive and significant influence on economic growth of Nigeria. On the other hand, the study showed that the manufacturing sector revenue did not have significant influence on economic growth of Nigeria.

Salami, Amusa and Ojoye (2018), studied impact of non-oil revenue on the economic growth of Nigeria. The study covered the period 1981-2016 and gross domestic product was adopted as the proxy for economic growth and it was also used as the dependent variable. On the other hand, the study adopted non-oil revenue as the independent variable. The study made use of the Ordinary Least Squares (OLS) regression analysis to analyse the data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin. Findings from the study revealed that non-oil revenue exerted a positive and significant impact on economic growth in Nigeria. The study therefore concluded that non-oil revenue exerted a significant impact on the economic growth of Nigeria.

Nwosa and Ogunlowore (2013) feels that Nigeria is supposed to witness increased revenue and tax inducement because of the oil wealth located in the country which is essential in spurring up development in the country but the contrary is the case as the fall in price of global international oil market have led to the decrease in oil revenue in the country.

Olayungbo and Olayemi (2018) investigate the long run nexus between government spending, non-oil revenue and economic growth in Nigeria between 1981- 2015. It was discovered from the long run analysis that substantial relationship was identified between non-oil revenue and economic growth meanwhile a contrary relationship was identified between fiscal spending and economic growth, the causal test showed that fiscal spending causes a change in economic growth and non-oil revenue, which is in line with the postulation of the Keynesian hypothesis. They however suggested that Nigeria should diversify their economy instead of relying only on oil revenue.

Ojong, Ogar and Arikpo (2016) carried out an assessment of effect of tax revenue on the Nigerian economy. The study covered the period 1993 to 2012 and the gross domestic product was used as a measure for Nigerian economy and it served as the dependent variable. On the other hand, petroleum profit tax, company income tax and non-oil revenue were used as measures of tax revenue and they served as independent variables. The study made use of the Ordinary Least Squares (OLS) method to analyse the data collected. Findings from the study revealed that petroleum profit tax exerted a negative and insignificant effect on the Nigerian economy while company income tax exerted a positive and insignificant effect on the Nigerian economy. The study further showed that non-oil revenue exerted a positive and significant effect on Nigerian economy.

2.4 Research Gap

In most of the studies, there has not been deliberate analysis of Granger Causality. This research will therefore probe into the variable that granger-causes the other in order to close the gap.

3. METHODOLOGY

3.1 Sources of Data and Techniques for the analysis

Annual data covering the period of 1981-2019, was employed in this study. All the data for the analysis were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin (various issues). The data will be analyzed and interpreted with the Descriptive Statistics, The data will be analysed using the Autoregressive Distributed Lags (ARDL) technique. This is a co-integration estimation procedure that considers the dynamic relationship between the variables (Pesaran and Shin, 2000). This technique therefore shows the long run and the short run relationship between non-oil revenues and economic growth in Nigeria. Regression analysis, Augmented Dickey Fuller (ADF) unit root test, and Pairwise Granger Causality Test will equally be employed.

3.2 Model Specification

The variables for this study are specified in the models below:

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$$RGDPG = f(NOILREV) \text{-----(1)}$$

Where;

RGDPG= Growth in real GDP (proxy for economic growth)

NOILREV = Non-oil Revenue

However, nonoil revenue is broadly categorised as either tax-based or non-tax revenues. Hence, NOILREV can further be decomposed into the following:

$$NOILREV = f(TAXR, NTAXR) \text{-----(2)}$$

Where

TAXR = tax revenue that are not related to the oil revenues

NTAXR = other revenues of government that are neither tax-based nor oil-based.

Thus, the growth model can be re-written as:

$$RGDPG = \beta_0 + \beta_1TAXR + \beta_2NTAXR + \mu t$$

In order to fully highlight the major determinants of economic growth, the Slow growth model format is considered, where the basic determinants of growth are shown to be labour and capital. For our model, the financing of budget is also included in the specification. The full model is specified as:

$$RGDPG = \beta_0 + \beta_1TAXR + \beta_2NTAXR + \beta_1FIN + \beta_2LAB + \beta_1CAP + \mu t$$

Where

FIN = funds for financing of budget

LAB = labour input (measured as secondary school enrolment)

CAP = capital input in the economy (measured as fixed capital formation)

In order to address the third objective of the study, the Granger Causality test is conducted. The Granger Causality test shows how each variable affects the movement in other variables.

3.3. Apriori Expectation

It is expected that $RGDP = f(TAXR, NTAXR)$ $f_1, f_2 > 0$. f_1, f_2 are the coefficients of Tax revenue that are not related to the oil revenues and Other Revenues of government that are neither tax-based nor oil-based. It is expected that the more the non-oil-based revenue, the more the economic growth of Nigeria.

4. ANALYSIS, RESULTS AND INTERPRETATION

4.1. Descriptive Statistics

Table 4.1

	Mean	Max.	Min.	Std. Dev.	Skewness	Kurtosis	J-B	Prob.
RGDPG	4.23	14.60	-7.58	4.35	-0.08	3.31	0.19	0.91
TAXSH	77.79	97.03	44.39	10.80	-0.92	4.39	8.44	0.01
NTAXSH	22.21	55.61	2.97	10.80	0.92	4.39	8.44	0.01
FIN	646.1	4913.8	-38.10	1169.8	2.30	7.54	66.20	0.00
HUC	39.57	55.14	24.66	10.27	0.10	1.59	3.24	0.20
CAPG	7.35	242.11	-84.69	47.34	3.17	17.35	389.63	0.00

Source: Author's computation.

Average share of tax revenues within the non-oil revenues is 77.79 percent while average non-tax revenue within the non-oil revenue is 22.21. The share of tax revenue within the non-tax revenues of government reached a maximum of 97.03 percent, which again demonstrates the dominance of tax as a major non-oil revenue for the government in Nigeria. Also, the government has financed the budget with over 646.1 billion naira on average over the period of the study. Average school, enrolment is 39.57 percent and the growth rate of capital in the economy is 7.35 percent over the period.

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Table 4.2: Correlation Matrix

	LRGDP	LTAXR	LNTAXR	LFIN	LHUC
LTAXR	0.936 (0.000)				
LNTAXR	0.959 (0.000)	0.961 (0.000)			
LFIN	0.881 (0.000)	0.837 (0.000)	0.856 (0.000)		
LHUC	0.977 (0.000)	0.985 (0.000)	0.972 (0.000)	0.876 (0.000)	
LCAP	0.499 (0.001)	0.258 (0.113)	0.373 (0.019)	0.336 (0.037)	0.353 (0.027)

Source: Author's computation, 2021

The initial patterns of relationship among the variables are highlighted by the correlation analysis among the variables which is reported in Table 4.2 above. In the result, a positive correlation is shown to exist between RGSP growth and all the other variables in the study. This implies that in general, when each of the variables are increased, economic growth also increases. Indeed, all the variables in the analysis possess positive relationship amongst each other. This implies that on-oil revenues are positively related with both labour supply and capital input in Nigeria.

Table 4.3: Unit root test result

Variable	Levels		First Difference	
	ADF	Crit. Val (95%)	ADF	Crit. Val (95%)
RGDPG	0.352	-2.943	-3.400	-2.943
TAXR	-1.056	-2.941	-6.812	-2.943
NTAXR	-0.538	-2.946	-11.337	-2.943
FIN	-1.190	-2.941	-5.461	-2.943
HUC	-2.198	-2.954	-3.770	-2.957
CAP	-1.982	-2.941	-5.572	-2.943

Source: Author's computation, 2021.

Table 4.3 presents results of Augmented Dickey Fuller (ADF) test in levels and first differences. The results indicate that each of the variables possesses ADF values that are less than the 95 percent critical values for the level series and greater than the critical value for the differenced series. In all cases, the variables in level form were non-stationary but their first differences were found to be stationary. This shows that all the variables (including economic growth) are integrated at order 1 (i.e. the variables are both I [0] and I [1]). It is therefore appropriate to use the ARDL-based cointegration analysis to estimate the relationships between the variables (Ighodaro and Adegboye, 2020).

Table 4.4: Table: F-Bounds Test for Cointegration

Test Statistic	Null Hypothesis: No levels relationship			
	Value	Signif.	I(0)	I(1)
F-statistic	6.401	10%	2.08	3
k	5	5%	2.39	3.38
		2.50%	2.7	3.73
		1%	3.06	4.15

Source: Author's computation, 2021

Table 4.4 shows the result of the Bounds test of long run effects for the ARDL specifications for all the four major equations in the study. The evaluation of the results is based on the critical F-statistic values for the lower and upper bounds as also reported in

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the results. The F value for the test is greater than both the lower and upper Bounds values at the 5 percent level. It can be seen that the null hypothesis of no long-run relationship between RGDP growth and the entire determinant variables is rejected at the 5 percent level. This result reveals that a long run relationship exists in the study.

Table 4.5: Short Run Results

Variable	Coefficient	t-Statistic	Prob.
D(TAXR)	-0.038	-2.246	0.035
D(TAXR(-1))	0.043	3.030	0.006
D(FIN)	0.007	1.801	0.085
D(FIN(-1))	-0.010	-2.635	0.015
D(HUC)	2.198	4.947	0.000
D(HUC(-1))	1.512	3.702	0.001
D(CAP)	-0.004	-0.314	0.756
CointEq(-1)*	-0.165	-7.516	0.000
Adjusted R-squared	0.680		
Durbin-Watson stat	1.956		

Source: Author's computation, 2021.

The results of the short run estimates are presented in table 4.5. The diagnostic tests in the result are generally impressive since the adjusted R-squared value of 0.68 is relatively high and indicates that 68 percent of the short-term changes in economic growth is explained by the explanatory variables. The Durbin-Watson statistics is also impressive at 1.95, indicating the complete absence of autocorrelation in the model. Note that these diagnostic tests also cover the long run results

Table 4.6: Long Run Results

Variable	Coefficient	t-Statistic	Prob.
TAXR	0.656	2.750	0.034
NTAXR	0.129	1.404	0.174
FIN	0.004	0.115	0.910
HUC	7.714	2.157	0.042
CAP	-0.281	-1.129	0.271
Constant	-10.52	-1.237	0.229

Source: Aurthor's computation, 2021.

The result of the long run relationship is presented in Table 4.6. In the result, only the coefficient of tax revenue (TAXR) is significant among the non-oil revenue variables. This coefficient is positive and passes the significance test at the 5 percent level. This means that increased tax revenue leads to economic growth in the long run. A one percent rise in tax revenue in the current period will lead to a 0.656 percent growth in the economy over a long period. The coefficient of the other non-oil revenue variable (NTAXR) fails the test at the 5% level of significance. However, given that tax revenue is the main non-oil revenue (as shown in the previous sections), the result shows that non-oil revenue will most likely improve economic growth in Nigeria. For the other variables, only the coefficient of human capital (HUC) passes the significance test at the 5 percent level. This suggests that human capital investment boosts economic growth both in the short run and in the long run.

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Table 4.7: Granger Causality Test Result

Null Hypothesis:	Obs	F-Statistic	Prob.
NTAXR does not Granger Cause RGDP	37	0.78	0.47
RGDP does not Granger Cause NTAXR		3.86	0.04
TAXR does not Granger Cause RGDP	37	4.08	0.03
GDP does not Granger Cause TAXR		0.35	0.71
TAXR does not Granger Cause NTAXR	37	5.52	0.01
NTAXR does not Granger Cause TAXR		0.07	0.94

Source: Author's Computation, 2021.

Finally, the result of the Granger causality test is reported in Table 4.7. In the result, the F-statistic value for the null hypothesis that RGDP does not Granger Cause NTAXR is significant at the 5 percent level. Also, the F-value for the null hypotheses that TAXR does not Granger Cause RGDP and TAXR does not Granger Cause NTAXR are significant at the 5 percent level. These results show that economic growth Granger causes nontax revenue inflow, rather than the other way around. This clarifies why NTAXR did not pass the significance test in the regression result. On the other hand, tax revenue Granger causes economic growth. These results indicate that a reverse relationship exists between economic growth and non-oil revenue, through the component of non-tax revenues.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

In conclusion, this study observed as follows:

- i. That non-oil revenue had a significantly positive influence on economic growth in Nigeria.
- ii. That non-oil revenue in the form of tax revenues had significant positive effect on long-term growth of real gross domestic product per capita in Nigeria.
- iii. That a reverse relationship exists between economic growth and non-oil revenue. This reverse effect is observed through the component of non-tax revenues.
- iv. That tax-based and non-tax based non-oil revenues has different relationships with economic growth in Nigeria.

5.2 Recommendations

The results obtained in the analysis so far are far reaching and necessitate certain recommendations as follows:

1. The study has shown that non-oil revenues exert both short run and long run effects on the economy, especially through tax effects. This shows that it is the tax component that governments should focus on when the goal is to employ non-oil revenue for economic growth and diversification. Thus, there is need to evolve policies that will ensure boost in the tax revenues by government, especially taxes that are not related to the oil sector, such as VAT and CIT.
2. The components of the tax revenue in Nigeria must be put into more efficient use. It is clear that contributions to direct taxes can be more easily traced to the taxpayers. Hence, proper returns of government may be focused on the sectors where higher revenue of direct taxes is received. This will encourage other sectors to sit up to their tax responsibilities.
3. In order to aid the contribution of the tax system to the economy, there is need for more political will to improve tax performance. One of such support is in form of adequate and extensive reforms in tax administration and policies. The result has provided the ground for efficiently reforming the tax system, namely, the focus on the social conditions of the individual countries.
4. The result generally indicates that increased non-tax (non-oil) revenue or yield is a function of the buoyancy of the Nigerian economy. If adequate measures are put in place to promote investment, production and aggregate demand, non-tax revenue will be boosted and the contribution of all forms of non-taxes to economic growth will be sustained.
5. The study revealed that the coefficient of human capital (HUC) passes the significance test at the 5 percent level, suggesting that human capital development will boost economic growth both in the short run and in the long run.

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APPENDIX

ARDL Long Run Form and Bounds Test
Dependent Variable: D(LRGDP)
Selected Model: ARDL(1, 2, 0, 2, 2, 1)
Case 2: Restricted Constant and No Trend
Date: 07/03/21 Time: 15:47
Sample: 1981 2019
Included observations: 37

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.736547	0.710178	-2.445227	0.0225
LRGDP(-1)*	-0.165082	0.106551	-1.549315	0.1350
LTAXR(-1)	0.108287	0.028921	-.744193	0.0011
LNTAXR**	0.021282	0.008357	2.546545	0.0180
LFIN(-1)	0.000703	0.006257	0.112330	0.9115
LHUC(-1)	1.273393	0.419445	3.035896	0.0059
LCAP(-1)	-.046324	0.015323	3.023133	0.0061
D(LTAXR)	-0.038114	0.023552	-1.618339	0.1192
D(LTAXR(-1))	0.043039	0.017911	2.402930	0.0247
D(LFIN)	0.006606	0.005417	1.219631	0.2350
D(LFIN(-1))	-0.009917	0.005958	-1.664471	0.1096
D(LHUC)	2.198340	0.749178	2.934336	0.0075
D(LHUC(-1))	1.511591	0.666884	2.266648	0.0331
D(LCAP)	-0.003706	0.016218	-0.228524	0.8213

* P-value incompatible with t-Bounds distribution.

** Variable interpreted as $Z = Z(-1) + D(Z)$.

Levels Equation

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTAXR	0.655959	0.314816	2.750086	0.0234
LNTAXR	0.128916	0.091829	1.403876	0.1737
LFIN	0.004257	0.037141	0.114627	0.9097
LHUC	7.713714	3.576611	2.156710	0.0417
LCAP	-0.280613	0.248552	-1.128991	0.2705
C	-10.51932	8.506774	-1.236581	0.2287

EC = LRGDP - (-0.6560*LTAXR + 0.1289*LNTAXR + 0.0043*LFIN + 7.7137

*LHUC -0.2806*LCAP -10.5193)

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ARDL Error Correction Regression
 Dependent Variable: D(LRGDP)
 Selected Model: ARDL(1, 2, 0, 2, 2, 1)
 Case 2: Restricted Constant and No Trend
 Date: 07/03/21 Time: 15:48
 Sample: 1981 2019
 Included observations: 37

ECM Regression
 Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LTAXR)	-0.038114	0.016973	-2.245652	0.0346
D(LTAXR(-1))	0.043039	0.014203	3.030324	0.0060
D(LFIN)	0.006606	0.003668	1.801066	0.0848
D(LFIN(-1))	-0.009917	0.003763	-2.635427	0.0148
D(LHUC)	2.198340	0.444355	4.947265	0.0001
D(LHUC(-1))	1.511591	0.408351	3.701691	0.0012
D(LCAP)	-0.003706	0.011801	-0.314078	0.7563
CointEq(-1)*	-0.165082	0.021963	-7.516334	0.0000
R-squared	0.742127	Mean dependent var		0.042191
Adjusted R-squared	0.679881	S.D. dependent var		0.041030
S.E. of regression	0.023214	Akaike info criterion		-4.499281
Sum squared resid	0.015628	Schwarz criterion		-4.150974
Log likelihood	91.23670	Hannan-Quinn criter.		-4.376486
Durbin-Watson stat	1.956227			

* P-value incompatible with t-Bounds distribution.

F-Bounds Test Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.400943	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Null Hypothesis: RGDP has a unit root
 Exogenous: Constant
 Lag Length: 1 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	0.351647	0.9780
Test critical values:		
1% level	-3.621023	
5% level	-2.943427	
10% level	-2.610263	

*MacKinnon (1996) one-sided p-values.

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Null Hypothesis: D(LRGDP) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.400118	0.0173
Test critical values: 1% level	-3.621023	
5% level	-2.943427	
10% level	-2.610263	

Null Hypothesis: LTAXR has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.056251	0.7229
Test critical values: 1% level	-3.615588	
5% level	-2.941145	
10% level	-2.609066	

Null Hypothesis: D(LTAXR) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.812180	0.0000
Test critical values: 1% level	-3.621023	
5% level	-2.943427	
10% level	-2.610263	

Null Hypothesis: LNTAXR has a unit root

Exogenous: Constant

Lag Length: 2 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.538496	0.8718
Test critical values: 1% level	-3.626784	
5% level	-2.945842	
10% level	-2.611531	

Non-Oil Revenue and Economic Growth of Nigeria (1981 to 2019)

Null Hypothesis: D(LNTAXR) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-11.33722	0.0000
Test critical values: 1% level	-3.621023	
5% level	-2.943427	
10% level	-2.610263	

Null Hypothesis: LFIN has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.189887	0.6689
Test critical values: 1% level	-3.615588	
5% level	-2.941145	
10% level	-2.609066	

Null Hypothesis: D(LFIN) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.460928	0.0001
Test critical values: 1% level	-3.621023	
5% level	-2.943427	
10% level	-2.610263	

Null Hypothesis: LHUC has a unit root

Exogenous: Constant

Lag Length: 5 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.197887	0.2108
Test critical values: 1% level	-3.646342	
5% level	-2.954021	
10% level	-2.615817	

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Null Hypothesis: D(HUC) has a unit root
Exogenous: Constant
Lag Length: 5 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-3.769755	0.0381
Test critical values:		
1% level	-3.653730	
5% level	-2.957110	
10% level	-2.617434	

Null Hypothesis: LCAP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.982275	0.2931
Test critical values:		
1% level	-3.615588	
5% level	-2.941145	
10% level	-2.609066	

Null Hypothesis: D(LCAP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.571827	0.0000
Test critical values:		
1% level	-3.621023	
5% level	-2.943427	
10% level	-2.610263	
