

Implication of Non-Oil Revenue on Macroeconomic Performance in Nigeria

Jacob Sesugh Angahar^(✉) and Abur Cyprian Clement

Economics and Business Policy Department, Nigerian Institute of Social and Economic Research, Ibadan, Nigeria

jacobangahar@gmail.com

ABSTRACT

This study looked at the implication of non-oil revenue on Nigeria's macroeconomic performance from 1990 to 2020. The study employed secondary time-series data. The estimation techniques include Ordinary Least Square (OLS) method, while standard error tests (SE), analysis of variance (ANOVA) are used to examine hypotheses. Results indicated that agricultural trade value, services export, Real interest rate, and credit to agriculture had a positive impact on non-oil revenue while employment in agriculture indicated otherwise. The study recommends that the government should ensure resources are channeled to agricultural-based exports. Hence drive foreign exchange earnings through agriculture outputs, hence making the sector more viable and the financial sector should formulate more realistic agricultural driving policies that will enable more availability of credit to the agricultural sector for expansion.

Keywords: non-oil, revenue generation, export, credit, agriculture and macroeconomic performance

Cite this article as: Angahar, J. S., & Abur, C. C. (2022). Implication of Non-Oil Revenue on Macroeconomic Performance in Nigeria. *European Journal of Economics*, 2(1), 19-24. <https://doi.org/10.33422/eje.v2i1.149>

1. Introduction

The contributory impact of non-oil revenue to Nigerian revenue generation and its impact on the macroeconomic performance of Nigeria cannot be overemphasized. The non-oil revenue sector pulls and distributes allot of resources for the continuous functioning of the economy. Nigeria is said to be blessed with abundant human and natural resources, but the government's priority since independence has been crude oil discovery and exportation, at the expense of other economic activities that may provide much-needed foreign exchange revenues.

Before the discovery of crude oil, cocoa was a key export product in Nigeria, and the agricultural industry was the most important. Crude oil has been the dominant export commodity in recent decades, and the petroleum sector is currently the dominating sector. This has not allowed for balanced economic growth because some sectors have been permitted to thrive while others have been stifled, causing the country to remain in the developing stage. This entails that, most essential nonoil generating commodities have been relegated and this has resulted in their non-revenue contribution in the economy (Aderoju, 2017).

According to Angahar (2013), the Nigerian banking industry should boost the quantity of credit granted to the private sector, which will contribute significantly to GDP growth. This simply means that the micro and medium scale private sector will aid huge exports, ensuring the growth of the non-oil sector of the economy which contributes to the overall growth of the Nigerian economy. Another major problem hindering nonoil sector revenue is the agricultural trade values. Because of the nature of agriculture in Nigeria, agriculture generates very low

values from trade activities. This is because of its nature of production; hence inability to produce quality finished goods for exports. This in turn contributes to low non-oil revenue in Nigeria.

However, the purpose of this research is to assess the impact of agricultural trade value on non-oil revenue in Nigeria. evaluate the influence of service export on Nigeria's non-oil earnings; determine the efficacy of the real interest rate on non-oil revenue in Nigeria; estimate the influence of agricultural employment on non-oil revenue in Nigeria; determine the impact of agricultural credit on non-oil revenue in Nigeria.

1.1. Summarized Stylized Fact

As reviewed, government has made great efforts over time to ensure that Nigeria's non-oil sector contributes significantly to economic performance, not to mention that economic diversification is encouraged. These initiatives can be divided into three categories, according to Hoeyi & Dzansi (2014), quoted by Anthony, Chukwudi, and Wilfred (2015): the Protectionism Policy (1960 to 1986); the Trade Liberalization Policy (1986 SAP era); and the Export Promotion Policy (Post SAP period). Protecting industries that produced import alternative goods was one of the main objectives of the protectionism strategy. In the Trade Liberalization Policy, the government was committed to deregulating, commercializing, and liberalizing the economy, while the main goal of the Export Promotion Policy was to diversify the economy by assisting small and medium-sized businesses (SMEs).

Since then, the value of non-oil exports has been declining, as indicated by Anthony, Chukwudi, and Wilfred (2015). For example, "the share of agricultural products in total exports fell from 84 percent to 1.80 percent between 1960 and 1995." As a result, exports of agricultural commodities and other non-oil products fell overall. According to CBN (2000), the manufacturing sector shrank from 13.10 percent in 1960 to 0.66 percent in 1995. According to Anthony, Chukwudi, and Wilfred (2015), the manufacturing sector was in the similar range in 2002. Although it has diminished over time till 2018, it has made no discernible contribution to Nigeria's macroeconomic performance.

2. Literature Review

The non-oil sector includes any activities that are not directly related to the petroleum and gas industry. Manufacturing, agriculture, telecommunications, banking, tourism, real estate, construction, and health care are all included. Elechi, Kasie, and Chijindu conceptualized (2016) Non-oil exports, which exclude oil products which including coal, cotton, timber, groundnuts, cocoa, beans, palm kernel, palm oil, hides, skin, cattle, and so on, are goods produced in the agricultural, mining, quarrying, and industrial sectors that are shipped abroad to generate revenue for the economy's expansion.

The export-led growth hypothesis (ELGH) states that trade openness is one of the primary factors of growth. It proposes that countries' overall growth can be seen as a result of growing the amount of labor and capital in the economy, as well as boosting exports. Exports, according to proponents, might act as a "growth engine." In this sense, exports and their relationships might stimulate economic growth, which will boost macroeconomic performance. While the United Nations (2000) affirms that there is a relationship between exports and growth, this is frequently attributed to the potential positive spillovers for the nation's economy arising from integration with the global markets, such as redistribution of available resources, increased efficiency, and different employment training effects. In this regard, according to United Nations (2000), developing nations were compelled to intensify their export-led growth

because the majority of them were dependent on multilateral institutions to carry out modification and normalization plans that would correct disparities in their core macroeconomic indicators. In order to support this investigation, this work is based on the export-led growth hypothesis (ELGH).

Aderoju (2017) examined Nigeria's Oil Revenue, Non-Oil Revenue, and Economic Development from 1980 to 2015. The study's overarching goal was to scientifically assess the impact of oil revenue and non-oil revenue on Nigerian economic development between 1980 and 2015. The study used systematic time series, the Augmented Dickey-Fuller test, the Johansen Cointegration test, the Phillip-Perron test, and the Ordinary Least Square estimation approach (OLS). The findings demonstrated a statistically significant positive association between non-oil earnings and Nigerian economic progress. The research advised, among other things, that Nigerians elect reputable persons into political posts who would use oil and non-oil revenue wisely to improve people's living standards and the country's general growth and development. Most significantly, the government at all levels should invest heavily in the oil and non-oil sectors of the economy so that more revenue can be realized and harnessed for the country's economic advancement.

Ude and Agodi (2014) used cointegration, the Error Correction Model (ECM), and the Ordinary Least Squares estimating technique (OLS) to investigate the impact of non-oil revenue on economic growth in Nigeria. The study's overarching goal was to determine the impact of non-oil earnings on Nigerian economic growth. The study's findings supported the idea of a positive association between economic growth and agricultural revenue, among other things. The research recommended, among other things, that the government invest significantly in the non-oil sector to ensure investment balance, and that interest rates be reduced to make loanable funds cheaper for investors in the Nigerian economy's non-oil sector, particularly the manufacturing subsector.

Salami (2018) empirically examined the impact of non-oil revenue on Nigerian economic growth. The study used simple regression analysis using the ordinary least square method and found a significant linkage between non-oil revenue and economic growth at the 1% level of significance. Also, at the 1% level of relevance, there is a considerable correlation and impact of non-oil revenue on overall government revenue. The study concluded by recommending, among other things, that the government ensures that cash earned from petroleum is used and employed in other domestic sectors such as agriculture and industry in order to broaden the economy's entire revenue source and base.

3. Methodology

Secondary data was used in the study. From 1990 to 2020, annual time series data were acquired from the Central Bank of Nigeria (CBN) Statistical Bulletin and the National Bureau of Statistics (NBS). The Ordinary Least Squares (OLS) procedure was used for the estimate, while standard error tests (SE) and analysis of variance (ANOVA) are used to evaluate hypotheses. The hypotheses were tested at a 5% level of significance; therefore, generalization of the study results would be limited to this extent. OLS is essential because it closely matches the function to the data and greatly reduces the sum of square errors. Hence, the main reason for using OLS estimator is not only because it is unbiased, but also because it has the lowest variance among all linear and unbiased estimators. It calculates the association by minimizing the sum of the squares of the observed and anticipated values.

3.1. Model Specification

The normal form of the model is stated as follows:

$$GDP = f(ATV, SE, RIR, ES, EA, CA) \quad (i)$$

The explicit form of the model is show as:

$$GDP_{it} = \lambda + \beta_1 ATV_{it} + \beta_2 SE_{it} + \beta_3 RIR_{it} + \beta_4 EA_{it} + \beta_5 CA_{it} + \pi_{it} \quad (ii)$$

Where:

λ = Intercept of relationship in the model/constant

GDP_{it} = Gross Domestic Product i in period t

ATV_{it} = Agricultural Trade Value i in period t

SE_{it} = Services Export i in period t

RIR_{it} = Real interest rate i in period t

ES_{it} = Employment in services i in period t

EA_{it} = Employment in agriculture i in period t

CA_{it} = Credit to the Agriculture i in period t

$B_1 - B_5$ = coefficient of each exogenous variable (parameters to be estimated)

π_{it} = Stochastic error term

4. Analyses of Estimates

Table 1.

Regression Estimates for the Model

Model	Unstandardized Coefficients		Standardized Coefficients	T	P-Values
	B	Std. Error	Beta		
(Constant)	839.154	841.935		-0.997	0.0013
Agric TradeValue	6.74***	0.01	0.083	2.193	0.0019
Services Export	0.024**	-0.059	-0.024	-0.41	0.2112
Real interest rate (%)	2.544**	-3.802	0.022	0.669	0.5011
Employment in agriculture	-3.987	0.01	-0.055	-0.563	0.8014
credit to the Agric	3.008***	0.135	0.447	4.736	0.0121

Source: Summary of SPSS printout version 21, 2020. Note: ***, ** and * indicate 1 per cent, 5 per cent and 10 Per cent significant levels respectively.

On overall, the level of significance are well explained as identified on table 1 respectively. From the estimates in Table 1 above, it is noticed the constant variable λ with the coefficient of 839.154 indicate a positive slope of the equation under consideration. This is because a well-interpreted distribution will imply a linear straight-line cutting across 839.154 on the positive axis of the plane, meaning zero predictive values of explanatory variables will translate to a positive dependent variable. This simply implies that the overall trend of the model may be positively inclined. This shows that the slope will evolve in a positive direction.

Results from Table 1 indicate that the coefficient of Agricultural Trade Value depicts a significantly positive impact on Agricultural Trade Value as evidenced by the coefficient of 6.737, with a standard error of 0.001 respectively. The implication then is that an increase in

Agricultural Trade Value share of the Non-oil revenue meaning that Agricultural Trade Value increases with an increase in the Non-oil revenue other variables being held constant. For Services Export, the regression results presented in Table 1 reveal a positive but insignificant nature of Services Export. This is evident by the coefficient of 0.024, with standard error value of -0.059 respectively. The implication of these is that there is an increase in non-oil revenue of 0.024 for every 1% increase in service export within variables under consideration.

The real interest rate, the results from table 4.1 depict an inverse and statistically significant relationship between the real interest rate and non-oil revenue sampled. This is evident from the coefficient value of 2.544, the standard error value of -3.802 respectively. This implies that a 1% increase in change in Real interest rate all other factors constant results to increase in non-oil revenue with respect data considered. On employment in agriculture, the results from table 4.1 depict an inverse and statistically insignificant relationship between Employment in agriculture and non-oil revenue sampled. This is evident from the coefficient value of -3.987, the standard error value of 0.01 respectively. This implies that a 1% increase in change in Employment in agriculture all other factors constant results to no efficacy on non-oil revenue with respect data considered. While credit to Agriculture, the regression results presented in Table 1 reveal a positive and significant nature of Credit 3.008 to Agriculture. This is demonstrated by the coefficient, which has a standard error value of 0.135. According to them, there is a 3.008 increase in non-oil revenue for every 1 percent increase in credit to agriculture among the variables taken into account.

Table 2.

Analysis of Variance Estimates

Model		Sum of Squares	Df	Mean Square	F
1	Regression	40856950.791	6	6809491.799	192.235
	Residual	743876.805	21	35422.705	
	Total	41600827.597	27		

Source: Summary of SPSS printout version21

Table 2 above shows that the analysis of variance estimates. The F-calculated value is 192.235. To identify the critical value respectively an F table is adopted which shows F-table value of 2.5 approximately. Following the decision rule for F-statistic, since the F-calculated value is 192.235 is greater than the F-table value of 2.5 hence; we accept the alternative and reject the null hypothesis. Hence, Non-oil revenue contributed significantly to macroeconomic performance in Nigeria.

Table 3.

Other Estimates for the Model

R	R Square	Adjusted R Square	R Square Change	Durbin-Watson
.991	.982	.977	.982	1.714

Source: Summary of SPSS printout version21

Table 3 indicates the coefficient of determination of 0.982. This implies that the explanatory variables contributed about 98% to the performance of the Non-oil revenue in Nigeria. Therefore 2% contribution was estimated to be as a result of variables explained by the stochastic error term (i.e not part of the model). 1.714 is the Durbin Watson value. Since the sample size is 30, the revised D = 1.201 and d = 1.411 confidence limits of the DW indicate that there is no first-order serial correlation in the error terms.

Adopting the standard error hypotheses testing procedure using estimates in table 1, led to the following decisions, real interest rate; services export; real interest rate; and credit to the agriculture, has implication on non-oil revenue in Nigeria while employment in agriculture

indicated otherwise. The implication for this outcome depicts those variables like real interest rate; services export; real interest rate; and credit to the agriculture should be concentrated on to turn around non-oil revenue in Nigeria. It is also obvious that agriculture employment is highly insignificant because of its low level contribution to non-oil revenue in Nigeria.

5. Conclusion and Recommendations

As evaluated from this research, it is imperative to conclude that, the over-dependent on oil revenue may lead us to a high level under development if resources are not properly channeled. In light of the fact that the growth of the oil industry has left other economic sectors underdeveloped, Nigeria needs to revitalize its non-oil sector particularly in the area of agricultural trade value, services export, employment in agriculture and credit to the agricultural sector in order to reap the benefits of non-oil revenue. In consolidating on the gains of investment in non-oil revenue, monetary authorities are expected to set interest rates favourable for investors to access capital at stable and relatively favorable cost. The research suggests that the government make sure that funds are directed toward services export that are based on agriculture and related sectors. This will, in turn, drive foreign exchange earnings through agriculture outputs, hence making the sector more viable. Since the study established that credit to the agriculture contributes to non-oil revenue in Nigeria, the financial sector should formulate more realistic agricultural driving policies that will enable more availability of credit to the agricultural sector and at the same time ensure utilization of these credits for agricultural purposes for real expansion of the sector.

References

- Aderoju B. R (2017) An Empirical Analysis of Oil Revenue, Non-Oil Revenue and Economic Development in Nigeria (1980-2015), *Research on Humanities and Social Sciences*.7 (24), 32-39.
- Angahar, J.S, (2013)'Banking Sector Reforms and Economic Performance: Analysis Using Credit to Private Sector'', *International Journal of Trend in Economics Management and Technology*; 2(4), 14-22. <http://www.ijtemt.org>
- Anthony I, Chukwudi E. E and Wilfred I. U (2015). Impact of non-oil sector on economic growth: a managerial economic perspective. *Problems and Perspectives in Management*, 13(2),170-182.
- Emilio J. Medina S (2000) Is The Export-Led Growth Hypothesis Valid for Developing Countries? A Case Study of Costa Rica, *United Nations Conference on Trade and Development Policy Issues in International Trade and Commodities Study Series No. 7*.
- Elechi, J.N, Kasie, E.G. and Chijindu, A.A. (2016). The Contribution of the Nigerian Banks to the Promotion of NonOil Exports (1990-2013). *Asian Journal of Economics, Business and Accounting*, 1(1): 1-13. <https://doi.org/10.9734/AJEBA/2016/28754>
- Okezie S. O, Azubike, J.U (2016) Evaluation of the Contribution of Non-Oil Revenue to Government Revenue and Economic Growth: Evidence from Nigeria, *Journal of Accounting and Financial Management* 2(5), 41-51.
- Salami, Ganiyu Olusoj (2018) Empirical Analysis of the Impact of Non-Oil Revenue On Economic Growth: Nigerian Experience, *International Journal of Economics, Commerce and Management the United Kingdom* 6(6), 263-276.
- Ude, D. K. & Agodi, J. E. (2014). "Investigation of the impact of non-oil revenue on economic growth in Nigeria". *International Journal of Science and Research*, 3(11), 2571-2577.