COMPARATIVE ANALYSIS OF OIL AND NON-OIL EXPORTS AND THEIR RELATIVE EFFECT ON THE GROWTH RATE OF NIGERIA'S ECONOMY

Atuma Emeka; Chukwu Onyeka Ezekiel; Nkwagu Chibuike Christian; Agwu Roseline Nnenna[4]; Chukwuajah Matthew Chidiebere & Udenta Blessing Nancy

Department of Economics, Ebonyi State University, Abakaliki, Ebonyi State, Nigeria.

Correspondence: atumaemeka9@gmail.com

Abstract:

This study comparatively examine the relative impact of oil and non-oil exports on the growth rate of the Nigeria's economy. Ex-post factor research design was adopted in the investigation. Multiple regression analysis was employed, in which Vector Error Correction mechanism (VECM) was applied. The results revealed the presence of long-run relationship among the variables. The results as well, indicated that about 19.48% of the discrepancy between the short run and the long-run values are corrected annually. It further revealed that non-oil exports positively impact more on the Nigeria's economy as it approximately contributed to 41.5% to GDP; while oil exports only contributed 2.1% to the GDP within the period of this study. Based on the findings, the study recommended for government to intensify efforts at non-oil export promotion and diversification policies, and also to intervene in the foreign exchange market in order to reduce or stabilize the exchange rate of the naira against the currencies of our trading partner.

Keywords: Oil Exports, Non-Oil Exports, Economic Growth, Vector Error Correction Mechanism (VECM)*, Nigeria*

Introduction

For decades of years now, the achievement of sustainable economic growth and development has been the major aim of every government across the countries of the world. The actualization of this goal requires huge earnings, and one of the ways of generating these earnings is through export. Hence, exportation of oil and non oil is fundamental for the acceleration of growth and development of every nation, since it is a major source of foreign income generation, job creation and intra-industry trade for the countries of the world (Kromtit Kanadi, Ndangra & Lado (2017; Maku, Adetowubo & Aduralere (2018).

Conceptually, oil export means the value of oil sold to foreign countries of the world annually, while non-oil export entails the value of non oil commodities produced in one country and sold to other countries of the world (Sani, 2020). Oil or non-oil export of goods and services stands as one of the most important sources of foreign earnings that ease the pressure on the balance of payments and create employments opportunities. It can be shipped, sent by email, or carried in personal luggage on a plane. It brings large experience of chances to the global market in order to take benefits of economies of scale, and the gains that come from it. That is why Bbaale and Mutenyo (2011) maintained that trade results to competence in resource allocation, job creation and provision of foreign exchange required for the correction of balance of payments disequilibrium. Abou-Strait (2005) also maintained that export is essential for the general enlargement of an economy. Sani (2020) maintained that knowledge transmission and technology spillovers are required for the expansion of an economy are made achievable through trade.

The Nigeria economy between 1960s and 1970s was dominated by agricultural commodity exports such as cocoa, groundnut, cotton and palm produce. However, from the mid-1970s, crude oil became the main export produce of the Nigerian economy and as such, the Nigerian government began the development of

the petroleum (oil) industry in the country in 1909 (Anyanwu, 1997). This suggests that the oil sector comprises the economic actions within the petroleum and gas industry, while the non-oil sector includes those collections of economic actions which are outside petroleum and gas industry and those that are not directly related to them. Hence, non-oil sector comprises sectors like manufacturing, agriculture, telecommunication, service, finance, tourism, real estate, construction and health sectors. However, the detection of crude oil in large quantities moved the concentration from non-oil export to a "petroleum mono-cultural economy" since the 1970s. As such, while the petroleum export was rising, non-oil exports were decreasing, and this made the dominance of oil export over non-oil export greatly fast and enveloping. The clarification to this economic inconsistency is that the oil sector that produces about 90% of export revenues are within the hands of few people in the nation, which are subjugated by expatriates and political class who manage fabrication and earnings of the oil sector. The worst is that the sector is detached from other sectors of the economy and thereby providing small or no connecting impact to the aggregate economy (Akujuru, 2015).

According to the export-led growth hypothesis by Beckerman, Haberlar and Vernon (1966), export expansion is one of the major determinants of growth. Hence, using trend analysis, we observed that between 1981 and 1985, non-oil exports like agriculture and manufacturing sectors increased from 14.4% to 19% and 20.3% to 21.1%, respectively, while service and oil sectors decreased from 47.5% to 47.3% and 0.14% to 0.13% respectively. Within these periods, GDP increased from -15.45% to 3.2%. Again, between 1991 to 2000, agriculture, oil and service sectors increased from 24.9% to 28.5%, 1.1% to 15.7% and 42% to 43.7% respectively while manufacturing sector and GDP even decreased from 17.7% to 13.9% and 8.9% to 2.4%. Similarly, between 2001 and 2011, agricultural and manufacturing sectors decreased from 51.6% 25.3% and 13.9% to 6.5% respectively. On other hand, oil, service sectors and GDP increased from 14.7% to 70.9%, 43.79% to 50% and 3.3% to 5.15%, respectively. Lastly, between 2011 and 2020, agriculture, oil, service sectors and GDP decreased from 24.8% to 24.15%, 87.5% to 58.2%, 48.7% to 46.4% and 2.5% to -1.8%, respectively, while manufacturing increased from 7.1% to 12.7% (CBN,2020).

From these trend analyses, these variables appear to indicate a contradiction to a priori expectation in line with the theory. This is simply because, in some years, these variables move in opposite direction, and even when they move in the same direction, they do not possess a corresponding increase. The economic implication of this is the country's periodic increase in unemployment, inflation and exchange rates; and these factors are highly conjectured as factors responsible for mitigating growth and development of a nation. Infact, these adverse consequences of over dependency on oil trade heightened the need to diversify the Nigerian economy away from oil towards the direction of non - oil export trade. It is believed that the non - oil trade has great potentials to propel the Nigerian economy to the desired growth and development. Having observed this problem, the need to comparatively examine the impact of oil and non-oil exports on the growth rate of the Nigeria's economy

Literature Review

Export

Export refers to a product or service produced in one country but sold to a buyer abroad. An export in international trade is a good produced in one country that is sold into another country or a service provided in one country for a national or resident of another country. The seller of such goods or the service provider is an exporter; the foreign buyer is an importer. Exports are one of the oldest forms of

economic transfer and occur on a large scale between nations. Companies that export heavily are typically exposed to a higher degree of financial risk. Exportation of goods often requires the involvement of Customs authorities (Bbaale & Mutenyo, 2011).

Oil Exports

This is the value of oil sold to foreign countries annually. The sale of oil to another country adds to the producing nation's gross output. Oil exports occur on a large scale between nations that have fewer restrictions on trade such as tariffs or subsidies. Nigeria is a member of the Organization of Petroleum Exporting Countries (OPEC). The types of crude oil exported by Nigeria are Bonny light oil, Forcados crude oil, Qua Ibo crude oil and Brass River crude oil. The oil and gas sector accounts for about 35 per cent of gross domestic product, and petroleum exports revenue represents over 90 per cent of total exports revenue (Sani, Ismalla, Danlami, Sani & Yusuf, 2020).

Non Oil Export

This is the value of non oil commodities produced in Nigeria and sold to other countries. The sale of non oil products to another country adds to Nigeria's gross output. Non oil exports occur on a large scale among nations that have fewer restrictions on trade such as tariffs or subsidies. Apart from petroleum, Nigeria's other natural resources include natural gas, tin, iron ore, coal, limestone, niobium, lead, zinc and arable land (Chinyere, Samuel, Nkama, Chinwoke, (2021).

Theoretical Frame work

Export-Led Growth Hypotheses

The idea of trade as an engine of economic intensification is accentuated by several economists. The notion that international trade generates economic expansion enhances the wellbeing of a country began during the 17th century by a collection of merchants, management personnels and philosophers who campaigned for Mercantilism. For a country to be potent, it should export higher than it imports where the resultant export excess is utilized in buying valuable metals like gold and silver. The administration in its authority has power over imports and encourages the country's exports (Sunday, Clement & Eteng, 2013)..

The export-Led-Growth theory proposes that rise in export of a nation is a catalyst to the intensification of her economy. That is, the export intensification has ability to control the expansion of the aggregate economy. Infact, according to the supporters of the export-Led-Growth, export is the way out to economic inactiveness particularly in underdeveloped nations.

The export-led growth hypothesis is one of the most debated in the recent past with little consensus. The debate which dates back to the classical and neo-classical economic theories, centers on the role of exports as one of the main determinants of economic growth. Adam Smith,

James Mill and David Ricardo on whose shoulders the argument rests, posited that participation in international trade could be a strong positive force in the economic development process of nations and that there are economic gains from specialization. Some related reasons analyzed to support this argument are that promoting exports encourages production of goods which provides the economy with foreign exchange that may further enable importation of capital inputs that cannot be produced

domestically (Kromtit, Kanadi, Ndangra, & Lado, 2017).

Empirical Literature

Adegbola, Samuel, Damilola, Ademola, Okoye, and Sarah, (2023) investigated the influence of both oil and non-oil tax revenue on the economic growth of Nigeria. The study employed an ex-post facto research design Error Correction Model was used. The findings revealed that Petroleum Profit Tax (PPT) and Customs and Excise Duty (CED) exhibited a positive and significant relationship with economic growth

Ogbu (2024) conducted an analysis of the influence of exchange rates on non-oil exports in Nigeria, spanning from 1986 to 2021. The study employed the linear regression method, incorporating the Error Correction Model (ECM) for data analysis. Key findings from the study indicate a negative correlation between exchange rate volatility and non-oil exports in Nigeria, as well as a negative association between exchange rates and non-oil exports in the country. Additionally, the study identified a unidirectional causality relationship wherein exchange rate volatility influences non-oil exports in Nigeria.

Akpokerere, and Ekane, (2022) investigated the impact of both oil and non-oil revenue on the Nigerian economy during the period spanning from 1994 to 2021. Descriptive statistics were initially applied to the data, The findings indicate significant results, with TOR showing a notable effect on RGDP, as evidenced by its associated p-value of 0.0000. Similarly, TNOR demonstrated a positive and significant influence on RGDP, supported by its associated p-value of 0.0097.

Chinyere, Samuel, Nkama, and Chinwoke (2021) conducted a study examining the impact of non-oil exports on economic growth in Nigeria. The research employed an ex-post facto research design, in which Ordinary Least Square (OLS) was used. The findings of the study indicate that non-oil exports do not significantly affect the growth rate of real gross domestic product (GDP). Furthermore, the contribution of agriculture to real GDP is not significantly influenced by non-oil export activities, despite the presence of a positive but statistically insignificant correlation between them.

Zubair, Salihu and Gyang (2021) investigated the effect of non-oil foreign trade on economic growth in Nigeria from 1986 to 2018 using unit root test, autoregressive distributed lag model and error correction model. The variables used in the study were gross domestic product, non-oil export, non-oil import and exchange rate. The results revealed that non-oil import and exchange rate had insignificant impact on economic growth; while non-oil export exerts significant influence on economic growth in Nigeria.

Jabir, Amin, Vera and Joshua, (2020) examined Oil revenues and economic growth in oil-producing countries. The study used data collected from 83 oil-producing countries between 1990 to 2015 and tested with the Panel Vector Autoregressive (PVAR). The results showed that government investment in oil revenues has positive effects on economic growth conditionally on the development banking sector with no effect on the stock market development. It also shows that private investment of oil revenues has negative impacts on economic growth conditionally on the banking sector development. The study recommended that oil-producing countries focus more on the share of the oil rent going to the government and the development of its banking sector.

METHODOLOGY

Unit root test and Vector Error Correction Mechanism (VECM) were the analytical method employed in

the investigation. The test of stationarity is used to determine the rank of integration of the variables of the model. On the other hand, the VECM model deals with the investigation of the coefficients of the parameters. In capturing the study, these variables were used as proxy: GDP = f (OEX, NOE, EXR, FDI) 1

This is structurally and linearly specified as:

$$GDP = b_0 + b_1OEX + b_2NOE + b_3EXR + b_4FDI + U_t \quad 2$$

Where: GDP_t = Gross Domestic Product, OEX_t = Oil Exports, NOE_t = Non-Oil Exports

EXR_t = Exchange rate, FDI_t = Foreign Direct Investment, U_t = Stochastic random term

b_o = Constant term, b_1, b_2, b_3, b_4 = Parameter estimates.

RESULTS

Table 1: Augmented Dickey Fuller Unit Root Test

Trend and Intercept @ Levels

Series	ADF Test Statistic	5% critical values	Remarks
GDP	4.081680	-2.943427	Not Stationary
OEX	-0.151397	-2.943427	Not Stationary
NOE	0.277991	-2.943427	Not Stationary
EXR	2.321285	-2.943427	Not Stationary
FDI	-1.261727	-2.943427	Not Stationary

Source: Researcher's Compilations from E-views 9

Table 2: Augmented Dickey Fuller Unit Root Test

Trend and Intercept @ 1st Difference

Series	ADF Test Statistic	5% critical values	Order	Remarks
GDP	-3.787124	-2.945842	1	Stationary
OEX	-3.858111	-2.945842	1	Stationary
NOE	-4.591188	-2.945842	1	Stationary
EXC	-3.332634	-2.945842	1	Stationary
FDI	-6.040599	-2.945842	1	Stationary

Source: Researcher's Compilations from E-views 9

From able 1 and 2 above, at 5 percent level of significance, none of the variables intended for this regression was stationary at level since by comparison, their critical values were greater in absolute values than their augmented dickey fuller (ADF) test statistics. However, at first difference, all the variables became stationary. Thus, all of the variables are stationary and integrated of the first order, I(1). Since the variables are not stationary at level the Johansen cointegration was conducted to test for the long-run relationship.

Table 3: Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.840890	163.1023	69.81889	0.0000
At most 1 *	0.774868	61.20726	47.85613	0.0017
At most 2 *	0.580939	32.58605	29.79707	0.0233
At most 3	0.245750	13.72852	15.49471	0.0907
At most 4*	0.055545	4.630640	3.841466	0.0314

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level
Source: Researcher's Compilations from E-views 9

In the Johansen cointegration test, the trace statistics indicated 4 cointegrating equations. The existence of at least one cointegtrating equation is enough to show the presence of a longrun stable and symmetry association between the prarmeters.

Table 4: Vector Error Correction Model (VECM) System Equation

Variable	Coefficient	Std. Error	t-Statistic	Prob
VECM	-0.194872	0.017028	-11.44430	0.0000
D(GDP(-1)	-0.671579	0.115219	-5.828698	0.0000
D(OEX(-1)	2.116948	0.380215	-5.567768	0.0000
D(NOE(-1)	41.45057	5.504318	7.530556	0.0000
D(EXR(-1)	-45.83127	19.37987	2.364891	0.0273
D(FDI(-1)	0.067499	0.007158	-9.429580	0.0000
C	7597.070	776.7056	9.781145	0.0000

R^2 = 0.940492 F-statistic = 31.60917 Prob(F-statistic) = 0.000000 DW = 2.052716
SOURCE: Researcher's Compilation from Eview9

From the table five above, the coefficient of VECM (1) is consistent by being negative fractional and significant. It suggests that the VECM could correct any deviations from longrun equilibrium relationship between GDP and the explanatory variables. The co-efficient indicates a speedy adjustment of -0.194872 per annum. This implies that following short-run disequilibrium, 19.4872% of the adjustment to the long-run takes places within one year. The above result shows that the R^2 is 0.940492, which implies that the model explains about 94.0492% of the total variations in gross domestic product (GDP) are explained by the independent variables; oil exports (OEX), non-oil export (NOE), exchange rate (EXR) and foreign direct investment (FDI) during the period of the study. While the remaining 5. 9508% variations are as a result of other explanatory variables that are not included in the model.

The result also shows that oil exports (OEX), non-oil export (NOE), exchange rate (EXR) and foreign direct investment (FDI) are statistically significant as their respective probability values (0.0000, 0.0000, 0.0273 and 0.0000) are less than 0.05 at 5% level of significance. Equally, they are positively

related to gross domestic product (GDP) excluding that of exchange rate (EXR) which is inversely related to economic growth in Nigeria.

Conclusion

This study generally sought to investigate the contribution of oil and non-oil exports to the economic expansion of Nigeria within the sample period 1981 to 2019. Ex-post-facto research design was adopted for this research. The variables of the study were gross domestic product (GDP), a proxy for economic growth and endogenous parameter; while oil exports, (OEX), non-oil exports (NOE), exchange rate (EXR) and foreign direct investment (FDI) as explanatory variables.

The empirical results revealed that oil exports (OEX), non-oil exports (NOE), exchange rate (EXR) and foreign direct investment (FDI) are significant determinants of economic growth. Also revealed, is the existence of a significant unidirectional causality running from oil exports (OEX) to economic growth and from economic growth (GDP) to non oil exports. However, foreign direct investment (FDI) was not shown as a significant determinant of economic growth.

Recommendations

Based on the results and findings of this result, the following recommendations are made:

I). Since oil and non-oil exports are significant determinants of economic growth, government should intensify efforts at export promotions and diversification policies. This will not only increase national income but also increase economic growth and general standard of living.

ii). The government, through its monetary authorities should continue to intervene in the foreign exchange market to further reduce or at least stabilize the exchange rate of the our currency in relation to those of her trading partners. This will make export more competitive in the international market, resulting in increased exports and economic growth.

iii). To attract more foreign direct investment, the government should provide the required infrastructure such as roads, good communication network, incentives such as tax holdings, and adequate legal framework. This will ensure increased income and economic growth.

References

Abou-Strait, F, (2005). Are exports the engine of growth? An application of cointegration and causality analysis for Egypt. 1977-2003. *African Development Bank Economic Research Working Paper,* 4(13), 234 – 245.

Adegbola, O. O; Samuel, A. F; Damilola, F. E; Ademola, A. O; Okoye, N. J;and Sarah, I. (2023). impact of oil and non-oil tax revenue on economic growth in Nigeria. *International Journal of Energy Economics and Policy*, 2023, 13(2), 545-552.

Akpokerere, O. E., &Ekane, R. O. (2022). Oil and non-oil revenue and the Nigerian economy. *International Journal of Management & Entrepreneurship Research*, *4*(11), 441-457.

Akinlo, A.E. &Adejumo, V.A. (2014). Exchange rate volatility and non-oil exports in Nigeria: 1986-2008. *International Business and Management, 9*(2), 70-79

Anyanwu, J. C. (1997). *The structure of the Nigerian economy (1960-1997).* Anambra: Joanee Educational Publishers

Bbaale, E. and Mutenyo, J. (2011). Export composition and economic growth in Sub- Saharan Africa: A panel analysis. *Consilience: The Journal of Sustainable Development*, 6(1) 1–19.

Central Bank of Nigeria (CBN) (2020). *Statistical bulletin, volume 26.* Abuja, CBN.

Chinyere F.E., Samuel N.N., Nkama O.N., Chinwoke R.E. (2021). Evaluation of the impacts of non-oil exports on economic growth in Nigeria between 1986-2018. *African Journal of Accounting and Financial Researc*h 4(3), 39-64. DOI: 10.52589/AJAFRMUN5QZ7W.

Haberler, G. (1988). *International trade and economic development.* San Francisco, CA: International Center for Economic Growth.

Kromtit, M.J., Kanadi, C., Ndangra, D.P., &Lado, S. (2017). Contribution of non-oil exports to economic growth in Nigeria. *International Journal of Economics and Finance,* 9(4) 253-162.

Jabir, I. M., Amin, K., Vera, O. F., & Joshua, Y. A. (2019) Oil revenues and economic growth in oil-producing countries. *Resources Policy*: 69 (10183).

Maku, O. E., Adetowubo-King, S. A.,& Aduralere O., O. (2018).Impact of Petroleum Product Price on Human Welfare in Nigeria. *Periodyk Naukowy Akademii Polonijne,* 9(4), 27-42

Opaleye, S.S., Okowa, W. &Ohale, L. (2018). Oil Rent and Socioeconomic Outcomes in Selected Oil Producing Countries in Africa.*International Journal of Research in Business, Economics and Management,* 2(2), 27-43

Ogbu C. O. (2024). Exchange rate and non-oil exports in Nigeria (1986-2021). *African Journal of Economics and Sustainable Development* 7(1), 36-55. DOI: 10.52589/AJESD8JTZYJU

Sani, B., Ismalla, S. A., Danlami, T., Sani, I. B., & Yusuf, J. A. (2020). Asymmetric impact of oil price on inflation in Nigeria. *CBN Journal of Applied Statistics*, 11(2), 85-113

Sunday A. E., Clement A. U., &Eteng U. O. (2013). Beyond oil: Dual-imperatives for diversifying the Nigerian economy. *Journal of Management and Strategy Vol. 4, No. 3;* ISSN 1923-3965 E-ISSN 1923-3973