

THE IMPACT OF NON- OIL EXPORTS ON ECONOMIC GROWTH IN NIGERIA**BY****Abdulmalik Iyabo B: Department of Economics, Kwara State College of Education, Ilorin;****E-mail: iyaboabdulmalik76@gmail.com****Abstract**

The over reliance on oil export revenue by Nigeria expose her economy excessively to external shocks. Oil accounts for over 90 percent of total export in Nigeria, while non-oil account for less than 10 percent of the total export. The essence of this study is to examine the effects of non-oil exports on economic growth in Nigeria from 1984 to 2015. Vector Auto regression model along with its devices; Impulse Response Functions and Variance Decomposition Device were used. The study found that non-oil exports affects economic growth both directly and indirectly through other variables such as foreign debt, external reserves, term of trade and investment. The paper therefore suggested that government should diversify production base away from oil to non-oil exports with proper exchange rate and inflation management policies aimed at improving the performance of the non-oil sector as being adopted in recent times by the country's monetary authorities.

Keywords: *Agriculture, Economic growth, Non-oil export, Import*

Introduction

Nigeria's external sector is dominated by oil and non-oil exports as her major sources of foreign exchange earnings. During the 60s, the country depended heavily on agricultural export as its main source of foreign exchange earnings and capital formation. The sector accounted for nearly 64% of the Gross Domestic Product (GDP) and 70% of total employment in the country (Ajayi, 2000). It is also important in the provision of raw materials for the industries as well as income to the individuals and the government. The development of agriculture to a large extent led to the development of the industrial sector, thus, making agriculture and industry interdependent (Samson & Abdulwahab, 2014). The contribution of agriculture's share as a percentage of total GDP systematically declined from 64.08% in 1960 to 21.91% in 2019 (Plecher, 2020).

When Nigeria experienced oil boom in the early 1970s, emphasis were shifted to the oil sector. During this period, crude oil became the main export product of the Nigerian economy. The export of crude oil constitutes about 96% of the total export while the performance of the non-oil export sector in the past two decades leaves little or nothing to be desired (Ezike & Ogege, 2012). The policy concern over the years has been to reverse this trend and expand non-oil export in a bid to diversify the nation's export base. The main objective of this paper therefore, is to examine the direct and indirect effect of non-oil export on economic growth in Nigeria between 1984 and 2015. The study is therefore, divided into three sections: the first part introduces, the second part reviews the relevant literatures and the last part concludes and makes suggestions.

The exchange mechanism enables modern societies to enjoy the benefits of division of labour and specialization in production by devoting attention to areas where they have comparative advantage. No country can be totally self-sufficient in terms of the products required in the country, as such, exchange becomes necessary and advantageous where two countries have different tastes and different talents in producing goods. Therefore, the theoretical base for export as an engine of economic growth is based on the twin pillars of the law of absolute advantage (originated by Adam Smith) and the law of comparative advantage (introduced by David Ricardo). Adam Smith suggested that each country should specialize in the production of those commodities and services in which it has an absolute advantage. Carrying this argument further, David Ricardo posited that even where one country (x) has an absolute advantage in the production of two commodities, as against another country (y), it may still be more beneficial to both countries if each of them specializes in the production of only one of the products. This would enable

each country to enjoy the benefits of comparative advantage and facilitates the process of exchange between the two countries.

Harberlar (1959) argued that expanding export holdout that promise of certain dynamic benefit on growth that could lead to higher rates of economic development. This is what recent growth theorists termed "Total Factor Productivity" (TFP). The new growth theorists emphasized the benefits of a dynamic export sector based on the assumption of increasing returns to scale and spillover effects from exports to other sectors of the economy. These externalities may take the form of diffusion of improved techniques, higher skilled labor and improved techniques, stemming from intensive competitive climate faced by export. Apart from externalities, a growing export sector may impact a stimulus to overall economic growth in so far as marginal factor productivity may be higher in this sector than in the rest of the economy.

Empirical Framework

The empirical approach of the relationship between export and growth has been widely debated in the literature, from Adam Smith's absolute advantage to David Ricardo's comparative advantage. The empirical findings on the relationship between export and growth for the less developed countries confirmed the role of exports as an engine of growth (Balassa, 1978; Tyler, 1981; Grossman & Helpman, 1991). Balassa (1978) observed that the correlation between export growth and output growth provides an indication to the total effort of exports on economic growth. He concludes that trade orientation has been an important factor contributing to inter country differences in the growth of output. Tyler (1981) observed that "the dramatic economic success of some countries pursuing export oriented policies, along with the equally dramatic failures of those countries pursuing autarkistic policies, has provided examples necessitating a re-examination of the role of international trade in the development of poor countries. He concluded that a 17.5% increase in export is associated with 1% increase in GDP. He also emphasize that countries which neglect their export sector through discriminatory economic policies are likely to have settled for lower rates of economic growth as a result". Grossman and Helpman (1991) emphasized that countries that have adopted an outward-oriented development strategy have grown faster and achieved higher levels of standards of living than their counterparts who engaged in protectionist trade policies. The Empirical studies from Nigeria on the relationship between export and growth includes the findings of Dennis (1993), Ekpo and Egwaikhide (1994), Olomola (1998), Okoh (2004), Adesoji & Sotubo (2013), Anthony (2015), Lawrence (2015), Adewale (2016), Idowu (2016), Onyinye(2017).

Fajana (1979) used the two-gap model to examine the export-growth link for the period of 1965 to 1975 and discovered that exports have significant effects on growth. Dennis (1993) found out that increasing productivity growth in exports and government expenditure has positively impacted output growth. He concluded that policy makers are to set up tools for accelerating economic growth through exports promotion and appropriate management of government expenditure. Olomola (1998) examined the link between exports and economic growth in Nigeria between 1959 and 1989 using an Error Correction method. He discovered that export growth affects income growth positively. Okoh (2004) also used Vector Error Correlation Model (VECM) and finds that openness impact positively on growth. Adesoji & Sotubo (2013) examined the performance of non-oil exports over the years. Findings from the study reveal that non-oil exports have performed below expectations giving reason to doubt the effectiveness of the export promotion strategies that have been adopted in the Nigerian Economy. Anthony et al., (2015) examined the impact of non-oil sector on economic growth for the period 1981-2012. The study adopted the export-led growth hypothesis as the framework of study. The econometric techniques of Johansen cointegration and the vector error correction model are chosen to ascertain the impact and the long run relationship between economic growth and the independent variables. Findings from the VEC analysis reveal that in both the short and long runs, non-oil export determines economic growth. Also, the co integration analysis indicates a long run relationship between non-oil export and economic growth over the period under study. **Impact of non-oil export on economic growth in Nigeria using the ordinary least**

square (OLS) for the period of 1980-2010 was examined by Lawrence (2015). It was discovered that non-oil export has a significant impact on economic growth in Nigeria.

Adewale et al., (2016) studied the impact of non-oil exports on Nigerian economy from 1970 – 2014 using OLS technique. The result shows that non-oil export have a significant Impact on GDP. Idowu (2016) also investigated the role of oil and non-oil exports on the Nigerian economy over the period of 1981 to 2015. The ADF and pp unit root test, johansen cointegration, granger causality test, impulse response functions (IRF) and variance decomposition (VD) were used in the analysis of the study. The result indicates that oil exports have inverse relationship with economic growth while non-oil exports have positive relationship with economic growth. Onyinye, Anthony & Jonathan (2017) examined the impact of non-oil export on capital formation and economic growth in Nigeria. It adopts classical linear macroeconomic model using aggregate data time series from 1980-2013. The empirical results from the estimated model showed that non-oil export has a positive impact on capital formation and economic growth in Nigeria.

Methodology: The Model

This research work adapts the theoretical framework of Ram (2020). Beginning with Cobb - douglas specification

$$Y_t = A L_t^\alpha K_t^\beta e^{it} \text{-----} (1)$$

Where Y_t stands for national output, L_t is the unit of Labour input, K_t is the physical Capital stock, A is the technological progress (or an index of total factor productivity), e^{it} is the stochastic error term; while α and β are production function parameters. Equation 1 above is augmented with other variables that have relationship with economic growth, non-oil export (EX), foreign debt (FDT), external reserve (EXTRES), terms of trade(TOT).

$$\text{Log } EG_t = \alpha_0 + \text{Log } L_t + \text{Log } EX_t + \text{Log } FDT_t + \text{Log } EXTRES_t + \text{Log } TOT_t + \text{Log } INV_t + e^{it} \text{-----} (2)$$

(Taking the logarithm of equation 1 and other variables included)

- Where EG_t = Economic growth taken at current price.
- L_t = Value of labour at current year.
- $EXTRES_t$ = Values of external reserves at current year.
- EX_t = Value of non-oil exports (agricultural products manufactured products and solid minerals) at current year.
- FDT_t = Value of foreign debt at current year.
- TOT_t = Value of terms of trade at current year.
- INV_t = Value of investment at current year.

A vector Autoregression model (VAR) is employed for this study because of its ability to characterize the dynamic structure of the model as well as its ability to avoid imposing excessive identifying restrictions associated with different economic theories. That is to say that VAR does not require any explicit economic theory to estimate the model. The VAR model may be viewed as a system of reduced forms of equations in which each of the endogenous variables is regressed on its own lagged values and the lagged values of all other variables in the system.

For an ‘n’ variable, VAR system can be written as:

$$A(1) Y_t = A + U_t \text{-----} (3)$$

$$A(L) = L - A, L - A_2L^2 \text{-----} Aml^m \text{-----} (4)$$

Where Y_t is an $n \times L$ (vector of macroeconomic variables), A is an $n \times 1$ (vector of constraints) and U_t is an $n \times L$ (vector of random variables), each of which is serially uncorrelated with constraint variance and zero mean. Equation 4 is an $n \times n$ matrix of normalized polynomial in the lag operation $L(L^{kyt} = Y_t - K)$ with the first entry of each polynomial on A’s being unity. Given that the error term (U_t) in the above

model are serially correlated, an Ordinary Least Square (OLS) is used to estimate the model. In order to analyze the impact of non-oil export on the Nigerian economic growth in a more convenient and comprehensive way, Impulse Response Function (IRFs) and Forecast Error Variance Decompositions (FEVDs) are obtained from a moving average representation of the VAR model.

Measurement and Sources of Data

The time series data used in this study is annual and it covers the period of 1984 to 2015. Economic growth is represented by (EG_t), Investment (INV_t) denotes the gross capital formation, Foreign debt (FDT_t), External reserves ($EXTRES_t$), Terms of trade (TOT_t) were used to represent degree of openness of the Nigerian economy, and relative prices respectively along with the value of non-oil export (EXT_t). All the data were sourced from the CBN annual statistical Bulletin.

Results

Unit Root Tests

The Augmented Dickey Fuller (ADF) test of unit roots were conducted for all the time series used in the study. The ADF result shows that all the variables were non-stationary at their levels. The test results also revealed that EG, EX, EXTRES, INV and TOT were integrated series of order 1 (1) while FDT was integrated of order 1 (2). The results of the ADF tests are shown on table 1.

Table 1: Unit Root Test Statistics

Variables	ADF Statistics At level	ADF Statistics of 1 st Difference	ADF Statistics of 2 nd Difference	Order of Integration
EG	0.466015	-3.252962	-	1
EX	1.720925	-5.380376	-	1
EXTRES	2.408747	-3.284716	-	1
INV	1.041982	-4.095082	-	1
FDT	-0.629922	-2.542242	-3.319886	2
TOT	-2.601276	-5.997960	-	1

Mackinnon critical values for rejection of hypothesis of a unit root.

1% = -3.6422

5% = -2.9558

10% = -2.6164

Table 2: Vector Auto-Regression (VAR) Estimates

t-statistics in parentheses

	LOG (EG)	LOG(EX)	LOG(FDT)	LOG(EXTRES)	LOG(TOT)	LOG(INV)
LOG(EG(-1))	0.571431 (4.33427)	0.260020 (0.30007)	-0.288313 (-0.82622)	1.819470 (1.21042)	0.615579 (0.75832)	0.229276 (0.28724)
LOG(EG(-1))	0.022834 (0.73120)	0.613650 (2.98974)	0.168091 (2.03366)	0.676322 (1.89953)	-0.237039 (-1.23279)	0.203285 (1.07521)
LOG(FDT(1-))	-0.032072 (-0.87589)	0.469699 (1.95165)	0.716565 (7.39365)	0.154174 (0.36929)	0.096333 (0.42728)	-0.187730 (-0.84681)
LOG(EXTRES(-1))	0.031581 (1.63325)	0.005229 (0.04115)	0.052707 (1.02985)	0.286377 (1.29897)	-0.001248 (-0.01049)	0.235230 (2.00932)
LOG(TOT(-1))	-0.091545 (-3.53974)	-0.371434 (-2.18513)	0.008214 (0.12000)	-0.081057 (-0.27489)	0.411699 (2.58542)	0.316234 (2.01966)
LOG(INV(-1))	0.022866 (1.07860)	-0.009707 (-0.06966)	0.051739 (0.92207)	-0.207110 (-0.85685)	0.195199 (1.49541)	0.567209 (4.41920)
C	4.733806 (3.31854)	-2.215852 (-0.23634)	3.544450 (0.93878)	-20.40962 (-1.25490)	-5.554373 (-0.63239)	-1.551474 (0.17964)
R-squared	0.940002	0.977483	0.995378	0.944949	0.699553	0.976924
Adj. R-squared	0.926670	0.972479	0.994351	0.932715	0.632787	0.971796
Akaike AIC	-2.505594	1.260240	-0.558899	2.361895	1.129660	1.095957
Schwarz SC	-2.191344	1.574491	-0.244649	2.676146	1.443911	1.410207

Akaike Information Criteria	1.486450
Schwarz Criteria	3.371954

Although the VAR model is not usually interpreted in the literature because of its complexity, but an attempt is made here to give some explanations. The model shows the inter relationship between all the variables. The only variables in the model that demonstrates a sign of exogeneity in the system is the terms of trade. All other variables demonstrate the characteristics that their values are generally endogenously determined within the system. This characteristics is demonstrated by the high values of R^2 attached to all the variables except the terms of trade.

Impulse Response Function (IRFS)

The impulse Response functions (IRFS) explains the behaviour of shock to any of the variables. It gives a clear picture of what will happen to the various variables if there is a change in other variables.

Table 3: Response of LOG (EG)

Response of LOG (EG)

Period	LOG (EG)	LOG(EX)	LOG(FDT)	LOG(EXTRES)	LOG(TOT)	LOG(INV)
1	0.056269	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.044270	0.007385	-0.004297	0.004146	-0.028696	0.007461
3	0.036069	0.021037	-0.005652	0.003141	-0.028700	-8.32E-05
4	0.028600	0.024354	-0.003976	-0.004344	-0.029643	-0.006413
5	0.021346	0.023793	-0.001168	-0.010166	-0.030049	-0.009958
6	0.014798	0.022678	0.001752	-0.013078	-0.028179	-0.011633
7	0.009359	0.021511	0.004392	-0.013915	-0.024632	-0.011944
8	0.005201	0.020341	0.006576	-0.013366	-0.020347	-0.011223
9	0.002325	0.019263	0.008230	-0.011907	-0.015988	-0.009820
10	0.000619	0.018362	0.009351	-0.009939	-0.011988	-0.008063

Table 3 shows that economic growth responds positively to a shock in itself while the other variables do not react in the first year. On the overall, non-oil export responds positively to a positive shock in EG although the response declines overtime from the fifth year. This confirms the findings of Adesoji & Sotubo (2013), Adewale et al., (2016), Idowu (2016), Onyinye et al. (2017) that there is a positive relationship between export and economic growth. On the other hand, economic growth responds positively to an overall negative shock in external reserves, terms of trade and investment with mixed results for foreign debt.

Variance Decomposition

Variance decomposition provides information on the importance of each random innovation to each variable in the model. Table 4 illustrates the direct effects of the various variables on growth.

Table 4: Variance Decomposition of LOG (EG)

Period	LOG (EG)	LOG(EX)	LOG(FDT)	LOG(EXTRES)	LOG(TOT)	LOG(INV)
1	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	84.09740	0.894793	0.302879	0.282047	13.50973	0.913152
3	73.83642	5.711131	0.579065	0.310867	18.92300	0.639521
4	65.44696	9.848819	0.598124	0.414894	22.81687	0.874325
5	58.34422	12.54976	0.511996	1.131042	25.97832	1.484654
6	52.67320	14.43718	0.469866	2.130491	28.08588	2.203384
7	48.38779	15.91374	0.543471	3.105830	29.18516	2.864013
8	45.26181	17.16642	0.750292	3.901791	29.54007	3.379618
9	43.01893	18.29032	1.075062	4.464611	29.42512	3.725969
10	41.39836	19.33655	1.484710	4.804898	29.05533	3.920149

At the initial period, economic growth explained 100% variation in itself. Its contribution therefore decreased in the second year when non-oil export, foreign debt, external reserve, terms of trade and investment contribute to its variability. As variance decomposition of economic growth decreases, it increases for the other variables. By the tenth year, economic growth declines to 41.4% with non-oil export and terms of trade explaining 19.3% and 29% of the variance in economic growth, while foreign debt, external reserves and investment explains approximately 1.5%, 5% and 4% variance in economic growth respectively. This describes the direct impact of the variables on non-oil export which is passed indirectly to growth. Both EG and non-oil export explains approximately 8% and 92% of the variance decomposition in non-oil export with the other variables explaining nothing or zero percent. However, non-oil export explains most of the variance in itself from the first year till the tenth year with 69%, while foreign debt and terms of trade explains 9 %, 7% and 12% of the variance decomposition on non-oil export. On the other hand, external reserves and investment collectively explained 3% in the tenth year.

Conclusion

From the analysis and findings, non-oil exports impacted positively on economic growth both directly and indirectly. An increase in the exportation of non-oil products reduces the country's foreign debt, increases its external reserves as well as investment, all these in turn leads to an increase in EG. The policy implication is that a diversification effort of the Nigerian government will lead to increase in economic growth.

Suggestions

This study suggests that:

1. Non-oil sector should be given equal parity with the oil sector because of its capacity to create more jobs for the economy and make the country self-reliant by serving as alternative and reliable source of income for the country.
2. Agriculture, mining, service, manufacturing, small and medium enterprises should be given urgent developmental priority in terms of infrastructural provision to boost the economic growth.
3. The private sectors should take the full advantage of government reforms and incentives to increase the exportation of non-oil products by dominating the markets in sub-Saharan African and even penetrate markets in Europe and America using export driven industrialization strategy and export promotion strategies.

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