NON-OIL SECTOR PRODUCT EXPORTS AND THE GROWTH OF THE NIGERIAN ECONOMY

DR. OBORO OGHENERO GODDAY[1] and PROF. AGUWAMBA MARACHI SUNDAY[2]

[1]Department of Banking and Finance, Faculty of Administration and Management, Delta State University of Science and Technology, Ozoro. Delta State, Nigeria.

[2]Department of Banking and Finance, College of Business and Management Studies, Igbenidion University, Okada, Edo State, Nigeria**.**

ABSTRACT

This paper critically investigated the effect of non-oil sector product exports on the growth of the Nigerian economy from 1990-2020 using the disaggregated approach. The regressor is non-oil sector product exports measured by agricultural products exports, manufacturing products exports, solid mineral exports, and services exports while the regress and is economic growth measured by real gross domestic product per capital. The study was patterned after the Vector error correction methodology though some pre-estimation test like descriptive statistics, correlation analysis, unit root test, cointegration tests, and granger causality tests were conducted. The data sourced from this paper were gotten from the Central Bank of Nigeria Bulletin and the World Bank Data bank (2020). The study affirmed that previous values of agricultural product exports and manufacturing product exports exerted positive high effect on the Nigerian economic growth. Meanwhile, past values of solid mineral and services exports influenced the growth of the Nigerian economy in a negative yet significant manner. Hence, we conclude that all non-oil export indicators exerted high statistical significant effect on economic growth with the exception of agricultural and manufacturing product export. Consequently, we suggests that pragmatic policy formulation on investment should be centered on the agro-allied sub-sector since it has the potential to better the Nigerian economy. Lastly, the federal government of Nigeria should give preference and palliative measures to investors who desire to invest in the manufacturing sector.

**Keywords**: Non-Oil Sector Product Exports, Growth, Nigerian Economy.

1. Introduction

Since the discovery and exploration of crude oil in large quantities in the early 1970s, the Nigerian government shifted her attention to the oil sector despite the fact that the non-oil sector (agricultural sector to be specific) was once instrumental to the growth of the Nigerian economy prior to these periods. Consequent upon this discovery, the oil sector became a major source of income for foreign exchange and an avenue of achieving high Gross Domestic Product (GDP). More explicitly, Uysal, and Mohamoud (2018) added that the major reason why the Nigerian government drifted away from the non-oil sector after her independence was catalyzed by the oil boom of 1973 and 1974.

Sequel to the above, the Nigerian government directed all her policies and programmes towards improving the oil sector to suit global practices at the expense of the non-oil sector despite its inert the richly-agro productiveness of the country not until 2007. Balsalobre-Lorente (2018) and Badeeb, Lean, and Clark (2017) &Ighosewe, Akan, and Agbogun (2021), however asserts that, the dwindling state of the global oil sector from 2008 till date coupled with the current outbreak of covid'19 pandemic prompted the Nigerian government to redirect her policies and programmes towards non-oil sector export diversification.

Outside the premise that the oil sector is highly volatile, fossil fuel (fossil oil) is an exhaustible asset. As such, it cannot be reliable source for the sustainable development of the Nigerian economy (Ideh, 2021). This again lends credence to any justification for export diversification. However, in spite of the efforts by various governments to boost non-oil export, crude oil still dominates government and policy makers' focus for growth (Central Bank of Nigeria (CBN) Bulletin, 2020; Lucky &Godday, 2017).

Figure 1: Ratio of Oil and Non-Oil Export Earnings to Aggregate Exports from 1990 to 2020
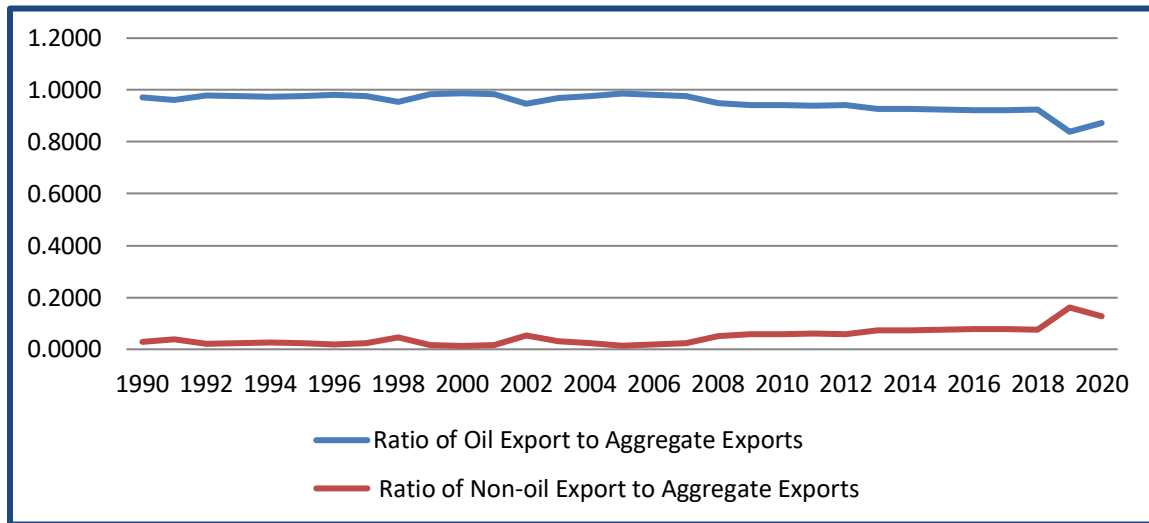
Sources: CBN Statistical Bulletin (2020)

Figure 2:Ratio of Oil and Non-Oil Export to GDP from 1990 to 2020
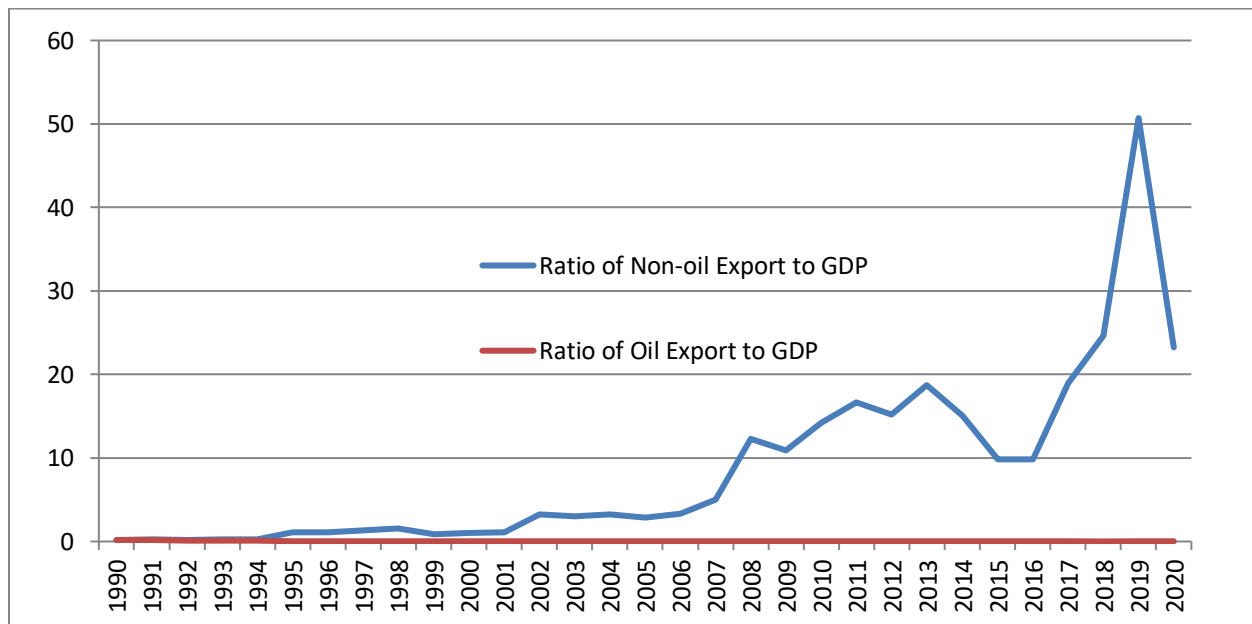
Sources: CBN Bulletin (2020)

In an attempt to look for lasting solution to the reason why the Nigerian government is yet to fully implement her export diversification policy, Ideh, Okolo, and Emengini (2021) maintains that, the shortfall lies in Ricardo's submission on theory of comparative cost advantages. According to Ricardo, countries can only enjoy the gains inherent export diversification, if they only export those commodities which they have comparative cost advantages over others as well as import those commodities which they have comparative cost disadvantage. In this light, Isaiah, Zayone, Henneberry, and Radmehr(2020) stressed that for the non-oil sector to contribute immensely to the growth of the Nigerian economy, efforts must be made to consider those factors that may either inhibit or improve non-oil sector's export growth. Again, they should also consider the degree of responsiveness of the exporter to variations in both price and non-price conditions.

A way further, a meticulous survey into extant studies reveals that though series of studies exist on the nexus between oil export and economic growth yet these studies are not exhaustive as they are faced with series of methodological issues as well as conflicting results. For example, Javad, Abbsi, and Baseri (2014); Kilavuz and Topcu (2012); Udude and Okulegu (2012); Safdari and Zaroki (2012), among others studies, revealed that export exert concave impact on economic growth but Syed (2015) and Noula, Sama, and Gwah (2013) found a negative relationship with mixed effect of export on economic growth. Again, none of the existing studies examined the impact of agricultural product export, manufactured product exports, solid mineral exports and services export, and aggregate revenue from non-oil exports. These concerns underpin the study's necessity.

Based on this, the current study aims to determine the extent to which non-oil sector product exports have influenced Nigerian economic growth from 1990 to 2020 using a disaggregated approach. Specifically, this study ascertained the extent to which agricultural products export, manufacturing products export, solid mineral exports, and services exports have affected Nigeria's economic growth

2. Literature Reviews

2.1. Conceptual Review

Non-oil product exports, simply expressed, are products other than crude oil (petroleum) products sold in the foreign exchange market only to generate cash. Notably, farm products exports, construction and manufacturing exports, solid mineral exports appear to be the four primary parts of Nigeria's non-exports industry though the sector houses nine (9) sub-sectors (see Table 1 below)

Table 1: Sub-sector of the Non-Oil Sector and their Range of Business Activities

S/N	Sub-Sector	Description of Activities
1	Agriculture	Cultivation, harvesting, handling, processing, storage, distribution of various crops(cocoa, oil palm, sesame seeds, groundnut, maize), processing, rearing, , fishery, and distribution of livestock and tamed animals
2	Manufacturing	There are ten (10) sub-sectors of manufacturing sector: Production, distribution lines, packaging, export line, marketing, etc.
3	Environmental services	Cleaning of offices and homes, urban waste collection and recycling, street cleaning, energy generation from waste, etc.
4	Building and Construction	Metal works, blocks, roofing works, supplies of building materials, electrical, plumbing, and finishing etc.
5.	Health services	Hospitals, pharmaceutical industries, Pharmacies, drug supplies, and accessory services
6.	Mineral Activities	Exploration, mining, processing, marketing, mineral testing, and transportation
7.	Power	Power generation, distribution, production, meter reading, supply of electrical accessories, installations, maintenance, renewable energy investments (solar, hydro, and wind).
8.	Telecommunication services	Telecommunication and engineering services, installations, retail services, telephone wholesale, and marketing services.
9.	Financial sector	Banking, insurance, installation maintenance , marketing services, transportation, etc.

Source: Researcher's Compilation Based on Webometrics (2021).

The four (4) non-oil sectors (agricultural sector, manufacturing sector, solid mineral sector, and services sector) which are engaged in exports are central to this paper. Accordingly, these sectors have their benefits and challenges. In relation to their benefits, the non-oil sector has the inert capacity to feed the nation, generate employment opportunities, revive the dwindling state of the

Nigerian economy if more attention is given to them and if the challenges which affect her very existence is addressed. Various challenges which face the sector generally include: Over-dependence on the oil sector, outright neglect of the non-oil sector, low domestic investment in the non-oil sector, absence of formalized institutions, poor transport and mobility system, unfavorable market conditions, high level of corrupt practices, political instability, lack of incentive for greater agricultural outputs, unsuitable technology, weak agro-business linkages, rapid population growth, and the likes (Nwankpa, 2017).

According to Edeme, Onoja, and Damulak (2018), the improvement of the agricultural sector, manufacturing sector, solid mineral sector, and services sector, will stimulate economic activity by promoting investment, resource utilization, output, and aggregate demand.

On the other hand, economic growth is accompanied by a rise in a country's production over duration of time, usually a year. To put it another way, economic growth is the amount of commodities generated in an economy over a specific time period (Olasupo, 2021). Accordingly, economic growth is estimated using GDP per capita in this study.

Connectively, it is expected that if the policies of the Nigerian government is directed towards, the non-oil sector, the Nigerian economic will experience sustainable growth (see figure 3)

Figure 3: Non-Oil Export Composition and the Nigeria's Economic Growth
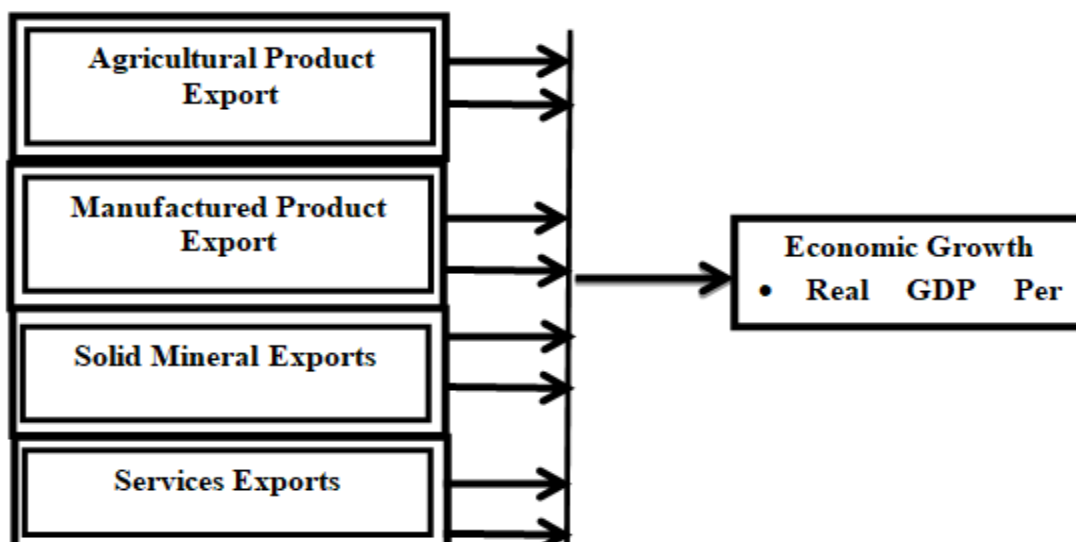
Source: Researcher Schematic Diagram (2022).

2.2. Theoretical Underpinning

The export-led hypothesis (ELH) and the David Ricardo Comparative cost Advantage theory were used to underpin this paper. The justification for using this theory to underpin this paper is informed on the ground that ELH suggests that through export diversification vis-à-vis non-oil export diversification (agricultural product exports, manufacturing product exports, solid mineral exports, and services exports) developing economies will overcome the negative impact of export instability caused by over-reliance on primary product-crude oil (Olayiwola&Okodua, 2015). This action will in turn result to economic stability (growth). Functionally, real gross domestic product (RGDPPC) is expressed as a function of agricultural product exports, manufacturing product exports, solid mineral exports, and services exports.

Following the submission of David Ricardo, countries can only enjoy the gains inherent export diversification, if they only export those commodities which they have comparative cost advantages over others as well as import those commodities which they have comparative cost disadvantage. By implication, for the economic growth to be steady, existing distortions must be corrected, as well as the necessity to place the business on a sustainable development path growth. This brings another question of what else needs to be done to diversify Nigeria's economy and develop its non-oil industry in order to fully achieve the sector's potential.

2.3. Extant Studies/Hypotheses Formulation

From 1998 to 2017, Babatunde (2018) investigated the impact of exports on the Nigerian. Multivariate analysis was used in this investigation. According to the report, service exports have a favorable impact on Economic development in Nigeria.

Abdulrahman (2021) recently studied the effect of exports on Saudi Arabia's economic strength from 2005 to 2019. The General Authority for Statistics in the Kingdom of Saudi Arabia provided the data. The study models' in linear and non-linear forms were estimated using the ordinary least squares approach. The findings revealed both oil and non-oil exports had a favorable impact on Saudi Arabia's economic performance over the study period.

Using the ARDL approach, Isaiah, Zayone, Henneberry, and Radmehr (2020) analyzed the role of agriculture, minerals, and manufactured exports on Angola's economic growth from 1980 to 2017. Agriculture, mineral, and manufactured exports all contributed to the nation's economic prosperity, according to the research. However, the study concludes that there is insufficient data to substantiate the Dutch illness occurrence in Angola.

Between 1981 and 2019, Zoramawa, Ezekiel, and Umar (2020) evaluated the non-oil sector's contribution to Nigeria's economic growth. The study affirmed that manufacturing and solid mineral had an unfavorable impact on the Nigeria's economic performance but the agricultural sector's export did not.

Using data from 1980 to 2017, Zayone, Henneberry, and Radmehr (2020) studied the effects of Angola's agricultural, mineral, and manufacturing exports on the country's economic growth. The impacts of sectoral exports on economic growth are estimated using an ARDL model. While exports from all three non-oil sectors propelled Angola's economy on the long-run but only agricultural exports propelled Angola's economyin the short run.

Similarly, Osabohien, Akinpelumi, Matthew, Okafor, Iku, and Olawand (2019) examined the association between agricultural export and Nigeria's economic growth using the Autoregressive Distribution Lag (ARDL) approach. Food products, inflation, foreign investment, labor force, and RGDP per capital growth rate were captured in the study. Agricultural exports have a considerable impact on Economic development in Nigeria, according to the study.

In some other advancement, Iwuoha and Awoke (2019) reported that RGDP, Exchange Rate, Inflation, Non-Oil Export, and Trade Openness tend to move simultaneously from 1981-2017. However, the impact of non-oil exports on Economic development in Nigeria is insufficient to propel the country to an enviable position during the research period. It also stated that if effectively, efficiently, and sufficiently handled, all variables evaluated have the intrinsic capacity to contribute to the growth of non-oil export. As a result, it was recommended that the government cut the existing exchange rate by 3%. To ensure proper implementation and supervision, the government should improve the current non-oil export policy. They should make certain that plan and policies are strictly followed and that surveillance agencies are enabled to conduct their jobs properly.

From 2013 to 2015, Bururac (2019) investigated the impact of industrial exports on economic development. Industrial exports improved after the European Union's recession according to the finding. More so, manufacturing exports have a favorable impact on Economic development in Nigeria once again.

From 1980 to 2014, Sermcheep (2018) investigated the impact of services export on economic growth in ASEAN countries. The data on services exports is disaggregated into modern and traditional services exports, and the estimates demonstrate that both exports contribute to GDP growth, with the contemporary services exports having a less substantial positive influence. The traditional engine of growth, goods export, continues to play a large and stable role as a growth-

enhancing element for ASEAN. The findings reveal that ASEAN's growth has been fueled by services exports in recent decades.

From 1984 to 2013, Priyankara (2018) investigated the impact of service exports on economic growth in Sri Lanka. Services exports have a favorable impact on Sri Lanka's economic growth, according to the report.

Bakari and Mohammed (2018) looked at the impact of agricultural exports on North American economic growth from 1982 and 2016. The static gravity model was utilized by the researchers. Agricultural policy, agricultural investment, and trade openness policies all propelled the growth of North American economy.

Uysal and Mohamoud (2018), on the other hand, looked at the impact on the export performance of seven East African nations between 1990 and 2014. Throughout the study period, the selected East African countries did poorly, according to the study. Hence, suggested that agricultural exports be substituted with industrial exports, with these countries also needing to develop their infrastructure, improve their human resources, and implement policies that will attract foreign investment.

From 1981 to 2015, Idowu (2016) analyzed the impact of aggregate exports on the Nigerian economy. The study's used the variance decomposition methodology. RGDP, oil, and non-oil exports were all co-integrated, according to the co-integration test. The Granger causality test reveals a short-run unidirectional causal relationship between oil export and GDP. A bidirectional long run causation relationship exists between oil export and GDP, as well as a unidirectional long run causality relationship between non-oil export and GDP. The study reaffirmed that, oil exports have adverseeffect onthe Nigerian economy. However, non-oil exports had adirect linkage.

3. Methodology

This paper adopts the longitudinal design. The study population covers the whole 4 non-oil export sub-sectors which are: Agricultural sub-sector, manufacturing sub-sector, solid mineral sub-sector and service sub-sector. Consequently, the census sampling techniqueis deemed appropriate since the current study involves complement enumeration of the sampling frame. Secondary data sources were used and data were extracted the CBN Bulletin (2020) and the World Bank Open Data Bank (2020) from 1990-2020. The choice of a 31 years period was informed by the intention to critically address the country's specific dimension to the export diversification-led growth debate since there was a drastic structural changes during this period

of under study. VECM was adopted though some pre-estimation test like descriptive statistics, correlation analysis, unit root test, cointegration tests, and granger causality tests were conducted.

The study patterned after the export-led hypothesis. Functionally, our model is stated below:

RGDPPC = f (AGREX, MAEX, SOEX, SEEX)   (3.1)

Econometrically, our model is stated below:

$RGDPPC_t = \beta_0 + \beta_1 AGREX_{t-i} + \beta_2 MAEX_{t-i} + \beta_3 SOEX_{t-i} + \beta_4 SEEX_{t-i} + \mu_t$ (3.2)

Where:

RGDPPC	=	Real Gross Domestic Product Per Capita
AGREX	=	Agricultural Product Export
MAEX	=	Manufacturing Product Export
SOEX	=	Solid Mineral Exports
SEEX	=	Services Exports
β_0	=	Constant term
$\beta_1 - \beta_4$	=	Beta Coefficient
e	=	Error term with the usual properties.

The natural logarithms of some of the variables were taken to enable uniformity of measurement. Specifying the explicit form of ECM model, we have:

$\Delta log(RGDPPC_t) = \beta 0 + \beta 1 \Delta log(AGREX_{t-1}) + \Delta log(MAEX_{t-1}) + \Delta log(SOEX_{t-1}) + \Delta log(SEEX_{t-1}) + \mu_t$ (3.3)

Where:

$\beta 0, \beta 1$	=	Short-run coefficients;
Δ	=	First difference identifier
μ_t	=	Error term with the usual properties.

Table 1-Variables' Operationalization

S/N	Variables	Nature of Variable	Denotation	Definition	Aprioiri Expectations
1	Real Gross Domestic Product Per Capita	Regressand	RGDPPC	GDP per population	Nil
2	Agricultural Product Export	Regressor	AGREX	Contribution of agricultural product exports	Positive

				to GDP	
3	Manufacturing Product Export	Regressor	MAEX	Contribution of manufacturing product exports to GDP	Positive
4	Solid Mineral Exports	Regressor	SOEX	Contribution of solid mineral exports to GDP	Positive
5	Services Exports	Regressor	SEEX	Contribution of services sector's exports to GDP	Positive

Source: Researcher's Compilation (2022)

4. Results and Discussions

This section covered pre-estimation tests, main regression results, and discussions of the regressed results

4.1. Pre-Estimations Tests

The following pre-estimation tests results were considered in this study:

Table 2: Descriptive Statistics of all Series

	RGDPPC	AGREX	MAEX	SOEX	SEEX
Mean	10.45235	0.921770	2.574352	0.260402	21.47224
Median	11.36470	0.361642	2.474100	0.261945	21.23634
Maximum	13.28010	7.268343	6.685800	1.081326	36.02327
Minimum	-13.90000	0.005900	0.207200	0.002844	8.829530
Std. Dev.	4.813046	1.682560	1.915573	0.217211	6.730126
Jarque-Bera	594.1615	110.4935	2.720695	44.31108	0.279674
Probability	0.0000	0.0000	0.256572	0.0000	0.869500
Observations	**31**	**31**	**31**	**31**	**31**

Source: E-Views Output (2022)

Table 2 reveals the individual characteristics of the variables used in the study and highlights the values of their respective median, mean, maximum and minimum as well as their standard deviation and Jarque-Bera Statistics (normality tests). For examples, the RGDPPC variable

recorded a mean value of 10.45235 with a maximum value of 13.28010 and a minimum value -13.90000. It also recorded a standard deviation value of 4.813046 which is lower than its mean value. These statistical results indicate that RGDPPC experienced a slow growth rate during the period being studied. It must be stated that the variable recorded a Jarque-Bera statistic of 594.1615 with a probability value of 0.0000. These statistical results show that RGDPPC is normally distributed at the traditional 1% level of significance.

The AGREX variable recorded a mean value of 0.921770 with a maximum value of 7.268343 and a minimum value of 0.005900. It also recorded a standard deviation value of 1.682560 which is higher than its mean value, indicating that AGREX recorded fast growth during the period covered by the study. The variable also recorded a Jarque-Bera statistic of 110.4935 and a probability value of 0.0000. What these statistical results mean is that AGREX is normally distributed at the 1% traditional level of significance.

The MAEX variable appeared with a mean value of 2.574352 with a maximum value of 6.685800 and a minimum value of 0.207200. It also recorded a standard deviation value of 1.915573 which is the lower than its mean. These statistical results portend that MAEX experienced a slow growth rate during the period being studied. The variable also recorded a Jarque-Bera statistic of 2.720695 and a probability value of 0.25672. Thus, these statistical results suggest that MAEX is not normally distributed as it is not significant at either 1%, 5% or 10% levels of significance.

The SOEX variable recorded a mean value of 0.260402 with a maximum value of 1.081326 and a minimum value of 0.002844. It also recorded a standard deviation value of 0.217211 which is less than its mean value. These statistical results show that SOEX recorded a somewhat slow growth rate within the period of the study. The variable also appears with a Jarque-Bera statistics of 44.31108 and a probability value of 0.0000. Thus, the statistical results indicate that SOEX is normally distributed at the traditional 1% level of significance.

The SEEX variable exhibited a mean value of 21.47224 with a maximum value of 36.02327 and a minimum value of 8.829530. It also recorded a standard deviation value of 6.730126. Which is lower than its mean values. These statistical results reveal that SEEX recorded a slow growth rate during the period covered by the study. The variable also recorded a Jarque-Bera statistic of 0.279674 with a probability value of 0.869500. These statistical results suggest that SEEX is not normally distributed since it is not significant at either1%, 5% or the 10% levels of significance.

Accordingly, all the study variables of the study, except agricultural product export exhibited high standard deviation value. This suggests that only agricultural product exports deviated far apart from their respective mean. Meanwhile, the low standard deviation recorded by the rest study variables indicated that they oscillate around their mean.

Table 3-Correlation Matrix for all Study Variables

Pair View	RGDPPC	AGREX	MAEX_	SOEX	SEEX
RGDPPC	1.000000				
AGREX	0.179186	1.000000			
MAEX_	0.627982	0.258486	1.000000		
SOEX	-0.778506	0.179463	0.529976	1.000000	
SEEX	-0.565689	0.013888	-0.259513	-0.162949	1.000000

Source: E-Views Output (2022)

The correlation coefficient for all the series revealed that agricultural and manufacturing product export is positively correlated with RGDP per capita growth rate (RGDPPC) though they reported weak correlation. This is because its correlation value which stood at 0.179186 and 0.627982are positively signed and less than 30%. However, both solid mineral and services exports exerted negative high correlation with real gross domestic product per capita growth rate. This is because their coefficient values which stood at -0.778506 and -0.565689 respectively are negatively signed and higher than 60%.

The result further revealed that none of the independent variables reported high correlation with each other. This suggests the possibility of no multi-collinearity problem. As such, we further subjected the test to diagnostic test to reaffirm the claims raised by the statistical procedures.

Table 4-Unit Root Test for all Series (Logged Form)

Augmented Dicker Fuller Test						
Parameters	**AT LEVEL (1(0))**			**AT FIRST DIFFERENCE (1(1))**		
	ADF test statistic	**Test critical value @ 5%**	**Prob.***	**ADF test statistic**	**Test critical value @ 5%**	**Prob.***
RGDPPC	-2.273404	-3.568379	0.4347	-5.133256	-3.574244	0.0014

AGREX	-3.307186	-3.574244	0.0850	-5.028569	-3.580623	0.0019
MAEX	-2.958755	-3.603202	0.1626	-6.875266	-3.574244	0.0000
SOEX	2.118894	-3.568379	0.5150	-4.785577	-3.574244	0.0033
SEEX	-3.216426	-3.568379	0.1004	-6.899997	-3.574244	0.0000

Philips-Perron Test						
Parameters	**AT LEVEL (1(0))**			**AT FIRST DIFFERENCE (1(1))**		
	Adj. t-Stat	**Test critical value @ 5%**	**Prob.***	**Adj. t-Stat**	**Test critical value @ 5%**	**Prob.***
RGDPPC	-2.232258	-3.568379	0.4558	-5.097053	-3.574244	0.0015
AGREX	-2.252468	-3.568379	0.4454	-6.238277	-3.574244	0.0001
MAEX	-3.493960	-3.568379	0.0582	-5.821881	-3.574244	0.0003
SOEX	-1.953075	-3.568379	0.6022	-5.086625	-3.574244	0.0016
SEEX	-2.661709	-3.568379	0.2582	-7.050961	-3.574244	0.0000

Source: Econometric Views Version 9.0 (2022).

Table 4 shows that all series were subjected to the ADF and PP tests and results obtained indicate that all series were found to be stationary only at their first difference. This justifies the need to test for long run relationships between non-oil sector products and the Nigeria's economic growth.

Table 5: Co-integration Test

Trace Statistics				Maximum Eigen Value			
Null Hypotheses	**Trace statistics**	**5% Critical Value**	**Prob.***	**Null Hypotheses**	**Eigen statistics**	**5% Critical Value**	**Prob.***
r = 0*	104.2493	79.34145	0.0002	r = 0*	45.70719	37.16359	0.0042

r < 1*	58.54211	55.24578	0.0249	r < 1*	31.57507	30.81507	0.0403
r < 2	26.96705	35.01090	0.2776	r < 2	14.38115	24.25202	0.5529
r < 3	12.58590	18.39771	0.2677	r < 3	8.905728	17.14769	0.5054
r < 4	3.680172	3.841466	0.0551	r < 4	3.680172	3.841466	0.0551

Trace Statistics and Maximum Eigen Test indicates 2 co-integratingeqn(s) at the 0.05 level.
*denotes rejection of the hypothesis at the 0.05 level

Source: Authors computation from E-Views 9.0 output (2022)

The co-integration test presented in Table 4 above reported two co-integrating equations at 0.05 level. This result therefore reveals the presence of a long run relationship among the variables contained in the model. Hence, we conclude that there is a long term relationship among the variables of the study.

Table6 –Granger Causality Test Output

Direction of causality	F-Statistics	P-value	Direction of causality	F-Statistics	P-value	Causation
AGREX→RGDPPC	0.08877	0.7680	GDPPC →AGREX	0.17329	0.6805	**No Causality**
MAEX→ RGDPPC	0.13743	0.7137	GDPPC →MAEX	7.37899	**0.0114***	**Unidirectional**
SOEX →RGDPPC	0.74318	0.3962	GDPPC →SOEX	3.83164	0.0607	**No Causality**
SEEX → RGDPPC	2.57859	0.1200	GDPPC →SEEX	2.09125	0.1597	**No Causality**
MAEX→AGREX	1.72953	0.1995	AGREX→MAEX_	1.26123	0.2713	**No Causality**
SOEX →AGREX	0.00069	0.9792	AGREX → SOEX	2.30754	0.1404	**No Causality**
SEEX →AGREX	0.97096	0.3332	AGREX →SEEX	0.04695	0.8301	**No Causality**
SOEX →MAEX_	7.13003	**0.0127***	MAEX_ →SOEX	0.02681	0.8712	**Unidirectional**
SEEX →MAEX_	0.01006	0.9208	MAEX→SEEX	1.52216	0.2279	**No Causality**
SEEX →SOEX	1.15299	0.2924	SOEX →SEEX	3.90215	0.0585	**No Causality**

Source: Author's Compilation Based on E-views 9.0 Output (2022)

The granger causality test result above indicates no causality between non-oil sector exports and the growth of the Nigerian economy though uni-directional causality was found flowing from GDPPC to MAEX and from SOEX to MAEX.

4.2. Main Regression Results

Having ensure that the model meet all the necessary requirements for prediction as highlighted above, the Vector error correction model (VECM) was presented in an attempt to both test the research hypotheses formulated earlier and discuss the regression result. Specifically, the VECM was used to further validate the long-run relationship among variables under investigation. Thus, the dynamics of the nexus between non-oil exports and economic growth was analyzed using the importance model. It is explicitly presented below:

Table 7: VECM Estimates

Parameters	Coefficient	Std. Error	t-Statistic	Prob.
ECM(-1)	**-0.975302**	**0.291059**	**-3.350880**	**0.0044**
D(GDPPC(-1))	0.256582	0.294157	0.872262	0.3968
D(AGREX(-1))	0.002583	0.012495	0.206712	0.8390
D(MAEX_(-1))	0.022942	0.020182	1.136747	0.2735
D(SOEX(-1))	-0.175229	0.052085	-3.364261	0.0043
D(SEEX(-1))	-0.131300	0.069248	-1.896086	0.0774
Constant	0.002879	0.006288	0.457881	0.6536
R-squared	0.684370	F-statistic		2.956726
Adjusted R-squared	0.552908	Prob.(F-statistic)		0.026772
Durbin-Watson stat				2.069771

Source: Econometric Views (E-Views) Version 9.0 (2022)

From the short run VECM estimates in table above,

1. The error Correction Term denoted by ECT (-1) which measures the speed of adjustment toward long-run equilibrium is rightly signed since it has negative coefficient as expected. Its value which stood at -0.975302indicates that in case of initial distortions, there is convergence towards long run equilibrium by 97.53% annually. This further suggests that the model is free from perturbations and is thus appropriate for policy formulation.

2. Again, the VECM estimates further reported a coefficient of determination being R^2 is estimated at 0.684370 (68.44%) signposting that all the independent variables (agricultural product exports denoted by AGREX, manufacturing product export denoted

by MANEX, solid mineral exports denoted by SOEX, and services exports denoted by SEEX jointly accounted for 68.44% variation in the regressed (Real GDP per capita growth rate) while the remaining 31.56% is explained by the stochastic term. When adjusted, it the regressor only accounted for 55.29%. This again suggests that the model over all reported high explanatory power.

3. Also, the F-statistics revealed that on the overall, non-oil sector exports have a high statistical significant effect on the growth of the Nigerian economy.

4. Meanwhile, the Durbin Watson test reported that the model is not serially correlated. This further reaffirmed the appropriateness of the model as a tool for policy formulation and implementation in Nigeria. The result are tested below:

Table 8: Summary of Test of Hypotheses

Hypotheses Testable Form	Coefficient	Prob.	Decision Rule	Conclusion
AGREX and GDPPC	0.002583	0.8390	Accept $H0_1$ if its p-value is >5%; otherwise reject it	Accept $H0_1$
MAEX and GDPPC	0.022942	0.2735	Accept $H0_2$ if its p-value is >5%; otherwise reject it	Accept $H0_2$
SOEX and GDPPC	-0.175229	0.0043	Accept $H0_3$ if its p-value is >5%; otherwise reject it	Reject $H0_3$
SEEX and GDPPC	-0.131300	0.0774	Accept $H0_4$ if its p-value is >5%; otherwise reject it	Accept $H0_4$

Source: Researcher's Compilation Based on E-Views Version 9.0 Output (2022)

4.3. Discussions of Result

Each regressed results are discussed below:

4.3.1. Agricultural Product Export (AGREX) and Economic Growth (GDPPC)

As reported by the VECM regression estimate in table 7above, past values of agricultural product exports reported a positive coefficient value of 0.002583. This suggests that agricultural product export is positively linked to economic growth ((GDPPC)). By implication, 1% increase in agricultural product exports only contributes an insignificant value of 0.2583% to the Nigerian economy. This result also re-validates the aprioiri expectation of this study. In terms of statistical significant, agricultural product export reported a p-value of 0.8390. Byextension, agricultural product export though has potential to spur growth but is not statistically significant enough to determine the growth of the Nigerian economy. This is because, since the exploration

of crude oil, the Nigerian Agricultural sub-sector has since contributed marginally to the growth of the Nigerian economy. More so, even with the new policy on export diversification, oil export still contributes the main shock of the Nigerian export earnings.

This result agrees with the findings of Uysal and Mohamoud(2018);Nwankpa, 2017; Olayiwola and Okodua (2015) but contradict the findings of Isaiah, Zayone, Henneberry, and Radmehr(2020); Zoramawa, Ezekiel, and Umar (2020); Bakari and Mohammed (2018); Osabohienet'al (2018).

4.3.2. Manufacturing Product Export (MAEX) and Economic Growth (GDPPC)

As reported by the VECM estimate in table 7above, manufacturing product exports reported a positive coefficient of 0.02942. This implies that 1% increase in agricultural product exports only increase the Nigerian economy by an insignificant value of 2.2942%but increased the Nigerian economy. The positive result re-validates the aprioiri expectation of this study. However, in terms of statistical significance, the variable being MAEX failed the test of statistical significance woefully. Hence, there was no enough evidence that is substantial enough to reject the null hypothesis. Thus, null hypothesis two was retained.

The implication of the above result is that, manufacturing product export though has potential to spur growth but is not statistically significant enough to determine the growth of the Nigerian economy. This result is not however surprising in that the Nigerian manufacturing sub-sector is still at the moments in full utilization stage as it encumbered with a lots of militating factor to the inclusion of regulatory bottlenecks, poor access to credits and the likes. Bururac, Mikulic, &Palic, (2019) added that, outside infrastructure, there are other challenges such as the suffocating high interest rate and banks' unwillingness to lend to the sector even though the monetary authorities classify it as a priority sector. In the same vein, Idowu ((2016) added that this sub-sector even as of 2014 when the economy exhibited growing symptoms of recession, only 6.45% of Nigeria's exports consisted of manufactured commodities. All these challenges contributed to the reason why the sub-sector is still at its lowest ebb.

To revalidate the above claims submitted by Ezeabasili (2018), our empirical findings of agrees with the claims ofAdesoji and Sotubo (2013), Onodugo et al. (2013), Olayiwola and Okodua (2013).

4.3.3. Solid Mineral Export (SOEX) and Economic Growth (GDPPC)

As reported by the VECM estimate in table 7above, solid mineral export reported a negative coefficient value of -0.175229. This suggests that agricultural product export has a positive impact on economic growth proxy (GDPPC). This suggests that 1% increase in solid mineral exports contributed a significant value of -17.5229% to the Nigerian economy. This result however deviates from our aprioiri expectation of positive relationship between both constructs. The reason behind the negative result is not far-fetched in that if the factors which plagued the sector are not attended to, the sector would still deter growth.

In terms of statistical significant, solid mineral export passed the test of statistical significant very well. This is because it p-value estimated at 0.0043 is less than 5% significant level. By implication, solid mineral export is a major determinant of economic growth in Nigeria. This study supports the findings of Zoramawa, Ezekiel, and Umar (2020) but deviated from the findings of Abdulrahman (2021); Zayone, Henneberry, and Radmehr (2020); Nelson, Gladice, Rivel, and Yirong (2020);Iwuoha, and Awoke (2019) Nwanne (2014).

4.3.4. Services Export (SEEX) and Economic Growth (GDPPC)

As reported by the OLS regression estimate in table 7above, services export reported a negative coefficient value of -0.131300. This suggests that are that the higher the services export, the lower the economic growth. This supports deviated from the aprioiri expectation of this study.

In terms of statistical significant, services export failed the test of statistical significant. This is because it p-value estimated at 0.0774 is greater than 5% significant level. By implication, services export is not a major determinant of growth. This result is not farfetched in that the sector is still at its ebb. Conversely,this result deviatedBabatunde (2018); Priyankara (2018); Sermcheep (2018).

5. Conclusions and Recommendations

With the current dwindling state of the Nigerian economy propelled by severe fiscal imbalances coupled with the mono-cultural nature of the Nigerian economy which forced the Nigerian economy into unplanned economic recession in 2015, the Nigerian government redirected her policies and programmes towards the once abandoned non-oil sector. However, the oil sector still overrides the non-oil sector in terms of contribution to GDP even with the policy directive of diversifying the Nigerian economy. Based on this submission, this paper critically investigated the effect of non-oil sector product exports on the growth of the Nigerian economy from 1990-2020 using the disaggregated approach. Having painstakingly considered extant studies alongside the regressed result, we conclude that all non-oil export indicators exerted high

statistical significant effect on economic growth with the exception of agricultural and manufacturing product export. Consequently, the following submissions were made for policy purposes:

1. Pragmatic policy formulation on investment should be centered on the agro-allied sub-sector since it has the potential to better the Nigerian economy.
2. The federal government of Nigeria should give preference and palliative measures to investors who desire to invest in the manufacturing sector since it has the potential effect on the Nigerian economy.
3. The federal government of Nigeria should re-visit existing policies on the solid mineral sector since neglect of the solid mineral sub-sector has made Nigerian economy to experience untold financial crises.
4. The federal government of Nigeria as a matter of urgency must address the various challenges inhibiting the service sub-sector from improving the Nigerian economy.

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