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Agricultural Commodity Export and Nigeria's Gross Domestic Product Between 2009 to 2018

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Abstract: Agricultural exports have undoubtedly played a crucial role in boosting Nigerian economic growth and other sub-Saharan countries. It has been contributing to foreign-exchange earnings in Nigeria and is used to promote other capital projects. Agriculture has been the main contributor to the Nigerian external sector before the discovery of oil. This study evaluates the linkage between selected agricultural commodity export and Nigeria's Gross Domestic Product (GDP) between 2009 and 2018. The work is quantitative, it adopts a descriptive research design where data on Sesame Seed Export (SSX), Cashew Export (CAX), Cocoa Beans Export (CBX), Exchange Rate (ER), Gross Fixed Capital Formation (GFCF), Real Gross Domestic Product (RGDP) and Agricultural Commodity Export (AGEX) were sourced from the Central Bank of Nigeria Statistical Bulletin and the United Nations' Commercial Trade Statistics. It employed descriptive statistics, the Ordinary Least Square method of Regression analysis and the Granger Causality test with the aid of Econometric Views (EVIEWS) software version 10.0. The findings revealed that there is no Granger causality between Agricultural Commodity Exports and Nigeria's Gross Domestic Product. It also found that Sesame Seeds Export has a significant effect on Nigeria's Gross Domestic Product within the period under study and Raw Cocoa Beans Export has a significant effect on Nigeria's Gross Domestic Product. It also revealed that there is no relationship between Agricultural Commodity Export and Gross Fixed Capital Formation in Nigeria. The study, therefore, recommends that the Federal Government of Nigeria through the Federal Ministry of Agriculture should support the participation of the private sector in the agricultural industry to increase total output, and also look beyond the production for national use to increase the exportation of the produce.

Keywords: Agricultural export, Gross Domestic Product and the Nigerian economy

1. Introduction

Agriculture is considered the backbone of Nigeria's socio-economic development. According to Verter and Becvarova (2016), an agricultural commodity refers to the major crops which are grown on plantations and farmlands, it is otherwise known as farm products. These farm products include grains, dairy, and livestock amongst others. They are a source of livelihood for individuals across the globe. In some cases, it could serve as food while in other cases, it is used for industrial purposes. Agricultural commodities are obtained from cultivated plants or animals to preserve or significantly improve human existence. The National Organic Program (2013) states that an agricultural commodity is any commodity or product whether in its raw form or processed derived from plants and livestock, that is advertised for human or livestock consumption and industrial purposes. Halder (2019) categorizes agricultural commodities into six namely cereal grains, soft commodities, meat, dairy, oilseeds and sundry agricultural commodities. Exports are goods or services manufactured in one nation but sold and used/consumed in another nation. Chait (2019) however classifies agricultural commodities into four main classes known as food, fuels, fibre and raw materials.

It is a documented fact that in the period leading up to the 1970s, the primary drivers of export revenues in Nigeria were Agricultural Commodity exports in a variety of ways. Throughout this time frame, the agricultural industry produced a huge quantity of food and cash crops for export and also for private consumption (cocoa, palm oil, groundnut, ginger, sesame, etc). Nigeria was the biggest producer of palm oil and groundnut products and the second-biggest cocoa producer (Leke, 2016). Other important exports were cotton, rubber, and timber products. Nevertheless, as a result of a significant structural change from what was principally agriculture-based since early 1970, oil production and marketing have become a central aspect of Nigeria's growth scheme (Ogbonna, Osondu & Emerole,2016). Because of these, the oil industry contributes around 80 per cent of tax revenue; it is a significant driver of development for the economy in Nigeria. Agricultural commodities in Nigeria include (cocoa, cotton, palm, rubber, sesame seed, ginger, cashew, groundnut, sorghum, millet, maize, etc.), strong minerals such as tin, ore, columbine and iron, and manufactures. Farmers cultivate such commodities as (a) a source of food for humans, (b) a source of food for livestock, and (c) a source of feed for fuels (Babatunde, 2018).

The early 1980s saw a mixture of demand and supply conditions and Western political intrigues that have steadily eroded the market share of the Organization of Petroleum Exporting Countries (OPEC) and the strategy of price stabilization on the selling of crude oil. It has culminated in a transition trap of petroleum market volatility, and a subsequent downward decline in government income from oil exports from the 1980 maximum (Felix, Joseph, Solomon & Emmanuel, 2020). Suggested that the result of the shrinking and unpredictable oil profits, rising demand for foreign exchange for industrial and commercial reasons, handling outstanding debt, and others have come together to make it compulsory for a nation to formulate a national agricultural commodity export scheme for economic growth aid. Says that, it is important to maintain the nation fulfilling its international financial responsibilities. The pressing need to broaden the resource-based nation is not only fiscally expedient but also of immense strategic political importance.

The U.S Department of Revenue (2010) states that agricultural commodity production is a set of actions which has its result as a product/commodity which eventually be distributed for retail purposes. Agricultural commodity production begins once people buy or raise a qualifying animal, or prepares the soil for planting crops. Osabohien (2019) emphasizes that between 1970 and 2010, the agricultural sector contributed up to 35.4 per cent of Nigeria's Gross Domestic Product. There is a persistent controversy on the relationship between agricultural commodity export and the gross domestic product of both developed and less advanced economies. Few analytical studies focus on the strong correlation between agricultural exports and gross domestic product around the globe. Economists, global organizations, and experts claim that agricultural commodity exports are a catalyst for growth in gross domestic product, mainly in developing nations where they are the major sources of foreign profits and economic output (Verter and Bečvářová, 2014). Researchers gave some reasons to support food and agriculture exchange. International commerce gives the entire amount of products and services to those nations. It also presents the population with a variety of resources which increases choices. Trade preserves steady demand and supply to some degree, which enables productive transactions and promotes growth in the economy among countries.

The means of payment and communication in the export activities are easier today than before as a result of e-banking and telecommuting(Pauline, Abiodun and Hindu,2020; Hindu, Pauline&Hope 2018). The advancement of exports of agricultural commodities will not only enhance development but also build more employment opportunities . It would also decrease the country's current risks of reliance on a single commodity over which the nation has very little authority. The purpose of this study is to evaluate the relationship between selected agricultural commodity exports and how they contribute to economic growth in Nigeria. In the last six years, available studies on the linkage between agricultural commodity exports on Nigeria's gross domestic product focus mainly on data gotten between 1970 and 2010, limited

studies are available on the recent years 2011-2019. Hence, this study intends to fill that gap in the literature by establishing the relationship between agricultural commodity exports and Nigeria's gross domestic product.

1.1 Statement of the Problem

Several developing countries find it difficult to fight poverty and enhance the gross domestic product due to over-reliance on a particular segment of the economy like the construction industry or oil and gas industry. Traditionally exports of agricultural commodities rely on the vagaries of nature. Climate change triggers differences in agricultural productivity that inevitably impact a country's economic development (GDP). The opposite occurs in a situation where there are adverse climatic conditions (Sanjuán-López and Dawson, 2010). The export sector in Nigeria relies primarily on sesame seeds, cashew nuts, fermented cocoa beans, and high-quality raw cocoa beans. Marketplace for these product categories is principally unreliable in terms of quantity, and cost. It brings substantial risk and ambiguity and also low capacity utilization in revenue. It is clear that primary product exports are less sustainable on the world market, and weigh less against produced goods exported by developed nations, contributing to declining trading conditions (Adenugba and Dipo, 2013). Suggested that due to these adverse conditions, the nation still relies on agricultural exports but its economic effect is yet to be assessed. This spurred the researcher to fill in the research gap about sesame seeds, cashew nuts, and high-quality raw cocoa beans. Available studies on the linkage between agricultural commodity exports and Nigeria's gross domestic product focus mainly on data between 1970 and 2010. Limited studies are available in the recent years 2009-2019, and they also established the relationship between agricultural commodity exports and Nigeria's gross domestic product.

1.2 Research Questions

Questions were asked to guide the study:

1. To what extent have agricultural commodity exports affected Nigeria's gross domestic product?
2. How has the sesame seeds export impacted Nigeria's gross domestic product?

3. What are the effects of raw cocoa beans export on Nigeria's gross domestic product?

4. What is the relationship between agricultural commodity export and gross fixed capital formation in Nigeria?

1.3 Objectives of the Study

The main objective of this study is to evaluate the linkage between selected agricultural commodity export and Nigeria's gross domestic product concerning sesame seeds, Cashew nuts and high-quality raw cocoa beans.Specific objectives of the study include to,

1. Evaluate the extent agricultural commodity exports have affected Nigeria's real gross domestic product.
2. Examine the effect of sesame seeds export on Nigeria's gross domestic product

3. Analyse the effect of raw cocoa beans export on Nigeria's gross domestic product

4. Establish the relationship between agricultural commodity export and gross fixed capital formation in Nigeria

1.4 Research Hypotheses

Null Hypotheses were formulated in line with the research questions and objectives. Thus:

H_{01}: There is no significant relationship between agricultural commodity exports and Nigeria's gross domestic product

H_{02}: Sesame seeds export do not affect Nigeria's gross domestic product

H_{03}: Raw cocoa beans export has no significant impact on Nigeria's gross domestic product

H_{04}: There is no relationship between agricultural commodity export and gross fixed capital formation in Nigeria.

1.5 Significance of the Study

This research adds to the field of business and agricultural academia by contributing to the existing scientific literature on the topic under review. There are few published studies on the relationship between exports of agricultural commodities and gross domestic product between 2009-2018, however, this study filled the void in the literature by assessing the linkage while concentrating on three key exports of agricultural commodities in Nigeria, namely sesame seeds, Cashew nut and high-quality raw cocoa beans. The findings revealed the importance or need for the export of agricultural commodities for enhancing Nigeria's gross domestic product. It would also serve as a resource for designing initiatives to revamp Nigeria and other countries' exports of agricultural products. Decision-makers could also use it as a reference for designing, evaluating and articulating economic policies and changes.

1.6 Scope of the Study

Various variables affect the gross domestic product of a nation like Nigeria. However, the focus here is on the effect and linkage between agricultural commodity exports and gross domestic product. The time scope of this study is between 2009-2018, this is to ensure all information gathered for this study is new and updated. This study covered the export of 3 (three) major agricultural commodities as Sesame seeds, Cashew, and high-quality raw cocoa beans.

1.7 Definition of Terms

Agricultural export: It involves the shipment to other countries of any agricultural commodity, including raw / refined from a nation's port or the sales of agricultural products manufactured in the home nation.

Causality: A notion representing the interconnection between two or more variables and the effect of the association between those variables.

Economy: This is the state of a nation or area for the development and distribution of goods and services and the supply of capital.

Economic growth: This can be described as growing the quantity and value of the products and services generated over time by the provided economy (nation). It is usually measured as the percentage level of real GDP.

Policy: A policy is a set of principles that guides decisions and delivers rational results. It is a declaration of intent and is carried out as a process or protocol.

Gross Domestic Product: This is the total market value of all finished goods and services produced within a country's border within a specific period.

Gross Fixed Capital Formation: This measures the net increase in fixed capital. It includes land improvements, Plants, Equipment and machinery purchases, Road constructions, School buildings, Railway construction, office, hospital, private residents etc.

Sesame Seeds: small oval seeds of the sesame plant, oils can be extracted from them.

2. Literature Review

This chapter deals with previous research, theories, and concepts that form the basis for this study. The goal of this section is to explain the value of this thesis and the theoretical structure to be established. The chapter offers comprehensive statistics on the Gross Domestic Product,

Export, and Agricultural Commodity concept, thereby giving an insight into the preliminary studies on agricultural exports and economic growth as given in the empirical review.

2.1 Conceptual Issues and Review

This segment explains the various concepts that provide a foundation for this analysis. In this, the concept of export and Gross Domestic Product were discussed extensively.

2.1.1 Concept of Export

Exports play a critical role in any economy's development as foreign trade is hugely advantageous for a country. Trade is also one of the many other catalysts of productivity and performance, and therefore its participation is largely dependent on its volume in aggregate demand. Information regarding this has managed to help numerous countries attain economic efficiency and sustainability (Okeke and Eze, 2019). As a result of this, the Nigerian economy has left policies on trade liberalization to the growth-led export strategy. Export promotion approaches are initiatives that promote exports, mostly through the free flow of resources, employees, companies, and students; access to multinationals; and transparent contact (Todaro and Smith, 2011). An export-led growth strategy is aimed at providing manufacturers with benefits to export their goods via various economic and government policies. Such policies seek to raise the national production level to improve the nation's export value. The government promotes and supports raising domestic production performance to meet domestic demand and the excess can be exchanged for foreign exchange influx from the global market (Mkpado, 2013).

As of 1960, a notable characteristic of Nigeria's foreign demand has essentially remained the same. The export sector is dominated by a specific commodity being dominant in export. Agricultural commodity exports dominated the Nigerian economy during the decades of the 1960s and 1970s. These commodities included producing cocoa, groundnut, cotton, and palm. In the mid-1970s and onward crude oil was featured as the Nigerian economy's main export commodity (Adebayo and Alheety, 2019). Light and soft, Nigerian crude oil is widely sought after on the foreign oil market. Crude oil exports now account for around 96 per cent of total exports. Throughout the past two decades, the success of non-oil exports has been almost nothing desirable. Thus, over the years the policy interests have turned towards expanding non-oil exports to diversify the export base of the nation. Diversifying the Nigerian economy is essential for crucial aspects; first of all, the international oil market volatility with the accompanying volatility of tax revenue lends credibility to any reasoning for export diversification (Anthony and Mustafa, 2011). Second, the value of export for the economic growth and prosperity of a country cannot be overemphasized.

Agricultural exports also played a pivotal role in economic growth in Nigeria, generating the income required for certain capital development ventures. Agricultural export goods generated just over 75 per cent of overall annual product exports in 1960, according to Ekpo and Egwaikhide (1994). In the 1940s and 1950s Nigeria also played quite strong in the manufacture and sale of some of the world's leading crops. For example, Nigeria was the largest palm oil and palm kernel exporter, placed 2nd to Ghana in Cocoa, and took third place in groundnut. Olayide and Essang (1976) concluded that Nigeria"s net exports from large crops added greatly to the Gross Domestic Product (GDP). In the same way, Shehu (2019) observed a long-term relationship between Nigeria's agricultural exports and economic growth.

Export is a necessary catalyst for the aggregate growth of an economy. In every economy, the main aim of policies targeted at export is the increment of the amount of economic activity. Therefore, it follows that export policies are best aimed at the sector where the effect of an improvement in export demand would be both beneficial and important. Export is undeniably a crucial source of foreign exchange in any nation (Mkpado, 2013). The activity that followed the oil boom era which resulted in the oil glut on the international oil market after 1981

contributed only to abandoning the competitive base for non-oil exports. That also contributed to the emergency initiatives from the Economic Stability Act of 1982 by subsequent governments (Ikpe, Ojike and Ahamba, 2020). The Babangida Administration's anti-trade stance toward the Buhari / Idiagbon system and the implementation of the Structural Improvement Plan (SIP) thus the need to expand the economy's export market. Before the oil sector emerged, agriculture was among the earliest professions in Nigeria and was the mainstay of the Nigerian economy, bringing in 80 per cent of export earnings and 75 per cent of the GDP (MakuaChukwu and Ojide, 2013). Consequently, this position has consistently fallen to date, the accompanying fluctuation in the promotion of non-oil exports, the world prices of agriculture and manufacturing products, and the emergence of oil have contributed in no small measure to the divergence of the role of agriculture in the development of the nation. The almost complete depletion of the agriculture sector exacerbates this problem. The Nigerian economy has not managed to recover from the resulting imbalances in both external and domestic sectors, so Nigeria's need for adaptation to broaden and reshape the economy's productive base to decrease its reliance on oil exports has resulted (Okeke and Eze, 2019). Also, an advanced sector can provide individuals with an associated reduction in the social cost of unemployment with an employment opportunity. Export earnings reduce and even improve the strains on the balance of payment position. Under a developed economy, a gratifying export desire can thus far turn into a thriving economy. Export helps to increase the level of aggregate economic activity by having multiplier effects on natural income levels. Income earned through exports will help to increase demand levels within the economy (Akpan, Nwosu, and Nweke, 2017).

To diversify the Nigerian economy's productive base, various prior governments have implemented policies and set up specific institutions such as the Nigerian Export Promotion Council (NEPC). Reports on the most and second most favourable export promotion policies of the Babangida administration in 1986 highlight those non-oil products generated by Nigerians are cheaper for foreign buyers. It also highlights that the amount being recorded using the local currency is higher than before (Shehu, 2019). The underlying issue is that statistical data available shows that its percentage contribution went from 5.8% in 1986 upward to 8.6% in 1988 unfortunately fell to 1.9% by 1992(CBN, 1994). As a result of this, this research intends to review the performance results of the non-oil sector, examine the policies embarked on to promote exports of Agro Commodity and identify the problems facing export categories without excluding their prospects and contributions in connection with the economic growth of Nigeria.

2.1.2 Concept of Gross Domestic Product

Gross Domestic Product (GDP) is the overall monetary or market valuation of all completed products manufactured within the boundaries of a nation over a specified period. It serves as a large indicator of successful domestic development, and as a detailed scorecard of the economic health of the region (Haldane, 2018). While GDP is generally measured yearly, it may also be estimated periodically. For eg, in the United States, the government issues an annualized estimation of GDP for each quarter and a full year as well. Most of the independent sets of data will then be provided in real terms, implying that the data will be modified for price fluctuations and thus is net of inflation. GDP comprises both private and public use, budget outlays, acquisitions, private production purchases, building expenses taken in, and the international exchange balance (exports are included, imports are subtracted).GDP metrics are of several categories: Nominal GDP is Actual Data estimation, Real GDP takes the effect of inflation into account and permits comparisons of the economic activity between one year and another to the next other comparisons over time, GDP development trend is the quarter-by-quarter rise in GDP, GDP per capita measures GDP per individual in the national population; it's a valuable way to evaluate GDP data between different nations. A trade surplus is one of the core aspects of calculation for a government (GDP). GDP decreases as the net amount of the products and services provided to foreigners by domestic suppliers equal the total value of imported goods and services bought by domestic buyers, commonly recognized as a trade surplus. If household

customers buy more on imported products than local industries sell to international consumers — a trade deficit — then GDP shrinks.

Gross domestic product (GDP) is the maximum market price of the goods and services during a set time by the nation's economy (Adebayo and Alheety, 2019). It incorporates all finished goods and services manufactured by the economic actors situated in that nation irrespective of their possession and does not hold back in any context whatsoever. It is regarded as the principal indicator of production and economic development worldwide. In economics, products and services end users are categorized into 3 groups: households, businesses, and government. A major way to calculate the gross domestic product (GDP) is known as the expenditure technique. This is done by incorporating the costs paid by these three user groups.

Accordingly, the formula defines GDP as follows:
GDP = Consumption + Government expenditure + Net exports

Or more briefly, as

GDP = C + I + G + NX

Where consumption (C) represents household and non-profit private consumption expenditure, investment (I) refers to corporate and household expenditure, government expenditure (G) refers to government expenditure on goods and services, and net exports (NX) refers to national exports minus imports.

2.2 Theoretical Review

It is crucial and significant to investigate whether GDP growth will fuel demand to help reduce the balance of payments deficit and to decide if the theories investigated are related to the mentioned issue under review. The theories utilized in this study are known as theories of economic growth. These theories explain how various factors work together to enhance economic growth which is measured in terms of Gross domestic product. Throughout economics, growth is typically expressed as a result of capital estate, human capital, labour, and technical advancement. In basic terms, it refers to the productivity of the working-age community, the resources required for activities, and the strategies they employ at their disposal to combine labour, capital and raw materials that would contribute to improved economic performance.
Various economic growth models support potential factors of growth in the economy. Key global development theories include:

i. Mercantilism – A nation's wealth determined by the aggregation of gold and the running surplus trade
ii. Classical theory -Adam Smith emphasized the role of increasing scale returns (scale/specialization economies)
iii. Neo-classical theory – development is dependent on supply-side variables such as the efficiency of labour, scale of labour, and factor inputs.
iv. Endogenous growth theories – Rate of substantial influence on the economy by human resources and the pace of technology innovation.
v. Keynesian demand-side – This states that aggregate demand could play a major role in shaping short and medium-term economic growth. Even though most development theories disregard the importance of consumer spending, a few other economists argue that downturns can cause the impacts of hysteresis and lower long-term growth.
vi. Limits to growth – From an environmental standpoint, some argue that resource deterioration and global warming will restrict very long-term economic growth. This implies global development will come to an end-reminiscent of the ideas of Malthus.

Four main theories form a framework for this research namely; The Keynesian theory of economic growth, the Classical theory of economic growth, the Neo-classical growth theory and the Endogenous Growth Theory.

2.3.1 Classical Theory of Economic Growth

In this, it has been believed that many scholars that supported the classical theory had one time or the other focused their efforts on the economic growth of countries that was described by the theoretical basis of the capitalist country's economic social structure. In this, three (3) types are identified: employees, socialists, and landowners. They are having their particular part in the financial process. Employees own manpower and sell it for a reasonable wage to the labour force. Landowners sell their land to investors for sale. Capitalists control the means of output produced and manage development by exploiting labour and resources in which they make huge profits. In this scenario, all the systems involved are controlled by these capitalists to acquire or obtain most of the assets within their reach if possible.

In the words of Salvadori (2003), the belief of classical economists shows that only capitalist within their class considers saving from their earned income. In such a situation, the calculation of income distribution does not focus on the gains/interest obtained but rather on the social community where someone finds himself. The process of converting the noted savings to capital expenditure could be made directly through the capital market when the savers are business owners, or implicit if the savers are not businessmen. This implies that mainstream economics supports the idea that all investments are converted into profit. However, the process of accepting this perception or thought has proved difficult in determining their take on the neoclassical view which had interest rate as its medium of equilibrium while considering savings and investment. For these scholars that supported the classical theory, a shift between savings and expenditures on the stock market happens mainly by labour market changes. Therefore, unlike the neoclassical development hypothesis, the pace of economic growth is dictated by the complex interactions between savings and the rate of population growth, the former being entirely invested in consumption though the latter being provided endogenously as a rising function of real pay.

More so, Adam Smith was of the view that the amount of performance essentially depends on contributions from three production sources, namely labour, money, and property (Smith, 1776). For such considerations, efficiency or development promotes growth components. It emphasized the concept of non-financial variables such as private property security, political reliability and also, and the involvement of laws and institutions to facilitate the growth of the economy. In the same vein, Rostow (1990) characterized the growth theory of Smith as consisting of subsystems which are non-economic factors and factor inputs, and technology. If some or all of these factors are increased, an economy will move to a greater level. Through this, the economy will move from one position of static equilibrium to the next. Nevertheless, this system is shown to have a threshold where increased use of inputs will not necessarily result in increased output. In general, in explaining the theories of economic growth, Classical economists suggested several factors which promote economic growth. These economists began with the basic means of production like labour, resources, land, and technology and progressed to the non-economic factors such as political stability, private property protection, the position of laws and organizations, town expansion and population growth; and non-monetary variables such as education and customs. All of these variables are also regarded as factors of production and are useful in explaining the growth in modern economic growth theories.

2.3.2 The Keynesian Theory of Economic Growth

The Keynesian economic growth theory implies that families can set aside a steady part of their earnings and that production companies turn those savings into investment. Unlike many other economic growth theories, the Keynesian economic growth theory has indicated that not every fund is converted to investment. Consequently, development is not determined by the extent of savings but by the amount of investment. In some unique scenarios where certain savings are transformed into an investment, it implies that the economy is in a stable condition (Salvadori, 2003). Harrod (1936) and Domar (1946) were some of the first economists to build up the macroeconomic model to explicitly assess the growth problem in the Keynesian approach.

We outlined some associations among household consumption, saving and entrepreneurial investment decisions since these patterns were not established scientifically. The decision to save on spending is characterized by an exogenously assigned tendency to spend while the investment strategy is determined by the concept of an accelerator. Harrod and Domar's (1936) model shows that manufacturing is only obtained through physical labour and capital.

Given regard to the Keynesian principle of fixed costs, companies select the right strategy at the prices offered. Therefore, a cost-reducing strategy is employed which calculates the ratio of capital-labour and the ratio of capital-output in a specific way. The model focuses only on the goods of market equilibrium due to the extreme presumption that the market system falls short of achieving full engagement of labour. The demand for products is considered to be optimum if the profits are equivalent to the expenditure required. An economy that is increasing alongside a road of product price equilibrium is considered to be on its legitimate road to prosperity. In this road, one gets Gw = s / v where Gw is the call for a justified rate of income growth, while s is the level of savings whereas v is the ratio of capital production. The behavioural theory on producers and the Keynesian multiplier produces that when the justified direction of development guarantees maximum labour (a special case), then the economy is assumed to be on the road of golden era development (Salvadori, 2003).

In recent evolution, Kaldor (1956) concluded that the triggers of growth are not saving, innovation, technological advancement, and population increase — these are the characteristics of growth — however the inclination of society and particularly entrepreneurs to invest. In this, Kaldor embraces the Keynesian method in conceiving economic growth as guided by mental and sociological influences such as human risk-taking behaviour, and money-making (Kaldor, 1956).

2.3.3 Neoclassical Growth Theory

The neoclassical theory of economic growth is distinctive compared to the traditional theory of economic development in such a way that the previous generates wage inflation, and steady income to land and natural resources whereas the latter presupposes steady wage levels and rents on rapidly increasing assets and resources. According to Agenor and Montiel (1996), The primary financial specialist to build up a model that speaks to the neoclassical theory of economic development while incorporating this notion was Robert Solow (1956). Thereafter, this theory was adapted and evolved by Trever Swan (1956). The most recent model has then renamed the Solow-Swan model (1956). The neoclassical development theory is best spoken to by this model. The Solow-Swan model was developed on a total consistent return to scale-creation work which joins work and capital (while lessening minor returns) in the creation of a composite good (Solow,1957).

Production is dispersed among reserve funds and utilization based on the Keynesian sparing standard. Investment funds are thought to be a permanent portion of yield and innovation rises at an exogenous rate. The economy is said to be in a consistent state if the reserved funds are equivalent to the degree of speculation. The intermingling procedure towards the consistent state is guaranteed by the supposition of the diminishing profitability of capital. The theory had endeavoured to take care of the sustainability issue of the consistent state by accepting a neoclassical production work that takes into account adaptable coefficients of production (Salvadori, 2003). Heijdra and Ploeg (2006) recommend that without innovative advancement, the Solow-Swan model would mean a convergence of nations with identical development processes as well as equivalent savings and demographic growth rates with identical steady performance levels. This convergence property, known as the Absolute Convergence Hypothesis, indicates that smaller nations could also rise higher during the transformation process, set to start with a fairly low quality of life and a reduced capital-labour ratio as they reach parity with the wealthy nations, but inevitably both communities reach the same per capita level of wealth (Agenor and Montiel 1996).

Other researchers also established an alternate theory that wealthier nations are rising above poor countries. This theory is regarded as the Theory of Conditional Convergence. Ramsey (1965) has also established a theory that went further to illustrate the neoclassical economic growth hypothesis by rendering the domestic savings rate endogenous. This substituted the ad hoc saving/aggregate demand with forward-looking philosophy focused on the maximization of the utility. The Ramsey model provides forecasts of development quite identical to those of the Solow-Swan. Different from the Solow-Swan model, nevertheless, according to Heijdra and Ploeg, 2006, the Ricardian equality shows that a specific approach being used to fund state spending may not make much difference when it comes to impairing investment, output and consumption or short-term government debt and tax, has an approximate effect on aggregate economic (macroeconomic) factors and over-rules excess saving.

2.3.4 Endogenous Growth Theory

Contrary to the conventional growth theory that interprets economic development as a product of exogenous forces, in the wake of the 1990s, Paul Romer, Robert E. Lucas, and Robert J. Barro separately established a modern form of growth theory that endogenized technology. This theory is termed the Principle of Endogenous Growths. The existing study indicates the significance of a multitude of channels within which endogenous steady flow development could spring up. The new theory of growth stressed the significance of innovation, the productivity of capital, the adoption of new technologies, and capital accumulation as crucial drivers of economic growth. East Asian nations' perspective also presents a range of lessons on policy impacts on economic development. State intervention to remove barriers to market forces and perhaps other pedigrees of market distortion indeed is not detrimental to growth (Agenor and Montiel, 1996). The purpose of the endogenous growth theory is double (Salvadori, 2003). Firstly, to mitigate this problem of the theory of neoclassical growth that does not illustrate continued growth, and secondly, to proffer a comprehensive model in such a way that all the development-critical factors such as savings, investment, and technology are the result of conscious decision making. Although the primary goal of the endogenous growth theory is to establish accrued variables that are economically significant, then the rate of return should not be pushed too low. This is seen as a prerequisite for continuous advancement. The abundance of variables can be enabled by either discarding natural resource shortages or by presenting technological innovations. For instance, labour has been directly changed into a completely replicable asset, human capital. As far as technical progress is concerned, one of the core characteristics of the endogenous growth theory is the ability to endogenize the investment strategy resulting in technological advancement, which comprises primarily of launching innovative intermediate and/or final products. It is seen in general that there is convergence from classical to endogenous growth models, partially via Keynesian theory about the assumption that the paradigm conceives the stable state as being endogenously defined. Neoclassical economists, on the other hand, view this as exogenously driven by variables considered from the outside domain of networks and resources. There is also convergence, with regards to the saving-investment equation, between conventional, neoclassical and endogenous development theory as compared to Keynesian theory. Although the former theories grasp the concept of saving as being completely converted into an investment, and thus growth is ascertained by saving itself, Keynesian theory conceptualized investment as the driver of wealth and no correlation inherently exists between the aforementioned and the latter factor (Salvadori 2003).

2.4 Theoretical Framework

This study was based on the Keynesian Theory of Economic Growth. The theory implies that families can set aside a steady part of their earnings and that production companies turn those savings into investments. Unlike many other economic growth theories, the Keynesian economic growth theory has indicated that not every fund is converted to investment. Consequently, development is not determined by the extent of savings but by the amount of investment.

2.5 Empirical Review

Numerous studies were carried out to study the relationship between non-oil exports and economic growth. The outcomes of these experiments vary from one analysis to the next; due to the variation in techniques and timelines and the parameters incorporated in the models. Usman (2010) conducted research using multi-linear regression on determinants of non-oil exports and economic development in Nigeria from 1988-to 2008. The result shows that GDP, consumer price index and exchange rate have a favourable partnership with non-oil exports. The study suggested that since non-oil exports were seen to have a favourable impact on Nigeria's economic growth over the 1988-2008 period, then the economic growth could be improved and productive if the government diversifies its export streams. Accordingly, for Nigeria to have sustainable economic growth, it is imperative to set up some initiatives that will significantly enhance the non-oil export earnings.

Muhammed (2004) researched the non-oil exports and economic development in Saudi Arabia (1970-2003). The research adopts the use of the three-stage least square test. The finding suggests that non-oil exports have a positive sign in all four predictor variables, namely: export demand, industrial development, and population, two of which are extremely important and, at the same time, are decided primarily by relative cost and industrial output. An increase in the population rate was considered to have a detrimental effect on the per capita real income. This was compatible with the fact that real GDP in Saudi Arabia rose at a slower pace than the population growth rate. The exchange rate had the right sign, but it seemed trifling. The study findings typically affirm exports lead to Saudi Arabia's economic growth. Consequently, the researcher recommends that even though Saudi Arabia is an oil-rich nation that is majorly dependent on exporting oil for the nation's domestic economic development phase. The effect of non-oil exports, via real per capita income, can also strengthen investment, and manufacturing, and assess economic growth.

Rasulbakshi and Mohseni (2010) used a Computable General Equilibrium (CGE) model to understudy how exports of non-oil products affect Iranian economic growth. Their discovery shows that exports of non-oil products and gross domestic product correlate. Iranian GDP has been influenced amongst other non-oil export products by industry and mining. Interestingly, a rise of 30% in non-oil exports will raise domestic production by 19.96% and business by 64%. Accordingly, the study reached the conclusion with a focus on the result indicating that the economic development had received the strongest impact from industrialization and mining among other exports of non-oil products. The outcome of the study suggests strengthening the non-oil exports with a strong focus on industrial exports can promote and boost the economic growth of Iran.

(Monir and Ebraham, 2010) which conducted surveys on the impact of exports of oil and non-oil products on Iran's gross domestic product (GDP) from 1973-to 2007. The regressive Vector Auto (VAR) approach and the time series were used. The result shows that real GDP is responding positively to an oil export shock, but that occurred following two lags. In addition, RGDP, that is, real GDP is optimistically responding to a non-oil export shock but occurred with more lags. The researchers believe that Iran's main element of government and state spending income is from oil export projection. Again, the findings demonstrate the long-term optimistic impact of exports of non-oil products on the economy. It is argued that good policies can enhance federal revenue, alter policy-making, and require long-term development initiatives to be comprehended and studied. Consequently, suggesting that it will be best to transfer the additional income generated by n rise in the oil price to non-oil production growth to retain income.

Moreover, (Ezike and Ogege 2012), carried out a study on the policy of foreign trade and the implications for non-oil exports of Nigeria. The research employed both correlation and the least square strategies. The result gotten indicated a negative correlation between Nigeria's trade

policies and exports of non-oil. However, Non-oil exports have a significant effect on the GDP, that is, economic growth and development of Nigeria; at a 5 per cent level of significance, exchange rates are also positively significant statistically. Consequently, they strongly advise that a nation which broadens its exportation base will have a chance of achieving better growth in its economy. Therefore, any trading strategy which solely depends on the crude petroleum (mono-product) is misguiding and also contributes uncertainty to the nation and external shocks which is attributable to the global oil sector. Hence, Nigeria's economy would do better if strategies are put in place by broadening and promoting its non-oil products and export respectively.

From 1970-to 2008, Ekperiware (2009) conducted research on oil and non-oil FDI and economic growth in Nigeria, using the methodology of the Ordinary Least Square (OLS). Their test findings indicate that both Oil FDI and Non-Oil FDI are statistically important at a degree of freedom of 5 per cent. A one-unit change in Oil FDI will trigger the country's economic growth to rise 3.24 times, and a one-unit change in non-oil FDI will cause GDP to rise 3.5 units. Presenting that, Non-oil foreign direct investment (FDI) is statistically very important and throws a better favourable influence on the economy of Nigeria. Consequently, the research advises that attempts should be put in place in drawing foreign direct investment (FDI) into the non-oil foreign direct investment (FDI) region to produce further foreign investment for Nigeria. This is because its impact on the growth of the economy is relatively low according to the analytical results, despite the oil sector getting a higher level in the economy.

Syed, Muhammed and Ranae (2015) researched the effect of agricultural exports on Pakistan's fundamental economic output was evaluated using secondary information from the period 1972-to 2008. The analysis evaluated the linkage among Gross Domestic Product (GDP), and agricultural and non-agricultural exports as dependent and independent variables, accordingly, using the Johansen co-integration methodology. From the studies, there is a negative relationship between the economic growth of Pakistan and agricultural exports whereas non-agricultural export industries possess a strong relationship to economic growth. Therefore, based on the empirical findings, the research proposed that Pakistan would enable systemic improvements in their exports of agricultural products by turning them into value-added goods.

2.6 Existing Gaps for the Study

Previous studies that analysed agricultural commodity export were not specific regarding the commodities that were being analysed, however, this study focused on three main products to give an exhaustive approach, these products are sesame seeds, cashew nuts, and high-quality raw cocoa beans. Additionally, available studies on the linkage between selected agricultural commodity exports on Nigeria's gross domestic product focus mainly on data gotten between 1970 and 2010, limited studies are available in the recent years 2009-2019, hence, this study intends to fill that gap in the literature by establishing the relationship between agricultural commodity exports and Nigeria's gross domestic product. In certain studies, the co-integration test between the variables was tested while using just two steps of the Angle-Granger method. There are a couple of disadvantages in having to test for co-integration that uses the Engle-Granger methodology. The co-integration test is highly probable to have less power compared to other tests, and the testing method presumes there is only one co-integration variable, where there may be more, that is, any correlation matrix of these matrices is acquired when predicting a regression variable. The chosen procedure for this study takes care of the aforementioned gap.

3. Methodology

3.1 Research Design

Kothari (2014) defines research design as a plan of action, an outline strategy of appraisal devised to retrieve answers to the research questions. A descriptive research design was adopted. Due to the nature of the subject under study, this research utilized a quantitative

method to collect data. This approach requires the collection and analysis of data provided as abstractions of numerical type. Quantitative techniques are those that accentuate particular factors, facts, figures, and frequency. Quantitative analysis approaches are generally applicable to data processing, which is organized and should be numerically interpreted (Matthew and Ross, 2010). It uses scientific methods to deliver immediate outcomes. It is based on the quantitative measurements of certain features.

3.2 Sources of Data

The data for this study were generated from secondary sources. Data were collected from several sources which include textbooks, journals, annual reports, the internet, and magazines

3.3 Methods of Data Collection

The method of data collection used for this study is the secondary method of data collection. The data collected is on the yearly export of the agricultural commodities. The data is sourced from the Central Bank Nigeria (CBN) Statistical Bulletin, Federal Ministry of Finance and Economic Development, Federal Inland Revenue Service (FIRS), International Monetary Fund (IMF) and World Bank covering the period from 2009-to 2018.

3.4 Population of the Study

The population of this study is made up of all the indices that contributed to the export unit of agricultural commodities in Nigeria

3.5 Sample Size of the Study

To ensure that the stated objectives are achieved, this study makes use of time series data from Real Gross Domestic Product (RGDP), Sesame Seed Export, Cocoa Beans Export, Exchange Rate, Gross Fixed Capital Formation (GFCF) and Agricultural Commodity Export to examine the linkage between selected agricultural commodity export and Nigeria's GDP from 2009-2018. The sample spans ten years (10 years).

3.6 Method of Data Analyses

In analysing the data gathered for this research, the researcher used descriptive statistics. After this statistical tool, the regression analysis using t-ratio, F-test and R-square values was also carried out. The data analysis tool for research is E-VIEWS software version 10.0. The software was used to analyse data collected from the published annual reports.

3.7 Study Variables and Measurement

Gross Domestic Product (GDP): This is the dependent variable based on this study as it looks at the linkage that real GDP and the exports of agricultural commodities have in Nigeria's economic growth. It is the specification of the amount of gross value contributed by all the local products in the country added to all the product taxes then subtracts any subsidies that are not incorporated in the product value. It is the estimation for the devaluation of manufactured assets or the deterioration depletion of natural resources, without being derivative.

Total Labour Force (LF): It measures the impact of labour force participation on the growth of the economy as agricultural sector production boosts labour productivity. Labour is seen as playing an essential role in the linkage between export and growth. The neoclassical theory postulates that total output increases as input (labour and capital) rise. Consequently, the labour force is expected to have a significant linkage with real gross domestic product.

Gross Domestic Fixed Capital Development (GFCF): Gross fixed capital development or formation involves land developments, acquisitions of factories, vehicles, and facilities; and construction of bridges, highways, and things such as colleges, workplaces, clinics, private housing, business, and industrial property. The neoclassical principle indicates that capital increase as an input in the manufacturing process results in increased productivity. So Gross Fixed Capital Formation is believed to have a major linkage with real gross domestic product.

Real exchange rate (ER): The model includes real exchange rates to represent pricing power on the global economy and also to determine the impact on economic growth efficiency through an export route. Exports in developing nations have been contended to rely heavily on the demand for tradable goods from around the world. Thus, actual exchange rate volatility may be critical for a low, transparent economy such as Nigeria, which is affected by shifts in foreign market rates. In this respect, a significant relationship is predicted between the real exchange rate and real gross domestic product (Henriques and Sadorsky, 1996).

Consumer Price Index (CPI): This is used as a representative variable as the data on the three agricultural exports are based on their exchange value over the years. A consumer price index is utilized to analyse the impact of inflation. The consumer price index illustrates increases in the cost of purchasing a basket of products and services for the typical customer and can be set or adjusted at prescribed periods, such as annual. It is also projected to hold an adverse effect in connection with economic growth.

Sesame Seed Export (SSX): Sesame seed is Nigeria's foremost agricultural export commodity. Export expansion is a major driver for boosting gross domestic product. The export expansion thus tends to focus investment in agricultural industries and effectively improves the economy's overall gross domestic product.

Cocoa Beans Exports (CBX): This is Nigeria's second most exportable agricultural commodity and shows a growing trend denoting the growing demands for cocoa beans on the global market and also the nation's production. Because exports are a stimulus for GDP growth and increase the restriction of foreign currency, exports of cocoa beans are anticipated to have a favourable connection to real gross domestic product.

Cashew Export (CAX): This is Nigeria's third exportable agricultural commodity. Cashew exports have been envisaged to have a positive impact on the gross domestic product of the Nigerian economy; however, more efforts can be made on the export of this commodity which can boost the real gross domestic product.

3.8 Model Specification

In the theoretical framework of this research, some divergent economic growth theories have been cited, theories as to the Classical economic growth theory that presumes non-income factors of production such as the increase in population, governmental unrest, the safety of personal assets and the roles of rules and judiciary in addition to economic variables of land production, labour, capital, and technology. The endogenous economic growth model had the assumption that strategies or plans that acknowledge transparency, rivalry, creativity, and uncertainty will enhance economic growth and vice versa. Strategies or plans that had the potential to limit/slow down change by safeguarding or prioritizing specific industries or companies are likely to decline long-term economic growth to the detriment of the community. The endogenous economic growth model uses a basic development feature Y = AK where Y is performance, A is advancement in technology and K is capital which implies a non-diminishing return to capital which has been criticized by numerous scholars. This research study utilized the Solow-Swan function of production, an economic growth theory of long-term increase in GDP set as a basis for developing the economic growth model in this study within the template of neoclassical economics. This model describes long-term economic growth by focusing on the aggregation of capital, labour, and advancement in technology. Solow-Swan demonstrates an efficient building block for additional constructs due to its especially likeable mathematical features. Consequently, since Nigeria's economy is labour-intensive and the study did not rely on the classical growth theory's non-economic variables, the following neoclassical component of production was utilized:

$$Y=f(L, K) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

This model can be amended by incorporating the exchange rate as a control variable in the formula:

$RGDP_t$=f (SSX_t, AGEX_t, CBX_t, ER_t) …….. (2)

In econometrical form, equation (3) could be stated as:

$RGDP_t$ = β_0 + β_1SSX_t + β_2AGEX_t, + β_3CBX_t + $\beta_4 ER_t$ + μ …… (4)

Where,

$RGDP_t$ stands for the annual Real Gross Domestic Product,

SSX_t stands for export of sesame seed,

$AGEX_t$ stands for Agricultural Commodity Export,

CBX_t stands for export of cocoa beans and

ER_t stands for the exchange rate.

μ stands for error term,

β_0 stands for the constant term

and β_1, β_2, β_3, and β_4, are the parameters of independent variables to be estimated.

The annual Real Gross Domestic Product is serving as the dependent variable while the export of sesame seed, agricultural commodity export and export of cocoa beans represent the independent variables. The exchange rate in this study was employed as a control variable.

In the same vein, another linear model was employed in this study as stated below:

$GFCF_t = f\ (AGEX_t, ER_t)$ ……(5)

In econometrical form, equation (5) could be stated as:

$GFCF_t$ = β_0 + β_1AGEX_t + $\beta_2 ER_t$ + μ …… (6)

Where $GFCF_t$ stands for the Gross Domestic Fixed Capital Formation, $AGEX_t$ stands for Agricultural Commodity Export and ER_t stands for the exchange rate. μ stands for error term, β_0 stands for the constant term and β_1, and β_2, are the parameters of independent variables to be estimated.

The Gross Domestic Fixed Capital Formation is serving as the dependent variable while Agricultural Commodity Export represents the independent variable. The exchange rate in this study was also employed as a control variable.

3.9 Validity and Reliability of the Research Instrument

The reliability of the instrument used to study the relationships between variables can be compared to the accuracy of information. The validity posits that the research instrument assesses the link between exporting agricultural commodities and real gross domestic product. This study uses annual reports from certain organizations (secondary data), these annual reports were evaluated by auditors, and data were verified and passed. Additionally, assertions within these reports were validated. Therefore, the results from this study are believed to be reliable and valid.

3.10 Limitation of the Study

This study examined the linkage between selected agricultural commodity export and Nigeria's GDP from 2009-to 2018. In the course of this study, the researcher was faced with many challenges and difficulties. Firstly, the researcher was faced with time constraints and funding as there was not ample time for in-depth research for this study (time constraint). The lack of

materials and needed documentaries also posed another threat to this study as a result of the COVID-19 Pandemic ravaging the world.

4. Data Presentation, Findings and Discussion

This chapter presents the secondary data sourced from the 2018 annual report of the United Nations' Commercial Trade Statistics and the Central Bank of Nigeria Statistical Bulletin. Also, the presented data are analysed and discussed using E-VIEWS (Econometric Views) version 10.0.

4.1 Data Analysis

Table 4.1: Secondary Data

YEAR	SSX	CBX	ER	GFCF	RGDP	AGEX
2009	110805.528	240992.385	147.3958	2169.73	49,856.10	1084.67
2010	231854.131	588438.204	148.8127	2295.77	54,612.26	1460.57
2011	169731.567	248576.386	152.3297	2474.3	57,511.04	1812.78
2012	241247.431	210097.408	155.9402	2570.49	59,929.89	1324.42
2013	174073.963	183506.38	155.7537	2869.52	63,218.72	1478.3
2014	235555.792	141350.245	156.9828	3398.96	67,152.79	1440.83
2015	167373.554	100840.368	192.3016	3528.43	69,023.93	2743.39
2016	110426.758	82977.226	253.4923	3769.2	67,931.24	4752.66
2017	93385.341	71991.717	305.7899	4227.03	68,490.98	1036.27
2018	225085.549	148418.859	306.0829	4510.73	69,810.02	1038.26

Source: 2018 UN Commercial Trade Statistics and CBN Statistical Bulletin

From the above table 4.1, the data for the various factors used in this study are shown. From the Table, Sesame Seed Export (SSX) and Cocoa Beans Export (CBX) were sourced from the United Nations' Commercial Trade Statistics while Exchange Rate (ER), Gross Fixed Capital Formation (GFCF), Real Gross Domestic Product (RGDP) and Agricultural Commodity Export (AGEX) were sourced from the Central Bank of Nigeria Statistical Bulletin.

These chosen variables represent the selected agricultural commodity export and Nigeria's Gross Domestic Product between 2009 and 2018.

4.1.1 Outcome of Descriptive Statistics

Table 4.2: Output of Descriptive Statistics

	SSX	CBX	ER	AGEX	GFCF	RGDP
Mean	175954.0	201718.9	197.4882	1817.215	3181.416	62753.70
Median	171902.8	165962.6	156.4615	1450.700	3134.241	65185.76
Maximum	241247.4	588438.2	306.0829	4752.660	4510.732	69810.02
Minimum	93385.34	71991.72	147.3958	1036.270	2169.732	49856.10

Std. Dev.	56594.02	149548.3	65.58452	1147.679	826.7767	6964.110
Skewness	-0.218589	1.846752	0.906110	1.897377	0.291228	-0.638400
Kurtosis	1.556361	5.672036	2.076973	5.416829	1.721539	2.051496
Jarque-Bera	0.948008	8.659061	1.723384	8.433842	0.822383	1.054116
Probability	0.622505	0.013174	0.422447	0.014744	0.662860	0.590339
Sum	1759540.	2017189.	1974.882	18172.15	31814.16	627537.0
Sum Sq. Dev.	2.88E+10	2.01E+11	38711.96	11854497	6152038.	4.36E+08
Observations	10	10	10	10	10	10

Source: Output form E-Views 10.0

Table 4.2 above discusses the result of the descriptive analysis carried out by the researcher. From the table, the researcher noted a better performance of the Nigerian economy with an average performance of 3181.416 and 62753.70 for Gross Fixed Capital Formation and Real Gross Domestic Product respectively. Also, the study noted an average exchange rate to US Dollar of N197.4882 within the period under study. This exchange rate performance was due to the influx into the nation's economy from the selected agricultural commodity export which invariably affected the Gross Domestic Product. In the performance of the agricultural commodity export within the period, Table 4.2 shows a significant performance of the various engaged variables. The above table reveals that within the period under study, there is a better performance of Cocoa Beans Export (CBX), followed by Sesame Seed Export (SSX). This is due to their corresponding mean values of 201718.9 and 175954.0 respectively. These noted performances aggregately contributed to the growth of the selected agricultural commodity export. This study shows that all the variables employed in this study had a positive return on their average performance.

On the consistency in their performances, the above table reveals that only Gross Fixed Capital Formation and Real Gross Domestic Product were more consistent in their performances than other variables engaged in this study. This was a result of the low standard deviation of 826.7767 and 6964.110 compared with their mean values. This means that within the period under study, only these two variables (that is, Gross Fixed Capital Formation and Real Gross Domestic Product) were more consistent in their growth rate. However, despite the average performance of the various agricultural commodity export selected within the period under study (that is, Sesame Seed Export (SSX) and Cocoa Beans Export (CBX)), the table above revealed that the performance of the variables was not consistent (as a result of high standard deviation). Table 4.2 reveals that within the period under study, only the performances of Cocoa Beans Export (CBX) and Agricultural Commodity Export (AGEX) were normally distributed as their corresponding Jarque-Berra probability values of 0.013174 and 0.014744 informed. Nonetheless, the performances of Sesame Seed Export (SSX), Exchange Rate (ER), Gross Fixed Capital Formation (GFCF) and Real Gross Domestic Product (RGDP) were not normally distributed as their corresponding Jarque-Bera probability values are greater than the 0.05 probability level of Significance.

4.1.2 Outcome of Regression Analyses

To be sure that the above-mentioned objectives of this research were properly discussed, the researcher estimated the existing relationship between the selected agricultural commodity export and Nigeria's Gross Domestic Product between 2009 and 2018 in two ways. The first was estimated to know the contributions of Sesame Seed Export (SSX), Agricultural Commodity Export (AGEX) and Cocoa Beans Export (CBX) to the growth of Real Gross Domestic Product

while the second estimated the relationship between Agricultural Commodity Export (AGEX) as a whole and the Gross Fixed Capital Formation (GFCF).

4.1.2.1 Regression Analysis with RGDP = f (SSX, AGEX, CBX, ER)

For adequate discussion of the topic under study, the OLS (Ordinary Least Square) method of Regression analysis was carried out using the constituents of some selected agricultural commodity export (that is, Sesame Seed Export (SSX), Agricultural Commodity Export (AGEX) and Cocoa Beans Export (CBX)) as the Independent variables and the Real Gross Domestic Product (RGDP) as the Dependent variable. Exchange Rate (ER) was engaged as a Control Variable. The Ordinary Least Square (OLS) regression model formed from the informed behaviour of the factors used in this study is **RGDP = f (SSX, AGEX, CBX, ER)**

Coefficient of Determination (R^2)

The Coefficient of Determination (R^2) explains the best fit of any regression model. In explaining its performance, how closer the R^2 value is to 100%, then the stronger the goodness fit. With the 0.904666 value of R^2, the study reveals that about 90% of the changes in Real Gross Domestic Product (RGDP) within the period under study were a result of the contributions of Sesame Seed Export (SSX), Agricultural Commodity Export (AGEX), Cocoa Beans Export (CBX) and Exchange Rate (ER) with the outstanding 10% being contribution from the other variables not mentioned in this model. It depicts a strong determination of the model.

With adjustment made in this study, the R^2 adjusted value of 0.828398 explains that with the adjustment in the independent variables, they can reckon for about 83% approximately of the disparity in Real Gross Domestic Product (RGDP) with the other 17% allocated to variables not included in the model.

Table 4.3: Regression Result of RGDP = f (SSX, AGEX, CBX, ER)

Dependent Variable: RGDP
Method: Least Squares
Date: 06/16/20 Time: 02:22
Sample: 2009 2018
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	46517.87	5656.622	8.223613	0.0004
SSX	0.057744	0.019104	3.022666	0.0293
AGEX	-0.019404	0.007812	-2.483754	0.0556
CBX	-0.024945	0.008058	-3.095765	0.0270
ER	66.81293	18.00712	3.710363	0.0138

R-squared	0.904666	Mean dependent var	62753.70
Adjusted R-squared	0.828398	S.D. dependent var	6964.110
S.E. of regression	2884.874	Akaike info criterion	19.07920
Sum squared resid	41612486	Schwarz criterion	19.23050
Log-likelihood	-90.39601	Hannan-Quinn criteria.	18.91324
F-statistic	11.86173	Durbin-Watson stat	1.917205
Prob(F-statistic)	0.009153		

Source: E-Views 10.0 Output

F-test

The F-test (F-statistic) explains the overall significance of the model. This reveals the contributions of the independent variables to the growth of the dependent variable. With

11.86173 of the F-statistic and the resultant 0.009153 probability value, the study reveals that the independent variables employed (Sesame Seed Export (SSX), Agricultural Commodity Export (AGEX), Cocoa Beans Export (CBX) and Exchange Rate (ER)) were significant statistically in describing the performance of the dependent variable (Real Gross Domestic Product (RGDP)). The reason is that 0.009153 which is the F-probability is less than the 0.05 probability level (that is a 5% level of significance) and as such, the null hypothesis is rejected which led to accepting the alternative hypothesis that the employed constituents of the selected agricultural commodity export were significant statistically in describing the performance of Nigeria's Gross Domestic Product within the period chosen for the study.

Evaluation Based on Economic Criterion

RGDP = 46517.87 + 0.057744SSX – 0.019404AGEX – 0.024945CBX + 66.81293ER

The above result which is the regression result is estimated to know if the signs of the variables used in the model suit what the economic theory suggests. This study reveals that if all the independent variables were kept constant, the Real Gross Domestic Product of Nigeria within the period under study will increase by 46517.87.

The model above reveals the existence of a positive relationship between Sesame Seed Export (SSX), Exchange Rate (ER) and Real Gross Domestic Product (RGDP) whereas a negative relationship is found between Agricultural Commodity Export (AGEX), Cocoa Beans Export (CBX) and Real Gross Domestic Product (RGDP). This means that any change in Real Gross Domestic Product (RGDP) will lead to an increase in Sesame Seed Export (SSX) and Exchange Rate (ER) (by 0.057744 and 66.81293 separately) but a decrease in Agricultural Commodity Export (AGEX) and Cocoa Beans Export (CBX) by 0.019404 and 0.024945 respectively.

The t-test

The t-test explains how the employed independent variables contributed individually to the performance of the dependent variable. From table 4.3, the t-test values of 3.022666 (0.0293), -2.483754 (0.0556), -3.095765 (0.0270) and 3.710363 (0.0138) for Sesame Seed Export (SSX), Agricultural Commodity Export (AGEX), Cocoa Beans Export (CBX) and Exchange Rate (ER) respectively shows that only Sesame Seed Export (SSX), Cocoa Beans Export (CBX) and Exchange Rate (ER) were significant statistically in describing the performance of Real Gross Domestic Product of Nigeria within the period under study. The reason is that 0.0293, 0.0270 and 0.0138 which are their probability values are less than the 0.05 probability level of significance (5% Level of Significance).

On the other hand, with the probability value of 0.0556, the parameter released to Agricultural Commodity Export (AGEX) was not significant statistically in describing the performance of the Real Gross Domestic Product of Nigeria within the period used for the study.

4.1.2.2 Regression Analysis with GFCF = f (AGEX, ER)

Having estimated the relationship in the first model, the second model studies the existing relationship between Agricultural Commodity Export (AGEX) as a whole and Gross Fixed Capital Formation (with Exchange rate as a Control Variable).

The Ordinary Least Square (OLS) regression model developed from the informed behaviour of the variables of the study is **GFCF = f (AGEX, ER)**

Table 4.4: Regression Result of GFCF = f (AGEX, ER)

Dependent Variable: GFCF
Method: Least Squares
Date: 06/16/20 Time: 02:30
Sample: 2009 2018
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.

C	859.3506	432.3818	1.987481	0.0872
AGEX	0.042613	0.112947	0.377282	0.7171
ER	11.36589	1.976494	5.750528	0.0007

R-squared	0.831278	Mean dependent var	3181.416
Adjusted R-squared	0.783071	S.D. dependent var	826.7767
S.E. of regression	385.0763	Akaike info criterion	14.98809
Sum squared resid	1037986.	Schwarz criterion	15.07886
Log-likelihood	-71.94043	Hannan-Quinn criteria.	14.88850
F-statistic	17.24414	Durbin-Watson stat	0.830679
Prob(F-statistic)	0.001973		

Source: E-Views 10.0 Output

Coefficient of Determination (R^2)

The Coefficient of Determination (R^2) explains the best fit of any regression model. In explaining its performance, the nearer the R^2 value tends to 100%, the stronger the goodness fit. With the R^2 value of 0.831278, the study reveals that about 83% of the changes in Gross Fixed Capital Formation (GFCF) within the period under study were a result of the contributions of Agricultural Commodity Export (AGEX) and Exchange Rate (ER) with the outstanding 17% came from other variables not mentioned in this model. It represents a strong resolution of the model.

With adjustment made in this study, the R^2 adjusted value of 0.783071 explains that with adjustment in the independent variables, they can reckon for about 78% approximately of the variations in Gross Fixed Capital Formation (GFCF) with the other 22% allocated to variables not covered in the model.

F-test

The F-test (F-statistic) explains the overall significance of the model. This reveals the contributions of the independent variables to the growth of the dependent variable. With 17.24414 of the F-test (F-statistic) with a 0.009173 probability value, it reveals that the independent variables employed (Agricultural Commodity Export (AGEX) and Exchange Rate (ER)) were significant statistically in describing the performance of the dependent variable (Gross Fixed Capital Formation (GFCF)). The reason is that the 0.009173 which is the F-probability value is less than the 0.05 probability level of significance and so the H_0 (null hypothesis) is rejected meaning that H_1 (Alternative Hypotheses) is accepted showing that the constituents of the employed agricultural export commodity were significant statistically in describing the performance of the economy of Nigerian within the period chosen for this study.

Evaluation Based on Economic Criterion

GFCF = 859.3506 + 0.042613AGEX + 11.36589ER

The above result (regression result) is checked to see if the signs of the variables used in the model match what the economic theory suggests. This study reveals that if all the independent variables were kept constant, the Gross Fixed Capital Formation (GFCF) within the period under study will increase by 859.3506.

The model above reveals the existence of a positive relationship between all the independent variables (that is, Agricultural Commodity Export (AGEX) and Exchange Rate (ER)) and the dependent variable (Gross Fixed Capital Formation (GFCF)). This means that any change in

Gross Fixed Capital Formation (GFCF) will lead to an increase in Agricultural Commodity Export (AGEX) and Exchange Rate (ER) by 0.042613 and 11.36589 respectively.

The t-test

The t-test explains how the employed independent variables contributed individually to the performance of the dependent variable. From table 4.4, the t-test value of 5.750528 (0.0007) for Exchange Rate (ER) shows that only Exchange Rate (ER) was statistically significant in explaining the performance of Gross Fixed Capital Formation (GFCF) within the period under study. This is because of the resultant probability value of 0.0007 which is less than the 5% Level of Significance.

On the other hand, with the probability value of 0.7171, the parameter released to Agricultural Commodity Export (AGEX) was not statistically significant in explaining the performance of Gross Fixed Capital Formation (GFCF) within the period under study.

4.2 Hypotheses Testing

At the beginning of this research, the under-listed hypotheses in their null (H_0) forms were postulated for testing:

H_{01}: There is no significant relationship between agricultural commodity exports and Nigeria's gross domestic product

H_{02}: Sesame seeds export do not affect Nigeria's gross domestic product

H_{03}: Raw cocoa beans export has no significant impact on Nigeria's gross domestic product

H_{04}: There is no relationship between agricultural commodity export and gross fixed capital formation in Nigeria.

4.2.1 First Hypothesis Testing

H_{01}: There is no significant relationship between agricultural commodity exports and Nigeria's gross domestic product.

H_{11}: There is a significant relationship between agricultural commodity exports and Nigeria's gross domestic product.

In evaluating the nature of the existing relationship between Agricultural Commodity Exports and Nigeria's Gross Domestic Product within the period under review, the researcher employed the Regression analysis of Table 4.3 of this study.

In the said Table, the t-statistic value of -2.483754 with a resultant probability value of 0.0556 reveals the contributions of Agricultural Commodity Exports to Nigeria's Gross Domestic Product. The 0.0556 value which is slightly greater than the 0.05 (5%) probability Significance Level shows that the contributions of Agricultural Commodity Exports within the period under review were significant statistically in the performance of the nation's Gross Domestic Product. Thus, the researcher accepts the null hypothesis that Agricultural Commodity Exports have no significant effect on Nigeria's Gross Domestic Product within the period under study.

The study concludes that there is no significant relationship between agricultural commodity exports and Nigeria's gross domestic product.

4.2.2 Second Hypothesis Testing

H_{02}: Sesame seeds export do not affect Nigeria's gross domestic product

H_{12}: Sesame seeds export affects Nigeria's gross domestic product

In ascertaining the nature of the existing relationship between Sesame Seeds Export and Nigeria's Gross Domestic Product within the period under review, the researcher employed the Regression analysis of Table 4.3 of this study.

In the said Table, the t-statistic value of 3.022666 with a resultant probability value of 0.0293 reveals the contributions of Sesame Seeds Export to Nigeria's Gross Domestic Product. The 0.0293 value which is less than the 0.05 (5%) probability Significance Level shows that the contributions of Sesame Seeds Export within the period under review were significant statistically in the performance of the nation's Gross Domestic Product. Thus, the researcher accepts the alternative hypothesis that Sesame Seeds Export have a significant effect on Nigeria's Gross Domestic Product within the period under study. The researcher, therefore, concludes that Sesame seeds export affects Nigeria's gross domestic product.

4.2.3 Third Hypothesis Testing

H_{03}: Raw cocoa beans export has no significant impact on Nigeria's gross domestic product.

H_{13}: Raw cocoa beans export has a significant impact on Nigeria's gross domestic product.

In ascertaining the nature of the existing relationship between raw Cocoa Beans Export and Nigeria's Gross Domestic Product within the period under review, the researcher employed the Regression analysis of Table 4.3 of this study.

In the said Table, the t-statistic value of -3.095765 with a resultant probability value of 0.0270 reveals the contributions of raw Cocoa Beans Export to Nigeria's Gross Domestic Product. The 0.0270 value of probability which is less than the decision rule of 0.05 (5%) Significance Level proves that the contributions of raw Cocoa Beans exports within the period under review were significant statistically in the performance of Nigeria's Gross Domestic Product. Thus, the researcher accepts the alternative hypothesis that raw Cocoa Beans Export has a significant effect on Nigeria's Gross Domestic Product within the period under study.

The researcher, therefore, concludes that Raw cocoa beans export has a significant impact on Nigeria's gross domestic product.

4.2.4 Fourth Hypothesis Testing

H_{04}: There is no relationship between Agricultural Commodity Export and Gross Fixed Capital Formation in Nigeria.

H_{14}: There is a significant relationship between Agricultural Commodity Export and Gross Fixed Capital Formation in Nigeria.

In ascertaining the nature of the existing relationship between Agricultural Commodity Export and Nigeria's Gross Fixed Capital Formation within the period under review, the researcher employed the Regression analysis of Table 4.4 of this study.

In the said Table, the 0.377282 value of the t-statistic with a resultant 0.7171 probability value reveals the contributions of Agricultural Commodity Export to Nigeria's Gross Fixed Capital Formation. The 0.7171 probability value is greater than the 0.05 (5%) decision rule proves that the contributions of Agricultural Commodity Export within the period under review were not significant statistically in the performance of Nigeria's Gross Fixed Capital Formation. Thus, the researcher accepts the null hypothesis that there is no relationship between Agricultural Commodity Export and Gross Fixed Capital Formation in Nigeria within the time frame chosen for the research.

Therefore, the researcher concludes that Agricultural Commodity Export and Gross Fixed Capital Formation in Nigeria have no relationship.

4.3 Discussion of Findings

Trade and exports play key roles in the growth and sustainability of economies as countries with diverse export contributions rarely face recessional hits. As a critical role in any economy's development, trade has been one of the many other catalysts of productivity and performance, and therefore its participation is largely dependent on its volume in aggregate demand. Information regarding this has managed to help numerous countries attain economic efficiency and sustainability. This study evaluated the linkage between selected agricultural commodity export and Nigeria's Gross Domestic Product concerning sesame seeds, Cashew nuts and high-quality raw cocoa beans the following were the noted conclusions of this study:

a. There is no significant relationship between agricultural commodity exports and Nigeria's gross domestic product.
b. Sesame seed export affects Nigeria's gross domestic product within the period under study.
c. Raw cocoa beans export has a significant impact on Nigeria's gross domestic product.
d. Agricultural Commodity Export and Gross Fixed Capital Formation in Nigeria have no relationship.

The findings of this study aligned with Rasulbakshi and Mohseni (2010) where the scholars found a favourable link between non-oil exports and economic development. According to the scholars, a rise of 30% in non-oil exports will raise domestic production by 19.96% and business by 64%. Accordingly, the study suggests that strengthening non-oil exports with a strong focus can promote and boost the economic growth of Iran. Also, the works of Ekperiware (2009) also supported the findings of this study. Ekperiware (2009) research work on oil and non-oil FDI and economic growth in Nigeria using the methodology of the Ordinary Least Square (OLS) found that a one-unit change in non-oil FDI will cause GDP to rise by 3.5 units. Presenting that, foreign direct investment (FDI) of Non-oil export is statistically very important with a favourable influence on the economy of Nigeria. Consequently, this research suggests making attempts to draw foreign direct investment (FDI) into the non-oil foreign direct investment (FDI) region to produce further foreign investment for Nigeria. This is because its impact on the growth of the economy is low relative to the non-oil sector according to the analytical results, despite the oil sector getting a higher level in the economy.

5. Summary, Conclusions and Recommendation

This chapter presents the summary of this study, its conclusions and possible recommendations as it relates to the linkage between selected agricultural commodity export and Nigeria's Gross Domestic Product.

5.1 Summary

Within Sub-Saharan Africa, agriculture and its commodity export have been a major influence on national development as the exportation of agricultural commodities has been a key encouraging factor to foreign direct investment. Export as a necessary catalyst for the aggregate growth of an economy has contributed greatly to the improvement of any economy. The major purpose of export guidelines in every economy is to increase the number of economic activities and therefore, these guidelines should be directed toward the sector(s) where the effect of an improvement in demand for export would be both beneficial and important. Nations generate foreign exchange from exports hence, the advancement of exports of agricultural commodities will not only enhance development but build more employment opportunities and also decrease the country's current risks of reliance on a single commodity over which the nation has very little authority.

As a strategy for national development, over 50 per cent of Nigerians living in the rural areas depend on the agricultural commodity for their livelihood as it has helped greatly in poverty

reduction, job creation, provision of food and the overall wellbeing of citizens. This great contribution of the agricultural commodity has shown its need for national development and economic prosperity. As rightly said by Shehu (2019), the fight for long-term economic growth could either be won or lost within the agricultural sector. This shows how significant agricultural commodity export is to economic development and growth

The major purpose of this research is to carry out a critical evaluation of the contribution of selected agricultural export commodities and how it affects the economic growth of Nigeria. This study looked at the effect of sesame seeds export on Nigeria's gross domestic product, it evaluated the existence of granger causality between agricultural commodity export and Nigeria's real gross domestic product. The study also targeted at establishing the relationship between agricultural commodity export and gross Fixed capital formation in Nigeria and also, to analyse the effect of raw cocoa beans export on Nigeria's gross domestic product. This study was anchored on four (4) economic growth theories (that is, the Keynesian Theory of Economic Growth, Classical Theory of Economic Growth, Neoclassical Growth Theories and the Endogenous Growth Theory). As a quantitative study, the descriptive research design was adopted to evaluate how Sesame Seed Export, Cashew Export, Cocoa Beans Export, Exchange Rate and Agricultural Commodity Export have contributed to the Gross Fixed Capital Formation and Real Gross Domestic Product of the Nigerian economy from 2009 to 2018 (that is, ten years' span).

On the contributions to the growth of Real Gross Domestic Product (RGDP), this study noticed that about 90 per cent of the growth of the Nigerian economy was a result of the contributions of Sesame Seed Export (SSX), Agricultural Commodity Exports (AGEX), Cocoa Beans Export (CBX) and Exchange Rate (ER). The employed model proves that Sesame Seed Export (SSX), Exchange Rate (ER) and Real Gross Domestic Product (RGDP) have a positive linkage, whereas a negative relationship is found between Agricultural Commodity Exports (AGEX), Cocoa Beans Export (CBX) and Real Gross Domestic Product (RGDP). In the same vein, this study noted at about 83 per cent of the growth of Gross Fixed Capital Formation in Nigeria as a result of the contributions of the Agricultural Commodity Export and Exchange Rate (ER). The employed model proves that Agricultural Commodity Export (AGEX), Exchange Rate (ER)) and Gross Fixed Capital Formation (GFCF) have a positive relationship.

The findings from this research showcase the need for the government and individuals to support and invest more in Nigeria are the agricultural sector. Although the sector has been somewhat primitive and undeveloped, the growth in the sector has contributed greatly to the economic growth and development of the nation. Developing Nigeria's agricultural sector will undoubtedly require enough funding as earlier stated in this study. To develop Nigeria's agricultural sector, the government can target development policies and disbursement of investment funds, basically focusing on the development of the agricultural sector. Also, in order not to neglect the potential of other subsectors of agriculture. Thus, emphasis must be on developing all the subsectors- including livestock production, fishery and forestry; and strengthening their linkages to other sectors of the economy through value-chain development. This will create more employment opportunities and generate additional income, which in turn will encourage exportation.

5.2 Conclusions

In recent times, there has been increasing pressure to increase investment in agriculture due to the need to reduce the overdependence on oil exportation. One of the benefits of agricultural development is ensuring poverty alleviation and increasing the economic growth of the nation thereby providing employment opportunities and food security. The agricultural sector's aim of food production, provision of resources for other sectors, creation of a viable market and domestic savings gives credit to its benefits in the growth of the economy. Also, Nigeria's endowments of natural agricultural production factors such as extensive water, arable land

capital and human resources highlight the potential for the export of agricultural commodities in the transformation of the economy.

In the existing view of the controversy among developed economies on the roles of agriculture as a precondition for trade liberalization, economic growth and industrialization. This study evaluated the contributions of Sesame Seed Export, Cocoa Beans Export, Exchange Rate and Agricultural Commodity Export to Gross Fixed Capital Formation and Real Gross Domestic Product of the Nigerian economy from 2009 to 2018.

The study found that there is no significant relationship between agricultural commodity exports and Nigeria's gross domestic product. Also, this study found a significant effect of Sesame Seeds Export and Raw Cocoa Beans Export on Nigeria's Gross Domestic Product within the time frame used for the study. Lastly, this research revealed that Agricultural Commodity Export and Gross Fixed Capital Formation in Nigeria have no relationship. This could be because of the lack of investment in the sector which is responsible for the slow growth experienced in Nigeria's agriculture.

5.3 Recommendations

Nigeria is known as a developing nation and strived for agrarian activities that are agricultural production. Considering the performance of agricultural commodity exports as revealed by the results of the study, the following recommendations are made:

1. The findings of this study showed a positive and significant relationship existing between Sesame Seed Export and Real GDP. To further improve this, the FGN (Federal Government of Nigeria) through the Federal Ministry of Agriculture should support the participation of the private sector in the agricultural industry to increase total output and also look beyond the production for national use to increase the exportation of the produce.

2. Also, in this study, raw cocoa beans export had a significant effect on Nigeria's Gross Domestic Product. This has shown the contributions of raw cocoa export to national development. In this, the Federal Government of Nigeria should encourage farmers to form cooperatives so that they could be open to loan schemes which will go a long way to increase productivity. Also, the government should finance research activities on improving the quality of cocoa beans produced and shipped abroad as such making up for its value addition to boost exports.

3. The findings of this research revealed an insignificant relationship between Agricultural Commodity Export and Gross Fixed Capital Formation in Nigeria. To boost the contributions of other agricultural commodities, the government should put in place policies to stimulate the production of other agricultural commodities through financial aid given to farmers, intensive research on improvement of quality of production, organization of seminars comprising of all participants (the producers, exporters, industries who use them as raw material and other stakeholders). Besides, there is an urgent need of rehabilitating ageing agricultural farms in Nigeria. Government should fashion out policies in this regard.

4. It is also necessary to explore policy options such as monetary policy by influencing interest rates to further promote fair interest on the loan to farmers for the production of export crops to expand exports generally, and agricultural exports, in particular.

5. Also, the government should lift tariffs on the importation of production equipment and other goods meant to accelerate agricultural output in Nigeria. By this, domestic prices (i.e. inflation rate) and the cost of producing agricultural products will be controlled and brought to the barest minimum.

6. Government should articulate monetary policies that make naira exchange rates be favourably influenced to encourage cheaper import prices of the necessary agricultural inputs which cannot be produced locally.

7. More so, adding value to our primary export commodities (such as cocoa and rubber) is important because it will not only command higher export prices but will enhance patronage in the international market.

8. From the proof gotten from this research, it is also recommended that the connections that agricultural sectors have with other sectors of the economy be made stronger to increase the effect of the export of agricultural commodities on growth across the sectors. An increase in productivity and the development of the agricultural value chain can be used to achieve this.

5.4 Areas for Further Studies

Having evaluated the linkage between selected agricultural commodity export and Nigeria's Gross Domestic Product with a special focus on Sesame Seed Export, Cashew Export, Cocoa Beans Export, Exchange Rate, Agricultural Commodity Export, Gross Fixed Capital Formation and Real Gross Domestic Product of the Nigerian economy from 2009 to 2018, further studies should look at the contributions of the exportation through both crop production and livestock to the development and growth of the Nigerian economy.

Also, a long-run relationship of the variables should be considered as this will show the future forecast of agricultural commodity export in many years to come.

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