# Impact of Agricultural Export on Inclusive Growth in Nigeria

Ibrahim, Taofik

Department of Economics, Ahmadu Bello University, Zaria, Kaduna, Nigeria.

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# IMPACT OF AGRICULTURAL EXPORT ON INCLUSIVE GROWTH IN NIGERIA

**Taofik Mohammed IBRAHIM**
Department of Economics, Ahmadu Bello University, Zaria, Kaduna, Nigeria.
E-mail: imohfik@gmail.com

**Abstract**
*The importance of the agricultural sector cannot be over emphasized as agriculture does not only serve the purpose of meeting a country's food needs but also serves as a source of revenue. Before the discovery of crude oil, Nigeria was the largest net exporter of agriculture product being a major source of government revenue at the time. However, successive administration's neglect of the sector and failure to diversify the economy have inhibited broad-based growth. This paper therefore examined the impact of agricultural export on inclusive growth (measured by per capita income) in Nigeria from 1981-2014 utilizing the Dynamic Ordinary Least Square (DOLS) estimation technique proposed by Stock and Watson (1993). This approach accounts for present and past effects of agricultural export on inclusive growth. The results of the paper reveal that agriculture export, gross fixed capital formation, real interest rate and government total expenditure had positive effect on per capita income (measure of inclusive growth). However, the size of the impact of agriculture export was relatively small, indicating that more needs to be done to make agriculture impact meaningful in the economy. From the findings, the study recommend suitable policy to boost agricultural output which would invariably increase agricultural export commodities leading to an increase in revenue generation which trickles down to inclusive growth.*

Keywords: **Agricultural export, Inclusive growth, per capita income, Cointegration, Dynamic OLS.**

## 1. Introduction

Agriculture is of key importance to the growth and development of a nation. The importance of the agricultural sector cannot be over emphasized as agriculture does not serve only the purpose of providing the country with its food supplies but also a source of revenue generation for the state. Agricultural activities carried out both at the micro and macro levels, have a multiplier effect on a nations socio-economic and industrial development.

Nigeria is primarily agrarian with its abundant land and resources. Despite the rapid growth of the oil industry over the years, agriculture accounted for 40% of GDP and provided employment (both formal and informal) for about 60% of the nations over 170million people. The country's agriculture remains largely subsistence based with 80% of agricultural output coming from rural farmers living on less than one dollar per day; earned from farming less than a hectare (2.47 acres). The nation has diverse agro-ecological conditions that can support a variety of farming models, to create its own green revolution. However, successive

administrations neglected agriculture over the years and failed to diversify the economy away from our dependence on capital intensive, oil sector. Before the emergence of oil, Nigeria was the largest net exporter of agricultural product and a major source of revenue. The country has the potential to go back to its previous position if adequate attention is given to agricultural policies (David, 2011).

Agriculture is tied to various sectors of the economy and is essential for generating broad-based growth and development as it still accounts for significant share in Gross Domestic Product (GDP; total labour force (Jimaza and Sani, 2003). In 2001, agriculture was about 41% of GDP with some 6% of the workforce employed in agriculture predominantly small holds. Nigeria has a total land area of 98.3million hectares. About 48% of the cultivable area are actually being cultivated and only less than 1% of the arable land is irrigated. In the 1950s and 1960s, agriculture accounted for 60-70 percent of total exports. The state was then a major exporter of cocoa, cotton, palm oil, palm kernel, groundnuts and rubber. An annual growth rate of 3-4 percent was achieved for agricultural export and food crops. Government revenue depended heavily on agricultural exports taxes, and both the current account and fiscal balances depended to some extent on agriculture from 1970-1974.

From the mid-1970s to the mid-1980s, the average annual growth rate of agricultural exports declined by 17% and by 1996, agriculture accounted for only 2% of exports. As agricultural export shrank from the traditional 12-15 commodities of the 1960s, the country became a net importer of some commodities it formerly exported. Also, the market for the nations agricultural exports did not increase appreciably as roughly all of it still goes to the European Union and almost all its primary terms without any appreciable value addition (Daramola, 2004). The major cause of the decline in agricultural export was the oil price shocks of 1973-1974 and 1979, which resulted in large inflows of revenue and neglect of the agricultural sector. The consequences of this phenomena owing to the reduced competitiveness of agriculture was that, the nation began to import some of those agricultural products formerly exported and other food crops that it had been self-sufficient.

Agricultural export has played a vital role in economic development by providing the inflow of foreign resources needed for other capital development projects. According to Ekpo and Egwaikhide (1994), agricultural export commodities contributed well over 75% of total annual merchandise exports in the 1960s. Nigeria was the largest exporter of palm oil and

palm kernel, ranked second to Ghana in cocoa and rated third in groundnut. The relationship between agricultural export and growth in Nigeria have been fluctuating over the years. Available statistics shows that agricultural performance was impressive in the 1970s, before declining at an annual average of 2.2% between 1971 and 1979 (Yaqub, 2010). From 1980-1994, agricultural export was stagnant as crops exported were now being imported into the economy. Between 1995 and 2001, there was a slight increase in agricultural export as certain policies like Family Support Programme/Family Economic Advancement Programme (FEAP) 1996, Agricultural and Rural Transformation Programme (ARTP) 2000, were put in place to revive agricultural export activities. Other agricultural policy reforms were undertaken and they were successful just as recent data on agricultural productivity reveals that, agricultural output has been on the increase, where it recorded 208.4 in 2007, 222.0 in 2008 and also appreciated from 237.1 in 2009 to 250.6 in 2010 and then to 264.08 in 2011 and also appreciated further to 274.9 in 2012.

Agricultural export contributions to GDP has been affected by a lot; Nigeria's dependence on oil neglecting other sectors of the economy which could contribute positively when combined with agricultural sector to the growth and development of the economy. Also the poor performance of agriculture was caused by various factors amongst which were inadequate mechanization of agriculture, tardiness in the supply and distribution of fertilizers and other farming inputs, pest and diseases as well as the outbreak of cassava mosaic disease in some southern states (CBN, 2012) which greatly affected the export of agricultural products since exportation is dependent on the volume of productivity thereby transforming Nigeria from a net exporter of agricultural products to a large-scale importer of the same products. This was marked particularly during 1973-1982. Also, an increase in agricultural export followed by no significant contributions to GDP, the increase to GDP would be very minimal and most time negligible. All these fluctuations in agricultural exports must have translated to some effect on growth (GDP).

Considering the present argument in the literature that for growth to be meaningful it must be inclusive. Growth is said to be inclusive if an increase in the capacity of an economy to produce goods and services compared from one period of time to another brings about a reduction in poverty level, lower unemployment rate and reduced inequality in income distribution. Therefore, it is important to analyze the impact of agricultural export on measures of inclusive growth rather than growth rate of GDP. Based on the aforementioned

issues, this paper deviate from other studies by examining the impact of agricultural export on inclusive growth (measured by per capita income) in Nigeria from 1981-2014 using Stock and Watson (1993) proposed Dynamic Ordinary Least Square (DOLS) estimation technique that accounts for present and past effect of agricultural export on per capita income as a measure of inclusive growth. The rest of the paper is organized as follows: Literature review is provided in section 2. Section 3 explains the theoretical framework, methodology and data used. Section 4 is the empirical results while section 5 concludes the paper.

## 2. Literature Review

The relationship between agricultural export and growth (GDP) in a nation has drawn the attention of many of whom we have economists, scholars, policy makers, researchers and academicians to mention only a few. This topic has caused a lot of debate over the years. Some Scholars argued that an increase in the rate of agricultural export is followed by a significant and notable increase in GDP owing to a rise in revenue generated in the state. The revenue generated is then allocated into other productive activities in the economy which results to a significant increase in GDP. While others argue that an increase or decrease in agricultural export leaves GDP unchanged. That is, a significant growth in agricultural export does not necessarily translate into a significant growth of GDP. And others viewed the relationship between agricultural export and economic growth from both the negative and positive sides owing to long-run and short-run effects.

Various studies have been carried out by different researchers to ascertain the relationship between agricultural export and growth and they all came up with various conclusions as to the relationship between agricultural export and growth.

For instance, Dawson (2005) observed the contribution of agricultural exports to economic growth in least developed countries using panel data of 62 LDCs for the period 1974–1995. The results of the study provides evidence that supports export-led growth theory for the 62 less developed countries considered in the study. The paper concluded that agricultural export plays important role in economic development of most of the LDCs considered in the study.

Using co-integration and error-correction models, Francis, et al, (2007) worked on agricultural export diversification and economic growth in Caribbean countries for the period 1961 to 2000. The results of the study reveal that agricultural export diversification impacted

on economic growth in short run for Barbados and Belize while for countries like Belize, Costa Rica, Haiti, and Jamaica, agricultural export impacted on growth in the long-run. The results also show that non-causality relationship exists for Trinidad and Tobago. Based on these findings, in the face of an outward oriented trade strategy adopted by most Caribbean countries, export-growth linkage still holds.

Sanjuan-Lopez and Dawson (2010) examined the effect of agriculture exports on economic growth in forty two developing countries using panel co-integration technique. The paper disaggregate export into agricultural and non-agricultural exports. The results of the study reveal that in general, agricultural and non-agricultural exports granger-cause growth (Gross domestic product) in most developing countries. The results also reveal a long run relationship between agricultural export and growth; and non-agricultural export and growth which is in support of the export-led growth hypothesis. The authors concluded that poor countries should adopt a balanced export-promotion polices while higher income earning countries should promote non-agricultural exports in order to achieve higher economic growth and development.

Ehinomen and Daniel (2012) examined export and economic growth nexus in Nigeria from (1970-2010) using Granger causality test and Autoregressive Distributed Lag (ARDL). The study found that there exist a long-run relationship between export and economic growth in Nigeria. They concluded that there is a causal relationship between export and economic growth that runs from agricultural export to economic growth.

Faridi (2012) examined the contribution of agricultural exports to economic growth in Pakistan from (1972-2008) using Johansen Co-integration and Granger Causality test. The study found that agricultural exports have negative and significant effect on economic growth. The study concludes that agricultural exports have no effect on economic growth.

Mehdi and Shahiyar (2012) examined the effect of export growth on economic growth in Iran using (OLS). The study found that all variables coefficients are significant and their marks conform to theoretical debates. They concluded that a positive relationship exists between agricultural exports and economic growth that runs from agricultural export to economic growth.

Gbaiye et al., (2013) investigated the relationship between agricultural exports and economic growth in Nigeria from (1980-2010) using Johansen maximum likelihood test of co-integration. The study found that a long-run relationship exists between agricultural exports and economic growth and the relationship is elastic in nature such that a unit increase in agricultural exports leads to a more than proportionate increase in real gross domestic product in Nigeria. They concluded that there is co-integration relationship between agricultural export and economic growth.

Gilbert, Linyoung and Divine (2013) examined the impact of agricultural export on economic growth in Cameroon: Case of Banana, Coffee and Cocoa from (1976-2009) using (OLS), Engle and Granger (1987) test and Johansen (1988) co-integration test (VECM). They found that agricultural exports have mixed effect on economic growth in Cameroon, Coffee export and banana export has a positive and significant effect on economic growth. On the other hand, Cocoa export was found to have a negative and insignificant effect on economic growth. They concluded that agricultural exports have mixed effect on economic growth.
Khan and Lodhi (2014) studied the nexus between agricultural raw material exports, trade openness and economic growth of Pakistan from (1980-2013) using Johansen Co-integration test. The study found a long-run association in the model. They concluded that agricultural exports have a positive impact on GDP (economic growth).

Ekiran, Awe and Ogunjobi (2014) carried out a study on the impact of agricultural export and economic growth in Nigeria from (1980-2012) using Johansen co-integration technique. The study found that agricultural export, agricultural output, net capital flow and world price of Nigeria's major agricultural commodities are long-run determinants of economic expansion in Nigeria and concluded that there was co-integration relationship between agricultural export and economic growth during the study period in Nigeria.

Ali Shah, Abrar ul haq and Adeel-Farooq (2015) carried out a research on the link between agricultural export and economic growth in Pakistan from (1972-2008) using Johansen co-integration technique Granger causality test and (OLS). The study found that agricultural exports have a negative relationship with economic growth of Pakistan while non-agricultural exports have a positive relationship. They concluded that there is an inverse relationship between agricultural export and economic growth.

Bulagi, Hlongwane and Belete (2015) examined the causality relationship between agricultural exports and agricultures share of gross domestic product in South Africa: A case study of avocado, apple, mango and orange from (1981-2014) using Granger causality test. The study found a unidirectional causality between exports and GDP. They concluded that a positive relationship exists between agricultural exports and economic growth.

Njimanted and Aquilas (2015) studied the impact of timber exports on economic growth in Cameroon: An econometric investigation from (1980-2014) using Johansen Co-integration test. The study found that timber export have an insignificant effect on economic growth of Cameroon in the short-run and in the long-run, it has a significant positive effect. They concluded that timber has both positive and negative effect on economic growth in the long-run and short- run respectively.

Gutema, Lagat, Daba and Mabeta (2015) studied the causal relationship between agricultural exports and economic growth in Ethiopia: A case study of coffee, oil seed and pulses from (1973-2013) using Granger causality test and Johansen Co-integration test. The study found that a long-run relationship exist between the GDP and agricultural exports, there is a bidirectional relationship between coffee export, oil seed export and economic growth and a unidirectional relationship between pulses export and economic growth (GDP). They concluded that a long-run relationship exist between economic growth and agricultural exports.

Ijirsha (2015) carried out empirical analysis on the effect agricultural exports on economic growth in Nigeria from (1970-2012) using Granger Causality test and Johansen Co-integration test. The study found that a long-run equilibrium relationship exists among the variables. The study concludes that agricultural export has a positive effect on economic growth in Nigeria.

Oluwatoyesse, Applanaidu and Abdulrazak (2016) examined agricultural export, oil export and economic growth in Nigeria: Multivariate Co-integration approach from (1981-2014) using Granger causality test and Multivariate Co-integration test. The study found that a significant relationship exist between economic growth and the agricultural export and oil export. They concluded that GDP, agricultural and oil exports are co-integrated.

Summarily, the above review of previous studies showed an inconclusive result. Most studies revealed a positive relationship between agricultural export and economic growth, other studies found a negative relationship between agricultural exports and economic growth while some established a mixed relationship between agricultural exports and economic growth which was negative in the short-run and positive in the long-run. This difference in results may be attributed to the fact that some studies focused on the export of specific commodities such as cocoa, coffee, oil seed, pulses, banana, avocado, apple, mango etc. Another plausibly reason that the results obtainable by different studies could be sensitive to the nature of the data utilized as well as the estimation technique adopted for the studies.

## 3. Theoretical framework and Methodology

In order to examine the impact of agricultural exports on economic growth, the supply side perspective on growth is considered in the theoretical framework. Therefore, the starting point of this study is neo-classical growth model developed by Solow (1957). The model state that production function is specified in terms of labour and capital as its traditional inputs.

$$Y_t = f(L, K) \tag{1}$$

Where Y is gross domestic product, L is labour and K is capital.

Equation (1) is augmented to include agricultural export which is a major source of revenue in the economy and it has implications on growth in the economy. A consistent increase in agricultural export will lead to a rise in revenue generated in the state. A rise in revenue generated will in turn lead to investment in the development of other capital projects which trickles down to per capita income, employment, growth and development in the economy as a whole.

$$Y_t = f(L, K, AEXP) \tag{2}$$

Where AEXP is agricultural export while other variables retain their earlier definitions.

In order to account for the impact of agricultural export on inclusive growth, Y in equation 2 is divided by population to derive the per capita income.

$$y = f(L, K, AEXP) \tag{3}$$

Where y is per capita income while other variables retain their earlier definitions.

From equation 3, capital (K) is proxy by gross fixed capital formation while Labour (L) is proxy by the total employed labour. Therefore, equation 3 is rewritten as:

$$pci = f(emp, gfcf, a\exp, \phi) \quad (4)$$

Where pci is per capita income; labf is total labour force; gfcf is gross fixed capital formation; aexp is agricultural export; $\phi$ are control variables like real interest rate and government expenditure that has direct link with per capita income. Thus equation 4 becomes:

$$pci = f(emp, gfcf, a\exp, ri, g\exp) \quad (5)$$

Where ri is real interest rate and gexp is government expenditure while other variables retain their earlier definitions.

From equation 5, a long run specification is adopted to show the long-run impact of agricultural export on per capita income. This specification is consistent with the conventional maximizing method when there is constrain in satisfying the usual homogeneity and adding up restriction.

$$\log(pci) = \alpha_0 + \alpha_1 \log(emp) + \alpha_2 \log(gfcf) + \alpha_3 \log(a\exp) + \alpha_4 \log(ri) + \alpha_5 \log(g\exp) + \varepsilon_t \quad (6)$$

Where $\alpha_0$, $\alpha_1$, $\alpha_2$, $\alpha_3$, $\alpha_4$ and $\alpha_5$ are parameters to be estimated. $\varepsilon_t$ is an error term assumed to be iid (0, $\delta^2$). Other variables retain their earlier definitions.

In order to avoid spurious regression, current time series econometric practice involve the determination of the stationary properties of the data. This is because the classical regression properties holds when variables are stationary {integrated of order zero, I(0)}. However, in most cases, economic variables are likely to be integrated of order one I(1). This implies that for a long run relationship to exist among these variables, the linear combination of I(1) variables is likely to be stationary I(0).

In carrying out this linear combination, two approaches has been mostly adopted in the literature. These are; the single equation method and the Johansen maximum likelihood procedure which is an improvement over the single equation approach. These two procedures have been criticized for their inability to address issues related to misspecification, endogeneity and serial correlated errors.

An alternative approach, which certainly have more advantage over both the single equation and Johansen maximum likelihood procedures is adopted for this study. This approach was proposed by Stock and Watson, (1993). This approach improves on others by correcting for regressors endogeneity by including leads and lags of first differences of the regressors and also used the GLS procedure to correct for plausible serial correlation among the errors. In addition, the Stock-Watson method has asymptotic optimality properties like the Johansen procedure.

$$pci = X_t M' + \sum_{i=-m}^{i=m} \varphi_i \Delta emp_{t-i} + \sum_{i=-n}^{i=n} \phi_i \Delta gfcf_{t-i} + \sum_{i=-o}^{i=o} \kappa_i \Delta a\exp_{t-i} + \sum_{i=-p}^{i=p} \pi_i \Delta ri_{t-i} + \sum_{i=-q}^{i=q} \Psi_i \Delta g\exp_{t-i} + \varepsilon_t \qquad (7)$$

Where M = [c, α, β, γ, λ], X = [1, emp, gfcf, aexp, ri, gexp] and m, n, o, p and q are the lengths of leads and lags of the regressors.

The annual time series data used in this study relate to the period 1981 to 2014 and were collected from the Central Bank of Nigeria Statistical Bulletin (2014) and National Bureau of Statistics' Annual Abstracts (2014). The variables of interest are: per capita income, total employed labour, gross fixed capital formation, agricultural export, real interest rate and total government expenditure.

## 4.0 Empirical Results

### 4.1 Unit root Test

The Augmented Dickey-Fuller test was used to test for unit roots and results are presented in table 1. The Akaike information Criterion (AIC) was used to select the order of augmentation. From table 1, it is clear that none of the variables are stationary at levels. The first difference of LOGPCI, LOGEMP, LOGGFCF, LOGAEXP, LOGRI and LOGGEXP are stationary.

**Table 1: Stationarity Test Result**

| Variables | Levels | | First Differences | |
|---|---|---|---|---|
| | ADF 1 | ADF 2 | ADF 1 | ADF 2 |
| LOGPCI | 0.198 | -1.085 | -4.259* | -4.699* |
| LOGEMP | -0.546 | -1.163 | -6.406* | -6.316* |
| LOGGFCF | 0.132 | -1.002 | -3.027** | -4.297* |
| LOGAEXP | -1.105 | -1.114 | -8.549* | -8.615* |
| LOGRI | -1.821 | -1.289 | -4.180* | -4.574* |
| LOGGEXP | -1.411 | -0.067 | -5.314* | -5.782* |

SOURCE: Author's Computation

*NOTE: ADF 1 includes a constant and ADF 2 includes a constant and a trend in the test regression as exogenous. Akaike Information Criterion was used to select lags automatically. * denotes significance at all levels (1%, 5% and 10%), ** denotes significance at either 1% or 5% or 10%.*

### 4.2. Cointegration Test

Based on the unit root test, the next, is the cointegration test to ascertain if the series (LOGPCI, LOGEMP, LOGGFCF, LOGAEXP, LOGRI and LOGGEXP) have a long run relationship since the linear combination of I(1) series will give an I(0) series. To achieve this, the Johansen and Juselius (1990) cointegration method is adopted in this study. This approach involves first determine the optimal lag length based on five different information criteria i.e. Akaike Information Criterion (AIC), Schwarz Information Criterion (SIC), Hannan-Quinn Information Criterion (HQ), Final Prediction Error (FPE) and Sequential modified LR test statistic (LR). The result presented table 2 suggest the optimal lag length as 1 for AIC, SC and HQ while LR and FPE suggest 2. Considering that SC penalize degree of freedom more than the order information criteria, 1 is selected as the optimal lag length in this study.

**Table 2: VAR Lag Order Selection Criteria**

| Criteria/Lag Length | 0 | 1 | 2 |
|---|---|---|---|
| Sequential Modified Test Statistic (LR) | Not Available | 249.07 | 51.57* |
| Final Prediction Error (FPE) | 2.09 | 1.07 | 8.68* |
| Akaike Information Criterion (AIC) | 4.04 | -3.67* | -4.14 |

| | | | |
|---|---|---|---|
| Schwarz Information Criterion (SC) | 4.32 | -1.75* | -0.56 |
| Hannan-Quinn Information Criterion (HQ) | 4.13 | -3.03* | -2..95 |
| Note: * indicates lag order selected by the criterion. | | | |

**Table 3: Test Results for Cointegration between Pairs of Variables**

| | **Trace Test** | | | **K=1** | **Maximum Eigenvalues** | | | **K=1** | |
|---|---|---|---|---|---|---|---|---|---|
| Equation | $H_o$ | $H_A$ | Trace Statistics | 5% Critical Values | $H_o$ | $H_A$ | Max-Eigen Statistic | 5% Critical Values | No of Cointegrating Equation |
| Equation (6) | R=0*<br>R≤1*<br>R≤2*<br>R≤3*<br>R≤4*<br>R≤5 | R=0<br>R=1<br>R=2<br>R=3<br>R=4<br>R=5 | 100.53<br>65.44<br>40.51<br>24.28<br>12.32<br>3.08 | 83.94<br>60.06<br>40.18<br>19.16<br>6.28<br>4.12 | R=0*<br>R≤1*<br>R≤2*<br>R≤3*<br>R≤4*<br>R≤5 | R=0<br>R=1<br>R=2<br>R=3<br>R=4<br>R=5 | 36.63<br>30.44<br>24.16<br>17.79<br>11.22<br>4.61 | 35.12<br>24.93<br>21.35<br>12.88<br>5.97<br>5.13 | 5 |

*R is the number of cointegrating vectors*

Cointegration test presented in table 3 suggest that the variables of interest are cointrgrated mwaning there exist a long run relationship among the per capita (LOGPCI), total employed labour (LOGEMP), gross fixed capital formation (LOGGFCF), agricultural export (LOGAEXP), real interest rate (LOGRI) and total government expenditure (LOGGEXP).

### 4.3. Stock-Watson Dynamic OLS Estimates

The inclusive growth (measured by per capita income) equation presented in table 4 was estimated including fixed 1 lead and 1 lag. The long-run agricultural export elasticity is found to be 0.017; gross fixed capital formation elasticity is 0.053; real interest rate elasticity is -0.029; government expenditure elasticity is 0.107; and total employed labour elasticity is 0.110. Apart from the total employed labour elasticity, which has the expected apriori sign buy is insignificant, all other elasticities have the right sign and are statistically significant. This result implies that a 1% increase in agricultural export bring about 1.7% increase in per capita income which is the measure of inclusive growth in this study.

**Table 4: Stock-Watson Dynamic OLS Result**

| Variable | Dependent Variable: Y (per capita GDP) | |
|---|---|---|
| | Coefficient | t-statistic |
| Constant | 13.817 | 6.535* |
| LOGEMP | 0.110 | 0.499 |
| LOGGFCF | 0.053 | 10.313* |

| | | |
|---|---|---|
| LOGAEXP | 0.017 | 1.982*** |
| LOGRI | -0.029 | -2.477** |
| LOGGEXP | 0.107 | 4.841* |
| $R^2$ | 0.73 | |
| Adj $R^2$ | 0.71 | |
| Durbin Watson | 2.134 | |

***Note: *, ** and *** depict significance at the 10%, 5% and 1% levels respectively***

## 5. Conclusion

This study is an empirical investigation of the impact of agricultural export on inclusive growth (measured by per capita income). The study made use of Stock-Watson dynamic OLS (DOLS) estimation technique to examine the long run relationship between agricultural export and per capita income, and also account for plausibility of misspecification, endogeneity and serial correlated errors.

The estimated results revealed that agricultural export, gross fixed capital formation (proxy for capital), real interest rate and government total expenditure have had a positive and statically significant effect on per capita income which is the measure of inclusive growth. Although the impact is relatively small, it suggests that changes in per capita income is accounted for by increase in agricultural export. The positive but significant impact total labour employed further reveal the inability of the economy to create jobs. The study therefore recommends the following: government should boast and encourage agriculture by providing enough incentives such as establishment of agricultural funds to finance and facilitate medium scale agricultural production; and harmonize agricultural research institutions as it is widely accepted that research and technology are the vehicles on which agricultural development can be improved.

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