Assessment of Various Policy Regimes towards Agricultural Export Growth in Nigeria

S. C. Udah[1,2], I. N. Nwachukwu[3*], A. C. Nwosu[4] and J. A. Mbanasor[3]

[1]Department of Agricultural Economics and Extension, Abia State University, Abia State, Nigeria.
[2]Division of Resource Management, West Virginia University, Morgantown, West Virginia, USA.
[3]Department of Agribusiness and Management, Michael Okpara University of Agriculture, Umudike Abia State, Nigeria.
[4]Department of Agricultural Economics, Michael Okpara University of Agriculture, Umudike Abia State, Nigeria.

Authors' contributions

Article Information

Original Research Article

ABSTRACT

The performance of the agricultural export in Nigeria has been decimally, declining from 75 percent in 1960 to 1.63 percent in 2010. In response to this scenario, this study assessed the performance of various policy regimes that managed the resources of Nigeria from 1961 to 2010. This is with the goal of identifying the regime that is the best in growing the agricultural export sector for recommendation. The study estimated the exponential trend of the agricultural export and analyzed such growth under different policy regimes. Time series data were used. Data analysis involved the use of exponential or log-linear trend. The result of the trend analysis showed that Nigeria's agricultural export did not fare well under the policy regimes except during structural adjustment

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Corresponding author: E-mail: christdliberator@yahoo.com;

(1986 – 1994) and liberalization (1995 – 2010) where acceleration was recorded in the short run. However, structural adjustment policy regime manifested positive characteristics which indicated that it has the best structure, among other regimes, in growing Nigerian agricultural export. The study advocated for policy of accelerated investment in public goods that supports agricultural production and marketing. This policy could be made possible through instituting Agricultural Trust Fund (akin to Educational Trust Fund) where certain percentage of proceeds from oil is saved towards agricultural development. This can be used to fund human capital development in agriculture, rural infrastructure, irrigation and power supply. The study further recommended a revisit of the Bretton Woods supported Structural Adjustment Program (SAP) with caution.

1. BACKGROUND TO THE STUDY

Agricultural export is a direct indicator of agricultural GDP growth. Its importance cannot be overemphasized. Available statistics indicate that in 1960, agricultural export commodities contributed well over 75% of total annual merchandise exports [1]. Nigeria was previously the largest exporter of palm oil and palm kernel, ranked second to Ghana in cocoa and occupied a third position in groundnut [2]. At present however, Nigeria has lost its role as one of the world's leading producer and exporters of agricultural commodities. This is evidenced from the fact that agricultural export as a share of total export has fallen to 1.63 percent in 2010. This is from a fall of 75 percent in 1960 to 2.77 percent in 1979 and 1.81 percent in 1981[3-5]. Nigeria has experienced four policy regimes since independence [2,6]. The period of 1961-1970 was characterized by diversification of resources to other sectors other than agriculture. The period of 1970-1985 was characterized by restrictive or regulated economic policy. It witnessed more direct government intervention in agriculture in the face of the noticeable decline in agriculture performance. For example, marketing board was established to handle agricultural produce.

The third period, 1986-1994, was structural adjustment which became a forerunner to the liberalization of Nigerian agricultural sector. It marked the beginning of a deregulated economy. Exchange rate deregulation was the major policy instrument. The last and current period, 1995-2010 was liberalization policy. The three documents that clearly spell out Nigeria's vision for agricultural development in this regime, especially when the civilian administration took over in 1999, are the National Economic Empowerment Development Strategy (NEEDS),

National Agricultural Policy (NAP) and Rural Sector Strategy (RSS), 2004. The overall strategic objective of the NEEDS and NAP is to diversify the productive base from oil and to promote market-oriented and private sector-driven economic development with strong local participation [7].

The Nigerian civilian government that commenced towards the end of 1990's also initiated many national and international projects, programs, and policies aimed at rapid agricultural growth. These include the implementation of the Comprehensive Africa Agriculture Development Program (CAADP), the National Food Security Program (NFSP) and the Agriculture 5-point Agenda [7].

Recent developments, therefore, suggests that Nigeria's greatest desire is to carry out economic transformation and increase economic growth by reviving and restructuring her neglected agricultural sector. To formulate strategies for achieving sustained production and rapid growth necessary for poverty eradication, relevant information is absolutely necessary [8]. This study therefore evaluated the performance of the various regimes with the aim of determining which regime contributed more to agricultural export growth. This would lead to adoption of appropriate policies instrument that might result in higher growth rates.

1.1 Statement of the Problem

Structural adjustment programme (SAP) was launched in1986 to redefine the state of the economy of Nigeria with the main aim of reversing the downward trend of the agricultural sector. The sector was deregulated by abolishing marketing board, eliminating price control, privatization of public enterprise, the devaluation

of naira to aid the competitiveness of the export sector [9].

Before SAP was introduced, Nigeria economy was characterized by a weak economic structure. This was as a result of frequent changes in economic and financial policies, bad implementation of gigantic agricultural projects, rise in food importation, fall in oil price, increase in foreign debt, and others. Despite the adoption of development plans, the economy behaved sluggishly and population grew by leaps and bounds unchecked, with Nigeria having one of the highest growth rates in the world (3-5.5%) [10].

Various policy regimes in Nigeria had launched Agricultural policies and programmes to boost food production. Some of them are: National Accelerated Food Production Programme (NAFPP), launched in 1972; Operation Feed the Nation, launched in 1976; River Basin and Rural Development Authorities, established in 1976; the promulgation of a Land Use Decree in 1978 which nationalized all land, and established new Commodity Board; Green Revolution Programme, inaugurated in 1980.

When SAP policies were executed as intended by the IMF, the Nigerian economy actually did grow as was expected. The growth manifested between 1986 and 1988, with the export sector performing especially well. However, the falling real wages in the public sector did not augur well amongst the urban classes. Drastic reduction in expenditure on public services also became problematic. These situations set off waves of rioting and other manifestations of discontent that made sustained commitment to the SAP difficult to maintain [10].

Despite all these efforts by various policy regimes, the Nigerian agricultural export as a share of total export has fallen to 1.63 percent in 2010. This is from a fall of 75 percent in 1960 to 2.77 percent in 1979 and 1.81 percent in 1981 [11,4,5]. There is therefore a definite need for an appropriate policy instrument for a sustained agricultural export growth in particular and agricultural growth in general.

1.2 Justification of the Study

Agricultural export is a direct indicator of agricultural GDP growth. Its importance cannot be overemphasized. Available statistics indicate that in 1960, agricultural export commodities contributed well over 75% of total annual merchandise exports [1]. Since the sub-sector's performance has a tremendous impact on the overall agricultural sector growth, the result of the study are expected to assist researchers, policy makers, and relevant government agencies to fashion out appropriate policies to improve agricultural export.

For a proper design of growth enhancing policies, policy makers should have better understanding of the best and workable policy instrument. They should know what accounts for variation in different policy instruments and their implementation; including the roles of such factors in agricultural export growth. With the necessary information, policy makers can evaluate and select the best instrument for positive effects on productivity.

Evaluating the various policy regimes to decipher the best instrument for agricultural export growthis an appropriate way of finding where policies can rightly respond to the issues of decimal performance of Nigeria agricultural export. The outcome would therefore assist in gaining better understanding concerning a more beneficial and appropriate public policy.

2. RESEARCH METHODOLOGY

2.1 Study Area

The study was conducted in Nigeria, the most populous country in Africa. The country lies wholly within the tropics along the Gulf of Guinea on the western coast in Sub-Saharan Africa. Nigeria lies between 4° and 14° North of the equator and between longitudes 3° and 15° east of the Greenwich. Nigeria has a total land area of 923,768.622 km or about 98.3 million hectares, and population of 151.874 million people [12]. Nigeria has a highly diversified agro-ecological condition, which makes possible the production of a wide range of agricultural products. Smallholder and traditional farmers who use rudimentary production techniques, with resultant low yields, cultivate most of this land [13].

2.2 Sources of Data

This study relied on the use of aggregate secondary data with a span of 50 years (1961-2010). Time series annual data on agricultural export (Quantity tonnes) were obtained from Food and Agricultural Organization (FAO) statistics by aggregating yearly quantities of

agricultural export commodities. Other information were obtained from Central Bank of Nigeria (CBN) several issues, journals, bulletins, and proceedings.

2.3 Method of Data Analysis

In order to evaluate the performance of various policy regimes towards growth in Nigerian agriculture export, this research adopted linear and quadratic time variables. Linear time variable indicates the circular path in the dependent variable, agricultural export (Quantity tonnes). The quadratic term (t^2) allows for the possibility of acceleration, deceleration or stagnation in growth during the period under study [14,15].

2.4 Model Specification

$$AE = \exp(\beta_0 + \beta_1 t + \xi) \qquad (2.1)$$

Where

AE = Agricultural export (Quantity tonnes),
t = Time trend measured in years;
β_0 = Intercept or constant of the trend equation;
β_1 = Slope or trend coefficient;
ξ = the error term.

If linearized by taking the natural logarithm of both sides, equation (2.1) becomes:

$$lnAE = \beta_0 + \beta_1 t + \xi \qquad (2.2)$$

Where lnAE is the natural logarithm of agricultural export; and all other variables were as previously defined. To ascertain growth pattern, and consequently test the hypothesis of whether there will be acceleration, stagnation or deceleration in growth of agricultural export, the quadratic equation, fitted to the data for the periods covered, is specified as:

$$lnAE = \beta_0 + \beta_1 t + \beta_2 t^2 + e \qquad (2.3)$$

Where the variables lnAE and t are as previously defined, and β_0, β_1 and β_2 are unknown parameters to be estimated. In testing the specified hypothesis in (2.3), If β_2 is positive and statistically significant there is acceleration in growth; if β_2 is negative and statistically significant there is deceleration in growth; if β_2 is positive or negative but not statistically significant there is stagnation in the growth process [15,16,6].

Apriori expectation: $\beta_2 > 0$ and statistically significant.

3. RESULTS AND DISCUSSION

3.1 Agricultural Export Growth Trends under Different Policy Regimes

The estimated trend and quadratic equations for Nigeria's agricultural export for the different policy regimes under consideration are presented in Table 1 and 2 respectively. The former indicates the direction of growth while the later indicates the existence of acceleration, deceleration or stagnation in growth of agricultural export. Each policy regime was analysed.

3.1.1 Policy of economic diversification (1961–1970)

The result of the first policy regime showed that the slope coefficient of the time trend was negative and statistically insignificant indicating stagnation; while the quadratic equations in time variable was negative and statistically significant confirming deceleration. The implication of the result is that the regime experienced decelerated

Table 1. Estimated trend equations for Nigeria's agric. exports 1961-2010

Period	β_0	β_1	R^2	F-value	Sig.
1961-1970 (n=10)	14.10*** (204.23)	-0.01 (-0.60)	0.04	0.36	0.57
1971-1985 (n=15)	13.62*** (109.20)	-0.08*** (-5.48)	0.70	30.00	0.000
1986-1994 (n=9)	12.46*** (93.08)	0.07* (2.95)	0.55	8.70	0.021
1995-2010 (n=16)	13.20*** (207.96)	0.02* (2.76)	0.35	7.61	0.015

Note: ***=significant at 1%;**significant at 5%; t-values are in parentheses; Source: estimate from data (FAOSTAT); 1961–1970= Policy of economic diversification; 1971-1985 = Policy of reconciliation, rehabilitation, reconstruction and stabilization; 1986- 1994= Policy of structural adjustment; 1995-2010 = Policy of liberalization

Table 2. Estimated quadratic equations in time variable for exports 1961-2010

Period	β_0	β_1	β_2	R^2	F-value	Sig
1961-1970 (n=10)	13.85***	0.12**	-0.01**	0.80	14.29	0.001
	(240.55)	(4.80)	(-5.20)			
1971-1985 (n=15)	13.51***	-0.04	-0.00	0.71	14.63	0.505
	(64.70)	(-0.58)	(-0.69)			
1986-1994 (n=9)	12.47***	0.07	0.000	0.55	3.73	0.989
	(49.22)	(0.59)	(0.02)			
1995-2010 (n=15)	13.14***	0.04	-0.00	0.38	3.91	0.498
	(124.69)	(1.31)	(-0.70)			

*Note: Asterisks ***=significant at 1%;**significant at 5%; t-values are in parentheses; Source: estimate from data (FAOSTAT); 1961–1970= Policy of economic diversification; 1971-1985 = Policy of reconciliation, rehabilitation, reconstruction and stabilization; 1986- 1994= Policy of structural adjustment; 1995-2010 = Policy of liberalization*

growth. This could be explained by the policy of diversification embarked by the regime in power. There was conscious effort to develop the industrial sector since agricultural sector dominated the economic activities right from pre independent era.

Ehinomen and Ladino [17] highlighted that during the 1960s and early 1970s, manufacturing activities were positively accelerated and value added per worker was at par with, if not higher than that in other African countries such as Botswana, Ghana and Kenya. During this period, the share of manufacturing in GDP nearly doubled from less than 5 percent to 8 percent and on that trend many people believed that the country was on a path to industrialization.

The path to industrialization led Nigeria to experience unfavourable trade balance from 1960 to 1965, partly because of the aggressive drive to import all kinds of machinery. Between 1960–1970, oil export also grew by 44.6 percent and 31.6 percent respectively while nonoil export showed marginal growth of 1.2 percent and 6.6 percent [18]. This tendency to channel factors of production from agricultural sector to industrial sector might have explained the deceleration in agricultural export which this policy regime experienced.

3.1.2 Policy of reconciliation, rehabilitation, reconstruction and stabilization (1971-1985)

The result of the second policy regime showed that the slope coefficient of the time trend was negative and statistically significant indicating deceleration; while the quadratic equations in time variable was negative and statistically insignificant confirming stagnation. The implication of the result is that this policy regime

experienced stagnated agricultural export growth. This could be explained by the continued marginalization of the agricultural sector amidst fast moving crude oil development. This period was characterized by currency overvaluation partly due to oil boom. This led to Nigerian agricultural exports being uncompetitive in the world market. Factors of production such as land and labour migrated out of the rural agricultural sector to the urban industrial sector. This was because construction, manufacturing and service sectors, booming at the period, were paying higher returns on those factors. The increased migration of able-bodied youths from the rural to urban areas may also have contributed to the problem of stagnation [2,6].

Available data suggests that the government as the major investor in the sector is under funding agricultural sector. The relative expenditure on the sector by government was below 5 per cent between this period-1971 and 1980. The highest recorded expenditure on the sector by government was 12 per cent between 1981 and 1985. This has since declined to less than 5 per cent [19]. Percentage growth rates of agricultural exports in 1971-76 were 11.1 percent while corresponding import was 45.9 percent [20]. By this period also an overvalued exchange rate was making Nigeria commodities uncompetitive in the world market since overvaluation makes export product more expensive. The above situation, coupled with wholesome marginalization of entire agricultural sector that was prevalent at this period, might have explained the deceleration observed in the trend result.

3.1.3 Policy of structural adjustment (1986-1994)

The result of the third policy regime showed that the slope coefficient of the time trend was

positive and statistically significant indicating acceleration; while the quadratic equations in time variable was positive and statistically insignificant confirming stagnation. The implication of the result is that the regime also experienced stagnated growth. This could be explained by the outcome of the performance of the previous regime.

Following the introduction of the Structural Adjustment Programme in 1986, Marketing and/or Commodity Boards were abolished. Their abolition eliminated the implicit tax and occasioned exchange rate depreciation. Although the policy boosted farm output marginally, it was observed that the sector's share in total export earnings did not present a cheerful picture as it barely exceeded 3.2 per cent in 1989. Since then it has remained below 2.5 per cent on an average. In other words, the relative value of aggregate export of agricultural goods declined [19].

This was attributed to two factors--rapid rise in the value and quantity of oil exports and decline in the quantities of agricultural export. The decline in world commodity prices also adversely affected export earnings from agriculture [19]. It should also be noted that the devaluation of the nation's currency at this period was supposed to make the prices of Nigerian commodities cheaper and attract foreign buyers. When SAP policies were executed as intended by the IMF, the Nigerian economy actually did grow as was expected. The growth manifested between 1986 and 1988, with the export sector performing especially well. However, the falling real wages in the public sector did not augur well amongst the urban classes. Drastic reduction in expenditure on public services also became problematic. These situations set off waves of rioting and other manifestations of discontent that made sustained commitment to the SAP difficult to maintain [21].The above reasons might have explained the stagnation observed in the trend result. It is important that urgent action be taken to reverse the poor performance of agricultural export.

3.1.4 Policy of liberalization (1995-2010)

The result of the forth policy regime showed that the slope coefficient of the time trend was positive and statistically significant indicating acceleration; while the quadratic equations in time variable was negative and statistically insignificant confirming stagnation. The implication of the result is that the regime

experienced stagnated growth. This is despite the fact that Nigeria at this period had comparative advantage in the exportation of cocoa [22].

An interesting development with the adoption of SAP was that new products and semi-processed agricultural products entered the nation's nonoil export basket. Marginal improvement in funding was also recorded from 2001 to 2004. Although still grossly under-funded considering the Food and Agricultural Organisation's recommendation, one would expect, given the democratic dispensation that later came, that the agricultural export would improve. On the contrary, its share of total export fell further from 0.91 percent in 1999 to 0.61 percent in 2005 and only rose marginally to 1.63 percent in 2010 [19,4]. This might explain the stagnation observed in the trend analysis. For such a decimal decline of agricultural export, it will take an accelerated investment to counter the problem.

4. SUMMARY OF FINDINGS

This study assessed the performance of various policy regimes towards agricultural growth in Nigeria. The result of the trend and quadratic analysis (Table 1 and 2) confirmed deceleration of the first policy regime (1961–1970). Stagnation was confirmed for the rest of the policy regimes considered. This implied that Nigeria agricultural export did not fare better under any of the policy regime. A closer look, however, showed that while both structural adjustment and liberalization policy regimes manifested positive coefficient in the trend result, only structural adjustment policy regimes showed positive coefficient in the quadratic result. This implied that structural adjustment policy regime has the best structure, among other regimes, in growing Nigerian agricultural export.

5. CONCLUSION

The purpose of this study is to assess the performance of various policy regimes towards agricultural export growth in Nigeria. The underlying fact and from the result of the trend analysis is that Nigeria agricultural export did not fare better under any of the policy regimes.

However, structural adjustment policy regime manifested positive characteristics which indicated that it has the best structure, among other regimes, in growing Nigerian agricultural export.

6. RECOMMENDATIONS

Based on the findings from the analysis, the following recommendations are made:

6.1 Accelerate Investment on Public Goods That Support Agricultural Production and Marketing

This policy could be made possible through instituting Agricultural Trust Fund (akin to Educational Trust Fund) where certain percentage of proceeds from oil is saved towards agricultural development. It will be used to fund human capital development in agriculture, rural infrastructure, irrigation, rural hospitals, rural banks, cottage industries and power supply. These structures have to be in place for structural adjustment program to achieve its purpose.

6.2 The Study Advocated for a Revisit of the Britton Wood Supported Structural Adjustment Program (SAP) with Caution

When SAP policies were executed as intended by the IMF, the Nigerian economy actually did grow as was expected. The growth manifested between 1986 and 1988, with the export sector performing especially well. However, the falling real wages in the public sector amongst the urban classes, along with a drastic reduction in expenditure on public services, contributed to its failure. Caution therefore implied that those factors that caused the problem have to be addressed.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sciencedomain.org/review-history.php?iid=1058&id=25&aid=8796