GROWTH, PERFORMANCE, AND FORECASTING OF CASHEW NUT PRODUCTION IN NIGERIA (1991 – 2020)

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ABSTRACT

This study assessed the growth, performance and forecasting of cashew nuts in Nigeria (1991 – 2020). FAOSTAT and the World Development Indicator (WDI) of the World Bank were used. Data were analysed using descriptive statistics, trend equation, growth rate model, Auto Regressive Distributed Lag (ARDL) bound test, and the Auto-Regressive Integrated Moving Average (ARIMA). The findings showed a generally unstable pattern in the value of cashew nut production, a very low export trend, except for 2017 and 2018. The estimated trend regression equation revealed a 9.3 percent and 23.76 percent instantaneous (IGR) and compound (CGR) growth rate, for the value of cashew nut production; and an IGR and CGR of 13.56 percent and 36.65 percent, respectively for export value. The ARDL bound test revealed a long-run relationship between the variables under consideration. The short-run ARDL revealed that the lag values of GDP (economic growth) contribute to economic growth in Nigeria in the short run. Output of the ARIMA model for forecasting revealed that, in the years 2030, 2033, 2034, and 2035, the value of cashew nuts to be produced in Nigeria will be $855m, $647 million, $609 million, and $524 million, respectively. Furthermore, in the years 2030, 2033, 2034, and 2035, the value of cashew nuts to be exported from Nigeria will be $446 million, $1.2 Billion, $1.5 Billion, and $1.7 Billion, respectively, while Nigeria's GDP will be $530 Billion, $566 Billion, $578 Billion, and $590 Billion, in the years 2030, 2033, 2034, and 2035, respectively. The study concluded that cashew nuts have the potential to contribute to economic growth in Nigeria.

Keywords: Cashew nuts, Potential, Economy, Nigeria

INTRODUCTION

Cashew (*Anacardium occidentale L*) is one of the major cash crops in Africa; ranking third in world production of edible nuts. It is a perennial crop belonging to the *anacardicaea* family. In West Africa, cashew is the second high-value export crop after Cocoa (Nitidae, 2019). This has made the region an active player in the global cashew market, with a share of 45% since 2015 (Monteiro *et al*., 2017). An estimated 4.2 million metric tonnes of global cashew production in 2012 showcased West Africa's dominance in both the current and emerging markets (Adeigbe et al., 2015). Subsequently, in Nigeria, cashew nut is also the second high-value export crop after sesame (PricewaterhouseCoopers, PwC, 2020); sesame, cashew nuts and cocoa account for more than half of the nation's agricultural exports. The raw cashew nut (RCN) is the main commercial product of the cashew tree in Nigeria. Products such as cashew apples, nuts and nut shells liquids (NSL) are obtained from the tree and are highly valued in both domestic and international markets. D'Ivoire and Nigeria were the top producers of cashews in the region, with individual yields exceeding 340,000 metric tonnes per annum (Food and Agriculture Organization, FAO, 2020).

Nigerian cashew nuts exports represent 12 to 18% of non-oil export earnings. The estimated export value varies from US$ 25 to 35 million annually (Nugawela and Oroch, 2018). Cultivation and processing activities in cashews provide employment and income generation for women and smallholder farmers in Nigeria (Akinwale, 2000; Topper *et al*., 2001). It supplements the income of about 100,000 farmers and an additional 95,000 people employed down its' value chain (Nugawela and Oroch, 2018) as harvesters, transporters, processors, marketers, and exporters, among others. Women are particularly involved in the cashew sub-sector more than in any other cash crop of the nation (Cocoa Research Institute of Nigeria, CRIN, 2019). Despite Nigeria's cashew production potential, the literature reveals that cashew apples and nuts account for only 50% of the yield attained from the tree species (Asogwa *et al*., 2019). Surprisingly, less than 10% of cashew produced is being processed in Nigeria, implying the country's high dependence on externally refined cashew products. Although scholars have documented West Africa's contribution to the cashew sector in the international market (Nitda, 2019; Mole, 2000) and associated cashew opportunities in Nigeria (Adesanya *et al*., 2021; Asogwa *et al*., 2019; Nwosu *et al*., 2016), a complete analysis of the value of cashew nut production, export trends, and its implications on economic growth in Nigeria is still undocumented. Hence, the need to assess the growth and export performance of cashews in the country.

Additionally, being a major cashew-producing country in the world, this present study aimed to forecast the value of cashew nut production and its export value in Nigeria, using the Auto Regressive Integrated Moving Average (ARIMA) model. This study is of immense benefit to farmers, extension agencies, relevant government stakeholders, NGOs, agricultural research institutes, policymakers and other researchers. The broad objective of this study is to assess the growth and export performance of cashew nuts in Nigeria (1991 – 2020). The specific objectives are to:

i. describe the value of cashew nut production, the export value of cashew nut and Nigeria's economic growth within the period under study;
ii. determine the growth rate and performance of cashew nut production and its export value within the study period;
iii. determine the effects of cashew nut production on economic growth within the study period; and
iv. forecast the value of cashew nut production and export value of cashew nut in Nigeria in the next 15 years.

METHODOLOGY

The study area is Nigeria. Nigeria is one of the sub-Saharan African nations located in West Africa with a population of over 200,000,000, using the country's population growth rate (National Population Commission, 2006). The country is located between 3^0 and 14^0 East Longitudes and 4^0 and 14^0 North Latitudes (NBS, 2011). Nigeria is bordered on the west by the Republics of Benin and Niger; on the east by the Republic of Cameroon; on the north by Niger and Chad Republics and on the south by the Gulf of Guinea. There are two seasons – the wet and dry seasons. The wet season lasts from April to October, while the dry season lasts from November through March.

The country has a compact area of approximately 923,768 square kilometres (356, 376 square miles) with Niger state being the largest state(landmass) having a total land area of 76, 363 km^2. Agriculture, since independence, has been a major contributor to the Nigerian economy. It is divided into six geopolitical regions: North-Central, North-West, North-East, South-West, South-East and South-South. The agriculture sector has been metamorphosed by commercial activities from the small to medium and large-scale levels of the market. The principal cash crops in the country include cocoa, oil palm and rubber while major staple foods are cassava, rice, yams, maize, taro, sorghum, and millet. Production of timber and livestock rearing such as goats, sheep, cattle and poultry as well as artisanal fisheries are the common occupations.

Time series (secondary) data on the value of cashew nut production, export value, Nigeria's GDP, exchange rate, and consumer price indices (inflation rate) for a period of thirty years (1991 – 2020). The adopted range in this study was informed with respect to the availability of data on variables of interest. The data were mainly sourced from FAOSTAT. The secondary data obtained for this study were analysed using descriptive statistics, trend analysis, growth rate model, Auto Regressive Distributed Lag (ARDL) model, and the ARIMA forecasting model.

Model Specification/Estimation Procedures

The Augmented Dickey-Fuller (ADF) test technique for the stationarity test procedure was used. Equally, the Auto Regressive Distributed Lag (ARDL) bound cointegration test procedure was utilized and based on the assumption that the variables under consideration are integrated of the order zero or order one. One of the advantages of the ARDL estimation over other well-known procedures advocated by Engle and Granger (1987), as well as the Johansen and Juselius (1990), and Johansen (1998) maximum likelihood estimation procedure is that it is free from pretesting the unit root and can be utilized whether the variable under consideration is integrated of order zero or one. The null hypothesis guiding the test is stated as follows: H0: $\beta = 0$ (β has a unit root); H1: $\beta < 0$ (for an alternative hypothesis).

Pesaran, Shin and Smith (2001) noted that to avoid a spurious regression, a variable cannot be integrated into order two. An appropriate lag length is provided while estimating an ARDL test procedure. For a small sample, an appropriate criterion to adopt includes, the Akaike information criterion (AIC) and the Schwarz criterion (SC) even though the SC criterion is considered superior to AIC. For the developed model for this study, ARDL equations are therefore stated as follows:

$$\Delta LNGDP = \beta_0 + \sum_{i=1}^{n} \Delta \beta_1 LNVCP + \sum_{i=0}^{n} \Delta \beta_2 LNEVC + \sum_{i=0}^{n} \Delta \beta_3 LNXR + \sum_{i=0}^{n} \Delta \beta_4 LNCPI + \mu_1 \text{ ---------- (1)}$$

In the process of conducting an ARDL bound cointegration test, the Ordinary Least Square (OLS) is estimated to establish the existence of the long-run relationship between the variables under study.

Trend Analysis

The trend equation is given as:

$Y_t = \alpha + \beta t + e$ …….. (2)

Where Y = value of cashew produced (‘000USD); export value of cashew (‘000usd); GDP (‘000)

α = intercept; β = slope/coefficient; t = time (year); e = error term

Compound Growth Rate

The compound annual growth function was specified as a semi-log equation, following Rehman *et al*., (2011):

$\ln Y_t = \alpha + \beta t + e$ …….. (3)

Where Y = as previously defined

α = intercept

β = 1 + r (the slope coefficient ‘β’ measures the instantaneous relative change in Y for a given absolute change in the value of explanatory variable ‘t’) – instantaneous growth rate.

t = time (year); e = error term; r = growth rate

when the relative change in Y is multiplied by 100, the percentage change or growth rate in Y for an absolute change in variable ‘t’ is obtained while the slope coefficient ‘b’ measures the instantaneous rate of growth. Therefore, the compound growth rate is then estimated using the following equation:

CGR = [antilog β – 1] * 100 ---------- (4)

NOTE: multiplying β by 100, will give the instantaneous growth rate (IGR) at a point in time.

Eq. (4) was estimated to test the significance of β. The underlying assumption in this estimation is that a change in cassava output in a given year would depend upon the output in the succeeding year (Deosthali and Chandrehekkar, 2004). If β is positive and statistically significant there is acceleration in growth, if β is negative and statistically significant there is deceleration in growth, if β is not statistically significant there is stagnation in the growth process.

Estimation Procedure for the Auto Regressive Distributed Lag (ARDL) Model

The data on gross domestic product (GDP) was utilized as the dependent variable, while the value of cashew nut production, value of cashew nut export, exchange rate, and inflation were utilized as the independent or explanatory variables. This study developed a model to capture the effect of cashew nut production on economic growth in Nigeria during the period under study. The functional form of the model is therefore specified as follows:

$$GDP = VCP, EVC, EXR, CPI \text{ ---------- (5)}$$

The variables are defined as follows:

GDP = Gross Domestic Product (a proxy for economic growth; measured in ‘million USD)

VCP = Value of Cashew Nut Production (‘000 USD)

EVC = Export Value of Cashew Nut (‘000 USD)

EXR = Exchange Rate

CPI = Inflation Rate

With the assumption of a linear relationship between the dependent variable and the independent variables in the equation above, the model is therefore specified as follows:

$$GDP = \beta_0 + \beta_1 VCP + \beta_2 EVC + \beta_3 EXR + \beta_4 CPI + \mu_1 \text{ ---------- (6)}$$

Where β_0 = constant term, β_{1-4} model parameters to be estimated, μ_1 = error term.

For statistical reasons, the above equation was further transformed into logarithms as follows:

$$LNGDP = \beta_0 + \beta_1 LNVCP + \beta_2 LNEVC + \beta_3 LNXR + \beta_4 LNCPI + \mu_1 \text{ ---------- (7)}$$

Where LN = Natural Logarithm

The Auto-Regressive Integrated Moving Average (ARIMA) Model in Forecasting

An ARIMA model predicts a value in a response time series as a linear combination of its past values. The ARIMA approach was first popularized by Box and Jenkins (1976), and ARIMA models are often referred to as Box-Jenkins models. This process is referred to as ARIMA (p, d, q), where p and q refer to the number of AR and MA terms, and d refers to the order of differencing required for making the series stationary.

The general form of the ARIMA(p, d, q) model is as follows:

$$y_t = c + \phi_1 y_{t-1} + \phi_1 y_{t-2} + \ldots + \phi_p y_{t-p} + \theta_1 \epsilon_{t-1} + \theta_2 \epsilon_{t-2} + \ldots + \theta_q \epsilon_{t-q} + \epsilon_t \text{ ---------- (8)}$$

Where:

- y_t is the differenced series after differencing d times: $y_t = \Delta^d y_t$.
- C is a constant term.
- $\phi_1, \phi_2, \ldots, \phi_p$ are the coefficients of the AR part.
- ϵ_t is the error term (white noise) at time t.
- $\theta_1, \theta 2, \ldots, \theta_q$ are the coefficients of the MA part.

RESULTS AND DISCUSSION

Value of Production, Export and Economic Growth in Nigeria (1991 – 2020)

The value of cashew nut (shell) produced in Nigeria within the period under study is presented in Figure 1.

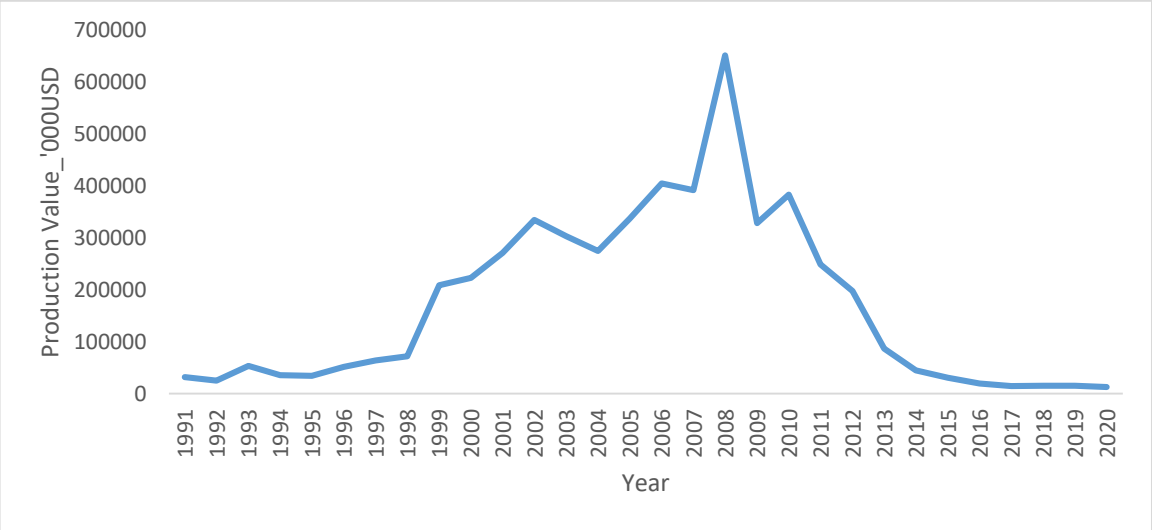

Figure 1: Value of Cashew Nut Production in Nigeria (1991 – 2020), computed from FAOSTAT Data

Figure 1 shows a generally unstable pattern in the value of cashew nut production in Nigeria within the period under study. It can be seen from the result that the country experienced some impressive level of growth (though unstable) in the value of cashew nuts produced in the first decade. The value of cashew nuts produced in Nigeria was at its peak in 2009; after which a continuous decline with the lowest in 2020 is observed. The continuous decrease in the value of cashew nut produced experienced in recent years (2013–2020) may be attributed to factors such as low yield/productivity, climatic variables, low cultivation area, and non-adoption of improved production technologies, among others. This will have implications on the future value of cashew nuts produced in the country, if necessary, measures are not taken.

Export Value of Cashew Nut in Nigeria (1991 – 2020)

The export value of cashew nuts in Nigeria within the period under study is presented in Figure 2. Figure 2 shows a very low export value of cashew nuts produced in Nigeria before the year 2010. This is regardless of the high value of cashew nuts produced in the country in the years 1991 – 2010. After the significant value of exports in 2012, the country experienced a continuous and unstable decline in the export value of cashew nuts. There was however an impressive increase in 2017 and 2018, after which the value decreased.

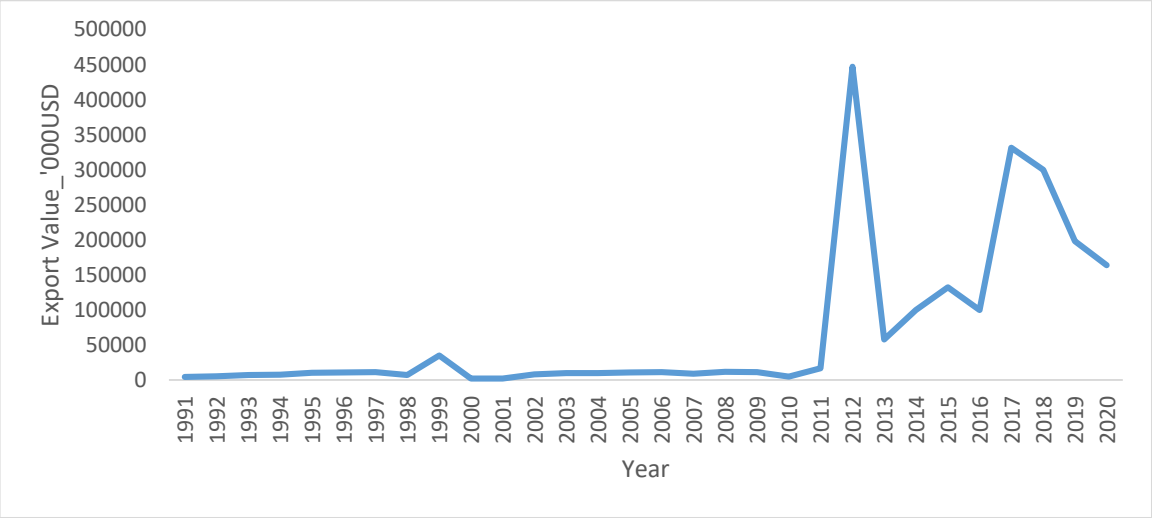

Figure 2: Nigeria's Export Value of Cashew Nut (1991 – 2020), computed from FAOSTAT Data

Nigeria's Economic Growth (1991 – 2020)

Nigeria's Gross Domestic Product (GDP) which is a macroeconomic indicator of economic growth is presented in Figure 3. The gross domestic product (GDP) measures of national income and output of a given country's economy. The gross domestic product (GDP) is equal to the total expenditures for all final goods and services produced within the country in a stipulated period. Figure 6 shows a general upward trend in Nigeria's GDP during the period under study. There was, however, a sharp decrease in the country's GDP in the years 2009 and 2017. In 2019, Nigeria's GDP was around $ 475 Billion, and this figure dropped by about 9.5% in 2020. The highest GDP recorded in the country within the period under study was in 2014 with a value of about $ 568 Billion.

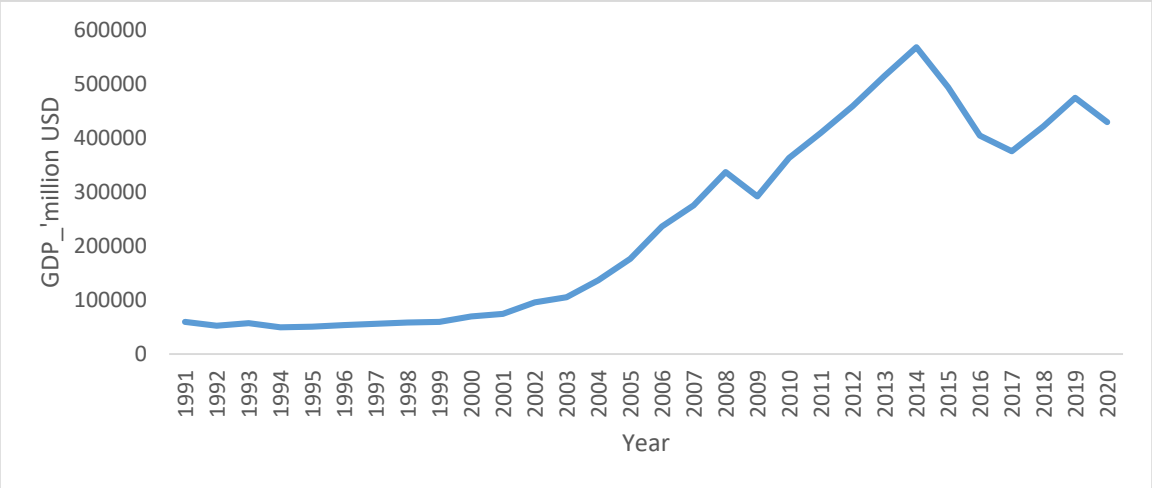

Figure 3: Nigeria's Gross Domestic Product (1991 – 2020), computed from FAOSTAT Data

Growth and Performance of Cashew Nut Production and Export in Nigeria

Table 1a presents descriptive statistics of variables of interest in this study; while Table 1b shows the compound growth rate of Nigeria's value of cashew nut production and export during the study period.

Table 1a: Descriptive statistics on variables of interest

	Cashew Export	GDP	Inflation	Production	Exchange Rate
Mean	67977.70	240363.2	18.45431	172252.3	133.3673
Median	11150.00	206119.0	12.71577	79482.00	128.9370
Maximum	447125.0	568498.8	72.83550	651325.0	358.8108
Minimum	2200.000	49502.35	5.388008	12875.00	9.909492
Std. Dev.	113171.0	180234.5	16.79694	165801.3	96.13940
Skewness	2.045171	0.297047	2.085276	0.910956	0.674909
Kurtosis	6.317333	1.504697	6.195002	3.228424	2.851529
Jarque-Bera	34.66949	3.236098	34.50193	4.214431	2.305066
Probability	0.000000	0.198285	0.000000	0.121576	0.315836
Sum	2039331.	7210896.	553.6294	5167570.	4001.019
Sum Sq. Dev.	3.71E+11	9.42E+11	8181.977	7.97E+11	268040.7
Obs.	30	30	30	30	30

Source: Author's Computation from FAOSTAT 2019

The ratio of standard deviation to the mean value of each variable used in this study reflects the preciseness of the variables. The higher this ratio, the greater the level of dispersion around the mean, and vice versa. These values are presented in Table 1a. The descriptive result indicates that all the variables have positive mean values with 30 observations. The probabilities of the Jarque-Bera test of normality for the variables show that three of the variables under consideration are normally distributed statistically (normal distribution exists when the probabilities of Jarque-Bera statistics are> 0.05).

Table 1b: Compound growth rate (CGR)

	Coeff.	**Std. Error**	**t-value**	**P>/t/**	**IGR**	**CGR**	**Decision/Performance**
Production							
Time	0.0926	0.0094	9.83	0.000^{***}	9.3	23.76	Acceleration
Constant	-173.556	18.9002	-9.18	0.000^{***}			
R^2	0.77						
F-Value	96.60			0.000^{***}			
Export							
Time	0.1356	0.0206	6.59	0.000^{***}	13.56	36.65	Acceleration
Constant	-262.057	49.2902	-6.35	0.000^{***}			
R^2	0.59						
F-Value	43.39			0.000^{***}			

Source: Author's Computation (2022), Using FAOSTAT, 2021

*** = sig. @ 1% level of significance. IGR and CGR = Instantaneous Growth Rate and Compound Growth Rate.

The estimated trend regression equation in Table 1b showed a 9.3 percent and 23.76 percent instantaneous and compound growth rate, respectively, for the value of cashew nut production within the period under study. The instantaneous growth rate (growth at a point in time) and compound growth rate for the export value of cashew nuts was 13.56 percent and 36.65 percent, respectively. The result on IGR implies that the relative change in cashew nut production and export value for absolute change in the trend was 9.3 percent and 13.56 percent, respectively. The compound growth rate (growth over the period) was 23.76 percent and 36.65 percent; implying that there was a general improvement in Nigeria's cashew nut production and export value over the period. Consequently, the performance for both the value of cashew nut production and export value was accelerated.

Effects of Cashew Nut Production on Economic Growth

To ascertain the time series properties of the variables under study, a stationarity test procedure was conducted. In this study, the Augmented Dickey-Fuller (ADF) unit root test is adopted and the results are shown in Table 2a.

Table 2a: The stationarity test results

Variables	Level Difference	Prob.	Order of Integration	First Difference	Prob.	Order of Integration
Export	-3.1971	0.0305**	I(0)			
Production	-1.4949	0.5220		-7.3895	0.0000***	1(1)
GDP	-0.5503	0.866		-3.6173	0.0119**	I(1)
Exchange	1.2494	0.9977		-3.7164	0.0094***	I(1)
Inflation	-1.9914	0.2887		-4.2511	0.0027***	I(1)

Note: ** and *** denote 1% and 5% critical values respectively.

Source: authors' own computation from EViews 12 results.

From the stationarity test results in Table 2a, the results showed that only the export variable was stationary at level I(0), at a 5% significant level. The remaining four other variables, Production, GDP, exchange rate, and inflation are stationary at the first difference I(1), at 1%, 5%, 1%, and 5% significant levels in the ADF test procedure respectively. In this case, an ARDL model procedure is conducted since there is a mixed order of stationarity among the variables. An ARDL bound test was performed using an automatic lag selection based on the Akaike info criterion (AIC). The maximum lag length of 4 was specified for the equations. The Bound test results in Table 2b show that the F-statistic values for the equation are greater than the critical values at both 10%, 5% and 1% significant values respectively. Therefore, the null hypothesis of no cointegration for the equation is rejected, hence the ARDL model estimation determines both the short and long-run estimated coefficients respectively. Thus, there is a long-run relation between the variables under consideration.

Table 2b: The ARDL Bound test results

Test-Stat	**Value**	**K**	
F-statistics	13.40247	4	
	ARDL critical value bounds		
	10%	5%	1%
Lower bound	2.2	2.56	3.29
Upper bound	3.09	3.49	4.37

Source: authors' own computation from Eviews 12 results.

Following the establishment of cointegration (long-run relationship) between the variables, the long-run estimates of the model to show the effects of cashew nut production and other variables of interest on economic growth (GDP) in Nigeria within the period under study (1991 – 2020) is presented in Table 2c.

Table 2c: The Long-run estimates for the model

Variables	Coefficient	Std. Error	t-statistic	Prob.	Decision
LNPRDN	0.8471	0.2586	3.2776	0.0015***	Significant
LNEXPORT	0.4427	0.7478	0.5919	0.6598	Not Significant
LNEXR	-0.9353	1.1128	-0.8404	0.5551	Not Significant
LNINF	-0.5186	0.4699	-1.1036	0.4687	Not Significant
C	10.8474	6.9523	1.5603	0.3629	Not Significant

Source: authors' computation from Eviews 12 results.

The long-run estimates show a positive relationship between the value of cashew nut production and economic growth at a 1% level of significance. The direction and magnitude of this relationship imply that a one percent increase in the value of cashew nuts produced in Nigeria will increase Nigeria's economic growth by 0.85% percent, *all things being equal*. This result is in line with the *a priori* expectation of this study. Investment in cashew nut production through expansion of cultivation area and adoption of relevant production technologies is expected to increase the value of cashew nuts produced in the country with its multiplier effect on economic growth (Gross Domestic Product). The finding of this study on cashew nut production is not surprising as; economic growth could be viewed as an increase in the production of goods and services from one period to the next. This finding agrees with Patterson (2014) who positioned that, a positive relationship exists between economic growth and increased added value of manufacturing. The finding is also in tandem with Michael *et al*. (2022 who reported that production networks amplify economic growth.

Although not statistically significant at the level of measurement, the positive relationship between export and economic growth in Nigeria implies that a one percent increase in the value of cashew nuts exported will lead to a 0.44% increase in the country's GDP. It has been established in the literature that, increased exports lead to increased investment, technological advance and import expansion; all of which contribute significantly to economic growth. Conversely, economic growth can lead to further export expansion by fostering the adoption of technology and increasing the level of imports used for production. This finding agrees with Kalaitzi and Chamberlain (2020) who reported a positive relationship between export and economic growth of the Gulf Cooperation Council (GCC) countries. Additionally, an earlier study by Hameed *et al*. (2012) used the Granger causality technique to indicate that there exists unidirectional causality from GDP to exports in Pakistan but not vice versa.

The short-run ARDL estimated results are presented in Table 2d. The result shows that the coefficient of the dependent variable, D(LNGDP (-1)) and D(LNGDP(-3)) is positively signed, and statistically significant at the level of measurement. By implication, the lag values of GDP (economic growth) contribute to economic growth in Nigeria in the short run. The coefficients of production and export were positively signed and significant at 5% and 10% level of significance, respectively. This implies that the value of cashew nut production and its export value directly affected economic growth in Nigeria during the period under study in the short run.

The variable of interest in a short-run model is the coefficient of the error correction model (ECM). The coefficient of the error correction term is signed negatively as expected with –0.781950 and is significant statistically at a 5% level of significance. This implies that there is cointegration and there exists a long-run relationship among the variables under study. Hence the gap between the equilibrium values and the actual value of the dependent variable is corrected with a speed of adjustment equal to 78% annually. Statistically, the coefficient of determination adjusted R^2 indicates that independent variables explain the dependent variable to the tune of 97%. The probability of the F-statistic results shows that the entire regression is adequate statistically. While the Durbin-Watson statistics with a value of (3.222914), indicate no serial correlation among the variables under consideration. The stability test result in the appendix for the economic growth equation shows that the fitted line is in between the critical bounds, and the lines in the CUSUM and CUSUMSQ test estimates are straight and are therefore significant statistically at the 5% level of significance. Thus, the null hypothesis of no stable residuals in both the short and long run is therefore rejected.

Forecast of Cashew Nut Production, Export and Nigeria's GDP (2021 – 2035)

Output of the ARIMA model, forecasting the value of cashew nut production, export value and the country's Gross Domestic Product from 2021 – 2035 is presented in Figures 7, 8, 9, and Table 3. The forecasted values were obtained using the available sample values of 1991 – 2020.

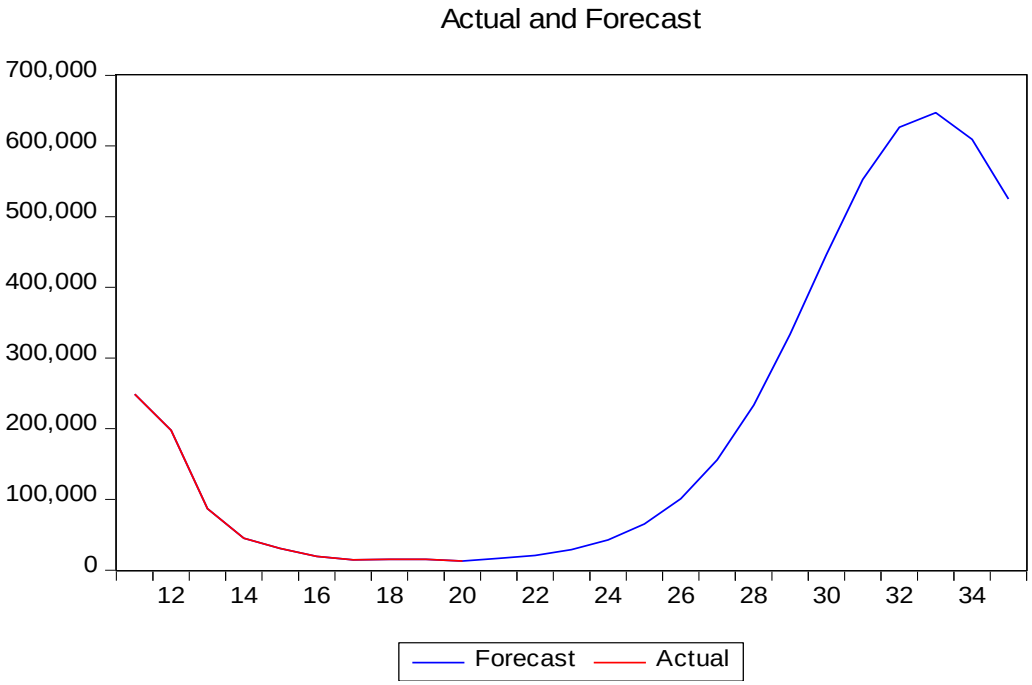

Figure 4: Graph of the Actual and Forecast Values on the Value of Cashew Nut Production in Nigeria

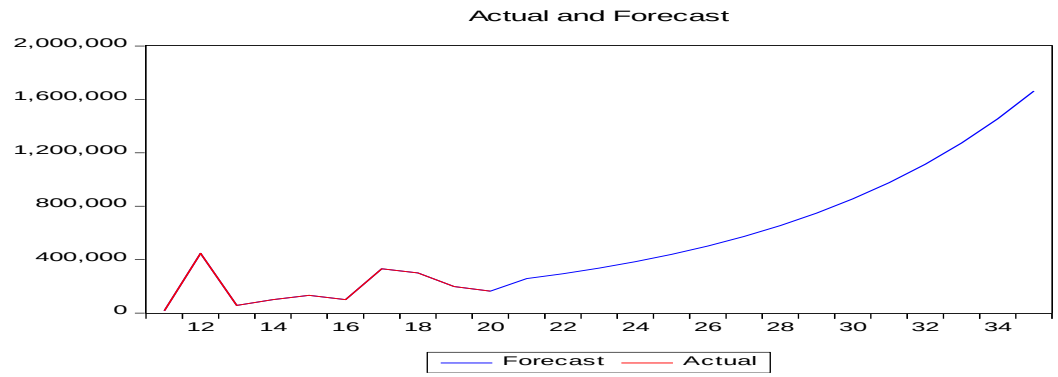

Figure 5: Graph of the Actual and Forecast Values on the Export Value of Cashew Nut Production in Nigeria

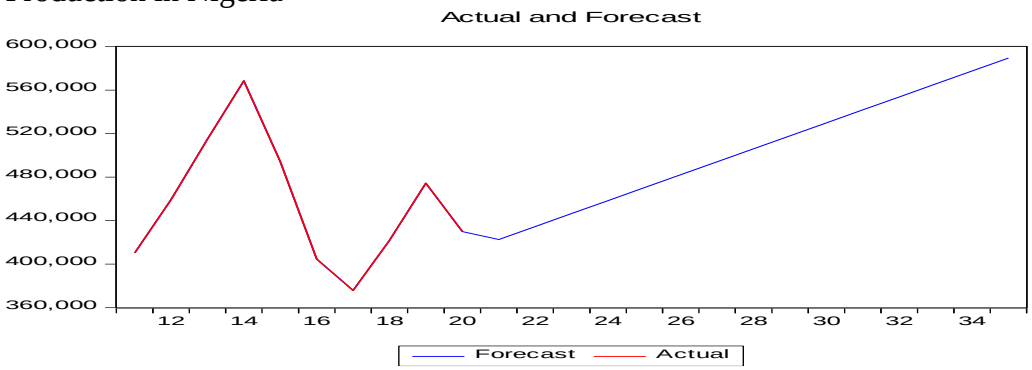

Figure 6: Graph of the Actual and Forecast Values on Nigeria's GDP

Table 3: Forecasted Values for Cashew Nut Production, Export and Nigeria's GDP

S/N	Forecasted Years	Cashew Nut Production (000 USD)	Export ('000 USD)	GDP ('million USD)
1	2021	16636.32	258125.71	422613.59
2	2022	20682.21	294850.17	434535.07
3	2023	29127.01	336799.56	446456.56
4	2024	42618.39	384717.24	458378.04
5	2025	65218.93	439452.33	470299.52
6	2026	101081.78	501974.78	482221.01
7	2027	155820.23	573392.53	494142.49
8	2028	233456.81	654971.13	506063.98
9	2029	333503.47	748156.21	517985.46
10	2030	446462.86	854599.06	529906.945
11	2031	552594.02	976185.92	541828.43
12	2032	626389.59	1115071.38	553749.91
13	2033	647103.35	1273716.56	565671.40
14	2034	609122.53	1454932.77	577592.88
15	2035	524772.55	1661931.24	589514.36

Source: Author's Computation from E-Views 12, using secondary data, 2022

Results have shown that though there has been some sluggish increase in the value of cashew nuts produced in the past few years, the forecasted series will continue to increase for this forecasted period *ceteris paribus*. The country will however experience a decrease in the value of cashew nuts produced in 2034 and 2035, *all else equal*. Furthermore, Figure 8 shows that the export value of cashew nuts produced in Nigeria will continue to increase at an increasing rate for the forecasted period *ceteris paribus*. Figure 9 shows that economic growth (GDP) will continue to have an upward trend during the forecasted period *ceteris paribus*.

Conclusion

This study assessed the growth and performance of cashew nuts in Nigeria (1991 – 2020). It can be concluded from the findings of this study that Nigeria's value of cashew nut production and export value has experienced acceleration in growth over the years; regardless of the unstable trend pattern. The value of cashew nut production and export value positively influenced the country's economic growth. However, there is the possibility of a decline in the value of cashew nut production if nothing changes. The recommendations are:

1. The government should prioritize and implement policy strategies that promote; best agronomic practices and intensive cashew nut production using improved varieties for improved productivity.
2. For long-term positive economic growth to be achieved, the output and export values of cashew nuts in Nigeria must be substantially enhanced through integrated policies, facilitated partnerships, linkages and coordination of key stakeholders in the sub-sectors.
3. Government should develop new policies, institutions and financing structures to drive sector growth as the sub-sector is crucial in the country's economic diversification drive, considering its effect on gross domestic product.

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