



The Palgrave Handbook of Agricultural and Rural Development in Africa

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Evans S. Osabuohien

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Boosting Non-oil Export Revenue in Nigeria Through Non-traditional Agricultural Export Commodities: How Feasible?

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and Lawrence U. Okoye*

I INTRODUCTION

The consensus in literature is that increased agricultural productivity is a vital pre-requisite for rapid economic growth and development (Adubi 1996; Evbuomwan 2004; Anyanwu et al. 2010). Economic development is a process whereby an economy's real national income increases over a long period of time. Among the roles conventionally ascribed to the agricultural sector in a growing economy are those of: (i) providing adequate food for an increasing population; (ii) supplying raw materials to a growing industrial sector; (iii) constituting the major source of employment; (iv) earning foreign exchange through commodity export; and (v) providing a market for the products of the industrial sector (Federal Ministry of Agriculture Water Resources and Rural Development 1988).

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In Nigeria, agriculture has traditionally been described as the mainstay of the economy. Nigeria's agriculture is diverse, presenting various opportunities. It includes four sub-sectors, namely; crop, livestock, fishery, and forestry. The crop sub-sector is the largest. Available statistics from the National Bureau of Statistics (NBS), revealed that the crop sub-sector accounted for 21.93% of the real national gross domestic products (GDP) in 2016. The livestock sub-sector followed with 1.74% and the fishery sub-sector contributed 0.52%. The forestry sub-sector contributed the least at 0.25%. Thus, these four sub-sectors of the agricultural sector together contributed a total of 24.44% to total real GDP in Nigeria in 2016 as against the 21.96% contribution by the industrial sector and the services sector's contribution of 53.59% (NBS 2017). Interestingly also, the quarterly real GDP growth rate by sector year on year as reported by the NBS revealed that the Nigerian agricultural sector grew by 4.11% in 2016 relative to 2015, whereas; the industrial sector and the services sector declined by 8.85 and 0.82%, respectively, in the spate of recession.

The Nigerian economy can be more clearly understood when classified into oil and non-oil sectors. Available statistics indicated that crude oil exports fetched Nigeria only N8.8 million (about US\$17.6 million) at independence in 1960 and this constituted just 2.7% of total export earnings, while non-oil exports amounted to N321.2 million (about US\$642.4 million), constituting 97.3% of total exports in the same period. But by 1976, the table turned, and the value of oil exports increased astronomically to N6321.6 million (about US\$12,643.2 million), constituting 93.6% of total exports, while the proportion of non-oil exports in Nigeria's foreign earnings had declined substantially to 6.4% at N429.5 million (about US\$859.0 million) (Evbuomwan 1996). This was a result of the neglect of the other sectors of the economy including agriculture after the discovery of oil in commercial quantities in the early 1970s in Nigeria.

Even though oil exports constitute a substantial proportion of Nigeria's export earnings, its importance in the GDP is lower than that of the non-oil sector as indicated earlier. Particularly worrisome is the fact that its fortunes have been on the downward trend in recent years with dire consequences for the Nigerian economy. For instance, from an average of US\$ 113.77 a barrel in 2011, the price of Bonny Light crude declined to US\$53.07 per barrel in 2015. Also, the average price of Forcados crude declined from US\$114.52 to US\$47.40 in the respective periods. Consequently, Nigeria's goods account in the Balance of Payments (BOP), declined persistently from 8.5% in 2012 to a negative 1.3% in 2015 (CBN 2015). Similarly, the current account balance as a percent of GDP declined to minus 3.79% in 2015 from 4.34% in 2012 while the overall balance as a percent of GDP declined to minus 1.44% from 2.78% in the respective periods.

It is also pertinent to note that, the bulk of the Nigerian population earn their living from the non-oil sector with the agricultural sector alone

providing employment for over 50.0% of the populace (NBS 2018), while agricultural produce and semi-processed agricultural commodities have constituted over 70% of non-oil export earnings over the years (Evbuomwan 2016). It is against this backdrop that the feasibility of boosting non-oil revenue through non-traditional agricultural export commodities is being thought of since; Nigeria is endowed with large agricultural land. In this study, an attempt was made to properly situate the contributions of both the traditional and non-traditional agricultural export commodities to the non-oil export sector and highlight the problems that have been militating against their effective performance so that adequate steps can be taken to eradicate them in order to boost their contribution to non-oil export revenue in Nigeria and the development of the Nigerian economy in general. Both descriptive and econometric procedures are employed to achieve this objective. The analysis covered years 2001 to 2015, being the period consistent data were available for both traditional and non-traditional agricultural export commodities.

The rest of this chapter is divided into four sections including this introductory section. The next section titled Literature Review provides some theoretical and conceptual background to the paper. It also highlights the United Nations Industrial Development Organizations report on world agro-industrial imports from Africa as a basis for subsequent analysis carried out in this paper. The third section reviews in detail the performance of the traditional and non-traditional agricultural export commodities in Nigeria. The chapter concludes and put forward suggestions necessary for better performance of the agricultural export commodities in boosting Nigeria's non-oil revenue to assure economic growth and development in the last section.

2 LITERATURE REVIEW

2.1 *Theoretical and Conceptual Issues on Balance of Payments and Trade Policy Reforms*

2.1.1 *Balance of Payments*

A country's balance of payments (BOP) as elucidated by (Ogiogio 1996; Rudiger et al. 2001; Englama et al. 2010) is a financial account of all the external transactions which pass through its official channels of international trade and payments. These transactions occur between the domestic economy and the rest of the world. The BOP has basically two main accounts, namely, the current account (which summarizes the state of the trade flows and unrequited transfers) and the capital account (which presents the position of capital flows). The sum of the balances of both accounts yields three possible positions for the overall BOP. These are a balance (equilibrium state),

a surplus and a deficit. When a surplus or deficit occurs, it is then financed through the reserves account. A surplus will require a country to invest its reserves wisely in the international financial market to earn investment incomes. It can also be used to accelerate real investment in the domestic economy to promote growth and raise the standard of living. A consistent BOP surplus improves a country's credit-worthiness rating in the international community and thus, its credibility in international trade and payments.

A BOP deficit, on the other hand, must be addressed by drawing down the reserves of foreign exchange, special drawing rights, gold and other assets acceptable for international payments. A deficit indicates that a country invests more than it saves, consumes more than it produces, and/or exports more capital than it receives. Chronic deficits are an indication of an unhealthy domestic economy and/or growing unfavorable nature of the international economic environment. Such deficits, when they become persistent, erode a country's credit-worthiness and thus, its credibility in trade and payments. Both surplus and deficit positions in the BOP are of considerable concern to macroeconomic policy management. A surplus, if not properly managed, could lead to significant appreciation in the nominal and real exchange rates thereby creating a trade bias against exports while protecting imports. This erodes competitiveness and the level of tariff protection for domestic industries and could possibly create forces that can turn a surplus into deficit in the BOP (Ogiogio 1996; Rudiger et al. 2001; Englama et al. 2010; Akinyemi et al. 2019). A deficit is already a precarious position, which requires adjustments in macroeconomic policies and incentive structures in order to secure a change or switch in expenditure pattern.

2.1.2 Trade Policy Reforms

A country's trade policy refers to the set of measures that direct the flow of its external trade (Ogiogio 1996). These include tariffs and non-tariff control measures (e.g. import licenses, import approvals, import, and export bans). Trade policy works effectively to protect the BOP position when a country has an appropriate exchange rate policy. For instance, high tariffs which are meant to protect import-competing industries and relieve pressure on the BOP could be severely undermined if there is substantial exchange rate appreciation arising from increased (unsterilized) capital inflow or the fixing of an exchange rate below the equilibrium level. In other words, a country whose BOP position is protected under a high tariff wall could suffer severe deficit if its exchange rate is grossly overvalued. The impact of trade policy is conceptually straightforward. Under any set of trade policies, the economy has a set of relative prices and profitability from various activities. These prices act as incentives to determine the structure of production and consumption of goods, which in turn determines the amount and composition of imports and exports. New trade policies therefore change relative prices, either implicitly or explicitly, and these affect production and consumption decisions. Trade

reform policies must contribute to an increase in exports; both for growth and for BOP support. An overvalued currency is a primary obstacle to exports, while exchange rate reform is a major part of the cure (Osabuohien et al. 2019; Beecroft et al. 2020).

The National Bureau of Statistics (NBS), the Central bank of Nigeria (CBN), the Federal Ministry of Agriculture and Rural Development (FMA&RD) and the Federal Ministry of Trade and Investment (FMT&I), in 2013, carried out a collaborative survey on the following exportable commodities in Nigeria; cashew, cocoa, cotton, coffee, palm oil, rubber, kola nut, tea, sugarcane, gum arabic, shea nut, ginger, garlic, and sesame seed. The survey brought to the fore some stylized facts that are of particular interest to this study. Among them is the fact that less than 1% of the respondents have access to formal credit, only 14.01% planted improved seeds, 39.4% used fertilizers, and 41.68% used pesticides. Furthermore, majority of the farmers 72.08% rely on hoe and cutlass, over 80% use traditional processing and preservation methods and less than a quarter of them use trucks/pick up vans to transport their commodities. All these have implication for productivity and output of these farmers and subsequently on their income and welfare and finally on the country's gross domestic products and trade volumes as well as balance of payments.

2.2 *Agro-Industrial Imports from Africa*

According to the United Nations Industrial Development Organization (UNIDO), world agro-industrial imports from Africa are still dominated by unprocessed and horticultural commodities, in sharp contrast with the commodity composition of global agro-industrial exports, which has shifted toward processed and semi-processed commodities. An examination of the Trade Performance Index—a sectoral benchmarking tool of export performance and competition developed by the International Trade Centre (ITC)—for African countries and the products considered in the UNIDO (2011) report, shows that the inability of many African countries to tap into the most dynamic market segments of the global agro-industrial products trade is partly due to lack of competitiveness and partly as a result of inability to adapt export supply to changes in world demand (UNIDO 2011).

3 PERFORMANCE OF THE TRADITIONAL AND NON-TRADITIONAL AGRICULTURAL EXPORT COMMODITIES IN NIGERIA'S NON-OIL REVENUE

3.1 *Oil and Non-oil Exports in Nigeria (2001–2015)*

Available data from the Central Bank of Nigeria (CBN 2001–2015), indicated that total export revenue in Nigeria was N1867.95 billion (US\$16.69 billion) in 2001 out of which oil export revenue constituted 98.50%, while

non-oil export revenue constituted the balance of 1.50%. Oil export earnings declined by 10.06% from N1839.95 billion (US\$16.44 billion) in 2001 to N1654.92 (US\$13.68 billion) in 2002, thereby constituting 94.57% of total export revenue, while, non-oil exports took a quantum leap of 238.38% from N28.01 billion (US\$0.25 billion) in 2001 to N94.78 billion (US\$0.78 billion) in 2002, and its proportion of total export revenue increased to 5.43%. However, from 2003, oil export revenue assumed an upward trend until 2009 when it declined again. It picked up in 2010 and 2011, but since 2012 it has assumed a downward trend until 2015 when it constituted 92.49% of total export revenue. Non-oil export revenue on the other hand has been on the increase since 2001 and reached a peak of N1130.23 billion (US\$7.18 billion) in 2013 when it constituted 7.41% of total export revenue. Though it has assumed a downward trend since 2014, it still constituted 7.51% of total export revenue in 2015 (see Figs. 1 and 2).

3.2 *Non-oil Exports in Nigeria by Products*

What constitutes non-oil exports in Nigeria are; agricultural produce, minerals, semi-manufactured products, manufactured products, and others. As contained in the CBN Annual Report, 2015:

- Agricultural Produce captured were; cashew nuts, cocoa beans, coffee, cotton, cow horn/bones, fish and crustaceans, ginger, groundnuts, gum Arabic, rubber, sesame seeds, and other agricultural products;

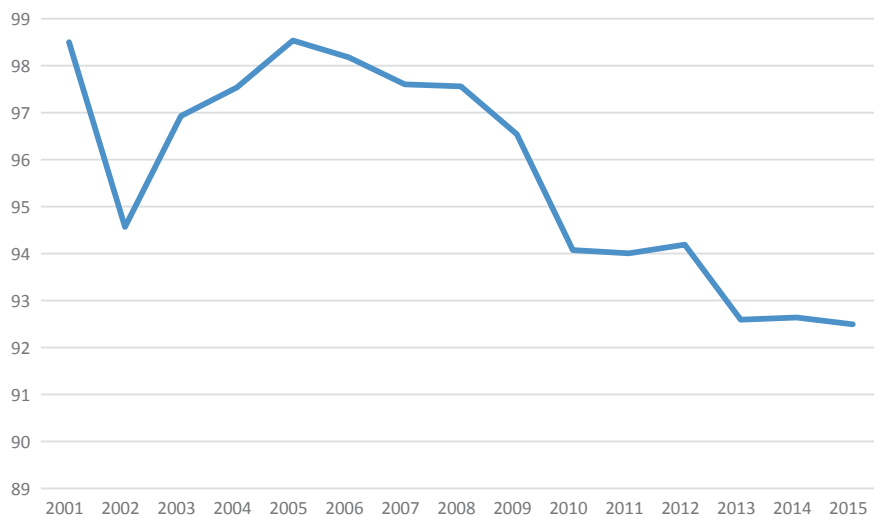


Fig. 1 Oil export revenue as percent of total export revenue, 2001–2015 (*Source* Central Bank of Nigerian annual report and statement of accounts, various issues)

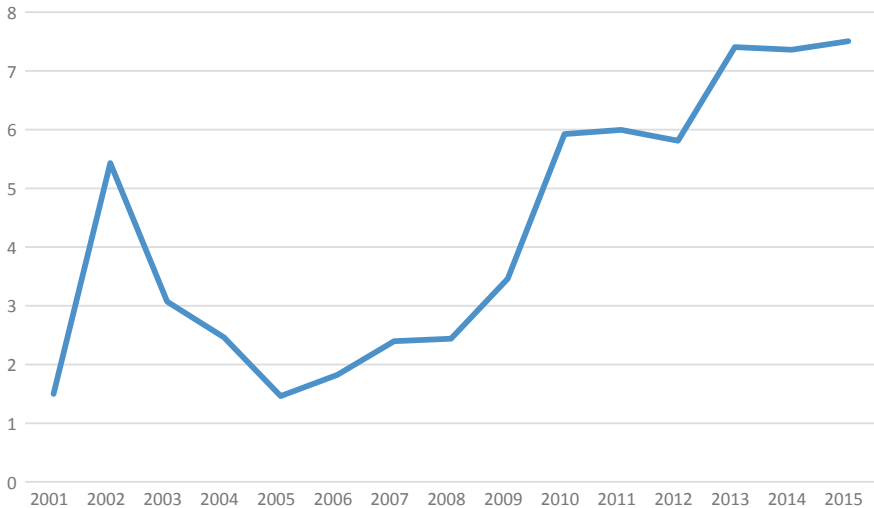


Fig. 2 Non-oil export revenue as percent of total export revenue, 2001–2015 (*Source* Central Bank of Nigerian annual report and statement of accounts, various issues)

- Minerals include; copper, lead, manganese, quartz, zinc, zirconium, and other minerals;
- Semi-manufactured are; aluminum, cocoa products, copper, cotton products, furniture/processed wood, lead, leather and processed skins, palm products, poly products, steel/iron, textured yarn/polyester, tin wheat bran pellets, zinc, and other semi-manufactured products;
- Manufactured products are; aluminum products, asbestos products, beer/beverages, carpet/rug, copper, confectionary, electrical, empty bottles, furniture, glass, insecticide, milk products, paper products, pharmaceuticals, plastic, plastic footwear, soap and detergents, steel/iron products, textiles, tobacco, vehicles, and other manufactured products; and
- Other exports comprise; cement/lime products, charcoal, fertilizer, petroleum products, urea, used/re-exported machinery, electricity, and other products.

Between 2004 and 2015 for which data was available, revenue from agricultural produce contributed 44.09% to total non-oil export revenue, followed by semi-manufactured which contributed 34.07%. Manufactured products contributed 11.95% while minerals contributed 3.16% to total non-oil export revenue in the period under review. The balance of about 6.7% was contributed by other exports (CBN 2015). Further analysis revealed that agricultural produce and semi-manufactured agricultural products alone contributed to the bulk of non-oil revenue in Nigeria between 2004 and 2015. The proportions ranged from 77.97% in 2004 to 59.4% in 2013 (CBN 2015).

3.3 *Agricultural Produce Exports in Nigeria by Commodities*

The main agricultural produce exported from Nigeria include; cashew nuts, cocoa beans, coffee, cotton, cow horn/bones, fish and crustaceans, ginger, groundnuts, gum Arabic, rubber, sesame seeds, and other agricultural products. However, cocoa, rubber, cotton, and groundnuts can be referred to as the traditional agricultural exports as they had featured in Nigeria's non-oil export account prior to Nigeria's independence in 1960, while crops such as cashew nuts, ginger, gum Arabic, and sesame seed are new entrants as they started featuring from late 1990s and early 2000s, and as such are referred to in this paper as non-traditional agricultural produce (Central Bank of Nigeria Annual Report and Statement of Accounts, 1981–2015, and Evbuomwan 1996).

Analysis of available data from various issues of CBN Annual Reports indicated that cocoa, which is a traditional agricultural export produce contributed most to total agricultural produce earnings in Nigeria between 2004 and 2015 (46.04%). Sesame seed which is a non-traditional agricultural export produce followed with 23.84% contribution to total agricultural produce export earnings. Contributions of other non-traditional agricultural produce such as cashew nuts (5.56%), fish and crustaceans (4.60%) and gum Arabic (2.12%) were more than the traditional ones like coffee (0.001%), groundnuts (0.16%), and cotton (4.20%).

3.4 *Econometric Analysis*

Taking a cue from the theoretical and conceptual framework on responses of agricultural export commodities production to their producer prices, exchange rate, interest rate and inflation rate, least square regression analysis was carried out with the available data for Nigeria's traditional and non-traditional agricultural export commodities.

The producer prices determine the income of the farmer while the exchange rate determine the competitiveness of the agricultural commodities in the world market (Adubi 1996; Evbuomwan 1996).

3.4.1 *Model Specification*

The model specified in its implicit form is as follows:

$$Y_t = f(INT_t, INF_t, EXR_t, PY_t) \quad (1)$$

Where Y_t represents the output of the selected agricultural crops in Nigeria, INT_t represents the interest rate, INF_t is the inflation rate, EXR_t is the exchange rate, and PY_t represents the prices of the selected cash crops. The *apriori* expectation is that the producer price and exchange rate will exact positive influences on agricultural output being incentives to farmers, while interest rate and inflation rate will exact negative influences on agricultural output in view of their cost implications.

Assuming that a non-linear relationship between the dependent variable and the independent variables, the model is expressed in the explicit form as:

$$Y_t = AINT_t^{\alpha_1} INF_t^{\alpha_2} EXR_t^{\alpha_3} PY_t^{\alpha_4} \mu_t \quad (2)$$

In order to carry out the various estimation tests, the model is linearized by taking the double log of both sides which is represented as:

$$\text{Ln}Y_t = \alpha_0 + \alpha_1 \text{Ln}INT_t + \alpha_2 \text{Ln}INF_t + \alpha_3 \text{Ln}EXR_t + \alpha_4 \text{Ln}PY_t + \mu_t \quad (3)$$

Where $\text{Ln}Y_t$ is the logarithm function of the output of the selected agricultural crops in Nigeria, $\text{Ln}INT_t$ is the logarithm function of interest rate, $\text{Ln}INF_t$ is the logarithm function of inflation rate, $\text{Ln}EXR_t$ is the logarithm function of exchange rate and $\text{Ln}PY_t$ represents the logarithmic function of prices of the selected cash crops. The inflation rate is the 12-month average change in prices for all items year on year, while the prices of the selected cash crops is their annual average price in Naira per ton.

Equation (3) is restarted for the panel estimation as:

$$\text{Ln}Y_{it} = \alpha_i + \delta_t + \alpha_2 \text{Ln}INT_{it} + \alpha_3 \text{Ln}INF_{it} + \alpha_4 \text{Ln}EXR_{it} + \alpha_4 \text{Ln}PY_{it} + \mu_{it} \quad (4)$$

Where i denotes country and t denotes time, α_i represents the country-specific effects, δ_t is the deterministic time trend and μ_{it} is the estimated residual.

Toward estimating the model in panel data approach, the Hausman test is used to determine whether the fixed effects or random effects regression result is much more appropriate. The fixed effects treat both α_i and δ_t as regression equation parameters, whereas random-effects treat them as components of the error term.

3.4.2 Presentation of Econometric Results

Fixed Effect Regression Results

In Table 1, the coefficients of all the independent variables for cocoa were appropriately signed and an adjusted R-squared of 0.9210 was obtained, indicating that more than 92% of the variation in the dependent variable (cocoa output) was explained by the independent variables (cocoa producer price, exchange rate, interest rate, and inflation rate). The exchange rate coefficient was positive as expected (0.9778) and significant at 1% level, while the interest and inflation rates coefficients (−0.5883) and (−0.1398), respectively, were negative as expected and significant at 5% levels, respectively. The producer price coefficient was positive (0.1311) as expected and significant at the 10% level.

Also, for rubber, all the variables as shown in Table 1 met a priori expectations and the adjusted R-squared was 0.8937 indicating that over 89% of the variation in the production of rubber was explained by the independent

Table 1 Fixed effect results by commodity

Variable	Cocoa	Rubber	Groundnut	Cotton	Sesame	Ginger	Cashew
LnPY	0.1311 ^c (0.098)	0.1051 (0.527)	0.0099 (0.776)	-0.0111 (0.816)	0.0268 (0.765)	0.1809 ^a (0.003)	0.0013 (0.978)
LnEXR	0.9778 ^a (0.003)	1.0958 ^a (0.000)	-0.1106 (0.170)	1.0288 ^a (0.00)	1.2066 ^a (0.003)	0.7030 ^a (0.001)	1.3068 ^a (0.000)
LnINF	-0.1398 ^b (0.067)	-0.1025 (0.203)	-0.7675 ^a (0.004)	-0.1162 (0.152)	-0.1068 (0.242)	-0.0515 (0.295)	-0.1137 (0.187)
LnINT	-0.5883 ^b (0.019)	-0.7399 ^a (0.006)	1.0714 ^a (0.000)	-0.7046 ^a (0.006)	-0.8107 ^a (0.006)	-0.4391 ^a (0.013)	-0.7791 ^a (0.005)
C	1.1263 (0.315)	1.3927 (0.488)	5.4178 ^a (0.000)	3.8722 ^a (0.006)	1.2932 (0.329)	0.3736 (0.608)	-0.7392 (0.559)
R-squared	0.9436	0.9241	0.9167	0.9051	0.9177	0.9721	0.92,340
Adjusted	0.9210	0.8937	0.8834	0.8672	0.8849	0.9610	0.8936
R-squared							
F-statistics	41.8166 ^a (0.000)	30.4190 ^a (0.000)	27.5118 ^a (0.000)	23.8489 ^a (0.000)	27.905 ^a (0.000)	87.2041 ^a (0.000)	30.3865 ^a (0.000)
Durbin Watson	1.7060	1.4436	1.6433	1.5475	1.3132	1.9624	1.5277

Note Probability values are in bracket; ^a, ^b, ^c represents significant at 1, 5, and 10%, respectively
Source Authors' computation

variables in the equation. The exchange rate coefficient was positive (1.0958) and significant at 1% as well as the interest rate coefficient at -0.7399 . The inflation rate coefficient at -0.1025 was appropriately signed and significant at the 10% level. The producer price coefficient though appropriately signed was however not significant.

All the independent variables for groundnut carried the appropriate signs and the Adjusted R-squared was 0.8833 which means over 88% of the variation in the output of groundnut was explained by the independent variables that entered the equation. The exchange rate and interest rate coefficients were appropriately signed and very significant, the inflation rate coefficient was also appropriately signed and partially significant, but the producer price coefficient though correctly signed was not significant as can be seen in Table 1.

The adjusted R-squared for cotton was 0.8672, indicating that over 86% of the variations in the output of cotton was explained by the independent variables in the equation. The exchange rate and interest rate coefficients (1.0288 and -0.7046) were appropriately signed and significant at 1%. The inflation rate coefficient was correctly signed (-0.1162) and significant at 10%, while the producer price of cotton coefficient was negative but not significant.

Similarly, all the variable for sesame seed met a priori expectations and the adjusted R-squared was 0.8849 indicating that over 88% of the variations in the output of sesame seed was explained by the independent variables in the equation. The exchange rate coefficient was 1.2066 and significant at 1% level, interest rate coefficient was -0.8107 and was also significant at 1% level. Both the inflation rate coefficient at -0.1068 and producer price for sesame seed coefficient at 0.0268 though correctly signed were; however, not very significant.

All the independent variables for ginger also met a priori expectations and the adjusted R-squared was very high at 0.9610, which means that over 96% of the variations in the output of ginger was explained by the independent variables. The exchange rate, producer price and interest rate coefficients (0.7030, 0.1809, and -0.4391) were correctly signed and very at 1%. The inflation rate coefficient (-0.0515) was correctly signed but not significant.

Finally, for cashew nuts, the independent variables carried the expected signs and the adjusted R-squared was 0.8936, which means over 89% of the variations in the output of cashew nuts was explained by the independent variables in the equation. The exchange rate coefficient and the interest rate coefficients (1.3068 and -0.7791) were correctly signed and significant at 1%, while the inflation rate coefficient was correctly signed (-0.1137) but not significant. The producer price coefficient (0.0013) though positive was not also significant.

Table 2 Random-effects regression result

<i>Variable</i>	<i>Coefficient</i>	<i>Standard error</i>	<i>T-statistics</i>	<i>Probability</i>
LnPY	0.0488439	0.0164774	2.96	0.003
LnEXR	1.129334	0.0640493	17.63	0.000
LnINF	−0.1056888	0.0215913	−4.89	0.000
LnINT	−0.756511	0.0604549	−12.51	0.000
C	1.548245	0.6824575	2.27	0.000
R-squared	0.0165			
Wald Chi2	1579.04			
Prob (Chi2)	0.0000			
Hausman Test (Prob)	1.0000			
Breusch–Pagan LM test (Prob)	0.0000			

The Random Effect Regression Result

The null hypothesis of the Hausman test is that the random-effects model is preferred as against the alternative that the fixed effects model is preferred. From Table 2, the Hausman test probability value is greater than 0.05 indicating that it is not significant, therefore, we accept the null hypothesis that the random effect model is preferred. The Breusch–Pagan Lagrange Multiplier test is then used to ascertain whether the random effects regression is appropriate or the simple OLS regression. The probability value is 0.000; therefore, we can conclude that the random effect regression is more appropriate for the study. In terms of the regression result, the coefficient value of prices of the selected crops is less than one indicating an inelastic relationship. Therefore, a 1% increase in prices of selected cash crops in Nigeria will induce about 0.0488 percentage increase in output of the cash crops. Furthermore, the result is statistically significant at the 5% level. This finding follows the theoretical underpinnings of the supply theory, such that an increase in price will lead to an increase in the quantity of goods produced.

Exchange rate also has a positive, but elastic relationship with output of cash crops in Nigeria. This is consistent with the study of Adesoji and Sotubo (2013) though contrary to the findings of Eyo (2008) that found a negative relationship between exchange rate and agricultural production. In particular, the coefficient value is 1.129 reflecting that a percentage increase in the exchange rate will induce about 1.129 percentage increase in output of selected cash crops. This suggests that the devaluation of the Naira has a positive impact on output of cash crops in the economy as exports become relative cheaper in the international market for these commodities. In addition to this, the result is statistically significant at the level of 1%.

As expected, inflation rate and the interest rate both have a negative, inelastic relationship and statistically significant relationship with output of cash crops in Nigeria. A percentage increase in the inflation rate leads to a 0.1056 percentage decrease in the output of cash crops in Nigeria. This supports the position of the Phillips curve in which an inverse relationship is expected

to exist between output and the inflation rate. The negative relationship between inflation rate and output of cash crop is in line with the empirical work of Eyo (2008). This finding is also not surprising as an increase in the inflation rate indicates that the general price level of goods and services are increasing. In Nigeria, this is usually reflected in transportation costs. This has a negative impact on farmers that have to move these commodities to the local market across states. The interest rate result is not surprising as interest rate is the cost of borrowing; therefore, as the cost of borrowing increases, farmers have less access to funds which could slow down farming activities, hence output of commodities produced. The negative inelastic relationship between output of cash crops and interest rate is also consistent with findings of Othuon and Oyugi (2017) for the Kenyan economy.

4 CONCLUSION

Concerned with the persistent decline in the export price of crude oil in recent years, and its impact on the Nigerian economy, this chapter examined the performance of both the traditional and non-traditional agricultural export commodities against the backdrop of the resilience of the agricultural sector. As a result of the decline in crude oil prices, Nigeria's goods account in the Balance of Payments (BOP), declined persistently from 8.5% in 2012 to a negative 1.3% in 2015 (Central Bank of Nigeria—CBN 2015). Similarly, the current account balance as a percent of gross domestic products (GDP) declined to minus 3.79% in 2015 from 4.34% in 2012 while the overall balance as a percent of GDP declined to minus 1.44% from 2.78% in the respective periods. Thus, the literature review covered theoretical and conceptual issues in balance of payments and trade policy reforms.

From theory, it is inferred that trade policy works effectively to protect the BOP position when a country has an appropriate exchange rate policy, and for non-traditional exports, a major policy change which can provide a boost is the depreciation of the real exchange rate. Hence, the study employed both descriptive and econometric procedures to analyze the available data obtained from the Central Bank of Nigeria and the National Bureau of Statistics on both the traditional and non-traditional agricultural export commodities which have been the major source of non-oil export earnings in Nigeria.

Available data indicated that, some traditional agricultural export commodities like cocoa and rubber have remained on the export list, while others like groundnut and coffee have almost disappeared from the export list. In the same vein, non-traditional agricultural export commodities like sesame seed and cashew nuts have started featuring prominently on the export list. In line with theory, the econometric analysis carried out confirmed that a major policy change which can provide a boost for agricultural exports is the depreciation of the real exchange rate. For all the agricultural export commodities analyzed in the study, the coefficient of the exchange rate was positive and highly significant. Similarly, the coefficient of the interest rate was negative

and very significant for all the commodities, confirming the fact that high interest rate prevalent in the country discourages agricultural production. The results obtained in the study also, confirmed that the inflation rate was affecting agricultural production negatively, though not as significant as the interest rate.

The study therefore recommends that government should evolve policies that are targeted at depreciation of the real exchange rate so that production of agricultural export commodities can remain attractive thereby promoting economic development. Furthermore, the constraints limiting agricultural productivity in Nigeria as gleaned from the report of the survey conducted by the NBS, the CBN, the FMA&RD, and the FMT&I should be addressed by all stakeholders (see the details in the last paragraph of Sect. 2.1.2). Finally, more emphasis should now be placed on export of processed and semi-processed agricultural export commodities as pointed out by UNIDO for African countries, in order to maximize returns in Nigeria.

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