Currency Devaluation and Importation of Rice in Nigeria

Abstract

Preference for consumption of imported rice by many Nigerians in the face of unstable exchange rate and currency devaluation, informed the determination of the trend of rice importation and the long run relationship that exists between naira devaluation and rice importation in Nigeria. Using time series data between 1980 and 2015, the study employed descriptive; and Co-integration and Vector Error Correction Techniques as analytical tools. The descriptive results only showed a steady trend in rice importation between 1986 and 1995 in the country; while the results of co-integration and vector error correction confirmed a long-run relationship between naira devaluation and rice importation, with a significant speed of adjustment and convergence to equilibrium in the long run. The study therefore concluded that naira devaluation with fluctuating exchange rate vis-à-vis other currencies significantly determined rice importation during the period under review, while also, despite naira devaluation the quantity of rice imported into the country especially by the rich people who can afford it had tremendously increased .

Keywords: Co-integration Techniques; Naira devaluation; Rice importation; and Nigeria

Introduction

Agriculture was the backbone of the Nigeria's economy at independence in 1960 and provided employment to over 75% of the population. The sector provides over 70% of total food consumed in the country, all raw materials for its agro-based industry and responsible for export earnings to finance imports (Alamu, 1981). However, Abdullahi (1981) observed that21 years after independence, Nigeria's agriculture was neither capable of producing enough food for the country's fast growing population nor able to cope with the growing demands for agricultural raw materials to sustain the country's agro-based industries. Several reasons were also put forward by various authors to explain the progressive decline in the performance of the Nigerian agricultural sector. Ashaka (2008); Walkenhorst (2007) and Sekumade (2009). The key reason pointed out by these authors was the oil boom, which is responsible for total neglect of agricultural sector by the government coupled with the exponential increase in foreign exchange earnings realized from the export of crude oil between 1972 and 1980.The monetization of oil earnings exerted an upward pressure in price level coupled with a rapid growth in money supply in Nigeria.. When the price of crude oil slumped during the 1st half of 1980's, Nigeria's crude oil, was sold at slightly above US$41 per barrel in the early 1981, and fell to less than US$9 by August, 1986 (Sekumade, 2009). This, according to Sekumade triggered off a series of development in the economy; and one example of such developments is the state of fiscal crisis as reflected in the persistent budget deficit, which culminated to approximately ₦17.4 billion

between 1980 and 1984. Monetary policy also became highly expansionary as a large part of the deficit incurred during this period were financed through the creation of credit thus the local domestic credit to the economy recorded an average annual growth rate of 29.9% between 1980 and 1984,withmost of the increase attributable to net claim by the government(Afolabi, 1995).

Devaluation according to Campbell(2010), is expressed in Nigeria context as the unit of naira needed to purchase one unit of another country's currency e.g. the United States dollar, British pounds, Euro among others. He also stated that devaluation of home currency affects local enterprises in their payment of foreign transactions, which could lead to the reduction in the value of a currency with respect to those goods, services or other monetary unit with which the home currency can be exchanged.

Devaluation of currency was introduced by Nigeria government in 1986, with the institution of Structural Adjustment Programme (SAP) as a policy designed to achieve a realistic exchange rate for the naira that was over-valued. This was unhealthy for economic growth and development of the nation since overvalued currency further worsen balance of payment problem (Todaro, 1989). However, the depreciation of Naira in 1986 during the structural adjustment Programme led to fall in Nigeria exchange rate with other foreign countries, thereby affecting most of the staple foods in the country. The SAP era thus represented the anti-climax of the thriving, flourishing period for Small and Medium Enterprises (SMEs) in Nigeria including the rice importers. Rice which is one of the staple foods in Nigeria is on the high side as a result of the increasing population growth, increased income levels, rapid urbanization and associated changes in family occupational structures.(Akande, 2011). Therefore the volume of rice imported in 2003 was 2.5 million metric tons at the price of ₦29.85 billion while in 2004 volume imported was 0.84 million metric tons at the price of ₦30.31 billion, which was attributed to the high tariff wall of 150% (Daramola, 2005). Naira purchasing power plays an important role in economic growth and development; and high dependency on goods and services from foreign countries bring negative impact than positive to the Nigeria economy. Meanwhile, consumption of foreign rice with high rate of its importation has been a source of worry to Nigeria populace, especially in the face of unstable foreign exchange rate and currency devaluation in the country; hence this study seeks to examine the relationship between Naira exchange rate and Rice Importation (RI),estimate the value trend and growth rate of RI over the years, as well as determine the long run relationship between naira exchange rate and rice importation in the study area.

2. Literature Review

Acar (2000) conceptualized currency devaluation as a macro-economic policy that deals with deliberate reduction in the value of domestic currency with the aim of maximizing gain in tradable items, and also affects goods and services in a nation where currency is devalued compared to another. The reduction in prices of goods and services according to Acar will stimulate trading activities in a country with devalued currency, and with overall purpose of enhancing economic growth and development

Voir (1997) analyzed the impact of devaluation on small scale enterprises in Burkina Faso, using ordinary least square (OLS) multiple regression method. He also considered the effect of currency devaluation on cost of production and profitability of small scale enterprises; and found that the rate of turnover in business activities reduced by 22%; while prices of imported inputs increased. It also revealed that a substantial profit was recorded in areas of building constructions; while other small scale businesses such as restaurant, provincial retailing, blacksmiths, carpentry and auto-mechanics among others suffered the scourge of devaluation. The study however concluded that devaluation has weakened many small enterprises which are not producing export products because of the depression of urban markets, arising from the fall of the purchasing power of the households. Egedegbe (2009) also argues from the proposition of neo-classical growth model that devaluation of the Naira has impacted negatively on all Nigerians, most especially companies and individuals that are poor. He further confirmed that devaluation made most companies to operate at a lost due to high cost of imported inputs, which contributed to increase in the major part of their net profits; while on the part of the masses the price of consumable items including rice, which is a staple food in Nigeria increased astronomically; and which consequently has negative effect on the poor.

Abayomi (2007) assessed the impact of naira devaluation on Nigeria economy, using the Auto-Regressive Distributed Lag (ARDL) and Granger causality test. He discovered that devaluation can only make goods and service expensive in a dependent economy like Nigeria; and in addition to the falling naira exchange rate which is the crippling effect of inflation in Nigeria (see also Adebayo, 2009).Abayomi also concluded that naira devaluation has enabled rich people in Nigeria to purchase imported rice, which became out of reach for the poor due to its high price.

Kost (1976) also used theoretical exploration to review the trade impact of currency devaluation on any commodity or sub-sector of a country's economy. He traces the effects of changes in exchange rates on commodity production, consumption, trade levels, and price for any two trading partners and discovered negative effect on the exporting country's currency; while the importer's currency remain appreciated. Galbotswe and Andria's (2011), examined the effect of

devaluation on monetary and fiscal policy, using the error correction model. The study discovered a contractionary effect of devaluation in the long run, while expansionary effect of devaluation on monetary and fiscal policy was also discovered in the short run.

The summary of the reviewed studies pointed to the negative effect of currency devaluation on micro and macroeconomic units, as well as the overall performance of the economy. In Nigeria studies also agree that negative effect of naira devaluation was significantly felt by the poor masses due to the importation of rice and other consumable items (Abayomi, 2007; Adebayo, 2009).The current reality in the Nigeria economy where there is more preference for importation of consumable items including rice, despite the low performance of naira against other major currencies in the foreign exchange market; justifies the need for the study.

3. Methodology

The study used graphical illustration to determine the trend of rice importation within the period 1980 – 2015; while Co-integration and Vector Error Correction Techniques was also used to determine the long run relationship between naira devaluation and rice importation in Nigeria within the period under consideration. The presence of Co- integration among the variables was conducted based on the F-statistic of the joint significance of the coefficients at specified time period; while the null hypothesis of no Co-integration between naira devaluation and rice importation was given as H_o: $\gamma_1 = \gamma_2 = 0$

(No co-integration); while the alternative hypothesis was also given as H_α: $\gamma 1 \neq \gamma_2 \neq 0$ (Presence of co- integration)

The study employed time series data spanning 1980 – 2015 in Nigeria. Data were mainly secondary and sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin and annual Reports and statement of Accounts, showing the volume of rice importation and devaluation of naira in Nigeria between 1980 and 2015.

4. Results and Discussion

4.1The Trend of Rice Importation in Nigeria

The graphical representation of rice importation value was examined in figure 1. It was observed that there was a slight decrease from 1981 to 1985 in the value of rice importation. This was maintained in a steady form between 1986 and 1995. The value increased slightly from 1997 with a waved movement till 2006. Furthermore, it experienced a slight and steady increase from

2007 up to 2012. Surprisingly, there was skyrocket increase in the value between 2012 and 2013 but fairly dropped in 2014 through to 2015. It was observed that the volume of rice imported into the country was significantly encouraged from 2013 upward as a result of long and sharp increase in its value. These trends were as a result of various friendly policies such as low tariff on rice importation introduced into the country; while decrease in the volume of rice importation from 1981 – 1985 was as a result of pre–ban on import of rice which was aimed at developing rice production in the country. During this period, more stringent policies such as Input Supply and Distribution Policy, Agricultural Input Subsidy Policy, Water Resources and Irrigation Policy, Agricultural Cooperatives Policy as well as the structural Adjustment Programme were put in place.

This steady trends from 1986 – 1995 was as a result of the ban placed on rice import which was reinforced by the introduction of Structural Adjustment Programme (SAP) in 1986. Under SAP, various trade policies (tariff, import restrictions, and outright ban on rice import at various times) were put in place to regulate importation of rice in the country.

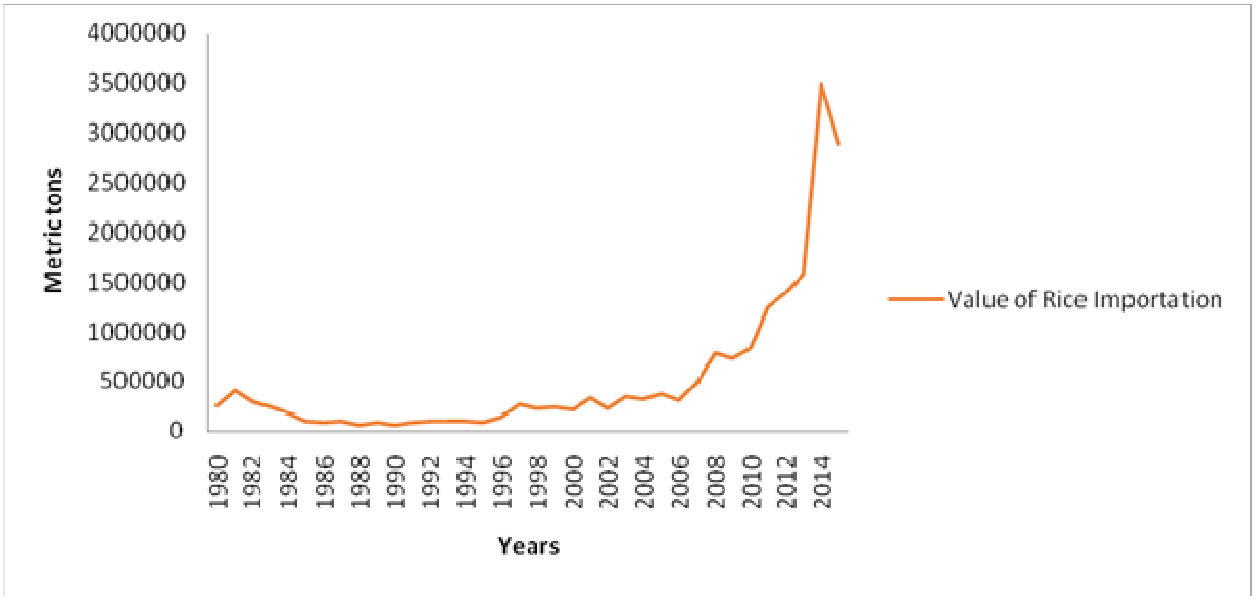

Figure 1: Graphical Trend of Rice Importation in Nigeria between 1980 and 2015

Source: Computed from CBN database, 2015

4.2 Co-integration Analysis

4.2.1 Unit Root Test

The Augmented Dickey-Fuller (ADF) unit root test was employed to know the order of integration of naira devaluation and rice importation. Based on the ADF test statistic in Table 1, it was revealed that the two variables were non stationary at level [I (0)] that is, not integrated at order zero. However, the two variables were stationary at first difference, which implies integrating in the order one [I (1)], and significant at 1% level. The test was necessary in order to show that the time series properties of the variables used in the study were void of spurious regression problem. This also confirms non acceptability of false relationship in regression estimates.

Table 1: Results of Augmented Dickey-Fuller (ADF) Unit Root Test

Variable	ADF Statistic	Lag	Remark
Level I[0]			
Naira Devaluation	-0.507773	0	Non stationary
Rice Importation	-1.0756184	1	Non stationary
First Difference I[1]			
Naira Devaluation	-5.237367	0	Stationary
Rice Importation	-6.772484	0	Stationary

Note: Test critical values are: 1% level = -3.639407; 5% level = -2.951125; 10% level = -2.614300

Lag selection is automatic based on Schwartz Bayesian criterion (SBC).

Source: Computed from CBN database, 2015

4.2.2 Co- integration Test

Having known the stationary properties of the variables, Johansen test of co- integration was carried out to test the long run relationship between naira devaluation and rice importation spanning 1980 to 2015. This is revealed in Tables 2 and 3, the Trace and Max-Eigen co-integration results respectively. Both tests indicated the presence of co-integrating relationship between naira devaluation and rice importation. The result also showed that there is one co-integrating equation at 1% level of probability, which implies that there is a long run relationship between naira devaluation and rice importation. The equation showed that naira devaluation positively and significantly affected rice importation in the long run.

Table 2: Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.464268	21.53603	15.49471	0.0054
At most 1	0.009248	0.315880	3.841466	0.5741

Trace test indicates 1 co- integrating eqn(s) at the 0.05 level

***MacKinnon-Haug-Michelis (1999) p-values*

Table 3: Unrestricted Co-integration Rank Test (Maximum Eigen value)

Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.464268	21.22015	14.26460	0.0034
At most 1	0.009248	0.315880	3.841466	0.5741

Max-eigenvalue test indicates 1 co–integratingeqn(s) at the 0.05 level

***MacKinnon-Haug-Michelis (1999) p-values*

4.2.3 Vector Error Correction Model Test (VECM)

The result of the VECM shown in Table 4 indicated that 1% devaluation of naira will lead to 245.2 increase in rice importation. This shows the increasing quantity of rice that is imported into the country which is substituted for the locally produced ones. This increase in rice importation despite devaluation condition of naira can partly be attributed to preference for the foreign rice especially by the rich people who can afford it (Abayomi, 2007). The result also shows rice importation in one and two lagged periods related negatively with rice importation in the current period. Naira devaluation in both one and two lagged periods also related negatively with rice importation in the current period. This result from error correction implies that relationship between naira devaluation and rice importation in the previous period interface with the current relationship. The result further shows the co-efficient of ECM(-1) as -0.228974(negative as expected) This implies that about 22.9% of the short-run disequilibrium and inconsistencies are being corrected and incorporated into the long run equilibrium relationship; while the probability value (0.73% < 10%) of ECM (-1) co-efficient confirms its statistical significance. The R^2 of about 71% also shows a very good fit of the model.

Table 4: Vector Error Correction Results

Dependent Variable D(RI) **Method: Least Square** **Date:02/09/17 Time: 14:28** **Sample (adjusted): 1983- 2015** **Included observations: 33 after adjustments**				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob**
C	**1.367346**	**3.96221**	**0.34510**	**0.0550**
D(ND)	**245.1527**	**727.780**	**0.33685**	**0.2045**
D(RI(-1)	**-2.135077**	**0.33903**	**-6.29765**	**0.0339**
D(RI(-2)	**-1.534454**	**0.53944**	**-2.84451**	**0.0050**
D(ND(-1)	**-3661.378**	**3286.34**	**-1.11412**	**0.0398**
D(ND(-2)	**-1737.989**	**3343.14**	**-0.51987**	**0.2776**
ECM(-1)	**-0.228974**	**0.129575**	**-0.014671**	**0.0726**
R-squared	**0.709000**			
Adj. R-squared	**0.736592**			
Sum sq. resids	**1.68E+12**			
S.E. equation	**249785.2**			
F-statistic	**8.410727**			
Log likelihood	**-453.6497**			
Akaike AIC	**27.85756**			
Schwarz SC	**28.12965**			
Mean dependent	**79088.52**			
S.D. dependent	**366931.4**			
Determinant resid covariance (dof adj.)	**1.20E+13**			

Determinant resid covariance	**8.06E+12**
Log likelihood	**-583.9998**
Akaike information criterion	**36.24241**
Schwarz criterion	**36.87729**

5. Conclusion and Recommendation

The study revealed that Rice Importation in Nigeria exhibited positive trend in the growth rate during the period under consideration, this implies that time is a major determining factor between naira devaluation and rice importation. Also, Naira devaluation with the fluctuating experience of naira exchange rate significantly determined rice importation during the period. Since it was established from the result that 1% devaluation of naira had contributed 245.2 increase in rice importation, which as a result of preference and affordability of the commodity by the rich people in the country; therefore the government need to enforce the policy of outright ban on rice importation at various times and focus more on indigenous technology; protect small and medium scale entrepreneurs towards mass production of local rice, to compete favourably with the more preferred foreign rice by many Nigerians. This reduces the volume of rice importation vis-à-vis its value; while the enormous foreign exchange used for the importation of rice into the country could be retained locally to stimulate the economy and bring up the value of the Naira.

References

Abayomi, F. (2007). "On the Revaluation of the Naira" Cached*http://www.nigeriavillagesquare*

Abdullahi, A. (1981). The Problems and Prospects of the Green Revolution for Agricultural and Rural Development of Nigeria: Technical and Environmental Perspectives, 1-50

Adebayo, O. (2009). "Impact of IMF- World Bank Programmes on Nigeria" Cached *http//www.africa.accanalysis*

Acar, M. (2000): Devaluation in Developing Countries: Expansionary or Contractionary? *Journal of Economics and Social Research,* 2(1). 59 – 83.

Afolabi, M.O. (1995). Growth Effect of Small and Medium Enterprises (SMEs) Financing in Nigeria. *Journal of African Macroeconomic Review*, 3(1), 193-205.

Akande, P. T. (2011). An Overview of Rice Economic. *The Nigeria Institute of social and Economic Research* (NISER), 1-11,2011.

Alamu, J. C. (1981).The effect of exchange rate fluctuations on the Nigerian. *African Journal of Business Management* Vol. 4, 1-5.

Ashaka, K. (2008).“Nigeria and Global Food Crisis”. The Sun Newspaper (May 5th, 2009). Retrieved on 4th August, 2009 from www.sunnewsonline.com

Campbell, M. (2010).Controversy in Applied Economics. *London: BPCC Wheaton’s Ltd; Exeter*. 2010.

Daramola, B (2005). Government Policy and Competitiveness of Nigeria Rice Economy paper presented at the workshop on Rice Policy for Food Security in Sub-Saharan Africa organized by WARDA, Cotonou, Republic of Benin 07-09- 2005.

Egedegbe, M.(2009).“The Painsof the DevaluedNaira” Catched http*//www.stockstockmarketniger*

Galbotswe, O. and Andria’s, T. (2011): Are devaluation contractionary in small import dependent economy? Evidence from Botswana

Kost, W.E.(1976).“Effects of an Exchange Rate Change on Agricultural Trade.”*Agricultural Economics Research* 28:99-106.

Vior, A. (1997). “The Impact of Devaluation on Small Enterprises in Burkina Faso” Catched *http://www.enterpreneurial.anf.org.com*

Todaro, M. P. (1989). Economics For A Developing World: An introduction to principles, problems and policies for development. Pp516.