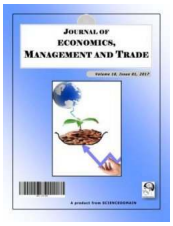

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Currency Devaluation and Importation of Rice in Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Authors OOE, OOSO and AIF designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author OOSO managed the analyses of the study. Authors OOE and APA managed the literature searches. All authors read and approved the final manuscript.

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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 equilibrium relationship 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 showed a decreasing, steady and increasing trend in the value of rice importation into the country; while the results of co-integration and vector error correction confirmed a positive long-run equilibrium 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 positively determined rice

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importation during the period under review. That is, 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; VECM; naira devaluation; rice importation; Nigeria.

1. 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 [1]. However, [2] observed that 21 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 [3,4,5]. 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 [5]. This, according to [5] 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 [6].

Devaluation according to [7], 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 [8]. 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 [9]. 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% [10]. 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 devaluation and Rice Importation (RI), estimate the value trend of rice importation over the specified years, as well as determine the long run relationship between naira devaluation and rice importation in the study area.

2. LITERATURE REVIEW

Acar [11] 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 [11] will stimulate trading activities in a country with devalued currency, and with overall purpose of enhancing economic growth and development.

Vior [12] 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. [13] 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 [14] 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 1]. Abayomi [14] 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 [15] 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. [16], 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 [14,17]. 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

3.1 Theoretical Underpinning and the Model

The theoretical framework of the model to be adopted for the co integration and error correction analysis is rooted in the Marshal-Lerner model which has been described as the extension of the Marshal's model which states that devaluation or depreciation of currency makes export relatively cheaper and import relatively expensive and more so for any country to earn surplus balance of trade, devaluation may be an effective tool. Abba Lerner while extending the work of Alfred Marshal and added the concept of elasticity of demand for export and import of goods, he explained that if the demand for export and import of goods in a country is relatively price elastic then devaluation would positively affect the terms of trade [18]. The J-Curve hypothesis differs on the effect of devaluation which it would only emerge in the

long run because the volume of export and import is unlikely to be affected in the short run due to trade agreements and switching costs among others. Therefore, in the short run devaluation may bring negative effects. This study will take into account the contribution of [18] which is an extension of [19] work with objective to apply the concept more practically under various scenarios. [18] developed a condition that if the demand for import and export of a country is elastic then the objective of surplus terms of trade may be achieved and if the demand for import and export is inelastic then devaluation would further increase the deficit [18]. The identified variables for this study includes the value of rice imports in Nigeria, devaluation of the naira over time, the consumer price index to take into account the elasticity of domestic price, the real exchange rates and the calculation of degree of openness of the economy to globalization. Therefore, the adopted Marshal-Lerner model is hereby specified as follow with modification to suit the objective of this study;

$$RMP = f(NDV, DRP, EXR, CPI, DOP) \quad (1)$$

$$RMP = \theta + \propto_1 NDV + \alpha_2 DRP + \alpha_3 EXR + \alpha_4 CPI + \alpha_5 DOP + ui \quad (2)$$

Where; RMP represent rice importation and dependent variable; while naira devaluation explicitly described as devaluation of the naira (NDV), domestic rice production capacity (DRP), real exchange rates (EXR), index of other consumer goods (CPI) and degree of openness of the economy to globalization (DOP) captured the explanatory variables of the model. The *ui* is the error term in the equation.

3.2 Estimation Techniques and Sources of Data

The study used graphical illustration to determine the trend of rice importation within the period 1980 – 2015; while co integration and vector error correction model (VECM) was employed to determine the long run equilibrium relationship between naira devaluation and rice importation in Nigeria. Augmented Dickey-Fuller test was carried out to determine the presence of unit root property in the variables employed; while the test of joint significance of variables was also carried out through the Wald Test and VEC Residual Portmanteau Test respectively. The time series data identified for the study were sourced from the Central Bank of Nigeria Statistical Bulletin, 2015 as well as the United States Department of Agriculture array of data, 2016. The data spanning1980-2015.

4. RESULTS AND DISCUSSION

4.1 The Trend of Rice Importation in Nigeria

The graphical presentation of the metric tons of rice imported into Nigeria between 1980 and 2015 was shown in Fig. 1. It was observed that there was a slight decreased from 1981 to 1985 in the metric tons of imported rice. This was steadily maintained between 1986 and 1995. The metric tons of rice imported increased slightly from 1997 with a waved movement till 2006. Furthermore, there was a slight and steady increased in tons of rice imported between 2007 and 2012; while there was a skyrocketed increased in the imported tons of rice between 2012 and 2013. Also, the tons of rice imported into the county reached maximum level in 2014, and further dropped in 2015. It was clearly observed that the metric tons of rice imported into the country was significantly encouraged between 2013 and 2014. This development might likely due to various friendly policies such as low tariff on rice importation introduced in the country; while decreased in the tons of rice imported between 1981 and 1985 might also be 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 trend also continued till 1995 which was reinforced with the operation of Structural Adjustment Programme (SAP) introduced 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.

4.2 Co-integration and Vector Error Correction Analysis

4.2.1 Unit root test

The unit root test was carried out to determine the stationary state i.e. time series properties of

the variables employed in the study. It depicts the order of integration of each of the variables and whether or not there is presence of stochastic trend. Testing for the existence of unit roots is considered a necessary step in this study. To achieve the purpose of this study which is to examine the impact of naira devaluation on rice importation in Nigeria, Time series data on rice importation in Nigeria (RMP) were converted into their growth rates.

Table 1 presents the result of the Augmented Dickey-Fuller (ADF) test statistics. The result indicates that all the variables were stationary at first difference. In view of the above and considering the fact that for the variables to be associated to one another statistically in the long-run, they must be of the same order of integration, i.e. I (I), as stated in Table 1. The study therefore proceeds further by specifying the long run equilibrium equation.

4.2.2 Johansen co-integration test

From the ADF unit root test presented in Table 1 it has been revealed that all the time series adopted for the purpose of the study are non-stationary series that only become stationary after differencing at order (I). Confirmation of the presence of non-stationary series suggests bogus relationship in the short-run because of the stochastic elements possessed by these non-stationary series. However, they cannot generate an equilibrium relationship in the short-run; they can only do so in the long-run if they co-integrate.

Therefore, Johansen Co-integration test was carried out to test for the presence of co-integrating equation of the multivariate series in the long-run. In the Johansen Co-integration test, the Trace Statistics and Maximum-Eigen Statistics were compared with 5% and 1% critical values in order to determine the number of co-integrating vectors in the model.

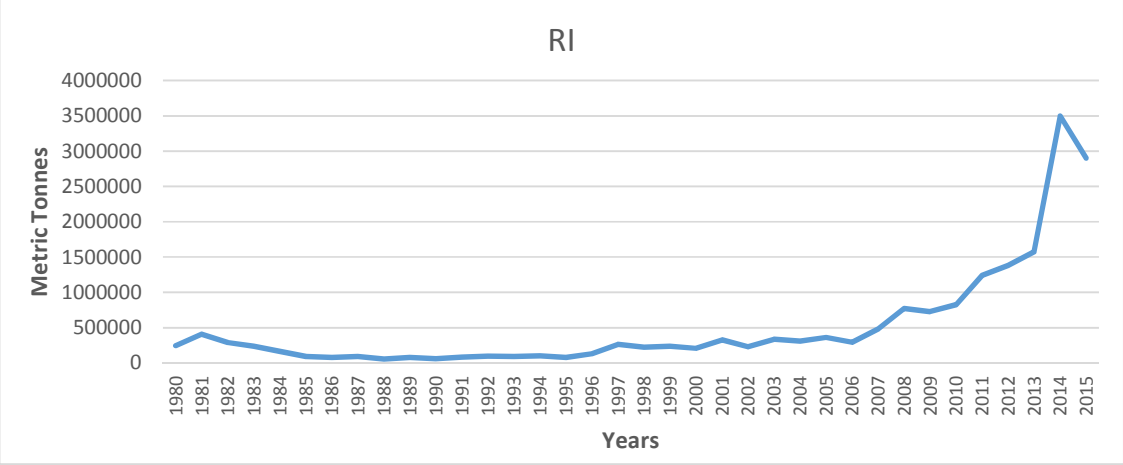

Fig. 1. Graphical trend of rice importation in Nigeria between 1980 and 2015
Source: Computed from CBN database, 2015

Table 1. Unit root test (Augmented Dickey-Fuller)

Variable	At level		First difference		Order of integration	Remarks
	ADF statistics	Critical val. @5%	ADF statistics	Critical Val. @5%		
RMP	0.909569	-2.951125	-6.614385	-2.951125	I(1)**	Stationary
NDV	0.507773	-2.948404	-5.237367	-2.951125	I(1)**	Stationary
DRP	-1.188695	-2.951125	-10.32712	-2.951125	I(1)**	Stationary
EXR	0.389864	-2.948404	-5.268854	-2.951125	I(1)**	Stationary
CPI	-1.958041	-2.951125	-5.737109	-2.951125	I(1)**	Stationary
DOP	-0.314643	-2.948404	-4.723067	-2.951125	I(1)**	Stationary

Source: Author's Computation, 2016
*Note: ** Significant at 5%*

Table 2. Johansen Co integration (Trace statistics) results

Series: RMP, NDV, DRP, EXR, CPI, DOP

Hypothesized		Trace	5 Percent	1 Percent
No. of CE(s)	**Eigen value**	**Statistic**	**Critical Value**	**Critical value**
None *	0.960432	188.3958	103.8473	0.0000
At most 1 *	0.623763	78.58487	76.97277	0.0375
At most 2	0.418149	45.34866	54.07904	0.2371
At most 3	0.345029	26.93630	35.19275	0.2921
At most 4	0.256036	12.54871	20.26184	0.4009
At most 5	0.070694	2.492793	9.164546	0.6790

** denotes rejection of the hypothesis at the 0.05 level*
Trace test indicates 1cointegratingeqn(s) at the 0.05 level
Source: Author's Computation, 2016

Table 3. Normalized Co integrating coefficients

1 Co integrating Equation(s)
Series: RMP, NDV, DRP, EXR, CPI, DOP

1 Co integrating Equation(s):		Log likelihood	-552.0218			
Normalized co integrating coefficients (standard error in parentheses)						
RMP	**NDV**	**DRP**	**EXR**	**CPI**	**DOP**	**C**
1.000000	541.1085	-0.077204	-539.4520	-29.45868	26.43874	88.22138
	(24.6963)	(0.02727)	(24.5917)	(1.29207)	(1.44398)	(35.1143)

Source: Author's Computation, 2016, Note :() standard error in parentheses

$$\mathbf{RMP} = 88.22 + 541.1\mathbf{NDV} - 0.077\mathbf{DRP} - 539.5\mathbf{EXR} - 29.45868\mathbf{CPI} + 26.4387\mathbf{DOP} \quad (1)$$
$$(35.1143)\ (24.6963)\ (0.02727)\ (24.5917)\ (1.29207)\ (1.44398)$$

Table 2 presents the unrestricted co integration rank test which indicates one co integrating equation at the 5% level of significance; while the normalized long-run co integration equation is also presented in Table 3. The equation describes the long-run equilibrium relationship among the variables specified in the model. From the normalized long-run equilibrium equation, the rates of naira devaluation (NDV) indicate a positive long-run equilibrium relationship with rice importation (RMP) in Nigeria over the period. While on the other hand, the level of domestic rice production output (DRP) over the years has maintained a negative relationship with rates at which the product is being imported into Nigeria through various means. This outcome of the domestic rice production revealed a statistical position that is in tandem with economic theory and expectation. Meanwhile, the negative long-run outcome of the exchange rates (EXR) and the consumer price index (CPI) which is the prices of other domestic products were also rightly signed in line with economic and statistical expectations [14,17,15].

4.2.3 Vector error correction model

The vector error correction model (VECM) was carried out using the optimal lag length (1, 1) after observing various lag lengths to allow for the identification of the main dynamic pattern of the model and ensure that the dynamics of the model have not been constrained by a too short lag length. The VECM as presented in Table 4 shows that there truly exist long-run equilibrium relationships among the variables. This is evident by the correctly signed and significant ECM coefficient (-0.000536). Hence, for concise clarification of the error correction term from the VECM model, the interested System of Equation is obtained by choosing the model that has the study's dependent variable: rice importation (RMP) therein as its dependent variable from the series of dynamic equations generated from the vector error correction model (VECM); and hereby presented and specified as follows.

In the specified equation above, the C_1 which also doubled as the coefficient of the lag value of the dependent variable is the speed of adjustment which is otherwise known as the error correction term. Also from the estimated system equation in Table 5, which was generated from the vector error correction model (VECM), it is evident that the error correction parameter estimate of -0.000536 follows economic theoretical underpinning since the coefficient is negative and statistically significant at 5% level of

significance. It further explains a long-run causality among the variables in the model, running from the independent variables to the dependent variable. The implication of the ECM coefficient is that the whole system is returning back to equilibrium at a speed of 0.0536% in each period. The error term which was indicated as CointEq1 in the vector error correction model (VECM) in Table 4 also validates the outcome of the system of equation generated by the model. It was equally revealed that the first lagged period values of the naira devaluation (NDV) and the exchange rates (EXR) were not significant despite their mixed relationships. Meanwhile, the first lagged period of domestic rice production (DRP), prices of other domestic products (CPI) and the degree of the openness of the economy to international trade (DOP) were significant but also with mixed relationships in their one lagged period. This relationship also agrees with the long-run relationship maintained with the level of rice importation in the economy.

4.2.4 Test of joint significance

In order to test the joint significance of the explanatory variables on the dependent variable, the study also adopted the Wald test as well as the VEC residual Portmanteau test for Autocorrelation hypothesis with restrictions.

Table 6 presents the result of Wald test for joint significance of the variables. The test revealed that all the independent variables in the system of equation model are jointly not equal to zero. The null hypothesis is therefore rejected. The Table also revealed that the probability value of the Chi-square is more than 0.05, which established this fact that the explanatory variables jointly and significantly contributed to the performance of the dependent variables.

4.2.5 Portmanteau test for autocorrelation hypothesis

The residual Portmanteau test for autocorrelation hypothesis in Table 7 revealed that the Q-stat and the adjusted Q-stat at various lag lengths which run from lag 1 to 10 have the probability values that showed to be higher than 0.05 significant levels. This implies that the null hypothesis of no autocorrelation is accepted. This result also confirms the Durbin-Watson statistics of the vector error correction model (VECM) presented under the estimated system of equation in Table 5, which indicates that the model is free from serial autocorrelation.

Table 4. Vector error correction estimates

Error correction:	D(RMP)	D(NDV)	D(DRP)	D(EXR)	D(CPI)	D(DOP)
CointEq1	-0.000536	-0.010912	-0.170759	-0.003825	-0.002868	-0.006004
	(0.00024)	(0.01105)	(0.21422)	(0.01129)	(0.00136)	(0.00405)
	[-2.26570]	[-0.98768]	[-0.79713]	[-0.33883]	[-2.11192]	[-1.48124]
D(RMP(-1))	-0.238703	-1.922001	-102.1059	-1.395095	0.403930	-2.073210
	(0.17629)	(8.22557)	(159.488)	(8.40411)	(1.01096)	(3.01779)
	[-1.35401]	[-0.23366]	[-0.64021]	[-0.16600]	[0.39955]	[-0.68700]
D(NDV(-1))	0.159862	5.237601	29.46982	3.476624	1.306158	2.059967
	(0.08711)	(4.06439)	(78.8055)	(4.15262)	(0.49953)	(1.49114)
	[1.83518]	[1.28865]	[0.37396]	[0.83721]	[2.61476]	[1.38147]
D(DRP(-1))	-0.000134	0.003479	-0.603497	0.003184	-0.002470	-0.003851
	(0.00019)	(0.00889)	(0.17240)	(0.00908)	(0.00109)	(0.00326)
	[-0.70139]	[0.39125]	[-3.50048]	[0.35047]	[-2.26049]	[-1.18042]
D(EXR(-1))	-0.163978	-5.239047	-31.24497	-3.454655	-1.303448	-2.038238
	(0.08807)	(4.10897)	(79.6699)	(4.19816)	(0.50501)	(1.50750)
	[-1.86200]	[-1.27503]	[-0.39218]	[-0.82290]	[-2.58103]	[-1.35207]
D(CPI(-1))	0.006404	-0.386888	-4.651935	-0.122147	0.732678	-0.458650
	(0.01957)	(0.91314)	(17.7052)	(0.93296)	(0.11223)	(0.33501)
	[0.32720]	[-0.42369]	[-0.26274]	[-0.13092]	[6.52839]	[-1.36905]
D(DOP(-1))	0.009074	-0.089513	15.04621	-0.214134	0.056879	0.412863
	(0.01315)	(0.61356)	(11.8964)	(0.62687)	(0.07541)	(0.22510)
	[0.69007]	[-0.14589]	[1.26477]	[-0.34159]	[0.75428]	[1.83413]
C	0.008596	5.783702	103.6163	5.187136	1.120806	2.610373
	(0.08666)	(4.04337)	(78.3979)	(4.13114)	(0.49695)	(1.48343)
	[0.09919]	[1.43042]	[1.32167]	[1.25562]	[2.25538]	[1.75969]

Source: Author's Computation, 2016
Note: () standard error in parentheses; [] t-values

Table 5. Estimated system of equation

	Coefficient	Std. error	t-Statistic	Prob.
C(1)	-0.000536	0.000237	-2.265701	0.0248
C(3)	0.159862	0.087110	1.835180	0.0684
C(4)	-0.000134	0.000191	-0.701393	0.4841
C(5)	-0.163978	0.088065	-1.862003	0.0645
C(6)	0.006404	0.019571	0.327203	0.7440
C(7)	0.009074	0.013150	0.690067	0.4912
C(8)	0.008596	0.086659	0.099193	0.9211
Determinant residual covariance		3867324		
Equation: D(RMP) = C(1)*(RMP(-1) + 522.326499811*NDV(-1) - 0.0744648873471*DRP(-1) - 520.728162748*EXR(-1) - 28.4364472505*CPI(1)+25.5199484175*D+199.854974184) + C(2)*D[RMP(-1)] + C(3)*D[NDV(-1)] + C(4)*D[DRP(-1)] +C(5) *D[EXR(-1)] + C(6)*D[CPI(-1)] + C(7)*D[DOP(-1)+C(8)				
Observations: 34				
R-squared	0.356255	Mean dependent var.		0.057718
Adjusted R-squared	0.182939	S.D. dependent var.		0.343547
S.E. of regression	0.310537	Sum squared resid.		2.507265
Durbin-Watson stat	1.903615			

Table 6. Result of wald test

System: Untitled

Test statistic	Value	Df	Probability
Chi-square	15.16059	7	0.3039

Null Hypothesis: C(1)=C(3)=C(4)=C(5)=C(6)=C(7)=C(8)=0

Table 7. Result of VECsystem residual portmanteau tests for autocorrelations

Null Hypothesis: no residual autocorrelations up to lag h
Date: 24/04/17 Time: 14:40
Sample: 1982 2015
Included observations: 34

Lags	Q-Stat	Prob.	Adj Q-Stat	Prob.	Df
1	25.21075	0.9108	25.97472	0.8912	36
2	66.74030	0.6530	70.09986	0.5414	72
3	95.90281	0.7911	102.0846	0.6423	108
4	143.8997	0.4867	156.4810	0.2254	144
5	176.0695	0.5689	194.1973	0.2223	180
6	220.0339	0.4110	247.5827	0.0690	216
7	242.5987	0.6533	275.9976	0.1432	252
8	275.0692	0.6982	318.4590	0.1048	288
9	301.7662	0.8073	354.7669	0.1154	324
10	333.1697	0.8416	399.2553	0.0753	360

**The test is valid only for lags larger than the System lag order.*
df is degrees of freedom for (approximate) chi-square distribution

5. CONCLUSION AND RECOMMENDATION

The study revealed that rice importation in Nigeria exhibited a decreasing, steady and increasing trend in the value of rice importation in Nigeria during the period under consideration. This implies that time is a major determining factor in the value of rice imported into the country. The study also discovered a positive and long run equilibrium relationship between Naira devaluation and rice importation in the country. While the VECM results indicated a rightly signed and significant value of error correction coefficient of -0.000536 (0.0536%) for the entire system model, which also indicates the ability of the model to adjust back to the equilibrium at a speed of 0.0536% in each period. The study therefore concluded that despite the devaluation of naira with the fluctuating experience of exchange rate, it still contributed positively to the value of rice importation in Nigeria during the period under consideration. This might likely due to the

preference and affordability of the commodity by the rich people in the country; therefore the government needs 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, in order 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.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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