

# ANALYSIS OF THE EFFECTS OF CURRENCY DEVALUATION AND TRADE BALANCE AND ECONOMIC GROWTH IN NIGERIA

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## **Abstract**

*This study examines the analysis of the effect of currency devaluation on trade balance in Nigeria. This is against the background that currency devaluation is an important policy and action of economic management that will accelerate trade and enhance economic growth and development in the long-run. Time series data were sourced from the Central Bank of Nigeria (CBN) Statistical bulletin, United Nations Conference on Trade and Development (UNCTD), Handbook of Statistics and the IMF International Financial Statistics from 1980 to 2017. The Error Correction Model was employed and the findings reveal that, currency devaluation proxy by Nominal exchange rate (NEXR) considered in the model has a positive significant effect on trade balance (TB) only in the long-run. In the short-run, the effect was not significant and negative. Therefore, the study concludes that currency devaluation improves trade balance in Nigeria in the long-run thereby, confirming to J-curve phenomenon in the Nigeria economy.*

**Keywords:** Currency devaluation, Co-integration, ECM, Trade Balance and J-curve

To Alemu & Jin-sang, (2014) currency devaluation is perceive in finance literature as a procedure traditionally agreed to enhance trade balance and domestic currency loss value, while exports become cheaper imports become expensive, which in turn promotes trade balance. In theoretical economic, export sector is better encouraged by devaluation of a local currency, as this would increase competitiveness of export goods in international markets. According to Alemu & Jin-sang, (2014), it would cause high import price because the higher import price could bring inflationary pressure to host county especially the import country that imports industrial needs, energy resources and consumption goods. In the past years, emerging economies adopted various development strategies such as industrialization, import substitution, export promotion to structural adjustment programming. However, Glenville & John, (2000) opined that Sub-Saharan Africa has embraced the latter approach which includes the removal of trade restraints and currency devaluation strategies. Economic theory of currency devaluation by Marshall submits that nation's trade balance will possibly be improved by devaluation in later years.

Vitale (2010) and Nkansah, (2015) believe that interest rate plays a less prominent role than exchange rate in a given country in the transmission mechanism of monetary policy. In Nigeria which is an emerging economy, it is argued that currency devaluation is a suitable macroeconomic tool supporting the export sector. In that regard, higher exports and lower imports promote the trade surplus of the host country and spur the aggregate demand and it is also likely to allow higher level of economic growth (Alemu& Jin-sang, 2014). In recent time, the policy makers in Nigeria tried different exchange rate policies which raised a lot of concern and make the issue of possible relation between currency devaluation and trade balance extensively studied by the scholars, researcher, economist, policy makers as well as intellectuals like Anderson and Styf (2010), Loto (2011), Asif (2011), Khan (2012), Kwalingana (2012), Rahman (2012), Ogundipe (2013), Salmasi (2013), Adeyemi, Ojeaga and Ogundipe (2013), Vijayakumar (2014). Their findings were mixed leaving the subject matter of devaluation and trade balance unresolved and debatable. Apart from the real exchange rate, trade balance is also affected by real domestic income, foreign income and interest rate.

Considering the fact that empirical studies carried out in the case of Nigeria are scanty there is mixed findings in the few work done. These empirical studies however investigate the Marshall-Lerner condition and J-curve phenomenon simultaneously in Nigeria. Due to the advent of robust econometric estimation techniques, the actual effect of currency devaluation on trade balance and whether the J-curve phenomenon holds in Nigeria. On this basis, this study tries examine the effect of currency devaluation on trade balance in Nigeria. However, the specific objectives of this study are to:

1. Examine the relationship between domestic interest rate and trade balance in Nigeria.
2. Evaluate the effect of currency devaluation on trade balance in Nigeria.
3. Determine the relationship between foreign income and trade balance in Nigeria.
4. Examine the effect of real domestic income on trade balance in Nigeria.

### **Significance of the Study**

This study uses the ratio of imports to exports  $\left(\frac{M}{X}\right)$  as proxy for trade balance as against other study that employs the difference between export and import (X-M) as proxy for trade balance. The study will therefore provide an insight to the understanding by government, self-regulatory institutions - Central Bank of Nigeria (CBN), Nigeria Stock Exchange (NSE), Security and Exchange Commission (SEC) etc, policy makers, importers and exporters thereby guiding these agents in making and implementing policies that will be favourable to trade balance in Nigeria.

Trade balance does not only result from the export or import of tangible goods but also from intangible goods resulting from education. Policies on education be effective and aimed at reconciling the processes of globalization and education in a way that is conducive for trade balance. Significant coordination and market failures in education and skills may cause trade balance not to be the case and therefore public intervention can be

appropriate in order to enhance the trade balance. Hence, revitalizing education is a right tool that will encourage a positive trade balance.

### **Literature Review**

The literature review section is divided into conceptual, theoretical and empirical literatures. This is to enable us caption different views by the authors and scholars in the field.

#### **Conceptual Literature**

Currency devaluation is the official reduction in the value of domestic currency in terms of foreign currency. As stated in Asif, (2011) it increases the local prices level of imports and the external prices of exports declines. Loto (2011) believe that devaluation is anticipated as useful measure for correcting trade imbalance but it has several effects on variables in major macroeconomic. According to Zeeshan, Asghar&Shahid (2016) it expenditure to fall and enhance the level of output through the multiplier effect. This policy of devaluation of domestic currency is used reduce deficit in the balance of trade and payment. As a result, Kashif (2011) sees devaluation as a reduction in the value of currency with respect to goods and services. While **Valentino, (2006) opines that** trade balance is a component of Gross Domestic Product (GDP), which it surplus increases GDP and it deficit reduces it. The impact of trade balance gives rise to the traditional Keynesian multiplier effect with consumption moving in the same direction if it impact is strong enough. Thus in financial literature, trade balance impact on the total size and composition of the current-account balance as well as influences the balance of payments.

#### **Theoretical Literature**

##### **Elasticity Approach Theory / Marshall-Lerner Condition**

This theory posit that complete transactions under contract during devaluation may negatively affect trade balance in the short-run but export and import quantities adjust over time which may give rise to elasticities of exports and imports to increase and quantities adjusted. Due to this, the foreign prices of the export of the devaluing country is reduced and increase the price of imported goods that directly reduces the demand for imports in the long-run, which improves trade balance. The elasticity theory states that the effect of devaluation is a function of the elasticity of exports and imports i.e devaluation = f(exports and imports).The hypothesis that devaluation can improve the trade balance is rooted in the Marshall-Lerner condition. The Marshall-Lerner condition states that for devaluation to have a positive effect on the trade balance and for a stable exchange market, the absolute values of the sum of the demand elasticities for exports and imports must exceed unity.

##### **Absorption/Switching Approach**

The absorption approach theory is different from balance of payments that emerged at the beginning of 1950s. This approach subscribe to the body of new analysis known as the absorption approach and associate it with balance of payments and was propagated by Mills

(2011). The absorption theory asserts that the devaluation of a country's currency may cause the terms of trade to fall, switching expenditure from foreign goods to locally produced goods and improve the trade balance of that country via expenditure switching.

### **The Monetary Approach Theory**

Frenkel & Johnson (2003) opined that in the monetary approach the balance of payment is a monetary phenomenon. And that any excess demand for goods, services and assets, could lead to a deficit in the balance of payments; reflects an excess supply of or demand for the stock of money. Therefore, the balance of payments behavior should be analyzed from the point of view of money supply and demand. To Mills (2011), the monetarist view is based on the argument that devaluation reduces the real value of cash balances and changes in relative price of traded and non-traded goods and causes the trade balance to improve. However, higher import prices after devaluation may contribute to higher overall domestic prices of non-traded goods and then impact negatively on the trade balance.

### **Empirical Literature**

Edwards (2007) examined the traditional theory behind the premise of devaluation using data from 1970-1980. His findings and conclusion was that devaluation causes expenditure switching, increases production and improves trade balance in the long-run. Akinlo (2000) investigated the effect of currency depreciation on the Nigerian economy between the years 1986-1991. The study employed the ordinary least square (OLS) and his result reveals a negative relationship between the profit levels of the manufacturing industries and movement in the exchange rate. Al-Abdelrazag (2013) investigated the impact of currency devaluation on trade balance in Jordanian economy between the years 1969-1994. Adopting the elasticity approach to the balance of payments, the study reveals that currency devaluation does not improve the trade balance in the short-run. Agbola (2004), applying the regression techniques, discovered a negative relationship between currency devaluation and trade balance in South Africa. Therefore, he believed that the negative relationship between devaluation and the balance of trade is attributed to overall effects of trade liberalization in the South African economy.

Yiheyis (2005) investigated the effect of currency devaluation on aggregate output from 1985-2004 using data from selected Africa countries. He employs panel data regression and his results reveals that output growth, eventually leads to improvements in trade balance, is influenced by monetary and fiscal policy. Asif (2011) and Salmasi (2013) uses regression and stationarity test on data from 1981-2008. They discovered that devaluation improved balance of trade significantly and concluded that devaluation will help the economy to gain benefit in balance of trade and reduce the deficit. Kashif (201) investigated the impact of devaluation on trade balance in Pakistan in the long and short-run, using a bound testing approach to Co-integration and Error Correction Mechanism (ECM). His result reveals that devaluation is only effective in improving trade balance and there is a co-integrated relationship between the real effective exchange rate and trade balance in the long-run.

Similarly, Loto (2011) determine the effect of devaluation of the Nigerian naira on the country's trade balance for the period 1986-2008. He uses the elasticity approach to balance of payments adjustment, the ordinary least square (OLS) to estimate the import and export demand functions. The results reveals that devaluation did not improve the trade balance because the sum of demand elasticities for imports and exports is less than unity and therefore, Marshall-Lerner condition do not hold. Rawlins (2011) and Kwalingana (2012) examine the effect of currency devaluation on trade balance in New Jersey, using panel data. In their studies for 19 African countries, they discovered that currency devaluation causes deterioration in trade balance in the medium-short term. Similarly, Ogundipe (2013) and Vijayakumar (2014) discovered a negative relationship between currency devaluation and trade balance and concluded empirically that it would not be useful to solve the deficit in balance of trade by using devaluation. Salman (2013) examine the effects of nominal effective exchange rate changes on trade balance in Malawi, using Johansen multivariate co-integration, the results reveals a significant impact of exchange rate devaluation on trade balance in the long-run.

Adeyemi, Ojeaga and Oluwatomisin (2013) investigate the impact of the Nigeria currency devaluation on trade balance using Johansen co-integration and variance decomposition between 1970-2010. Their results indicate that there exist a long-run relationship between trade balance and its determinants – domestic income; domestic and foreign money supply, domestic interest rate and nominal exchange rate and all variables are stationary. Alemu and Jin-Sang (2014) on examining the effect of depreciation on export in countries selected from Asian. Using the panel data, the study reveals no evidence for the effect of depreciation to improve trade balance in their economies. Zeeshan, Asghar and Shahid (2016) also evaluate the effect of devaluation on balance of trade and on the External Debt in Pakistan between 1980 and 2014. They adopted the Autoregressive distributed lag model (ARDL) and the Error Correction Mechanism (ECM). Their results establish a significant relationship between currency devaluation and trade balance in Pakistan.

With a scanty and contradictory argument in their research, there is the need to out other research in Nigeria to determine the relationship between currency devaluation and trade balance. It is on the basis of this that the study explore the effects of currency devaluation and trade balance in Nigeria and to test whether Marshall-Lerner Condition or J-Curve phenomenon holds in the country base on the theory of the elasticity.

## **Methodology**

This, study adopted the longitudinal research design using the entire Nigeria economy as the population of this study. The study focuses on currency devaluation and trade balance as the sample size while 37 annual observations for period ranging from 1980-2014 were used. All variables were secondary and were sourced from the Central Bank of Nigeria (CBN), Statistical Bulletin, United Nations Conference on Trade and Development Handbook of Statistics (UNCTDHS) and the IMF International Financial Statistics. The study

adopted the descriptive statistic, unit root test and co-integration and Error Correction Model (ECM) mechanism to investigate the data. The properties of the variables were summarized and presented with descriptive statistic. The purpose of the unit root test was to examine the stationarity of the variables using Augmented Dickey Fuller (ADF). The relationship adopted for the variables is given as:

$$\Delta Y_t = \alpha_t + \beta_t \delta Y_{t-1} + \gamma \sum_{i=1}^m \Delta Y_{t-i} + \varepsilon_t \dots\dots\dots 1$$

Where

$\alpha$  = represents the drift,  $t$  = deterministic trend and

$m$  = lag length large enough to ensure that  $\varepsilon_t$  is a white noise process.

The Engle and Granger co-integration test is used to ascertain the long-run relationship between the variables. If co-integration exists, then we analyze the short-run relationship with the incorporation of the estimated Error Correction Term (ECT). Therefore, an Error Correction Model (ECM) is appropriate (Engle and Granger, 1987).

**Theoretical Framework**

In the Elasticity Approach models, the Marshall-Lerner condition poses the question as to what conditions does devaluation improves the trade balance. The trade balance was either expressed in terms of foreign currency (TB\*). In determining net supply of foreign exchange in the foreign exchange market (balance of payments) for example. Or in terms of domestic currency: *TB* e.g., if we are interested in net exports as a component of GDP  $\equiv C+I+G+ TB$ . The theory assumes no capital flows or transfers, i.e  $\Rightarrow BOP = TB$ , Price in terms of producer’s currency (PCP); Supply elasticity =  $\infty$ , complete exchange rate passing through, and demand is a decreasing function of price. If the above assumptions hold, the condition becomes:

$$-1 + (\epsilon_x) + (\epsilon_x^{EM/X}) > 0 \dots\dots\dots 2$$

If we assume simply that we start from an initial position of balanced trade, i.e  $EM = X$ .

$$\text{Then the inequality reduces to: } -1 + (\epsilon_x) + (\epsilon_x) > 0 \dots\dots\dots 3$$

This is the Marshall-Lerner condition or phenomenon.

**Model Specification**

This study employed the model used by Emmanuel, Tarcicious&Mbohwa (2015), which is the functional relationship among the variables is specified.

$$TDB = f(NEXR, DINTR, FINC, DINC) \dots\dots\dots 4$$

However, to order to ascertain the effects of the currency devaluation stability factors on trade balance in Nigeria, the model is presented in econometric form as:

$$TDB_t = \alpha_0 + \beta_1 NEXR_t + \beta_2 DINTR_t + \beta_3 FINC_t + \beta_4 DINC_t + \mu \dots\dots\dots 5$$

The combine estimate the short-run dynamics and long-run equilibrium and the Error Correction Model (ECM) were used as short-run equation due of lagged variables that was specified as:

$$TDB_t = \alpha_0 + \beta_1 \sum_{t=1}^n \Delta TBT_{t-1} + \beta_2 \sum_{t=1}^n \Delta NEXR_{t-1} + \beta_3 \sum_{t=1}^n \Delta INTR_{t-1} + \beta_4 \sum_{t=1}^n \Delta FINC_{t-1} + \beta_5 \sum_{t=1}^n \Delta DINC_{t-1} + \delta_1 Ecm(-1) + \mu \dots \dots \dots 6$$

Equation 5 is the long-run model with standard assumption and equation 6 is the short-run model due to its lag values.

Where, TDB = Trade Balance, DINTR = Domestic Interest Rate

NEXR = Nominal Exchange Rate (proxy currency devaluation)

FINC = Foreign Income, DINC = Domestic Income

$\alpha_0$  = Intercept or constant,  $\beta_1, \beta_2, \beta_3, \beta_4,$  and  $\beta_5$  = Coefficients

$\delta_1$  = captures the long-run effect.  $Ecm(-1)$  = error correction term,  $\mu$  = Error term

t = respective variables at time t

A priori expectations are expressed as:  $\alpha_0 > 0; \beta_1, \beta_2, \beta_3, \beta_4$  and  $\beta_5 > 0$

**Data Presentation and Analysis**

**Unit Root Test**

**Table 1: Stationarity Test**

Variables	Levels		Remarks	First difference		Remarks
	Statistics	Prob.		Statistics	Prob.	
TDB	-3.44	0.01*	Stationary	-7.43	0.00*	Stationary
NEXR	1.35	0.99	not-stationary	-5.02	0.00*	Stationary
FINC	-4.10	0.00*	Stationary	-9.09	0.00*	Stationary
DINTR	2.98	0.04*	Stationary	-6.19	0.00*	Stationary
DINC	-0.48	0.88	not-stationary	-4.74	0.00*	Stationary

\* 5% significance level

Source: E-views 9

Table 1 shows that at levels only NEXR and DINC are not stationary while the first differenced of the variables stationary and integrated of the order I(1).

**Descriptive Statistics**

**Table 2: Summary Statistic**

variables	TDB	NEXR	FINC	DINTR	DINC
Mean	72.163	75.529	40476235	12.130	137324.8
Median	69.727	22.051	32109600	12	99604.2
Maximum	113.404	253.49	1496440	23.242	610235
Minimum	31.344	0.61	6539300	6.125	1090.8

<i>Std. Dev.</i>	20.535	73.543	32637367	3.793	147625.4
<i>Skewness</i>	-0.032	0.4809	1.262173	0.768	2.2819
<i>Kurtosis</i>	2.422	1.9885	4.495821	3.890	7.5193
<i>Jarque-Bera</i>	0.521	3.0034	13.27345	4.861	63.5991
<i>Probability</i>	0.771	0.2227	0.001311	0.088	0
<i>Sum</i>	2670.01	2794.55	1.50E+08	448.79	5081018
<i>Sum Sq. Dev.</i>	15180.57	194707	3.83E+15	517.95	7.85E+10
<i>Observations</i>	37	37	37	37	37

The ratio of the mean to the median is approximately 1 in table 1 for all variables. The difference between minimum and maximum values is significant. The TDB reveal a negatives Skewness which shows a long tail to the left from its mean. The other variables have long tail to the right from the corresponding mean. A flat distribution property is displayed by TDB and NEXR and is relative to normal with their Kurtosis value less than 3.0. However, FINC, DINTR and DINC have a peak distribution property that is relatively normal with their Kurtosis value greater than 3.0 approximately. The Jarque-Bera statistic and probability values are not significant for TDB and NEXR which means that the variables are normally distributed. The FINC, DINTR and DINC variables are not normally distributed. Therefore, unit root test of the variables becomes necessary.

**Correlation Matrix**

**Table 3 Correlation Analysis**

<i>Variables</i>	<i>TDB</i>	<i>NEXR</i>	<i>FINC</i>	<i>DINTR</i>	<i>DINC</i>
<i>TDB</i>	1.00	0.46	-0.17	0.35	0.05
<i>NEXR</i>	0.46	1.00	-0.39	-0.14	0.55
<i>FINC</i>	-0.17	-0.39	1.00	-0.07	-0.28
<i>DINTR</i>	0.35	-0.14	-0.07	1.00	-0.08
<i>DINC</i>	0.05	0.55	-0.28	-0.08	1.00

Source: E-views 9

In table 2 present the strength and direction of the relationship between the variables under consideration. There is a weak positive relationship between NEXR, DINTR and TDB, while the relationship between DINC and TDB is very weak positive. This implies that an increase in NEXR, DINTR and DINC similarly increases trade balance in Nigeria. It is only FINC that has a negative relationship that is very weak with TDB, which implies that an increase in FINC, decreases trade balance in Nigeria.

**Cointegration Test**

**Table 4: Johansen Co-integration Analysis**

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace		
No. of CE(s)	Eigenvalue	Statistic	5% Critical Value	Prob.**
None *	0.746619	104.9794	69.81889	0.0000
At most 1 *	0.720130	58.30212	47.85613	0.0039
At most 2	0.211232	15.00548	29.79707	0.7797
At most 3	0.183168	6.937843	15.49471	0.5849
At most 4	0.001731	0.058898	3.841466	0.8082
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen		
No. of CE(s)	Eigenvalue	Statistic	5% Critical Value	Prob.**
None *	0.746619	46.67733	33.87687	0.0009
At most 1 *	0.720130	43.29663	27.58434	0.0002
At most 2	0.211232	8.067641	21.13162	0.8995
At most 3	0.183168	6.878945	14.26460	0.5036
At most 4	0.001731	0.058898	3.841466	0.8082

Source: E-views 9

In Table 4 both the Trace and Max-Eigen statistics reveals the present of two co-integrating relationship. This implies that all the variables converge in the long-run and any variable that deviate from this convergence in the short-run will adjust to equilibrium in the long-run. All the co-integrating variables show an element of Error Correction Model; hence, the Error Correction Model is estimated.

**Regression Analysis**

**Table 5: The Vector Error Correction Model**

Error Correction	D(LTDB)	D(LNEXR)	D(LFINC)	D(LDINTR)	D(LDINC)
ECM	-0.55	-0.23	0.20	2.49	11.13
	-0.23	-0.33	-0.26	-1.54	-3.84
	(-2.39247)	(-0.70072)	(0.78195)	(1.61599)	(2.89857)
D(LTDB(-1))	-0.12	-0.42	-0.49	-1.65	-8.52
	-0.22	-0.31	-0.25	-1.45	-3.63
	(-0.55331)	(-1.32811)	(-1.98606)	(-1.13435)	(-2.34817)

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D(LTDB(-2))	-0.01	-0.02	-0.01	-0.71	-6.97
	-0.20	-0.29	-0.22	-1.33	-3.32
	(-0.02544)	(-0.08545)	(-0.03645)	(-0.53253)	(-2.09834)
D(LNEXR(-1))	0.23	0.08	0.30	0.68	-5.11
	-0.15	-0.22	-0.17	-1.00	-2.49
	(2.56736)	( 0.36453)	(1.79877)	(0.68293)	(-2.05446)
D(LNEXR(-2))	-0.23	0.13	0.16	0.11	3.50
	-0.17	-0.24	-0.19	-1.11	-2.76
	(-1.36752)	(0.56437)	(0.88331)	(0.09537)	(1.26846)
D(LFINC(-1))	-0.02	0.15	-0.18	0.30	4.00
	-0.19	-0.28	-0.22	-1.29	-3.22
	(-0.11888)	(0.53084)	(-0.84220)	(0.23417)	(1.24127)
D(LFINC(-2))	-0.21	-0.01	-0.22	0.69	1.57
	-0.17	-0.25	-0.19	-1.13	-2.83
	(-1.22249)	(-0.05005)	(-1.16252)	(0.60522)	(0.55530)
D(LDINTR(-1))	-0.04	-0.01	0.09	0.05	0.22
	-0.03	-0.05	-0.04	-0.21	-0.53
	(-1.32842)	(-0.27082)	[(2.44508)	(0.24468)	(0.41013)
D(LDINTR(-2))	-0.06	-0.02	-0.07	0.18	0.60
	-0.04	-0.06	-0.04	-0.26	-0.64
	(-1.68081)	(-0.40646)	(-1.52744)	(0.71455)	(0.93686)
D(LDINC2(-1))	-0.04	-0.01	0.00	0.12	-0.12
	-0.01	-0.02	-0.02	-0.10	-0.24
	(-2.50962)	(-0.60898)	(0.29796)	(1.21758)	(-0.4951)
D(LDINC2(-2))	-0.02	-0.01	0.01	0.07	0.01
	-0.01	-0.02	-0.01	-0.07	-0.18
	([-1.91335)	(-0.78437)	( 0.54696)	(1.00292)	(0.03127)
C	0.04	0.15	-0.08	-0.08	0.33
	-0.05	-0.08	-0.06	-0.36	-0.89
	(0.75322)	(1.89813)	(-1.28572)	(-0.21794)	(0.36520)
R-squared	0.58	0.24	0.55	0.13	0.63
Adj. R-squared	0.37	-0.14	0.32	-0.30	0.44

Source: E-views 9

From table 5, all the converging variables are mutually causal as reveal by the Vector Error Correction Model (VECM). The 2adjusting co-integrating variables are D(DLTB) and

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D(DLNEXR) which show a negative values of their respective coefficients when compared to their t-values in the ECM. This implies that the error correction is rightly signed and the speed of adjustment is approximately 55% and 23% in the two variables converging in the long-run. The converging variable D(DLTDB) is statistically significant. This is visible from its t-value of 2.39 which is greater than 2.0. From the table also, D(LDFINC)), D(LDINTR) and [D(LDINC)] are the non-adjusting variables and are not statistically significant. This implies that domestic income, domestic interest rate and foreign income have no significant effect on trade balance in the long-run in Nigeria. The coefficient of determination ( $R^2$ ) is 58% and the Adjusted determination ( $R^2$ ) is 37% implying that trade balance has a very good-fit of the regression line. This also means that all the variables used in the model account for approximately 37% of total variation in trade balance in Nigeria.

**Pair-Wise Granger Causality Tests**

Table 6: Causality Result

Null Hypothesis	Obs	F-Statistic	Prob.
LNEXR does not Granger Cause LTDB	35	6.34781	0.0050
LTDB does not Granger Cause LNEXR		1.76057	0.1892
LFINC does not Granger Cause LTDB	35	0.74056	0.4854
LTDB does not Granger Cause LFINC		0.88077	0.4249
LDINTR does not Granger Cause LTDB	35	0.03737	0.9634
LTDB does not Granger Cause LDINTR		0.10183	0.9035
LDINC does not Granger Cause LTDB	35	0.21339	0.8091
LTDB does not Granger Cause LDINC		0.31674	0.7309

Source: E-views 9

The causality result in table 6 is clear that only one causality relationship between nominal exchange rate and trade balance was found. The result shows that currency devaluation granger causes trade balance in the long-run at 1% level and that causality

relationship was not found between foreign income, domestic income, domestic interest rate and trade balance in Nigeria.

### **Discussion of Result and Policy Implication**

The Trade balance D(LTDB) model in table 6 reveal that the in lag period 1 and 2 of the trade balance, D(LTDB(-1)) and D(LTDB(-2)) have negative effect on current year trade balance in the short-run and not significant. The year lag 1 and 2 of currency devaluation, (D(DNEXR)-1)) and (D(DNEXR)-2)) reveal a mixed effect on trade balance, while the year lag 1 has a positive significant effect on trade balance and the period lag 2 has a negative relationship with trade balance in the short-run but not significant.

This means currency devaluation can improve trade and has yielded a fairly desire good result in promoting trade balance in Nigeria if well applied by the government. Similarly, the 1 and 2 period lag used for domestic income (LDINC), foreign income (LFINC) and domestic interest rate (DINTR) have no significant negative effect on trade balance in the short-run in Nigeria except for the 1<sup>st</sup> period lag of LDINC that is significant and only LTDB and LNEXR that are correctly signed. This showed that government policies in exchange rate and trade have impacted on trade balance in the long-run. This was confirmed by the causality running from currency devaluation to trade balance in Nigeria. The results also shows that currency devaluation have adverse effect on trade in the short-run while in the long-run it had positive effect on trade balance, which confirm to the J-curve phenomenon in Nigeria. The result of this findings are in line with that of Asif(2011) and Salmasi(2013), Kashif (2011), Rawlins (2011) and Kwalingana(2012) that currency devaluation causes deterioration in trade balance in the medium-short term and significantly improved balance of trade in the long-run.

### **Summary of Findings**

This study was concern with the evaluation of the effect of currency devaluation on trade balance in Nigeria. This study was carried against the background that currency devaluation is an important policy action of economic management in Nigeria that will accelerate trade and encourage economic growth and development in the country. The data were sourced from Central Bank of Nigeria (CBN), Statistical Bulletin, United Nations Conference on Trade and Development, (UNCTD) Handbook of Statistics and IMF International Financial Statistics. The Error Correction Model (ECM) was used and the findings reveal that currency devaluation proxy by Nominal exchange rate (NEXR) has positive and significant effect on trade balance (TDB). In the short-run the effect currency devaluation was negative and not significant.

### **Conclusion**

Good governance and adequate security is a prerequisite to trade and as trade affect currency devaluation and trade balance of a country. In a country like Nigeria were insecurity posed a threat to trade, currency devaluation and trade balance will be distorted. Therefore

education of the people is important to understand the importance of good governance and insecurity of a country. The study concludes that currency devaluation improves Nigeria trade balance in the long run it is imperative to put in check the problem of insecurity through education of the people. The study confirms with the J-curve phenomenon in the country.

### **Recommendations**

Due to the foregoing, the following recommendations were made:

1. Export promotion strategies (EPS) should be encouraged by the government so as to maintain a surplus balance of trade
2. There should be a working and conducive environment for trade balance to improve working on imports and exports.
3. The government should coordinate and harmonize monetary policies in Nigeria in order to facilitate the financial integration process in the country,
4. There should be effective and coordinative fiscal and monetary, formulated by financial authorities in order to harmonize policy that will always encourage favourable balance of trade in the country.

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