EVALUATION OF THE EXCHANGE RATES FLUCTUATION ON THE MANUFACTURING OUTPUT IN NIGERIA (1980-2014)

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ABSTRACT

The study would identify the strengths and weakness of exchange rate policy and management, identify those parts that are mostly affected by instability in exchange rate provide the general public with adequate information on the foreign exchange transaction.The study used annual time-series data from 1980-2014 sourced from the Central Bank of Nigeria (CBN) statistical bulletin for various issues and National Bureau for Statistics (NBS) statistical bulletins. Different econometric techniques adopted revealed the following findings that a unit changes in investment rate will lead to a -0.078217 decreases in manufacturing output. Fluctuations in the rate of exchange is not favourable to economic activities in the manufacturing sector as importation of both capital goods and other inputs become increasingly difficult owing to unstable foreign exchange policy.

Keywords: rates, manufacture, exchange rate & export

Introduction

Following the fluctuation of the naira in 1986, a policy induced by the structural adjustment program (SAP), the subject of exchange rate fluctuation has become a topical issue in Nigeria. This is because it is the goal of every economy to have a stable rate of exchange with its trading partners. In Nigeria, this goal was not reached in spite of the fact that the country embarked on devaluation to promote export and stabilize the rate of exchange. The failure to realize this goal subjected the Nigerian manufacturing sector to the challenge of a constantly fluctuating exchange rate. This was not necessitated by the devaluation of the naira but the weak and narrow productive base of the sector and the rising import bills also strengthening it. In order to stem this development and ensure a stable exchange rate, the monetary authority put in place a number of exchange rate policies.However, very little achievement was made in stabilizing the rate of exchange. As a consequence, the problems of exchange rate fluctuation persisted. In macro-economic management, exchange rate policy as an important tool derives from the fact that changes in the rate of exchange have significant implications, for a country's balance of payment position and even its income distribution and growth. It is not surprising since its behavior is said to determine the behavior of several other macro-economic variable

(Oyejide, 1985). It is even more so for Nigeria which had embarked on a course of rapid economic growth with attendant high import dependency.

The manufacturing sector plays a catalytic role in a modern economic and has many dynamic benefits that are crucial for economic transformation. In an advanced country, the manufacturing sector is a leading sector in many respects. It is a quest for increasing productivity in relation to import substitution and export expansion, creating foreign exchange earnings capacity, raising employment, promoting the growth of investments of a faster rate than any other sector of the economy, as well as wider and more efficient linkage among different sectors (Fakiyesi, 2005). But the Nigerian economy is under-industrialized and its capacity utilization is also low. This is in spite of the fact that manufacturing is the fastest growing sector since 1973 (Obaden, 1994). The sector has become increasingly dependent on the externalsector for import of non-labor input (Okigbo, 1973). Inability to import non labour input therefore, can impact negatively on manufacturing production.Oyejide (1985), posited that the breakdown of the Bretton woods system induced variability in the rate of exchange worldwide; Nigeria inclusive.The impact of fluctuation in exchange rate on manufacturing output has not received adequate attention. This paper attempts to give attention to the issue. Despite various efforts by the government of Nigeria to maintain a stable exchange rate, the naira has continue to depreciate from N0.61 in 1981 to N2.02 in 1986, N7.901 in 1990, all against the one US dollar. The policy of guided or managed deregulation pegged the naira at N21.88.6 in 1994, N86.32.2 in 1999 and N135.50 in 2004. Thereafter, the exchange rate appreciated to N132.15 in 2005 and later N118.57 in 2008. Towards the end of the year, the naira depreciated to N150.01.24 in 2009 and current in 2nd August, 2013 the exchange rate of one US dollar to naira is N160.147.56 (or N160.15).

Thus, uncertainty in trade transaction post a lot of problems such as inflation, which determine the internal balance of a country, it has also tended to undermine the international competitiveness of non-oil export and make planning and projection difficult at both micro and macro levels of the economy, some small and medium scale enterprise have been rankled out as a result of low dollar naira exchange rate.

Objectives of the Study

In a highly import dependent economy like Nigeria, the naira exchange rate has become one of the most widely discussed topic in the country today. This is not surprising as the topic has had a lot of impact on the Nigerian manufacturing sector. It is therefore, the objective of this study to evaluate the effects of exchange rate fluctuations on manufacturing sector in Nigeria.

These specific objectives are as follows:

I. To investigate empirically, the effects of exchange rate fluctuations on Nigerianimportation of input and capital goods.

2. To examine the causal link between exchange rate and Nigerian imports of input andcapital goods.

Research Questions

The following are the research questions this study seeks to proffer empirical answer to:

i. To what extent does exchange rate fluctuation affect the importation of input and capital goods?
ii. What is the causal link between exchange rate and Nigerian imports of input and capital goods

Research Hypotheses

The following research hypotheses are tested in the study. The hypothesis of the study is the null hypothesis denoted as 'H_0' and alternative hypothesis as 'H_1'.

H_0: Exchange rate fluctuation has no significant effect on the importation of input and capital goods.

Scope of the Study

This research work is designed to cover a period of 34 years, that is, (1980-2014) i.e. scope consists of the regulatory and deregulatory exchange rate period.

Significance of the study

The study would identify the strengths and weakness of exchange rate policy and management, identify those parts that are mostly affected by instability in exchange rate provide the general public with adequate information on the foreign exchange transaction and its impact on the manufacturing sector. In general, the study benefits the following;the government will benefit as it will enable them ascertain the extent to which the variation of exchange rate affect the quantity of input and capital goods imported into Nigeria by manufacturing firms, the government can make policies that will help Nigerian manufacturers prosper in their business.The manufacturers will be much aware of the impact of the exchange rate fluctuations on their firms.To the students, it will be a work base for further research.To the public it will be a thorough understanding of the exchange rate fluctuation and having taken appropriate measure will lead to a stable economy.Olisadebe (1991) expressed that the naira exchange rate given its macro-economic impact specially Nigeria is perhaps one of the most widely discussed topic today. According to Olisadebe (1991), one worrisome development in the naira exchange rate in recent years, especially since the introduction of the structural Adjustment program (SAP)in 1986 is that it has continued to depreciate as a result of which some people have called for fixing of the exchange rate even at a par with the united states dollar. On the equilibrium of exchange rate, the author remarked that such rate ensure the simultaneous attainment of internal and external balance.

Exchange Rate

The exchange rate is a term used to refer to the price of a foreign currency in units of a local currency or, conversely, the price of a local currency in units of a foreign currency (Clerk et al 1993). It is the price of one unit of the foreign currency in terms of the domestic currency (Jhingan, 2003). To Ojo (1998), the objective of exchange rate determination is to arrive at a stable and realistic figure that is in consonance with other macroeconomic fundamentals.

A realistic exchange rate reflects the strength of foreign exchange inflow and outflow, stock of reserves and also ensures balance of payments equilibrium consistent with cost and price levels of trading partners (Ogiji and Ehusani 2002).

Exchange Rate Regimes

The literatures have been consistent. Two major regimes are the fixed and floating exchange rate systems. Along the continuum, variants of exchange rate systems have been developed as a result of past attempts at achieving realistic and sustainable currency prices.
According to Dumoyi (2002), early literatures on optimum currency areas have tried to identify some key features thought to be decisive in the choice between fixed and flexible exchange rate regimes. Some of those given prominence included: factor mobility, openness, capital mobility, and diversification of the external sector, geographical concentration of trade, degree of economic development and degree of divergence in the inflation rate.

Subsequent literature raised serious doubts about the theoretical relationship between the country's characteristic and the assumed case for a fixed or a flexible exchange rate regime. These doubts about the characteristics especially the openness of the economy and the divergences of the rate of inflation led to a focus on three broad characteristics in modern literature. These include: the nature of disturbance, reputation consideration and real wage flexibility. These broad characteristics are often beset with theoretical ambiguities. Most countries are exposed to different mixes of disturbance both in the domestic and in the external economy, some of which favour fixed while others favour free floating exchange rates which are characteristically unrealistic.

In general, Ajoni (1986) posited that the optimal management of the exchange rate depends on the policy maker's economic objectives, the sources of shocks to the economy and the movement in key macroeconomic variables. As a consequence, it is difficult to define a system that might be effective and optimal at all times. When economic conditions change, the suitability of the existing system may be called to question thereby necessitating the need for a change.

While a fixed regime guarantees stability in the decision making process, a flexible system tends to be volatile and transmits external shocks across borders. A floating rate does not on its own guarantee the prevention of external shocks to the domestic economy. Also, a floating exchange rate is not necessarily self-equilibrating as recent experiences have shown that reserves are needed for desirable adjustments.The problems associated with fixed and flexible regimes usually prompt currency managers to adopt a combination of the two (Tokunbo and Ahamefule). This defines a hybrid system. Hybrid systems in the literatures include:

Adjustable Peg system

This system is based on an assumed par value that defines upper and lower limits of fluctuations from a central exchange rate. Although such upper and lower levels are defined, they can be altered as the balance of payments position changes. This system was in operation for a quarter of a century after the World War II. Under the regime, some countries agreed to

fix the price of their currencies against the dollar and by implication against each other, hence the system also became known as the Dollar System.

Crawling Peg system

This hybrid system was developed to check external imbalances and destabilizing speculation. Under the crawling peg of "sliding and gliding parities", the authorities undertake programmed or step devaluation instead of a once and for all approach to alter the par value so as to restore external balance.

Managed Float System

The Managed Float System involves some form of official intervention to the path of exchange rate, when it overshoots the desired level. This is in sharp contrast to the pure float that allows the market forces to dictate the movements in the exchange rate. For the system to succeed there must be a large pool of reserves to draw from when necessary. Insufficiency of reserves is a major constraint to this exchange rate variant and has often resulted to the specification of bounds within which the system should operate. The advantage of this regime is its relative stability.

Exchange Rate Pass-Through (ERPT)

The concept of exchange rate pass-through was originally seen to refer to the effects on import prices, of changes in the exchange rate. Golberg and Knetter (1997) define exchange rate pass-through as "the percentage change in local currency import prices resulting from a one percentage change in the exchange rate between the exporting and the importing countries". To Menon (1994), exchange rate pass-through is the degree to which exchange rate changes are reflected in the domestic currency prices of traded goods. Alper (2003), looked at exchange rate pass-through as the effects of exchange rate changes on domestic inflation.

While exchange rate pass-through has long been of interest, the focus of this interest has evolved considerably over time. After a long period of debate over the law of one price and convergence across countries, beginning in the late 1980s exchange rate pass-through studies emphasized industrial organization and the role of segmentation and price discrimination across geographically distinct product markets. More recently pass-through issues play a central role in heated debates over appropriate monetary policies and exchange rate regime optimality. These debates hinge on the issue of the prevalence of producer currency-pricing (PCP) versus local currency pricing (LCP) of imports, and on whether exchange rate pass-through rates are endogenous to a country's inflation performance. Low import price pass-through means that nominal exchange rate fluctuations may lead to lower degree of exchange rate pass-through has important implication for "expenditure switching" effects from the exchange rate.

Along its continuum, exchange rate pass-through has been described as unlimited, full or complete; and partial, limited or incomplete. One-to-one response of domestic prices to exchange rate changes is referred to as full or complete exchange rate pass-through while less than one-to-one response of domestic prices to exchange rate changes is referred to as partial, incomplete or limited exchange rate pass-through (Kiptuief *etal.* 2005). Traditional thinking in Economics and balance of payment models make the simplifying assumption that the prices of

tradable goods once expressed in the same currency are equalized across countries, that is, the purchasing power parity condition (PPP) holds. Empirically, however, this assumption has found in general, little support at least in the case of small samples and in the short to medium run. In line with this evidence, the theoretical literature developed over the past two decades has provided different explanations on why the ERPT is incomplete. In summary, the determinants of ERPT are not such that allow complete transfer of shocks in currency movement to prices across countries.

The Concept and Structure of Manufacturing

Anyanwu (2004) defined manufacturing as the conversion of raw materials into finished consumer goods or intermediate or producer goods. Manufacturing like other industrial activities creates avenues for employment, helps to boost agriculture, diversify the economy, while helping the nation to increase its foreign exchange earnings, enabling local labour to acquire skills. In addition it minimizes the risk of over dependence on foreign trade and leads to the fullest utilization of available resources which leads to the increase in the GDP.Nigeria's manufacturing value added (MVA) of an estimate of $3.4 billion in 1985 ranks her as Africa's largest manufacturing economy after Egypt and twelfth among developing countries. Yet despite two decades of growth boosted by import substituting policies, Nigeria's manufacturing sector remains heavily import dependent. According to Opalluwa et al (2010), the Nigerian economy is under-industrialized and its capacity utilization is also low. They stated that the sector has become increasingly dependent on the external sector for import of non-labour input.

This has been the inevitable outcome of a perverse incentive structure that accelerated the growth of import intensive consumer goods and light assembly industries contributing relatively little value-added under high protective walls while decelerating growth of local resource-based industries. For example, the share of food and textile products in manufacturing output fell from 51% in 1973/74 to 36% in 1977/78, while the share of durable goods with low value added rose from 7% to 19% during the period. Within the durable goods sub-sector itself, the share of transport equipment, which has low value added, rose from about one-tenth of one percent to 11% during 1971/72-1977/78. The net effect of this is that import dependency was fostered in the manufacturing sector in 1970s.

The manufacturing sector has a wide range of industrial activities, from informal sector enterprises using simple technology to heavy capital goods industries in the automotive and electrical equipment sector. Out of this, a wide spectrum of light consumer goods dominates the manufacturing profile. These have been nurtured and reinforced by regimes of "easy" import substitution, localization of assembly and final processing of relatively simple products. The earliest attempt at manufacturing saw the establishment of agro-based industrial concerns such as vegetable–oil extracting plants tanneries and tobacco processing units.

Empirical Review

Literatures on the relationship between the macro economic variables such as exchange rate and industrial output are quite few as most of the literatures reviewed dealt with the relationship between macroeconomic variables and stock market return, stock market index,

banking profit or performance etc. However, a small number that has helped us in gaining insight on how to empirically analyse and achieve the objective of this paper are presented as follows;

Afaha and Ologundudu (2014), empirically investigate the macroeconomic factors affecting industrial performance in Nigeria over the period of 1979-2010 by employing the co-integration and an error correction model. Their study revealed that, interest rate spread and exchange rates have negative impact on the growth of manufacturing sub -sector in Nigeria and also show that a rise in the index of manufacturing sub-sector is a reflection of high inflation rate and cannot be interpreted to mean a real growth in the sector. They argued that liberalization of the Nigerian economy has promoted manufacturing growth for the period under study and concluded that, a long-run equilibrium relationship exists amongst the variables, as evidenced by the co-integration.

Adebiyi and Babatope (2004), considered the role of institution and other macroeconomic variables in development of the Nigerian manufacturing sub-sector. Their empirical study using Augmented Dickey Fuller (ADF) test and error correction mechanism (Dickey D.A. & Fuller W-A.1979), (ECM) model revealed that apart from institutions other macroeconomic variables affect the manufacturing-sub-sector performance in Nigeria. Adebiyi and Babatope (2004) used the cointegration technique in analyzing interest rate policy and the financing of the manufacturing sub sector. Their analysis however suggests cointegration or an acceptance of the alternative hypothesis among the variables CMS (Credit Manufacturing Sub-sector), ER (Exchange Rate), IMP (Index of Manufacturing Production), INF (Inflation), IRS (Interest Rate Spread) and DGF (Deficit Government Financing). McKinnon (1973); Shaw (1973); Fry (1982) argued that financial deepening as a result of interest rate deregulation directly influences factor productivity through higher real rates of interest. According to them, there is the portfolio choice that diverts savings from low-yielding, self-financed investments to the acquisition of financial assets, through higher yields.The importance of interest rate to manufacturing subsector is best discussed in terms of the provision of capital it commands in the finance of manufacturing sub-sector in Nigeria. Also, McKinnon and Shaw (1973) emphasized the importance of internal and external finances in the development of manufacturing sub-sector in developing countries, including Nigeria, while McKinnon emphasizes the significance of internal finance where investors have to accumulate savings before obtaining lumpier capital goods; Shaw stresses the importance of external finance and the development of financial institutions in capital accumulation.

Elhiraika (2008) in his empirical study investigated the role of structural dynamics of transformation in the form of manufacturing share in aggregate output. He used data of 36 African countries and also examined the key determinants of manufacturing share in aggregate output and its relationship with real GDP growth and growth volatility. Theanalysis indicated that an increased share of manufacturing in total output has the potential to raise GDP growth and reduce growth volatility through accelerated growth given the strong backward and forward linkages between the manufacturing sector and other sectors. The design and implementation of effective industrial policies to promote manufacturing can act as a means to boost economic transformation and achieve economic and social development goals including employment creation and poverty reduction.Odior, (2013) empirically investigated the impact

of macroeconomic factors on manufacturing productivity in Nigeria over the period 1975-2011. He started his analysis by examining stochastic characteristics of each time series by testing their stationarity using Augmented Dickey Fuller (ADF) test and estimate error correction mechanism model. His result revealed the presence of a long-term equilibrium relationship, as evidenced by the co-integrating equation of the VECM and concludes that credit to the manufacturing sector in the form of loans and advances and foreign direct investment have the capacity to sharply increase the level of manufacturing productivity in Nigeria, while broad money supply has less impact.Sangosanya (2011) used panel regression analysis model and gibrat's law of proportionate effect in investigating firm's growth dynamics in Nigerian manufacturing industry.The study observed that the manufacturing firms finance mix, utilization of assets to generate more sales, abundance of funds reserve and government policies are significant determinants of manufacturing industry growth in Nigeria.

Rina, Tony and Lukytawati (2010) examined the impact of fiscal and monetary policy on industry and growth of economy in Indonesian using the computable general equilibrium (CGE) model.

Research Design

The study will use analytical, explorative and descriptive research design, to obtain the secondary data needed in investigating the impact of exchange rate on the manufacturing output in the Nigerian economy.

Sources of Data

This study relied only on secondary sources of data which were sourced from the publications of the CBN, NBS, Internet and other variables sources. It relied on time series data on all the variables in the model from 1980-2014.

Method of Data Collection

Secondary data relevant for this study was sourced directly from the publications of the central Bank of Nigeria (CBN) national Bureau of statistics (NBS), internet and past research woks.

Method of Data Analysis

The model of the study was estimated with the aid of the E-view Econometrics package. The estimation procedures adopted in this study are in the following steps:

1. Descriptive statistic of the series in the model
2. Establish the order of integration of the employed variables using the Augmented Dickey-Fuller (ADF) unit root test. This is a stationarity test.
3. If the variables are confirmed to be stationary, i.e if the variables are found to be integrated of order /(I), then the long-run relationship would be tested through Johansen cointegration test. When this long-run equilibrium relationship is established, the model would then be tested the OLS method.
4. The causal links among the variables in the model would be tested by the application of granger causality test.

Specification of the Model

The primary model showing the technical relationship with exchange rate and manufacturing output is specified thus:

MOU - F (EXR) ---------- (1)

Equation (1) can be expanded to cover other variables affecting manufacturing output in Nigeria as follows:

MOU = F (EXR + INFL + INTO + INVT, ———————————— (2)

Where:

MOU = Manufacturing output as percentage of GDP
EXR = Exchange rate
INFL = Inflation Rate
INTR = Interest rate
INVT = Investment growth rate

Equation (2) was explicitly specified to cover the stochastic element as follows;

$MOU – b_0 + b_1EXR + b_2INFL + b_3INTR + b_4INVT + Ut$ ----------(3)

Where:

B_0 = Intercept
B_1-b_4 = Coefficients to be estimated.

All the variables were taken on annual basis and used in their log form. On a priori expectation, it was expected that all the independent variables except EXR and INTR would positively affect the GDP.

Justification of the Technique Adoption

The procedure for estimation adopted for this study is the classical linear regression model and using ordinary least square OLS as an estimator. The method of the ordinary least square is attributed to Carl Friedrich Gauss, a German Mathematician. The method is most preferred because:

(i) It is easy to understand.
(ii) Simple in its computational procedure and parameter estimation.

Stationarity Test

In testing the time series properties of the data for this study, the Augmented Dickey Fuller test statistic was used to test for Stationarity of the data. The ADF test statistic revealed that all-time series data are stationary at first difference at 5 percent level of significance.

Null hypothesis (H_0): Variable contains unit root and hence is non-stationary.

Alternative hypothesis (H_1): Variable does not contain unit root and hence is stationary.

Decision rule: If the calculated ADF test statistic is greater than the MacKinnon critical values (both in absolute term) at the chosen level of significance, reject the null hypothesis of non-stationarity and accept the alternative hypothesis of Stationarity, otherwise do not reject the null hypothesis of non-stationarity. The result is hereunder tabulated:

LOG (MOU) at Level (intercept)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.234333	0.6480
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

The variable (MOU) was tested for Stationarity at level and was found not to be stationary at the 5% significance level. Judging also from the ADF t-statistic of -1.234333 which is less than test critical values at 5% (-2.951125), we accept the null hypothesis formulated above and conclude that the variable MOU is not stationary at level, hence we proceeded to perform same at its first difference below:

LOG(MOU) at 1st Difference (intercept)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.427463	0.0000
Test critical values:	1% level	-3.646342	
	5% level	-2.954021	
	10% level	-2.615817	

The variable (MOU) when tested for stationarity at first difference was found to be stationary at the 5% significance level. Judging also from the ADF t-statistic of -7.427463 which is less than test critical values at 5% (-2.954021), we reject the null hypothesis formulated above and conclude that the variable MOU is stationary at first difference. This is further confirming by its low p-value of 0.0000.

LOG(EXCRT) at level (intercept)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-0.901635	0.7755
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

The variable (EXCRT) was tested for stationarity at level and was found not to be stationary at the 5% significance level. Judging also from the ADF t-statistic of-0.901635 which is less than test critical values at 5% (-2.951125), we accept the null hypothesis formulated above and conclude that the variable EXCRT is not stationary at level, hence we proceeded to perform same at its first difference below:

LOG(EXCRT) at 1st Difference (intercept)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.026063	0.0000

Test critical values:	1% level	-3.646342
	5% level	-2.954021
	10% level	-2.615817

The variable (EXCRT) when tested for stationarity at first difference and was found to be stationary at the 5% significance level. Judging also from the ADF t-statistic of -6.036063 which is less than test critical values at 5% (-2.954021), we reject the null hypothesis formulated above and conclude that the variable EXCRT is stationary at first difference. This is further confirmed by its low p-value of 0.0000.

LOG(INVT) at Level (intercept)

	t-Statistic	**Prob.***
Augmented Dickey-Fuller test statistic	-3.832307	0.0061
Test critical values:	1% level	-3.639407
	5% level	-2.951125
	10% level	-2.614300

The variable (INVT) was tested for stationarity at level and was found to be stationary at the 5% significance level. Since the ADF t-statistic of -3.832307 is greater than test critical values at 5% (-2.951125), we reject the null hypothesis formulated above and conclude that the variable INVT is stationary at level.

LOG(INTR) at level (intercept)

	t-Statistic	**Prob.***
Augmented Dickey-Fuller test statistic	-4.137905	0.0028
Test critical values:	1% level	-3.639407
	5% level	-2.951125
	10% level	-2.614300

Similarly, the variable (INTR) was tested for stationarity at level and was found to be stationary at the 5% significance level. Considering the ADF t-statistic of-4.137905 which is greater than test critical values at 5% (-2.951125), we reject the null hypothesis formulated above and conclude that the variable INTR is also stationary at level.

LOG(INFL) at Level (intercept)

	t-Statistic	**Prob.***
Augmented Dickey-Fuller test statistic	-4.174717	0.0026
Test critical values:	1% level	-3.646342
	5% level	-2.954021
	10% level	-2.615817

Source: Abstracted from E-views 8.0

In the same vein, the variable (INFL) was also tested for stationarity at level and was found to be stationary at the 5% significance level. Judging from the ADF t-statistic of-4.174717 which is greater than test critical values at 5% (-2.954021), we reject the null hypothesis formulated above and conclude that the variable INFL is stationary at level.

CointegrationTest

Having confirmed that the variables are not stationary at levels, it became imperative that the data series are tested for to determine whether there exist long-run equilibrium relationships among the variables under stud. In this study, the Johansen cointegration test is employed. The trace statistic tests the null hypothesis that there is at most r cointegrating equations. The trace test does not accept the null hypothesis if the trace statistic exceeds the critical values, otherwise, it accepts the null hypothesis that there is no cointegrating equations. The Trace test and Maximum Eigenvalue test is presented below:

Table 2(a) Unrestricted Cointegration Rank Test (Trace)

Hypothesized
No. of CE(s) Critical Value Prob.**

-2.615817 No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.725728	94.16935	69.81889	0.0002
At most 1 *	0.607772	51.47936	47.85613	0.0220
At most 2	0.291793	20.59425	29.79707	0.3834
At most 3	0.191274	9.208612	15.49471	0.3464
At most 4	0.064575	2.202881	3.841466	0.1378

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

4.2(b) Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.725728	42.68999	33.87687	0.0035
At most 1 *	0.607772	30.88511	27.58434	0.0181
At most 2	0.291793	11.38564	21.13162	0.6088
At most 3	0.191274	7.005731	14.26460	0.4885
At most 4	0.064575	2.202881	3.841466	0.1378

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Abstracted from E-views 8.0

Interpretation:

From the result of the trace test displayed in the table 2 a above, the trace statistic of 94.16935 and 51.47936 exceed the critical values of 69.81889 and 47.85613 respectively at 5 percent confidence interval, hence we do not accept the null hypothesis and conclude that there are two cointegrating equations and therefore, a long run relationship exist among the variables.

The eigenvalue test statistic also supported this claim of long-run relationship among the explained and explanatory variables. In panel two in the table 2, the maximum eigenvalue statistic of 42.68999 and 30.88511 are greater than the critical values of 33.87687 and 27.58434 respectively at 5 percent confidence interval, thus, indicating two cointegrating equations. Having fulfilled the basic requirements for time-series econometrics, we now proceed to test and analyse the OLS estimation output.

OLS Estimation Result

The Ordinary Least Square (OLS) i.e. regression result is as presented below:

Table 3: OLS Output

Included observations: 35

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.77010	1.735956	6.204129	0.0000
LOG(EXCRT)	-1.215178	- 0.160570	-7.567899	- 0.0000
INVT	0.078217	0.057424	1.362098	0.1833
INTR	0.033594	0.068065	0.493550	0.6252
LOG(INFL)	0.039977	0.303256	0.131827	0.8960
R-squared	0.772053	Mean dependent var		5.708571
Adjusted R-squared	0.741660	S.D. dependent var		2.618191
S.E. of regression	1.330753	Akaike info criterion		3.540931
Sum squared resid	53.12713	Schwarz criterion		3.763124
Log likelihood	-56.96629	Hannan-Quinn criter.		3.617632
F-statistic	25.40232	Durbin-Watson stat		1.917602
Prob(F-statistic)	0.000000			

Source: E-views 8.0

Interpretation of Result:

The above results are stated from the E-views automated result which can be viewed on the appendix page. From the result, the entire regression coefficient has the expected sign of hypothesis except exchange rate and investment which comes in with a negative sign. From the

result, the constant (£0) has a positive sign which states that if other independent variables are assumed to be zero, manufacturing output in Nigeria equals 10.77010.

The first independent variable pi known as the coefficient of exchange rate appeared with a negative sign which is contrary to our a priori expectation. The coefficient is statistically significant owing to its low p-value of 0.0000 and a t-statistic value of -7.567899, which is the statistical yardstick for individual test of significance. The result above shows that there is a negative relationship between Exchange rate and manufacturing output within the period of study. This implies that a unit change in exchange rate will lead to a -1.215178 decreases in manufacturing index and or output of the Nigerian economy. This result confirms the fact that an unfavourable exchange rate regime is detrimental to importation in a nation. Fluctuations in the rate of exchange are not favourable to economic activities in the manufacturing sector.

Similarly, the investment coefficient (p2) also has a negative sign which is also contrary to our a priori expectation. The coefficient is equally statistically insignificant owing to its high p-value of 0.1833 and a low t-statistic value of -1.362098. The result shows that within the period of study there appears an inverse relationship between investment and manufacturing output in Nigeria. A unit change in investment rate will lead to a -0.078217 decreases in manufacturing output. This result is not strange as successive Nigerian governments have not given the desired attention to investment in the relevant sectors of the economy. Furthermore, the porous security situation and cases of kidnapping that has become rampant are indices to discourage any foreigner thinking of investing in Nigeria. In general, it can be adduced that the Nigerian environment is not friendly for investment either foreign direct investment or foreign port-folio investment as it is riddled with so many uncertainties. For example, the nation's exchange rate policy is highly volatile and unstable and serves to discourage prospective investors in the system.

The coefficient of Interest rate (INTR) is seen to have a value of 0.033594. This shows that a unit change in NIR will increase the manufacturing index by 0.033594 units.
The excessive interest rate fix by monetary policy makers in the country is enough to keep potential investors out of the system perpetually, hence stagnating the manufacturing sector.

Finally, the coefficient of inflation (INFL) is seen to have a coefficient of 0.039977. This shows that a unit change in INF will increase the manufacturing index by 0.039977 units.

Model Fitness

The table above shows the coefficient of multiple determinations (R^2) which explains the extent to which the independent variables affect the dependent variable. R^2 at 0.77 or 77% indicates a very strong relationship between the dependent and independent variables. In this case, 77% of the variations in the dependent variable are explained by the independent variables. The adjusted R^2 which shows a more conservative way of looking at the coefficient of determination is also above 50% at 74%. So 80% of the changes in manufacturing's output (MOU) are explained by changes in the exchange rate, inflation rate, investment and interest rate. Only 27% of the variations are determined by other factors outside our model. Moreover, this table shows the results of correlation test i.e Durbin-Watson statistic placed at 1.917602, indicating the absence of serial correlation. With an F-statistic value of value 25.40232 and a p-value of 0.0000 it can be safely concluded that the model has a good fit.

Ramsey Reset Test

This test for the correct functional form, checks whether or not the linear functional forms is appropriate for the selected data used for analysis. This has to do with the fitted value ^{te}Y2" generated from the model. When an OLS is performed using the Ramsey Reset, the T - statistic for the fitted value is derived which will determine the decision of the researcher. The excessive interest rate fix by monetary policy makers in the country is enough to keep potential investors out of the system perpetually, hence stagnating the manufacturing sector.

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The decision rule for Ramsey Reset test has been stated in the methodology chapter. Based on the result from the automated Ramsey reset test, the T-statistics of the fitted value appears to be low (2.2734) and the P-value of the F-statistic (0.0244) suggests that the null hypothesis (HO) should be accepted which states that the original model fits the data while the alternative hypothesis is rejected. Therefore the model stated for this is absolutely in a correct functional form.

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	**2.291782**	**Prob. F(4,30)**	**0.0827**
Obs*R-squared	8.191806	Prob. Chi-Square(4)	0.0848
Scaled explained SS	12.09988	Prob. Chi-Square(4)	0.0166

The heteroskedasticity test was conducted under Harvey's assumption, the result show that n.R2 = 8.191806 and the Prob. Chi-Square(S) which is 0.0848 is significant thus indicating that there is heteroskedasticity problem.

Similarly, cumulative sum (CUSUM) and cumulative sum of square (CUSUMQ) plots fromrecursive estimation of the model is as shown below. This indicate stability in the

coefficients over the sample period as the plot of the CUSUM and CUSUMSQ statistic fall inside the critical bands of the 5% confidence interval of parameter stability.

Test of Hypothesis

One hypothesis was formulated in the beginning of this research and to test the said hypothesis, we shall use the p-values and t-statistics of the variable (exchange rate) to accept or reject the formulated hypothesis.

Formulated Hypothesis

H_0: Exchange rate fluctuation has no significant effect on the importation of input and capital goods.

H_1: Exchange rate fluctuation has a significant effect on the importation of input and capital goods.

Decision: Since the t-statistic value of -7.567899 is greater than 2 and the probability value of 0.0000 is quite low. These are the yardsticks for measuring individual statistical significance; hence we reject the null hypothesis stated above and conclude that exchange rate fluctuation has a significant effect on the importation of input and capital goods in Nigeria within the period 1980 - 2014.

Summary of Major Findings

The study used annual time-series data from 1980-2014 sourced from the Central Bank of Nigeria (CBN) statistical bulletin for various issues and National Bureau for Statistics (NBS) statistical bulletins. Different econometric techniques adopted revealed the following findings. The unit root test adopted reveals the evidence of stationarity at among the variables just as the Johansen cointegration test showed that a long-run equilibrium relationship between the variables covered in the model,the first independent variable, exchange rate appeared with a negative sign which is contrary to our a priori expectation but statistically significant. The result shows that there is a negative relationship between Exchange rate and manufacturing output within the period of study. This implies that a unit change in exchange rate will lead to a -1.215178 decreases in manufacturing index and or output of the Nigerian economy. This result confirms the fact that an unfavourable exchange rate regime is detrimental to importation in a nation. Fluctuations in the rate of exchange are not favourable to economic activities in the manufacturing sector.Empirical findings reveal an inverse relationship between investment and manufacturing output in Nigeria. A unit change in investment rate will lead to a -0.078217 decreases in manufacturing output. This result is not strange as successive Nigerian governments have not given the desired attention to investment in the relevant sectors of the economy. Furthermore, the porous security situation and cases of kidnapping that has become rampant are indices to discourage any foreigner thinking of investing in Nigeria. In general, it can be adduced that the Nigerian environment is not friendly for investment either foreign direct investment or foreign port-folio investment as it is riddled with so many uncertainties. For example, the nation's exchange rate policy is highly volatile and unstable and serves to discourage prospective investors in the system. Furthermore, the granger causality testing

revealed that there is causation between exchange rate and manufacturing output in Nigeria at the 10% significance level.

Conclu sions

In concluding, it is established that an unfavourable exchange rate policy as evident in the Nigerian case is detrimental to importation in the nation. Fluctuations in the rate of exchange is not favourable to economic activities in the manufacturing sector as importation of both capital goods and other inputs become increasingly difficult owing to unstable foreign exchange policy. On investment side, findings reveals a negative relationship with manufacturing output, an indication that successive Nigerian governments have not given the desired attention to investment in the relevant sectors of the economy. Furthermore, the porous security situation and cases of kidnapping that has become rampant are indices to discourage any foreigner thinking of investing in Nigeria. In general, it can be adduced that the Nigerian environment is not friendly for investment either foreign direct investment or foreign port-folio investment as it is riddled with so many uncertainties. For example, the nation's exchange rate policy is highly volatile and unstable and serves to discourage prospective investors in the system.

Recommendations

Arising from the above research, the followings are policy recommendations suggested:

a) The government should restrict the importation of similar products manufactured in Nigeria to increase the buying of Nigerian products.
b) Government should stimulate export diversification in the area of agriculture; agro-investment, and agro-allied industries, oil allied industries such will improve Exchange rate fluctuations on manufacturing sector in Nigeria Economy.

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