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Exchange Rate Regimes and the Performance of the Real Sector in Nigeria

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ABSTRACT: *Within the international market system, the exchange rate has been a critical criterion for determining the relative power of a domestic currency in comparison to another. Essentially, Nigerian exchange rate policy has been aimed toward safeguarding the Naira against continual loss of its privileged position in the global monetary system from time to time. As a result, different exchange rate regimes have been adopted. Therefore, Exchange Rate Regimes and the Performance of the Real Sector in Nigeria was studied from 1970-2019.The output of real sector variables (agricultural sub-sector, industrial sub-sector, and services sub-sector) was examined using the Auto Regressive Distributed Lag Model technique. Nominal exchange rate and dummy variables of Regulated and Deregulated regimes were used as independent variables, while, controlling for net exports, inflation, bank credit to the private sector, foreign direct investment, external reserve. The results of the estimation revealed that regulated regime periods had a negative but insignificant association with real sector variables, while deregulated regime periods had a positive but insignificant relationship. By implication, the perpetual loss in value of Naira exchange rate remain a source of concern hence; the need to formulate a reliable exchange rate policy that can stand the test of time in Nigeria. In addition, the regulated exchange rate regime was loosely fixed with temporal government intervention in the foreign exchange market. Such monetary interventions have not yielded the desired results. The study recommended that a stronger exchange rate policy be developed that achieves the needs of primary exchange rate users, as well as that more bank credits be extended to the real and export sectors in order to produce high-quality outputs for export rather than relying solely on monetary intervention strategies by the Nigerian Central Bank.*

KEYWORDS: exchange rate; real sector; deregulation; monetary policy

Classification: D4, E5, F6, O15, J10*;

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INTRODUCTION

A country's local currency is valued using the exchange rate as a major denominator in international trade. The price of a stock or bond is almost never tied to a central parity with a small volatility margin. In addition, several economies do control their currency exchange rates. Some nations have altered the course of their exchange rate policies, including Argentina in January 2002 and Thailand in July 1997(Rose, 2011). Various governments implement various exchange rate regimes, and a nation may at any given time have several different exchange rate regimes. There hasn't always been a global exchange rate system that works well for all nations (Dao and Nga, 2020). A market system with a flexible exchange rate will often experience regular, if not more frequent, fluctuations in the exchange rate. Changes in exchange rates have an impact on the entire economic system. As a result, exports and imports on a global scale represent how interdependent nations are, with the exchange rate serving as an inelastic yardstick. Governments, businesses, and the vast majority of people are therefore worried about exchange rate movements. It is crucial to choose an appropriate exchange rate regime for a country because it influences both international finance and economic growth. Some nations opt for a flexible or adjustable exchange rate system, whereby the value of a nation's currency in relation to other currencies is entirely determined by supply and demand for similar currencies. In certain nations, the central bank sets the exchange rate at which domestic money can be exchanged for foreign currency. This is known as a fixed exchange rate system. Additionally, several nations operate under a managed floating exchange rate regime, which enables the central bank to interfere in the foreign exchange market while maintaining market forces. The achievement of the nation's macroeconomic objective is the aim of the exchange rate regime policy.

Throughout different periods of Nigeria's economic history, fixed, flexible, and hybrid exchange rate regimes, as well as particular hybrid or variants of exchange rate regimes, have all been used, depending on the situational economics and the overall development objectives of the Federal government. In the post-crisis scenario, exchange rates and the choice of exchange rate regime are still crucial, especially for emerging economies (Klein and Shambaugh, 2010; Rose, 2011; Ghosh, Ostry, and Qureshi, 2014). One of the most contentious topics in discussions of macroeconomic policy is the implementation of an exchange rate regime and how it affects macroeconomic performance. Due to the widely held belief that nominal variables are unrelated to longer-term growth performance, the impact of regimes on productivity and economic development has received surprisingly little attention, even though the consequences for inflation and the credibility of policy have attracted a lot of attention. Even if exchange rate regimes and growth are related, there are no adequate explanations for the nature of the relationship in the economic literature. On one hand, in the event of a large shock, pricing distortions and resource misallocation result from the lack of currency rate movements under a peg and some degree of short-run price rigidity (particularly, excessive unemployment). This process lends credence to the argument that fixed

exchange rate regimes increase output volatility (Sturzenegg and Levy-Yeyati, 2003). Similar to other nations, Nigeria's real sector is the main engine of the nation's economic growth and development and is essential to its entire development. According to the paper, a healthy real sector market has the ability to promote economic development and create a sizable number of jobs (Ibadin, Moni and Eikhomun, 2014).

Statement of the Problem

The broad definition of the real sector of the Nigerian economy is any category of economic activity that is not directly or indirectly tied to the oil and gas sectors. Just a few examples include the telecommunications industry, the financial sector, tourism, trade, health services, mining, agriculture, and other manufacturing industries. Each of these activities is made up of numerous businesses that collectively employ a sizable workforce and generate exports to other countries including cocoa, cashew, sesame, ginger, gum Arabic, shrimps, cotton, rubber, and kuti cable.

The manufacturing and service sectors require foreign currency to import inputs that are not readily available domestically. Hence, in a nation like Nigeria, where rapid economic expansion has led to a heavy reliance on imports, the exchange rate has a significant impact on real sector output performance as well as the behavior of numerous macroeconomic indicators (Oyejide, 1985; Adeniyi, 2012). The formulation of a favorable exchange rate regime has been a significant challenge for the Nigerian central bank (Central Bank of Nigeria) for a number of years, and the failure to achieve a stable exchange rate has led to declining fortunes, a shaky productive base, and underperformance for the Nigerian real sector and its component units (Opaluwa, and Abu, 2010; Fapetu and Oloyede, 2014). Only if government policies, in particular exchange rate policies, have a favorable impact on the production and distribution of goods can they be considered effective (Akinmulegun and Falana, 2018). Nigeria's current economic problems are directly tied to the exchange rate due to unwholesome speculation and corruption, and the CBN is working hard to defend the naira against the dollar in order to maintain exchange stability (Olajide, 2016).

According to Ayodele (2004), the Nigerian economy was plagued by "exchange rate volatility, import dependence, a weak manufacturing capacity, low agriculture, a weak private industry, a high foreign debt overhang, wasteful public utilities, and a lack of social services, all of which conspired to stifle the real sector's performance. As a result, Nigeria's growth has fluctuated at times, and subsequent exchange rate strategies have failed to elevate the real sector to the position of pride on the world stage. According to Mordi (2006), insufficient exchange rate management can lead to inefficient patterns of production and consumption, and high exchange rate volatility creates unpredictability and a variety of disruptive macroeconomic repercussions. In order to cope with the significant terms-of-trade shock, tightening external funding conditions, and depletion of reserves, Nigeria, like some other Sub-Saharan African nations, implemented detrimental exchange rate controls. Sadly, the restrictions have only led to significant economic inefficiencies,

increased spreads in parallel markets, and policy uncertainty, mandating more exchange rate flexibility by correcting distortions that are negatively impacting the real economy by loosening exchange rate restrictions (International Monetary Fund, 2017).

The purpose of this to examine whether maintaining a weak (nominal and real) exchange rate through sterilized interventions, interventions coupled with capital controls, or any other measure that provides a net subsidy to the tradable sector affects the growth of the real sector's production in Nigeria. This study also aimed at examining specifically, whether the choice of exchange rate regime at any one time had a substantial impact on the expansion of the real sector and whether the significance of the link was uniform across the Nigerian real sector.

The study is unique in its approach to systematically identify the structural break point which enables an explicit evaluation of the pre SAP effect of exchange rate on the real sector, as well as post SAP effect. That is to say, the study investigates the impact of policy regime in each period before the Structural Adjustment Program; and also the policy effect after the major structural economic change. Most researchers (Obi et al, 2016; Abraham, 2012), have written on other areas of exchange rate but not strictly on a clear focus on the appraisal of a regime periods. Falana (2018) examined the connection between the exchange rate and Nigeria's real estate sector performance. Hence, the gap was covered by synthesizing the performance of agricultural sub sector, manufacturing sub sector and service sub sector respectively with respect to the pre and post Structural Adjustment Programme policy effect on exchange rate in Nigeria from 1970 to 2019. Using an ideal model that accounts for the recursive effect in the policy lags within the period under review.

The study proceeds to empirically hypothesized on:

i. effect of different regime periods [i.e regulated(1970-1985) and deregulated(1986-2019)]on agricultural sub-sector of the real sector in Nigeria;

ii. effect of different regime periods on output of industrial sub-sector of the real sector in Nigeria; [i.e regulated(1970-1985) and deregulated(1986-20190)]

iii. extent to which the different regime periods impact on output of services sub-sector of the real sector in Nigeria. [i.e regulated(1970-1985) and deregulated(1986-2019)].

iv. test for the existence of structural break in exchange rates regimes for the period under consideration

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LITERATURE REVIEW

Exchange Rate Regimes

The selection of a dominant exchange rate regime is typically governed by exchange rate policy. A change in policy will give the exchange rate regime room to adapt on its own. Over the years, the majority of nations have utilized different exchange rate regimes. They include fixed, floating, and hybrid regimes, which are most common in emerging economies. In Nigeria, all of the aforementioned regimes have existed at various points. Each regime is adjusted to address the problems that the foreign exchange market is currently experiencing. A single currency peg, crawling peg system, peg to basket of currencies, and adjustable peg system, commonly known as "fixed with bands," were all fixed exchange rate structures that Nigeria employed prior to 1986. The monetary authority employed a number of different exchange rate regimes, such as managed/dirty floating exchange rate schemes. There are numerous possible exchange rate regimes claims (Sanni, 2006). They are all situated halfway between two extremes. The two extremes are the completely fixed rate and the freely floating rate. The two types of exchange rate regimes are fixed exchange rates and flexible exchange rates. The fixed exchange rate system was in place from 1960 to 1986, while the flexible exchange rate system, which has since witnessed various revisions, has been in place since 1986.

Fixed Exchange Rate Regime

Prior to 1960, there was a global fixed exchange rate mechanism in existence, with currencies linked to gold. This allowed for unlimited capital movement as well as currency and trade stability around the world. The arrangement, however, collapsed in the early 1970s as the dollar fell in value, forcing the Bretton Woods system of fixed exchange rate regimes to collapse. Following the end of the fixed exchange rate regime, some African countries have depreciated their exchange rate peg (typically to the SDR or a basket of currencies) or embraced a free float. The vast majority, on the other hand, chose a peg to the SDR, the US dollar, or a currency basket. Despite the split, Nigeria retained its exchange rate policy and operated the fixed exchange rate arrangement using the International Monetary Fund's (IMF) par value mechanism. Because the country's currency could not be traded on the international currency market, its exchange rate was heavily influenced by administrative decisions. As a result, the Nigerian currency was first tied to the British pound sterling, but due to the pound's depreciation in 1967, the indigenous currency was allowed to fluctuate independently of the sterling, but was pegged to the dollar in the currency basket. Following the conversion of Nigeria's pounds to Naira in 1973, the naira's exchange rate was purposefully depreciated to allow the country to get low-cost inputs from outside in order to carry out development initiatives. The change, however, has resulted in a slew of issues in Nigeria's external sector. Some of these issues include the quick depletion of the country's external reserves as a result of an unparalleled volume of foreign exchange imports and outflow.

Floating/Flexible Exchange Rate Regime

A dramatic change in Structural Adjustment Programme led policy brought about by the abandonment of the fixed exchange rate in favor of a flexible exchange rate regime in September 1986. The system was driven by market forces since the naira was let to find its own level based on the strength of demand and supply for foreign cash. Monetary authorities retained the right to act in the market and direct the movement of currency rates in order to uphold stability and accomplish policy goals. A number of strategies were used in the search for a stable naira exchange rate that was realistic and within the institutional framework of market-determined arrangements. The naira was first listed on the Second-tier Foreign Exchange Market (SFEM) on September 26, 1986, and a dual exchange rate system that combined the first and second-tier exchange rate regimes was implemented. In contrast to the floating exchange rate, which was used to determine the value of other transactions using important pricing techniques like average successful bids, marginal rate, and the Dutch Auction System (DAS), the first-tier exchange rate was administratively determined and used for official transactions such as debt service payments, expenses for Nigerian missions, and public sector transactions.

The Monetary Model

The conceptual Monetary Model of Rate Of exchange was born as a result of the shortcoming in the Traditional Flow Model. The origins of this model can be traced back to the work of a group of economists led by Robert Mundel and Harry G. Johnson at the University of Chicago. In terms of the demand for and supply of money by two trading countries, the monetary model effectively succeeds to explain changes in exchange rates. Academic arguments had followed the model's proponents' lead, stating that because the exchange rate is just the relative price of two countries' currencies, the study of how it is determined should concentrate on relative demand for and supply of money. As a result, money demand is determined by the relative availability of currencies, as well as the fact that relative real income, relative money supply, and interest rate differentials. Olisadebe (1995) proposed that an increase in money supply leads the currency rate to depreciate as a result of inflationary pressure. As a result, with a steady nominal money supply, a growth in real income causes prices to fall, resulting in an appreciation of the exchange rate. A rise in the benchmark rate reduces money demand while raising prices (with a given stock of money). The exchange rate depreciates when prices rise, whereas the Traditional flow model predicts the opposite effect. An increase in the real income and interest rates causes the exchange rate to rise in this example.

Mundell–Fleming Model

The Mundell-Fleming IS/LM model, as modified by Calvo, serves as the basis for this study (1999). Fleming and Mundell (1963) separately created the Mundell-Fleming IS-LM model (1962). The model is a development of the traditional IS-LM Model, which examines the economy under a scenario of autarky. The model also shows the short-run link between the nominal

exchange rate, interest rate, and output of an economy, based on the idea that demand determines output. The Mundell-Fleming model is the traditional theoretical standard policy for real output exchange rate policy analysis. The model defaults to viewing output as a homogeneous good that is produced, consumed, and traded on a global scale (Kowalski et al., 2003). Currency exchange rates are determined according to the Mundell-Fleming model. The model takes into account the balance of foreign payments as an extra equilibrium condition in addition to the money and goods markets (Kanamori and Zhao, 2006).

The following is the Calvo (1999) version of the Mundell-Fleming IS/LM model:

$$y = \alpha * e + u, \alpha > 0 \quad 2.1$$

$$m = y + v \quad 2.2$$

Where, in logarithmic form, y stands for output, e for the nominal exchange rate, m for money, and u and v for stochastic disturbances. Equation (2.1) represents an IS curve, whereas equation (2.2) represents an LM curve (2.2). Both equations include stochastic elements to account for the effects of interest rates, and equation 1 has its money elasticity set to unity (2.2). Under a full and instantaneous pass-through from the exchange rate to the price of domestic output, the equations (2.1) and (2.2) can be altered as follows:

$$y = u \quad 2.3$$

$$m = y + e + v \quad 2.4$$

The preceding equations simply illustrate that, regardless of the exchange rate policy, output variance equals variance of real shock. It is reasonable to assume that developments in modeling approaches do not significantly alter the insights and potency supplied by the Mundell–Fleming type of models, particularly in disaggregated examination of the Real sector. According to the standard Keynesian open economy model, External balance (current account consistent with long-run capital flows) and internal balance (full employment and price stability) can be preserved by two types of policies: expenses and expenditure-reducing policies. Expenditure-switching policies seek to alter the makeup of a country's spending on marketable and non-tradable goods, whereas expenditure-reduction policies seek to reduce overall spending. The fundamental tool of the first type of policies is the exchange rate, whereas the old methods of the second are monetary and fiscal policies. If the Marshall-Lerner requirements are met, a change in the currency rate (currency depreciation or devaluation) is expansionary, according to the Mundell (1963)-Fleming (1962) model. Depreciation of the currency rate, according to this basic textbook model, improves aggregate demand by favouring exports and generating a switch from imports to domestic goods. Meade's "traditional" interpretation is based on his money-free Keynesian model, which is elaborated on by the Dornbusch's monetary approach, which he published in 1951. Actual devaluations of the currency, according to this common view, help countries prevent financial crises and provide long-term growth by helping the export industry. By introducing an inter-

temporal method to the classic Mundell-Fleming model, Obstefield and Rogoff (1995) supported the rise of aggregate demand due to devaluations.

Empirical Studies

Falana (2018) examined the connection between the exchange rate and Nigeria's real estate sector performance. In the study, which made use of a modified Mundell-Fleming IS-LM framework and the results of the Impulse Response Functions and Forecasting Error Variance, these metrics were used. Decompositions using the Generalized Method of Moments showed that under the two alternative regimes, the five components of the Nigerian real sector responded to exchange rate differently. The exchange rate also accounted for more production shocks in the regulated regime than in the guided deregulated regime.

Obi et al (2016) studied the relationship between Nigeria's output growth and exchange rate regimes between 1970 and 2014. (GMM). The results demonstrated that a deregulated exchange rate regime increased economic growth in Nigeria relative to a fixed exchange rate regime during the course of the study, indicating that exchange rate regimes actually affect real economic performance in the country.

Eze and Okpala (2014) conducted a quantitative analysis of the effect of exchange rate policies on Nigeria's economic growth reveals that the money supply, government spending, and exchange rate are all crucial factors in determining the success of the economy. The study also indicated that management effectiveness is more significant than exchange rate regime, whether it is fixed or fluctuating.

Abraham (2012) researched on exchange rate and performance of Nigerian manufacturing under alternative regimes. This served as a model for both the regulated (1970–1985) and the deregulated (1986–2010) regimes. The study finds that the index of manufacturing output granger affects exchange rate under regulated conditions, while the opposite impact holds under deregulated conditions, based on descriptive statistics and econometric approaches.

Opaluwa (2010) studied on influence of currency rate variations on Nigeria's industrial sector. The outcomes of the study imply that exchange rate changes have a negative impact on industrial production. This was largely owing to the fact that Nigerian manufacturing is heavily reliant on imported raw materials and capital goods, which are paid in foreign currency with a volatile exchange rate. The study advocated strengthening the link between the industrial and service sectors by obtaining raw materials locally and implementing other import substitution initiatives.

Theoretical Framework

The model's theoretical foundation is based on a modified version of the original IS-LM framework, which incorporates the implications of the theoretical model developed by Kandil and Mirzaie (2002). The capacity of this model to incorporate consumption, investment, government

spending, taxation, exports, imports, interest rate, exchange rate, current account balance, capital account, and national output into a single model gives it a basic advantage over other models. According to this concept, "the exchange rate indirectly affects output through the channels of import-export and money supply" (Lizondo and Montiel, 1989,p5.). The reduced-form of Kandil and Mirzaie's (2002) theoretical model used in the study is as follows from the standpoint of theoretical predictions:

$$AY_t = \alpha_0 + C(L)Y_{t-1} + B\varepsilon_t \quad \text{.....3.1}$$

In order to reflect the true realities of the Nigerian economy, the adapted model was updated in accordance with the nature of this study, the structure of data used, and to accommodate some significant factors. As an open economy metric, Net Export was introduced to the models. Other significant variables (such as the rate of inflation, external reserves, foreign direct investment, and bank lending to the private sector) were incorporated into the aggregate output equation, which was then presented in the models.

The structural model of real sector performance is expressed as single equation:

$$Y_t = f\,(\,NExr_t\,, Dexreg1970-1985_t\,, Dexdereg1986-2019_t\,, NEXP_t\,, INF_t\,, FDI_t\,, FR_t\; BCRED_t\,) \quad \text{.....3.2}$$

$$Y_t = \alpha_0 + \beta_1 NExr_t + \beta_2\; Dexreg1970-1985_t + \beta_3\, Dexdereg1986-2019_t + \beta_4\; NEXP_t + \beta_5 INF_t + \beta_6\, FDI_t + \beta_7\, FR_t + \beta_8\, BCRED_t + \varepsilon_i \quad \text{.....3.3}$$

Where Y_t represents Agricultural sub-sectors output of the real sector; Industrial sub sector output of real sector, and Service sub sector output of real sector.

NExr: Nominal Exchange Rate

Dexreg1970-1985: Dummy variable of regulated exchange rate Regime 1970-1985

Dexdereg1986-2019: Dummy variable of deregulated exchange rate Regime 1986-2019

NEXP: Net Exports

INF: Inflation

FDI: Foreign Direct Investment

FR: Foreign Reserve

BCRED: Bank credit to private sector.

In estimating the specific objectives, each objective is modeled as follows:

$$AGRIC_t = \alpha_0 + \beta_1 NExr_t + \beta_2 Dexreg1970-1985_t + \beta_3 Dexdereg1986-2019_t + \beta_4 NEXP_t + \beta_5 INF_t + \beta_6 FDI_t + \beta_7 FR_t + \beta_8 BCRED_t + \varepsilon_i \quad \textbf{3.5}$$

Where $AGRIC_t$ is expressed as percentage contribution of the agricultural sector to real GDP. While $NExr_t$ = the annual average of the exchange rate, $Dexreg1970-1985_t$ and $Dexdereg1986-2019_t$ are expressed as qualitative categorical variables for measuring the different exchange regime periods., $\beta_5 INF_t + \beta_7 FDI_t + \beta_8 FR_t + \beta_9 BCRED_t$ are control variables as already defined. β_1 to β_9 , are coefficients that measure the relative effect of corresponding exchange rate regime on agriculture sector performance and, also parameters of control variables to be estimated, α_0 is the intercept term, and ε_i the error term.

Objective two examines the extent to which exchange rate regimes exerts influence on output from the industrial sub-sector in Nigeria. The functional and estimation forms of the industrial sector performance model are as follows:

$$IND_t = \alpha_0 + \beta_1 NExr_t + \beta_2 Dexreg1970-1985_t + \beta_3 Dexdereg1986-2019_t + \beta_4 NEXP_t + \beta_5 INF_t + \beta_6 FDI_t + \beta_8 FR_t + \beta_8 BCRED_t + \varepsilon_i \quad \textbf{3.7}$$

Where: IND_t is expressed as percentage share of the industrial sector to the real GDP.

Objective three examines the extent with which exchange rate regimes exerts influence on output of the service sub-sector in Nigeria. The functional and estimation forms of the service sector performance model are as follow

$$SERV_t = \alpha_0 + \beta_1 NExr_t + \beta_2 Dexreg1970-1985_t + \beta_3 Dexdereg1986-2019_t + \beta_4 NEXP_t + \beta_5 INF_t + \beta_6 FDI_t + \beta_7 FR_t + \beta_8 BCRED_t + \varepsilon_i \quad \textbf{3.9}$$

Where: $SERV_t$ is expressed as percentage share of the services sector to the real

Objective four examines the existence of a structural break in exchange rates regime for the period under consideration. The bivariate predictive regression model takes the form,

$$NExr_t = \beta_0 + \beta_1 z_{t-1} + \varepsilon_t \quad \text{3.10}$$

where $NExr_t$ is the log naira to dollar exchange rate from period $t-1$ to period t, z_{t-1} is a candidate predictor, t disturbance term with mean zero and variance σ^2 , and $t = 1, \ldots, T$. Using array notation, the predictive regression model can be expressed as

$$NExr_t = x_{t-1}\beta + \varepsilon_t, \quad \text{..... 3.11}$$

Where: $x_{t-1} = (1, z_{t-1})'$ and $\beta = (\beta_0, \beta_1)'$. We are interested in testing the structural stability of the regression parameters β_0 and β_1. We consider breaks in both the intercept and slope coefficients of the predictive regression model, as the intercept and slope coefficients both affect the conditional expected stock return, $E(NExr_t \mid z_{t-1})$. Suppose there is a structural break in the predictive regression model at period *k*, so that

$$NExr_t = x_{t-1}\beta^0 + \varepsilon_t, t = 1,...,k, \quad \text{.....3.12}$$

$$NExr_t = x_{t-1}(\beta^0 + \delta) + \varepsilon_t, t = k+1,...,T, \quad \text{.....3.13}$$

Where: $\beta^0 = (\beta_0^o, \beta_1^0)'$ and $\delta = (\delta_0, \delta_1)'$. Writing the model with a structural break in matrix notation, we have

$$NExr = X\beta^0 + X_{0k}\delta + \varepsilon, \quad \text{.....3.13}$$

Where: $NExr = (NExr_1,..., NExr_T)'$, $X = (x_0,..., x_{T-1})'$, $X_{0k} = (0,...,0, x_k,..., x_{T-1})'$, and $\varepsilon = (\varepsilon_1,..., \varepsilon_T)'$.

Variable explanation, and a priori expectation

Variable	Description	Data Source & measurement	Signs
Agriculture Sector Output	Output performance of crop production, fishery, livestock, and forestry	CBN statistical bulletin, 2018 (₦' Billion)	N/A
Industrial Sector Output:	Output from two main sub-sectors in Nigeria: mining and quarrying, and manufacturing.	CBN statistical bulletin, 2019(₦' Billion)	N/A

Services Sector Output:	The value of services provided by sub-sectors such as finance, telecommunications, health, education, hospitality, and entertainment	CBN statistical bulletin, 2019. (₦' Billion)	N/A
NEXP	Statistic for comparing the worth of one country's currency to another's.	CBN statistical bulletin, 2019.Using bilateral rate for computation. (₦' Billion)	- (+)
Regime Period	A dummy variable is used to capture regime periods under our study using 1 and 0	The year at which exchange rate has impact carries 1, and the year of no impact carries 0	- (+)
Net Exports	Measures exports to imports values of outputs of goods flowing within an economy for a specified time period, usually a year.	CBN statistical bulletin, 2019.	+
Control Variables:	Variables which might have independent causal effects.	N/A	N/A
INF	Changes in the domestic prices influences real sector		-
FDI	Foreign capital in the form of real assets domestication in an		+

	economy impacts real sector		
FR	Foreign exchange reserves impacts on real sector activity		+
BCRED	Credits advances to private sector business influences real sector activity		+

Source: Authors Compilation with data from CBN bulletin, World development indicator

RESULTS AND DISCUSSION

The analysis of the empirical model is based on the technique of Auto Regressive Distributed lag (ARDL) given, the mixed order of co-integrating relationships between variables in the model. Also, the variables are admixtures of quantitative and qualitative type since the regime periods can be easily captured using dummy (1, 0). The exchange rate policy framework adopted in Nigeria which resulted in a shift in regimes of rate of exchange within the periods under study exhibited structural change in the model parameter hence, classifying the analysis into regulated and deregulated regime.

Table 4.1. Pairwise correlation analysis and summary statistics

	LNAGRIC	LNIND	LNSERV	LNNEXR	LNNEXP	LNINF	LNFDI	LNER	LNBCRED	DEXR
LNAGRIC	1									
LNIND	0.896***	1								
LNSERV	0.235***	0.572***	1							
LNNEXR	0.169***	0.508***	0.964***	1						
LNNEXP	-0.451***	-0.104***	0.707***	0.673***	1					
LNINF	-0.144***	-0.109***	-0.069***	0.014***	0.024***	1				
LNFDI	0.547***	0.537***	0.411***	0.442***	-0.024***	0.154***	1			
LNER	-0.043***	0.299***	0.873***	0.873***	0.749***	-0.123***	0.350***	1		
LNBCRED	0.424***	0.658***	0.480***	0.377***	0.093***	-0.103***	0.098***	0.338***	1	
DEXR	-0.081***	-0.023***	0.064***	0.073***	0.172***	0.135***	0.152***	0.032***	-0.023***	1

Summary Statistics

Mean	7.520378	7.300687	6.986317	2.735825	26.82787	2.652326	0.150074	10.79174	2.119221	0.880000
Std. Dev.	2.309770	1.986184	2.727110	2.438476	2.734471	0.679396	0.769546	2.097331	0.352856	0.328261
Skewness	-0.766452	-0.181643	0.197381	-0.300098	-0.444346	0.620999	-0.243716	-0.618460	0.454223	-2.338738
Kurtosis	2.172081	2.041752	1.485818	1.360817	1.485850	3.055345	2.695657	2.314798	2.494578	6.469697

Note: $***\ p\ < 0.05$

LNAGRI = Agricultural Sector Output; LNIND= Industrial Sector Output; LNSERV= Service Sector Output; LNNEXR= Nominal Exchange Rate; LNNEXP= Net Exports; LNINF= Inflation; LNFDI= Foreign Direct Investment; LNER= External Reserves, LNBCRED= Bank Credit to Private Sector; and DEXR= Dummy Variable of Regime Periods.

Source: Author's Calculation (2023).

The result displayed at the upper part of Table 4.1 depicts no multi collinearity among the variables. The problem of multi collinearity is somewhat inherent in time series variables. Gujarati (2004) had opined that, the problem is not about the existence of multi collinearity in a model rather its degree of appearance. The multi collinearity of a degree above 85 per cent tends to exhibit a high multi collinearity. The variables of the above model are well behaved in terms of multi collinearity except for certain variables which exceeded the 85 per cent but showed a strong correlation , such variables consist of NEXR/SERV (0.962) ; IND/AGRIC (0.896), NER/SERV (0.873); NER/NEXR (0.873).Whereas, the lower parts containing the summary descriptive statistics revealed that, the average values of real sector proxies, AGRIC, IND, and SERV converged around 6.98 to 7.52, while the explanatory variables diverged significantly from 0.15 to 26.82.The flow of distribution showed fewer number of explanatory variables, INF (3.65) and DEXR (6.46) exhibited a peaked curve, while the other variables are flat curved.

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Structural Stability Test for Real Sector (Regulated and Deregulated Regimes).

Table 4.2 Structural Stability using Chow Test.

Chow Breakpoint Test: 1986

Null Hypothesis: No breaks at specified breakpoints

F-statistic	3.968748	Prob. F(10,13)	0.0114
Log likelihood ratio	46.18114	Prob. Chi-Square(10)	0.0000
Wald Statistic	39.68748	Prob. Chi-Square(10)	0.0000

Source: Authors Computation (2023).

The Table 4.2 revealed that parameters of the regression within the period under study do not remain same as some policy adjustments in exchange rate within the five core sub regimes would have significantly influenced the coefficients of the regression results. To this end, a null hypothesis (No Structural Break at specified points) is tested at a 0.05 significance level with computed value of F-statistic (Prob.). Given the result in Table 4.2, the null hypothesis (H0) is rejected at a 5 per cent acceptable significance with probability of F-statistic (0.00114) lower than 0.05 conventional level of significance. This suggest that structural change had occurred in exchange rate policy thrust within the period under study; the regimes periods are decomposed into two broad category of regulated regime (1970-1985) and deregulated regime (1986-2019). Consequently, the crucial aspects of Chow test is the acknowledgement of the breaking point which in Nigeria is the period that predates IMF Structural Adjustment Programme in Nigeria (1986). Hence, the regression result is spitted along the break point for avoidance of spurious results as well as minimal forecast error.

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Unit Root Test

The Augmented-Dickey -Fuller (ADF) Test Result

Table 4.1 The Unit Root Test Result

Variables	**ADF Test Statistic @ Level**	***5% Critical Level**	**ADF Test 1st Diff.**	***5 % Level**	**Order of Integration**
AGRIC	-1.122020	-2.922***	-6.719771	-2.923***	1(1)
IND	-0.529774	-2.922***	-6.679590	-2.923***	1(1)
SERV	-1.291271	-2.922***	-.4.463547	-2.925***	1(1)
NExr	-0.461167	-2.922***	-6.684427	-2.923***	1(1)
NEXP	-0.508439	-2.922***	-6.985867	-2.923***	1(1)
INF	-4.584508	-2.923***	-7.64776	-2.925***	1(0)
FDI	-2.034234	-2.923***	-10.92594	-2.923***	1(1)
FR	-2.186563	-2.933***	-3.223278	-2.933***	1(1)
BCRED	-2.331552	-2.922***	-4.629703	-2.929***	1(1)
DEXR	-3.550458	-2.938***	-6.716904	-2.933***	1(0)

Note: $***\, p < 0.05$ $level\ of\ signficance$ *MacKinnon (1996) one-sided p-values.

Sources: Author's Computation (2023).

From the output of Unit root result above; there exist mixed order of integration of both 1(0) and 1(1) series for all the variables of our model. AGRIC, IND, SERV, NEXR, FDI, NEXP and BCRED were integrated 1(1) while INF and DEXR were integrated 1(0). None of the variables were 1(2); and given the mixed order of integration from the output of the unit root test, the analysis proceed with the conduct of Co-integration using ARDL Bound test to examine whether or not a long run relationship exist among the variables in the model.

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Co - integration Test Results Using
Table 4.3b Auto - Regressive Distributed Lag Model Bound.

F-Bounds Test			Null Hypothesis: No levels relationship	
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	4.614013	10%	1.92	2.89
k	7	5%	2.17	3.21
		2.5%	2.43	3.51
		1%	2.73	3.9

Sources: Author's Computation (2023).

The result of Bound Test from the Table 4.3b seeks to ascertain the existence of a long run relationship among the variables of the model. The null hypotheses is tested at 0.05 level of significance and we reject null hypothesis if the F-statistic value is lower than I(0) bound series otherwise, do not reject. Therefore, the output of our bound test suggests a long run relationship since the F-statistic value (4.614013) is greater than I(0) bound series at 0.05 level of significance. Hence, we proceed for model parsimonious Error Corrected Model version.

Estimates Results and Discussion
Table 4.3c Parsimonious ECM of Agricultural Sub Sector Result (Regulated Regime)

Dependent Variable: D(LNAGRIC)
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.004682	0.106156	0.044100	0.9669
D(LNAGRIC(-1))	0.067606	0.059848	1.129622	0.3218
D(LNNEXR)	2.188266	1.870718	1.169747	0.3070
D(DEXR)	-0.629636	0.298760	-2.107494	0.1028
D(LNNEXP)	-0.926125	0.085937	-10.77676	0.0004
D(LNINF)	-0.068936	0.127398	-0.541108	0.6172
D(LNFDI)	0.036466	0.259204	0.140686	0.8949

D(LNER)	0.062386	0.089279	0.698777	0.5232
D(LNBCRED)	-0.500042	0.759996	-0.657953	0.5465
ECM(-1)	-0.929773	0.503596	-1.846268	0.0136

R-squared	0.989514	Mean dependent var	-0.391433
Adjusted R-squared	0.965921	S.D. dependent var	1.602674
S.E. of regression	0.295862	Akaike info criterion	0.577964
Sum squared resid	0.350138	Schwarz criterion	1.034433
Log likelihood	5.954252	Hannan-Quinn criter.	0.535709
F-statistic	41.94053	Durbin-Watson stat	1.688714
Prob(F-statistic)	0.001328		

Source: Author's Computation (2023)

The result of agricultural sub sector after adjustment for error provided a better model with R-square of 0.98. The 98% total variation in agricultural sub sector performance is explained jointly by the explanatory variables, giving only 2% to influences not captured in the model. The lag value of agricultural output performance exhibits a positive statistically insignificant relationship since the regime periods under study affected agricultural output given the high dependence on imports of foreign agricultural input which improves domestically produced agro commodities by about 67 %, on average. But, the value of nominal exchange rate exhibited a positive significant relationship in explaining variations in agricultural sub sector output performance. Hence, 2.18% increase in agricultural sector output performance was brought about by a unit increase in exchange rate during the regulated regime period. This is an indication that, overvalued naira exchange rate made the agricultural products endeared to domestic consumers but unattractive to the external buyers.

The summary review of regulated regime era using dummy indicated that, the regulated regime period adversely impacted on agricultural sector by about 62 %, on average. Given that, agricultural sector outputs were not sufficiently consumed domestically rather, local consumers substituted foreign made – agro foods for the domestically produced type. In addition, more attention were given to oil and gas business in the wake of 1970s to late 1980s. Moreover, the value of Net export is statistically insignificant though negatively related to changes in agricultural sector. Exports of Agricultural sector output gulped by 0.92%, on average, due to higher imports of agro inputs exceeded the exports of agro-commodities during the period under review. Controlling for instruments of macroeconomic volatility, the agricultural sector activities drove down rate of inflation to 06% since most of the imported inflation made consumers switch to local agricultural produce rather than consuming the imported ones that come at a higher cost. The Agricultural sector improves at an insignificant proportion of 03% due to increase in foreign direct

investment. By implication, the fraction of foreign owned businesses were less of agricultural base. Most which were non-mechanized rather, the use of crude implements stalled mass production. Also, agricultural sector produce accounted for a 0.06% growth during the period due to increase in the external reserves. Recall, the exchange rate overvaluation dithered foreign buyers to purchase more of domestically produced agricultural produce, resulting in a marginal addition to external reserves. During the period also, bank credit to private sector decreased output of agricultural sector by 0.50% since most bank lending were on offshore sector, paying little or no attention to agricultural sector abroad. Besides the report of the variables, there is speed of adjustment to long equilibrium relationship amongst variables in less than one year.

4.4.a Parsimonious ECM of Industrial Sub Sector Result (Regulated Regime)

Dependent Variable: D(LNIND)

Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.141689	0.066132	2.142529	0.0988
D(LNIND(-1))	0.122174	0.054752	2.231395	0.0895
D(LNNEXR)	-0.786850	1.197893	-0.656862	0.5471
D(DEXR)	-0.537634	0.189706	-2.834038	0.0742
D(LNNEXP)	-0.575399	0.054702	-10.51880	0.0005
D(LNINF)	-0.141521	0.079878	-1.771722	0.1511
D(LNFDI)	0.213976	0.161378	1.325932	0.2555
D(LNER)	0.008022	0.056528	0.141912	0.8940
D(LNBCRED)	-0.152860	0.475793	-0.321274	0.7641
ECM(-1)	-0.363060	0.322867	-1.124485	0.0327

R-squared	0.992081	Mean dependent var	-0.165078
Adjusted R-squared	0.974263	S.D. dependent var	1.156726
S.E. of regression	0.185571	Akaike info criterion	-0.354951
Sum squared resid	0.137746	Schwarz criterion	0.101518
Log likelihood	12.48466	Hannan-Quinn criter.	-0.397206
F-statistic	55.67878	Durbin-Watson stat	1.713003
Prob(F-statistic)	0.000762		

Source: Author's Computation (2023)

The adjusted R-Square of 97% shows that explanatory variables jointly explain up to 97% total changes in industrial sector output performance under the regulated exchange rate regime period, attributing 3% to factors not captured in the model. But, coefficient of error correction model (ECM) indicated that, adjustment in any long run disequilibrium in the model can be corrected in less than four months. The lagged value of industrial sector output accounted for 12% value addition to growth of industrial sector output during the period. Except that, the nominal exchange rate exhibited negative relationship with industrial output at 78%. Recall, during the period under study, Nigerian currency was overvalued and it was cheaper to import productive inputs abroad. The industrial sector exports was relatively low given the fact that an overvalued currency makes it difficult to export. Whereas, the regulated exchange rate regime does impact industrial sector negatively as output level decreased by 53 %, the sharp drop in crude oil prices in the international oil market in 1981 cause the Nigerian monetary authority to adopted a policy of gradual depreciation of the nominal exchange rate of the naira with aim to reversing the observed overvaluation of the naira in early 1970s.This policy push of partial naira depreciation significantly increased the cost of imported industrial inputs such as machines, tools, and chemicals used in production. The industrial sector output under performed by about 57%; since net export value decreases, owing to high input cost – high price of output relations. Controlling for cyclical tendencies, industrial sector was hardly heated by inflation to the tune of 14% given the decrease industrial sector availability of output for consumption and exports. Bank credit to private sector exhibited negative relationship with industrial sector output performance due to the dominance of offshore sector credit during the review period.

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Parsimonious ECM of Service Sub Sector Result (Regulated Regime)

Dependent Variable: D(LNSERV)

Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.083348	0.108878	0.765523	0.4866
D(LNSERV(-1))	-0.501404	0.618557	-0.810603	0.4631
D(LNNEXR)	2.127094	1.829483	1.162675	0.3096
D(DEXR)	-0.179401	0.284573	-0.630421	0.5626
D(LNNEXP)	-0.092336	0.098062	-0.941608	0.3997
D(LNINF)	0.035140	0.143124	0.245522	0.8181
D(LNFDI)	0.014087	0.233813	0.060249	0.9548
D(LNER)	-0.056124	0.080506	-0.697143	0.5241
D(LNBCRED)	-0.194353	0.738865	-0.263043	0.8055
ECM(-1)	-0.669955	0.590305	-1.134931	0.0318

R-squared	0.439280	Mean dependent var	0.046459
Adjusted R-squared	-0.822341	S.D. dependent var	0.195223
S.E. of regression	0.263540	Akaike info criterion	0.346583
Sum squared resid	0.277813	Schwarz criterion	0.803053
Log likelihood	7.573917	Hannan-Quinn criter.	0.304329
F-statistic	0.348187	Durbin-Watson stat	1.408928
Prob(F-statistic)	0.913048		

Source: Author's Computation (2023)

Service sector estimation result yielded an R-Square of 43% showing the explanatory power of the independent variables of nominal exchange rate, dummy of regulated regime, net exports, inflation, FDI, external reserve and bank credit to private sector. Also, the quick to adjustment coefficient of the model is less than 7 months (ECM(-1) = -0.66)). From the result, lagged value of service sector output performance; net exports; and external reserve were unfavorable to the service sector growth performance. Whereas, inflation rate, FDI and nominal exchange rate supported service sector output growth.in the regulated period. Lastly, the regime period does not impact service sector output. Recall, during the period, it was relatively expensive to import transportation tools due to partial depreciation of Naira , although, there were not enough foreign exchange to finance such huge importation occasioned by the declined oil prices of 1980 glut. The cost of importation and low oil price caused government to deplete of external reserve to

finance importation Train compartments and spare parts, as well as other service sector requirements.

4.5 Long Run Estimation Result of Agric Sub Sector (Deregulated Regime)

Dependent Variable: D(LNAGRIC)
Included observations: 13 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.088185	0.194261	-0.453953	0.6807
D(LNAGRIC(-1))	1.305264	0.738717	1.766935	0.1754
D(LNNEXR)	0.666720	0.401868	1.659053	0.1957
D(DEXR)	-0.045321	0.181903	-0.249152	0.8193
D(LNNEXP)	0.168993	0.185008	0.913432	0.4284
D(LNINF)	-0.130042	0.113902	-1.141702	0.3365
D(LNFDI)	0.267542	0.148138	1.806032	0.1687
D(LNER)	-0.201935	0.157040	-1.285878	0.2887
D(LNBCRED)	0.195298	0.439562	0.444302	0.6869
ECM(-1)	-1.946034	0.944493	-2.060401	0.0134

R-squared	0.796209	Mean dependent var	0.248690
Adjusted R-squared	0.184837	S.D. dependent var	0.190966
S.E. of regression	0.172416	Akaike info criterion	-0.605684
Sum squared resid	0.089182	Schwarz criterion	-0.171108
Log likelihood	13.93695	Hannan-Quinn criter.	-0.695009
F-statistic	1.302332	Durbin-Watson stat	2.242597
Prob(F-statistic)	0.459701		

Source: Author's Computation (2023)

The result of deregulated regime yielded an R-Square of 0.79 which denotes a model of good fit. Also, the ECM speed of adjustment is less than one year period. Evidence from the report revealed that, the deregulated exchange rate regime does not significantly impact agricultural sector output performance positively hence, agricultural sector output decreases by 04% during the period. This reduction in agricultural output can be attributed to the inability to access enough foreign exchange to fund the necessary imports of inputs given that the only source of exchange rate supply available for agricultural sector was from the Second Tier Exchange Rate Market were uniform rates were and usually higher than that of First Tier Market Rate.

Although, other factors can influence agricultural sector output such, net exports which accounted for 16% growth of agricultural sector under the new regime. Other variables of growth includes: nominal exchange rate accounted for 66%; FDI accounted for 26% ; and bank credit to private sector accounted for 19% .Agricultural sector did not perform well due to negative contribution of Inflation rate at 26% and external reserve position at 20 respectively.

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Long Run Estimation Result of Ind Sub Sector (Deregulated Regime)

Dependent Variable: D(LNIND)
Included observations: 13 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.152532	0.067631	2.255359	0.1094
D(LNIND(-1))	-0.162348	0.246814	-0.657773	0.5577
D(LNNEXR)	0.399035	0.208693	1.912070	0.1518
D(DEXR)	0.038913	0.095537	0.407312	0.0471
D(LNNEXP)	0.127415	0.085019	1.498659	0.2309
D(LNINF)	0.009268	0.057955	0.159924	0.8831
D(LNFDI)	-0.051400	0.073306	-0.701165	0.5337
D(LNER)	0.223234	0.084229	2.650330	0.0770
D(LNBCRED)	0.049146	0.173856	0.282682	0.7958
ECM(-1)	0.051624	0.208838	0.247194	0.0207

R-squared	0.867830	Mean dependent var	0.190665
Adjusted R-squared	0.471319	S.D. dependent var	0.122555
S.E. of regression	0.089110	Akaike info criterion	-1.925758
Sum squared resid	0.023822	Schwarz criterion	-1.491182
Log likelihood	22.51743	Hannan-Quinn criter.	-2.015083
F-statistic	2.188669	Durbin-Watson stat	0.878612
Prob(F-statistic)	0.280999		

Source: Author's Computation (2023)

The result of industrial sub sector output performance under deregulated regime produced an R-Square of 86% showing the simultaneous influence of the explanatory variables towards explaining total variation in industrial sub sector output performance within the deregulated period of study. The speed of adjustment to long run equilibrium departure is less than one year. Whereas, the deregulated regime does impact positively on the output performance of industrial sub sector, leading to an improvement in output by about 03%. Recall, during this period, the import substitution strategy of government was ineffective; the psychological perspective of Nigerians to imports coupled with the unstable Naira exchange rates had crippled the productive strength of industrial sector. The only kiss of life extended to revive industrial sector output performance was the dual exchange rate operation from which the sector can directly or indirectly access foreign exchange for the importation of material input. Controlling for other influences, nominal exchange rate supported output performance of industrial sector by 39%; net export by about 12%; external reserved by about 22%; inflation by about 09% and bank credit to private sector by about 04% respectively. While, FDI accounted for 05% slow output performance.

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Long Run Estimation Result of Service Sub Sector (Deregulated Regime)

Dependent Variable: D(LNSERV)
Included observations: 13 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.123075	0.079610	1.545971	0.2198
D(LNSERV(-1))	0.262131	0.324416	0.808011	0.4782
D(LNNEXR)	0.151288	0.127025	1.191009	0.3193
D(DEXR)	-0.061179	0.055667	-1.099033	0.3520
D(LNNEXP)	0.027649	0.047551	0.581450	0.6017
D(LNINF)	0.052480	0.040046	1.310504	0.2813
D(LNFDI)	-0.019262	0.064871	-0.296934	0.7859
D(LNER)	0.194024	0.048712	3.983089	0.0283
D(LNBCRED)	-0.004565	0.103124	-0.044270	0.9675
ECM(-1)	-0.200046	0.131634	-1.519720	0.0259

R-squared	0.928671	Mean dependent var	0.233483
Adjusted R-squared	0.714684	S.D. dependent var	0.099097
S.E. of regression	0.052933	Akaike info criterion	-2.967460
Sum squared resid	0.008406	Schwarz criterion	-2.532884
Log likelihood	29.28849	Hannan-Quinn criter.	-3.056785
F-statistic	4.339845	Durbin-Watson stat	2.009402
Prob(F-statistic)	0.127069		

The service sector ECM result generated R-Square of 92%, by implication; the explanatory variables of our model jointly explain 92% total variation in service sector output performance, leaving 8% to influences not captured in the model. The deregulated regime period does not significantly impact service sector output positively since output level dropped at about 6% during the period under study. Increased costs of production have induced higher service charges and services dissatisfaction. The Shortage of productive inputs including auto spare parts, inadequate supply of industrial chemicals, drugs for hospital patients and educational learning materials have resulted in a deteriorating services and higher service charges in service sector. The dummy variable of deregulated regime periods is insignificant to total changes in service sector output performance.

Agricultural Sub Sector Summary of Major Findings

Regulated Regime (1970-1978) and (1978-1985) and Deregulated Regime (1986-1994) (1995-2006) (2006-2019)

Hypothesis One summary: The null hypothesis is tested at the conventional 5% level of significance as against the computed value of probability of exchange rate regime periods.

Therefore, since the probability of exchange rate dummy variables for regulated and deregulated periods exceed 0.05 level of significant, we do not reject null hypothesis (H0); and conclude that' all the regimes period (regulated and deregulated) did not significantly impact on the agricultural sub sector output performance in Nigeria within the period under study.

There negative relationship between dummy of the regulated and deregulated regime periods and the agricultural sub sector performance in Nigeria implied that, the regimes of regulated and deregulated did not statistically impact on agricultural sub sector in Nigeria. The imports of agricultural sector inputs usually came with higher prices as a result of exchange depreciation before and after structural adjustment programme, resulting in high cost of production and decreased output level. In addition, the continued operational rigidity for agricultural sector to access foreign exchange has adversely impacted their output performance of the industry.

Industrial Sub Sector Major Findings

Regulated Regime (1970-1978) and (1978-1985) and Deregulated Regime (1986-1994) (1995-2006) (2006-2019)

Hypothesis Two Summary: In testing hypothesis, we compare the null hypothesis with the alternative at 5 per cent significance level. Therefore, since the probability of the dummy variable of exchange rate regimes (regulated) is greater than 0.05 level of significant, we do not reject the null hypothesis (H0). Also, dummy variable of exchange rate regimes (deregulated) is less than 0.05 level. We conclude that 'regulated regime periods did not significantly impact the performance of industrial sub sector of the real sector in Nigeria, while, the deregulated regime exacts a significant impact within the period under study.

Service Sub Sector Major Findings

Regulated Regime (1970-1978) (1978-1985) and Deregulated Regime (1986-1994) (1995-2006) (2006-2019)

Hypothesis Three Summary: Given the null hypothesis tested at the conventional 5% level of significance as against the computed value of probability of exchange rate regime periods. Therefore, since the probability of exchange rate dummy variables for regulated and deregulated service sector regime periods exceed 0.05 level of significant, we do not reject null hypothesis (H0); and conclude that' all the regimes period (regulated and deregulated) did not significantly impact on the service sub sector output performance in Nigeria within the period under study.

Hypothesis Four Summary: The real sector structural stability was tested with a null hypothesis of " No Breaks at a specified breakpoints" as against the alternative of " Presence of Structural

Breaks at a specified Points" Using a 0.05 level of significance to compare with the computed (prob.) of F-Statistic. Therefore, given the values of F- statistic (Prob.) = 0.00114 which is less than the 0.05 level of significance, we reject the null hypothesis and conclude that' there is a significant structural break in exchange rates regime within the period under study.

Summary of Results

The dummy of regulated regimes of AGRIC, IND and SERV did not conform to the theoretical expectations due to macro-economic problems such as balance of payment deficits, declined external reserves, exchange rate induced inflation, and over reliance on importation. Consequently, the instability of exchange rate as well as policy inconsistency in Nigeria may have adversely impacted on the broad spectrum of output performance of real sector in Nigeria within the period of study. The collapse of one exchange rate policy at any point in the regime period propelled the quick switching to another policy strand, which has grossly undermined the anticipated swift of real sector progress. Although the exchange rate policy is tied to national monetary policy and both cannot be implemented in isolation without recourse to the international monetary system coupled with the macroeconomic conditions prevalent at every period under the regimes. More so, the oil fortune of mid 1970s attracted huge foreign exchange reserve to the economy and propelled demand for foreign made raw materials for real sector's output. The Naira was over-valued, whereas, the dwindled fortunes of 1980s that followed eroded the purchasing power of Naira in exchange internationally. Following the import substitution policy of SAP, coupled with rationing of foreign exchange, real sector performance nosedived. Many small-scale industries and establishments are being shut down or have wounded - up due to inability to secure the necessary raw materials and spare parts to remain in operation. The difficulty to access foreign exchange by real sector led to high cost of imports without proper import substitution plan. Hitherto, various exchange policy remains in force to feed the import dependent economy of Nigeria. Corollary of the foregoing passage is rampant unemployment and dwindling capacity utilization in existing industries

CONCLUSIONS AND POLICY IMPLICATION OF THE FINDINGS.

The adoption of various exchange rate regimes in Nigeria under the auspices of regulated and deregulated regimes was in a bid to seek for a suitable exchange rate policy framework to quell instability and loss of purchasing power of Naira in the international market. In pursuant of this, the finding of our estimate showed that, Nigerian real sector is adversely affected by the various policy shift in a bid to find a suitable exchange. The various strategies employed for improve the well-being of real sector output as well as other macroeconomic aggregates were not homogenous in its effect across the components of real sector. In addition, the regulated exchange rate regime was loosely fixed with temporal government intervention in the foreign exchange market; leading to loose impact on agricultural, manufacturing and service sub sector's output performances. Such monetary interventions did not yield the desired results. Also, the deregulated regime period, only

impacted on manufacturing sector positively while weakening the performances of the other sub sector output potentials. Therefore, easing the structural and institutional rigidities to assessing exchange rate for real sector growth is strongly needed. Also, extending more credits to the private sector to produce quality output and in large scale for exports will increase foreign exchange holdings in our reserves.

Recommendations

1. The Central Bank of Nigeria should bear in mind the exports sectors' competiveness at the global market place, and formulate a formidable foreign exchange rate policy that will bolster the output performance of the real sector in Nigeria.

2. With the rising inflation rate in Nigeria, synchronized crawling peg exchange rate system should be adopted for real sector outputs only.

3. Government through the monetary authority should extend more credit facilities to the real sector to boost output and enhance exports so as to attract more foreign exchange revenue.

4. The foreign exchange market should harmonize to provide supply-side services on the demanders of foreign exchange for imports of real sector inputs and other international obligations.

5. The foreign exchange window of Central Bank of Nigeria: Investors' and Exporters' Window (I. & E. Window) should be accessible by the primary users of foreign exchange so as to mitigate the adverse effect of arbitrages and dampen speculative tendencies.

6. The Government and the Real Sector players should pay more attention to Import Substitution Strategy so as to lessen the demand for foreign exchange used for imports of inputs and finished products.

7. Government should advance loans and subsidies to agricultural business to mechanized system of farming rather, the use of crude implements which have stalled mass production, processing and storage of agricultural produce.

Contributions to Knowledge

The Results of the research analysis expose the rationale behind the incessant exchange rate policy switch from one regime to another. Therefore, the need of studying the behaviors of each ' 'exchange rate regimes on real sector output performance' from the period of 1970 to 2019 tends to give a new insight into the policy framework as well as chart a new course in formulation of foreign exchange rate policy in Nigeria

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