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Exchange Rate Fluctuations and Macroeconomic Stability in Nigeria (1970 - 2001)

Emeka J Okereke*

The study X-rayed the effect of exchange rate fluctuations on macroeconomic variables during the period 1970-2001. This is against the backdrop of persistent exchange rate fluctuations and comatose response of macroeconomic indices over the period under review. In order to achieve this, secondary data, which were sourced from the Central Bank of Nigeria (CBN), Nigeria Deposit Insurance Corporation (NDIC) and other relevant publications, were used. To ensure uniformity, the raw data were converted into rates or ratios and that formed an operational data (as presented in Table I). The data were analyzed using multiple regression analysis, which is patterned after the Granger causality test. The study revealed that exchange rate fluctuations are not significant factors influencing macroeconomic variables in Nigeria, except for the Level of Government Influence on the Economy (LGIE). Again, while inflation and average interest rate are significant factors influencing exchange rate fluctuations in Nigeria, external reserves and level of government influence are not. Given these findings, a triple-policy approach of institutional, structural and attitudinal changes were recommended. This, it is hoped, will enhance the value of the domestic currency and ensure the stability of macroeconomic variables as well as improve the living standard of the people.

I. Introduction

The Nigerian economy, since independence, has undergone multidirectional metamorphosis. There have been days of joy, stagnation and crisis. In each of these days the various governments had, at one time or the other, responded to the crises of the day in its own way. While the crying days of an economy are associated with external economic imbalance [of payment disequilibrium (deficit), huge external debts, rising imports with corresponding export reduction, and so on] and internal imbalance [which includes rising inflation, growing unemployment, reduced capacity utilization rate, increasing interest rate and so on]. Obviously, no government can contend with these imbalances without severe pressure and application of policy measures. Exchange rate policy is one of such measures.

Successive Nigerian governments have adopted different exchange rate policies leading to four major exchange rate regimes since 1970. Specifically, conventional pegs (1970-77), crawling bands (1978-1985), independently floating (1986-93) and managed floating (1994-2001) were applied with their variants by different governments. The first two regimes are fixed exchange regime while the last two are floating exchange rate regime. Exchange rate fluctuations are mainly associated with floating exchange regime, which covered the last two regimes (from 1986-2001), while 1970-1985 witnessed little or no fluctuations.

Floating exchange rate regime was adopted in Nigeria with the introduction of Structural Adjustment Program (SAP), which ushered in the deregulation of the Nigerian

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economy, including the foreign exchange market. SAP is a compendium of policy instruments and the Second-tier Foreign Exchange Market (SFEM), which metamorphosed into the present Autonomous Foreign Exchange Market (AFEM), is one of these policy instruments. SFEM is designed to essentially correct the so-called artificial overvaluation of the *naira* by allowing its rates to be determined by the forces of market supply and demand thereby shutting down the parallel market in foreign exchange market. Specifically, SFEM or AFEM had the objectives of evolving a realistic and sustainable market determined exchanger rate for the *naira*, so as to reduce demand for foreign exchange to available supply, reduce the pressure on the Balance of Payments (BOPs), eliminating the distortion in all sectors of the economy, reduce imports, stimulate exported and pave way for more reliance on the economy and sustainable economic growth. Summarily, the floating exchange rate regime in Nigeria should create stability in exchange rate, achieve internal balance and bring long-term external equilibrium. The question that always comes to mind is whether these objectives have been achieved given the persistent depreciation of the *naira* exchange rate, the persistent wide divergence between official and parallel market rates, the persistent BOP deficit disequilibrium, slow response of export and low level of foreign private direct investment. Again, how far have both fixed and floating exchange rate regimes fared in enhancing the value of *naira* and stabilizing Nigerian macroeconomic indices over the period, are under review.

A cursory look at some of the macroeconomic variables of the Nigerian economy in Table 1 is revealing. There has been persistent instability in prices and consequently galloping inflation. Inflation has been on a geometric increase. It has grown from 9.9% (in 1980) - 72.8% (in 1995) showing about 86.4% growth rate. Although there was a decline from 1996 (29.3%) but the decline rate (59.79%) is far below the growth rate. The economy recorded a single digit of 8% in 1998 as reported by CBN. Interest rates have been fluctuating on an increasing trend. Lending rate rose from 6% in 1980 to between 30% - 40% in 1993 and has been fluctuating at an increasing rate depending on the policy. There are rising import bills. It rose from N756.4m (in 1970) - N837.4b (in 1998) [CBN Briefs 1999: 6]. Other variables like unemployment, exchange rate and balance of payments have continued to show some margin of decline without good sign of recovery. For instance, labor force has been growing without corresponding increase in employment opportunities. It is important to note here that some macroeconomic variables have shown slight growth but unfortunately these growths have not been consistent, thereby leading to unreliable forecast. Under this circumstance, no meaningful economic decision can emerge. The inconsistencies and downturn recorded in most of the macroeconomic variables have been attributed to fluctuations in exchange rate. These inconsistencies have their difficulties in the economy, but most damaging is the persistent downturn in important economic indices, and most importantly on the living standard of the people. This is where this study becomes very imminent, given that there are gaps in the cause and effect of exchange rate fluctuations on economic indices.

II. Literature Review

Historically, studies have analyzed exchange rate and macroeconomic variables at one end and macroeconomic variables and exchange rate fluctuations at another end using either simple regression or multiple regression analysis. For instance, Ahamadu and Zarma (1997) conducted an empirical work on the stability of exchange rate and macroeconomic

variables in Nigeria. They found that the instability in exchange rate is largely explained by the continuous existence of parallel market in the country. Other variables, in their model had a very minor input on the instability of exchange rate. That is, changes in market fundamentals such as inflation and interest rate do not largely explain the volatility of the *naira* exchange rate. This is however a contradiction to other findings, like that of Humphrey (1986). Cooley (1987) in an econometric study developed a model that assessed the relative impact of macroeconomic variables on the *naira* value of exchange rate from 1973-1992. He concluded that the purely economic or market-determined variables (interest rate, inflation, reserves, etc.) play virtually little or no roles in exchange rate determination. Dornbusch (1976) examined, among others, the inflationary impact on the stability of exchange rate. He concluded that a 5% point depreciation in the effective exchange rate would in the short run raise inflation by about 4% and in the long run by about double that amount. Thus, an increase in import prices spills over to increased domestic inflation. In another study by Humphrey (1986: 198-9) he found that a rise in inflation in one country relative to the other (trading partner) will cause the former's currency to depreciate on the foreign exchanges. Olisadebe (1991: 158) also found that equilibrium exchange rate is influenced by changes in relative inflation rates between Nigeria and her trading partners. Udo (2003) in his study found a positive relationship between inflation and exchange rate, which is in line with economic theory. Egwacklide *et al.* (1994) in Udo (2003: 47) examined, the quantitative effects of exchange rate depreciation on inflation, government revenue and expenditures and money supply. The study revealed that domestic money supply, real output and official exchange rate are the proximate causes of inflation in Nigeria.

The above studies used ordinary simple or multiple regression analysis to establish cause and effect relationship between exchange rate and macroeconomic variables. This has been proved inappropriate (Okonkwo, 1998). Therefore, a stronger tool, called Granger Causality Test is applied in this study.

III. Methodology

The study is investigative and therefore secondary data, which are mainly times series annual data sourced from the publications of the Central Bank of Nigeria (CBN), Nigerian Deposit Insurance Corporate (NDIC), Federal Office of Statistics (FOS) and other relevant sources, were utilized. In order to ensure uniformity, the sourced data were converted into what we called operational data (see Table 1) with which models were formulated and their estimation carried out using Granger causality test, with appropriate modifications. Data analysis, interpretation and policy implications of the model estimates are the basis of our recommendations and conclusions.

IV. Model Estimations

Our estimation is based on Granger's (1969) causality test, which regresses a variable Y on lagged values of itself and another variable X plus a constant. In a modified version causality test regresses a variable Y on lagged values of itself plus X 's present and past values (Pierce and Haugh, 1977; Odedokun, 1987; Ezirim 1998 and 1999). The modified version is estimated of the mathematical form

$$Y_t = Q_0 + Q_1 Y_t + Q_2 \sum_{j=1}^m (X_t + X_{t-j}) + U_t \quad (1)$$

Where Y_t = Dependent variable at time, t

Q_0 = Intercept

Q_1 = Coefficient of lagged Y at time, t (present) and $t-1$ (past)

Y_{t-1} = Lagged Y value

Q_2 = Coefficient of the independent variable (present and past values)

X_t = Independent variable at time t (present value)

X_{t-1} = Independent variable at time, $t-1$ (past value)

U_t = Error term

$\sum_{j=1}^m$ = Sum of the values from year 1 to m th year.

According to the above modified version, causation is flowing from X to Y , if Y is better predicted by all the available information in X other than Y . On the other hand, X can be predicted if Y is taken as independent variable in the model and treated as such. This means that causation in eq.(1) can move from Y to X . Given this we can have a reverse of eq.(1) as:

$$X_t = \varphi_0 + \varphi_1 X_{t-1} + \varphi_2 \sum_{j=1}^m (Y_t + Y_{t-1}) + E_t \quad (2)$$

This means that Y is said to Granger cause X and causation from Y to X is identified if the coefficients (φ s) of the present and past values of Y in eq.(2) are significantly different from zero as a group. On the other hand, causation from X to Y is identified if the coefficients (φ s) of the present and past values of X in eq.(1) are significantly different from zero as a group. The significance of the effect of the causality (causal variable) is tested using the traditional statistical F-test (whether it is positive or negative). That is whether the change in the independent variable significantly increases or decreases the dependent variable and vice versa.

Given the above framework, we build our operational model by hypothesizing that:

- (1) Exchange rate fluctuations is not a significant factor influencing Nigerian macroeconomic variables, mainly inflation, interest rate, external reserves and level of government influence on the economy.
- (2) Macroeconomic variables, mainly inflation rate, interest rate, external reserves and level of government influence on the economy are not significant factors causing fluctuations in exchange rate in Nigeria.

The above hypotheses are mathematically represented thus:

$$EXCR_t = a_{01} + a_1 EXCR_{t-1} + a_2 \Sigma(INF_t + INF_{t-1}) + U_t \quad (3)$$

$$INF_t = b_{02} + b_3 INF_{t-1} + a_4 \Sigma(EXCR_t + EXCR_{t-1})U_t \quad (4)$$

Where

$EXCR_{t,t-1}$ = Real exchange rate (deflected with inflation rate) at time, t (present), $t-1$ (past). This is the amount of naira exchanged for one US dollar.

$INF_{t,t-1}$ = Inflation rate at present (t) and past periods ($t-1$)

$$EXCR_t = a_{03} + a_5 EXCR_{t-1} + a_6 \Sigma(AVINTR_t + AVINTR_{t-1}) + U_t \quad (5)$$

$$AVINTR_t = a_{34} + a_7 AVINTR_{t-1} + a_8 \Sigma(EXCR_t + EXCR_{t-1}) + U_t \quad (6)$$

Where

$AVINTR_{t-1}$ = Average banks' leading rate at the current period t and past period $t-1$.

$$EXCR_t = a_{05} + a_{09} EXCR_{t-1} + a_{10} \Sigma(EXTR_t + EXTR_{t-1}) + U_t \quad (7)$$

$$EXTR_t = a_{06} + a_{11} EXTR_{t-1} + a_{12} \Sigma(EXCR_t + EXCR_{t-1}) + U_t \quad (8)$$

Where, $EXTR_{t-1}$ = Nigerian external reserves growth rate at both present (t) and past periods ($t-1$)

$$EXCR_t = a_{07} + a_{13} EXCR_{t-1} + a_{14} \Sigma(LGIE_t + LGIE_{t-1}) + U_t \quad (9)$$

$$LGIE_t = a_{08} + a_{15} LGIE_{t-1} + a_{16} \Sigma(EXCR_t + EXCR_{t-1}) + U_t \quad (10)$$

where

$LGIE_{t-1}$ = Level of government influence on the economy derived from the ratio of government expenditure (GOVTEXP) to Gross Domestic Production (GDP) (GOVT. EXP - GDP Ratio) at both current (t) and past period ($t-1$).

The identities are as defined previously and the interpretations are as in eqs.(1) and (2) above.

V. *Model Estimation Results

Real Exchange Rate on Inflation Rate (Present and Past Values)

$$EXCR_t = -4.064 + .978 EXCR_{t-1} + .155 INF_{t,t-1} \quad (11)$$

t (-1.443) (18.324) (2.910)

Prob (.160) (.000) (.007)

$R = .961, R^2 = .923; AR^2 = .918$

$F = 168.068 F\text{-sig.} = (.000); DW = 1.959$

Inflation on Real Exchange Rate (Present and Past Values)

$$INF_t = 1.082 + .879 INF_{t-1} - .057 EXCR_{t,t-1} \quad (12)$$

t (.395) (9.893) (-.642)

Prob (.696) (.000) (.526)

$R = .878, R^2 = .771; AR^2 = .756$

$F = 48.948 F\text{-sig.} = (.000); DW = 2.063$

Exchange Rate on Average Interest Rate (Present and Past Values)

$$EXCR_t = -2.440 + .914 EXCR_{t-1} + .076 AVINTR_{t,t-1} \quad (13)$$

t (-.544) + (13.950) (1.163)
 Prob (.591) (.000) (.255)
 R = .951; R2 = .904; AR2 = .896
 F = 132.542; Sig.F = .000; DW = 1.791

Average Interest Rate on Exchange Rate (Present and Past Values)

$$AVINTR_t - 1 = .887 + .949AVINTR_{t-1} - 0.007EXCR_{t+t-1} \quad (14)$$

t (.795) + (13.298) (-.091)
 Prob (.433) (.000) (.928)
 R = .945; R2 = .894; AR2 = .887
 F = 122.123; Sig.F = .000; DW = 2.508

*Extracted from SPSS Computer Program

Exchange Rate on External Reserve (Present and Past Values)

$$EXCR_t = 2.175 + .949EXCR_{t-1} + 0.003EXTR_{t+t-1} \quad (15)$$

t (.974) + (15.849) (.045)
 Prob (.339) (.000) (.964)
 R = .949; R2 = .900; AR2 = .893
 F = 125.804; Sig.F = .000; DW = 1.736

External Reserve Growth Rate on Real Exchange (Present and Past Values)

$$EXTR_t = -5.786 + .666EXTR_{t-1} + .017EXCR_{t+t-1} \quad (16)$$

t (-.135) + (4.785) (.120)
 Prob (.893) (.000) (.905)
 R = .665; R2 = .442; AR2 = .403
 F = 11.477; Sig.F = .000; DW = 2.921

Average Real Exchange Rate on Level of Government Influence on the Economy (Present and Past Values)

$$EXCR_t = .396 + 1.080EXRC_{t-1} - .137LGIE_{t+t-1} \quad (17)$$

t (1.264) + (4.440); (-.568)
 Prob (.220) (.000) (.578)
 R = .949; R2 = .900; AR2 = .891
 F = 94.897; F sig. = (.000); DW = 1.079

Level of Government Influence on Economy on Average Real Exchange Rate (Present and Past)

$$LGIE_t = -5.1160 + .676 LGIE_{t-1} + .312 EXCR_{t+t-1} \quad (18)$$

t (-1.369)	(5.604)	(2.586)
Prob (.185)	(.000)	(.017)
$R = .949$;	$R^2 = .900$;	$AR^2 = .891$
$F = 126.996$;	$F\text{-sig.} = (.000)$;	$DW = 1.626$

VI. Interpretation of Estimation Results

From the entire result, we can establish the cause and effect relationships between exchange rate fluctuations and macroeconomic variables at one end and macroeconomic variables and exchange rate fluctuations at the other end. The combined values of the coefficient of exchange rate show that they are statistically insignificant for all the variables except Level of Government Influence on the Economy (LGIE). Thus, causality is not flowing from exchange rate to inflation rate, average interest rate and external reserves. This means that exchange rate fluctuations is not significant factor influencing macroeconomic variables in Nigeria. But with causality flowing from LGIE to exchange rate, it means that exchange rate is a significant factor affecting LGIE. Thus, the coefficient of the combined values of inflation (INF) and average interest rate (AVINTR) are statistically significant at the probability levels of 5%. This means that causality is flowing from inflation and average interest rate to exchange rate. This automatically rejects our null hypothesis. Thus, causal relationship exists between inflation and average interest rate and exchange rate fluctuations in Nigeria, implying that these macroeconomic variables are significant factors influencing exchange rate fluctuations in Nigeria.

At the conventional significance of level of 5%, the result shows that the coefficient of the combined values of external reserves and level of government influence on the economy are statistically insignificant. This means that causality is not flowing from these macroeconomic variables to exchange rate in Nigeria.

VII. Economic Analysis and Policy Implications

This Section considers the economic dimensions of the results, monetary, fiscal and structural policy implications of our earlier interpreted results. The aim is to come up with appropriate recommendations that will help in building a stronger economy and enhancing the well-being of the citizens. The variables in the models have been taken successively.

Inflation distorts the economic activities, especially, among investors. However, it is a necessary 'evil' when certain policies are put in place. High interest rate is a major source of high inflation rate, which is phenomenal in Nigeria. The high inflationary rate has continued to 'torment' the standard of living of the Nigerians. The Government's influence on interest rate (supply and demand sides) is always increasing pressure on inflation. From our result and interpretation, it is evident that control of inflation in the Nigerian economy is an important recovery tool and should form an essential policy trust of Government. A reduction in inflation will go a long way in stabilizing the exchange rate while increase will continue to generate instability. Therefore, any policy of Government at continuously depreciating the local currency has the tendency of fueling inflation. This is the present situation in Nigeria and is very detrimental to the economy and peoples' living standard, especially, in the wake of geometric increase in the poverty

level. It is obvious that poverty is a killer - destroying the mental, physical, economic, social and political foundation of any nation. Commenting on Nigerian poverty level, Thomas and Canagarajah (2002) in *afro News* (2002) said "Nigeria was endowed with land, oil and natural resources, but a substantial proportion of its population remains very poor because of its failure to manage its wealth effectively". Inflation, as an economic performance indicator, should be considered from the point of view of both domestic and international standpoints.

Interest rate is the price paid for the use of funds. It is the cost of funds and has remained a very strong force in determining the direction of investment in the economy. There is a direct relationship between exchange rate and interest rate, with the expected signs. Causality is also flowing from interest rate to exchange rate, which suggests that interest rate is a significant factor influencing exchange rate. By implication, it means that interest rate is a good economic and policy tool for achieving exchange rate stability. But this depends mainly on the investment structure and culture of the people as well as their savings potentials. In the wake of growing poverty level in Nigeria, the issue of savings is out of the way. Strong and stable exchange rate is achieved through sound productive base. Basically, this is oriented to investment, which depends on savings, which again is virtually absent in relative terms. A hungry man is an angry man, says an adage. It follows that no meaningful interest rate policy pursued will achieve the desired investment result since even at the least interest rate the responses will be highly infinitesimal. It calls for policy attention on the remote cause rather than on the immediate cause.

Lack of causation running from exchange rate to interest rate explains the instability in the exchange rate. Causality will flow in a strong and stable exchange rate regime. Evidently, fluctuations in exchange rate produced instability in interest rate. This is in line with the result of a study by Gbosi (1998: 284). A priori, high interest rate is supposed to attract foreign investment which boosts BOP position and enhances the value of domestic currency. Our findings, however, deviated from this economic expectation.

External reserve is a pool from where drawings are made. Our estimation result and the interpretation therefrom portray this static characteristic. Exchange rate is not a significant factor influencing exchange rate in Nigeria. The model is with the correct sign. As external reserve increases, exchange rate is put under less pressure and this leads to appreciation of the currency. The dwindling external resource is reflected in the continued depreciation of the *naira*. Formulation of policies aimed at increasing external reserve is therefore inevitable. The declining external reserves in Nigeria is also reported in a study by Kalu (1994) in Gbosi (1998).

Exchange rate, as a dependent and independent variable in eq.(17) and (18), respectively, exhibits a very strong association between the variables. The causality tests indicate a one-way causation. Thus, causality is only running from exchange rate to LGIE but none is running from LGIE to EXCR. This means that LGIE is a significant factor influencing exchange rate. This indicates that government policy changes and implementation is very significant in either enhancing or deteriorating the value of domestic currency. Reversing the direction of causation, exchange rate is not a significant factor affecting LGIE in Nigeria. Exchange rate is essentially a monotonic decreasing function of government expenditure. When such expenditures are properly channeled, it enhances the productive base and brings about a strong exchange rate. Unfortunately, the Nigerian economy has been experiencing

weak exchange rate, which confirms that Government expenditure is a source of leakage to the limited foreign exchange resources of the country. The exchange rate spread (premium) can also be identified as a significant factor apart from the issue of 'rumors'. It has also been observed that corruption at different levels of Government is a deadly disease killing the various sectors of the economy and decisive steps must be taken to check this cancer worms eating deep into the fabrics of the Nigerian economic, political, social and spiritual systems. Onuchuku (1998: 117) in his study concluded that "public investment spending in Nigeria is characterized by corruption and inefficiency. Funds were either embezzled or diverted."

VIII. Recommendations

Given the estimation result, its interpretation, economic analysis and policy implications and above all, the non-response of exchange rate policy to policy objectives, it calls for either institutional, structural and/or attitudinal changes among policy formulators, operators and the society at large. Institutionally, a tightly and moderately managed (intermediate) exchange rate regime is advocated. This involves a *de facto* peg-and-watch approach. Structurally, the multiple rates experienced now should be collapsed into one single rate, which will help to reduce if not eliminate currency substitution, which is growing highly in Nigeria. This should be accompanied by fiscal discipline and that will help to check pressure on both inflation and interest rate. Attitudinally, our leaders and policy formulators, economic operators and the like, should embrace the spirit and fear of God and this will no doubt usher in patriotic attitudes which is the foundational requirement for economic sustenance and growth. According to Okonjo-Iweala (2003: 5-6) "Our values constitute our super structure—without fundamental change in our value system, there is no real success for us as a society". The Government should vigorously pursue strong productive base oriented in the provision of infrastructural facilities at both rural and urban areas. The construction of functional industries like steel companies, metallurgical industries should be the priority of the Government.

IX. Conclusions

Given that causality is not flowing from exchange rate to macroeconomic variables studied (except for the LGIE and the non-response of exchange rate policy to policy thrusts), it is clear that the current floating exchange rate regime is not appropriate for the Nigerian economy and cannot be used to attain stability in either macroeconomic variables or itself except for modifications are made as recommended in this study. Continuous reliance on external influences like International Monetary Fund (IMF) will never allow us to move ahead. The earlier we consider the realities of our immediate economic structure, social and political environments, the quicker we march forward. The American solution may not be the Nigerian solution! A more indigenous approach to dealing with economic misalignment is most appropriate, as experienced in Ghana, Malaysia, Indonesia, etc. It is strongly hoped that the objective implementation of the triple-policy recommendations herein, will go a long way not only in enhancing the value of our domestic currency but will in stabilizing macroeconomic indices and improving the living standard of the people. ▲

Reference # 01J-2005-12-03-01

Table 1: Operational Data on Nigerian Macroeconomic Indicators (1970 - 2001)

S/No	Indicators	1970	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	1990
0	Real Exchange Rate	.6157	.5870	.6368	.6224	.5455	-.4071	.4953	.5470	.5054	.5234	.4923	.4525	.6211	.5561	-.4620	.8446	3.1375	3.7189	3.3028	4.5212	7.3445
1	Inflation Rate	13.8	15.6	3.2	5.4	13.4	33.9	21.2	15.4	16.6	11.8	9.9	20.9	7.7	23.2	39.6	5.5	5.4	10.2	38.3	40.9	7.5
2	Av. Interest Rate (Max.)	10	10	10	10	9	10	6	11	11	9.5	9.5	10	11.8	11.5	13	11.5	12	19.2	17.6	21.6	26.5
3	External Reserves Growth Rate %	36.1	26.5	44.8	25.8	1191.5	8.6	(9.5)	(17.5)	50.5	143.6	78.9	(55.5)	(57.7)	(23.8)	46.3	43.5	118.6	29.4	(29.5)	311.2	159.7
4	Government Expenditure-GDP Ratio (LGIE)	.02	.017	.027	.024	.052	.104	.109	.122	.138	.145	.246	.301	.219	.173	.186	.215	.236	.314	.356	.491	.668
S No	Indicators	91	92	93	94	95	1996	97	98	99	2000	2001										
0	Real Exchange Rate	8.5826	10.9118	9.4145	9.46	58.9846	58.9846	57.2831	74.7012	75.4265	83.1085	97.9907										
1	Inflation Rate	13	44.4	57.2	57.0	72.8	26.3	8.5	10.0	10.0	3.5	16.5										
2	Av. Interest Rate (Max.)	20.8	27.5	36.2	21	20.8	26.4	20.3	21.4	22.6	21.8	21.2										
3	External Reserves Growth Rate %	26.6	68.4	380.6	(54.7)	32.4	332.2	50.4	(13.5)	138.2	51.1	42.8										
4	Government Expenditure-GDP Ratio (LGIE)	10.7	11.2	9	6.9	7.3																

Source: Derived from original data from CBN/NDIC Publications

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