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Exchange Rate Dynamics and Balance of Payments Repositioning in Nigeria

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Abstract

The study examines foreign exchange dynamics in the Nigerian economy in relation to balance of payments, using time series drawn from the publications of the Central bank of Nigeria (CBN), Debt Management Office (DMO) and National Bureau of Statistics (NBS). The regression method was adopted in data analysis, facilitated by software package for social sciences (SPSS). The statistical results justified the alternate hypotheses, thus affirming that the foreign exchange proxies specified in this study are significant predictors of variations in balance of payments. In explaining the variations in the current and capital accounts of balance of payments, the predictor coefficients are positive for exchange rate and external reserves but negative for external debt. This analytical manifest is traditional as a favorable exchange rate (positively) stimulates trade and capital flows. Also, an increase in external reserves (positively) boosts the confidence of foreign investors and this fundamentally mirrors the strength and depth of liquidity in the global economy. It is a critical factor of foreign investment interest in the economy. Furthermore, a nation's external indebtedness apparently (negatively) conveys a profile of macroeconomic weakness and flakiness. It is, therefore, vitally imperative for more auspicious management systems to be institutionalized for the close monitoring stabilization of favorable profiles of exchange rate, external reserves and external debt. This will advance and sustain a more attractive, competitive and productive Nigerian economy.

Keywords: Foreign exchange, International investment, Nigerian economy

1. Introduction

For several years, the Nigerian economy witnessed high level volatility in foreign exchange dynamics, which aggravated the nation's balance of payments. Basically, adequate foreign exchange is required in the economy for the servicing of external debts, importation of raw materials, machines and spares and upgrading of industrial infrastructure for sustainable development. Against this backdrop, the concern of many scholars and economy watchers has to do with the dynamics of foreign exchange, being contingent on the market forces of demand and supply, as well as their critical linkages with balance of payments. Also of immense interest is the trend of balance of payments between trading nations, which underscore financial and real investments cooperation for economic cooperation and sustainable development. Some research works had examined changes in exchange rate over the years, with emphasis on short-run equilibrium tendency. They also address the implications of foreign exchange dynamics on international finance and investment profiling (Loto, 2011; Lipsey & Chrystal, 2004). Considering Nigeria's macroeconomic context, this study examines foreign exchange dynamics in relation to balance of payments.

Strategically, foreign exchange management systems are designed to help economic actors respond favorably to address shocks and fluctuations in international business cycles, hence the emphasis on market efficiency and macroeconomic stability. The proxies of foreign exchange dynamics in this study are also relevant in the analysis of balance of payments plausibility and financial integration possibility. The key objectives of foreign exchange management system in the Nigerian nation, therefore, holistically seek to address macroeconomic anomalies and forge new international trade frontiers for sustainable development. This overriding poise inspires macroeconomic policy interjections which tend towards liberalization, and underscore transient features of market determined exchange rates. Competitive (aggressive) trade reforms are also vigorously pursued, which complementarily bring about substantial reduction in import tariffs to the admiration of foreign investors. In the

Nigerian scene, the apex bank equally undertakes measures to ensure adequate and timely availability of bank credit for trade finance at competitive interest rates. It also puts forward those policies that are meant to create appropriate institutional frameworks for greater national export drive. Similar endeavor like this in the past culminated in the establishment of export-import bank, export processing zones and special free trade/economic zones. Collectively, these institutions work to ensure safety, liquidity and optimality in the management of the nation's foreign exchange and allied trading profiles in the international market arena. In this study, therefore, the variables adopted as proxies of foreign exchange dynamics are exchange rate, external reserves, and external debt; while the current and capital accounts of balance of payments are designated as the criterion variables. The study specifically has as its objectives:

- To examine the extent to which the current account of balance of payments is related to exchange rate, external reserves and external debt; and

- To examine the extent to which the capital account of balance of payments is related to exchange rate, external reserves and external debt.

These research objectives logically elicit the following hypotheses:

Ho_1: The current account of balance of payments is not significantly related to exchange rate, external reserves and external debt; and

Ho_2: The capital account of balance of payments is not significantly related to exchange rate, external reserves and external debt.

2. Literature Review

In Nigeria, research works relating to foreign exchange dynamics and balance of payments generally underscore the overriding goal of sustainable macroeconomic stability. Among the scholarly contributions are the works of Obaseki (2000) and Alihu (2007), who fundamentally examined Nigeria's foreign exchange management regimes as well as mechanisms of fixing the critical challenges associated with foreign exchange vagaries and vicissitudes in the economy. Their studies equally addressed foreign exchange dynamics and established that Nigeria's external trade policies have not significantly achieved many expected strategic macroeconomic targets. In contemporary analytical discourse, three theories on which these research adventures anchor are:

- Mint parity theory,
- Purchasing power parity theory, and
- Balance of payments parity

The mint parity theory is associated with international gold standards, where the currency in use was made of gold or converted into gold at a fixed rate. Thus, the value of the currency unit was defined in terms of certain weight of gold, and the apex bank of the country bought and sold gold at the specified price. The rate at which the standard money of the country was converted into gold was the mint price of gold. The actual rate of exchange, therefore, prevailed around mint parity relative to the cost of shipping gold between two countries. The exchange rate under the gold standard was still subject to and operationally determined by the forces of demand and supply between the gold points. The purchasing power parity (PPP) theory seeks to determine the exchange rate between countries under inconvertible paper currency system. The purchasing power parity, thus, represents the quotients of purchasing power of the different currencies. Equilibrium exchange rate between two inconvertible paper currencies is attained where there is equality of purchasing power, anchored on relative price levels. In the balance of payments theory, favorable balance of payments is expected to raise exchange rate as driven by the demand and supply of foreign exchange. The rate of foreign exchange may also be associated with seasonal trade fluctuations in export and import commodities.

Consequently, foreign exchange dynamics continue to pose strategic challenges to economic management and administration in developing economies coupled with the intrigues of conducting trade within global policy infrastructure. It has equally been observed that the introduction of Dutch Auction System in Nigeria has not shown appreciable efficiency over the years as the market is highly characterized by exchange rate instability, insignificant premium and declining reserves (Ogbonna, 2010; Nnanna, 2004; Onoh, 2002). In the face of scarce foreign exchange resources, the apex bank of the nation closely monitors the use of periodic releases of foreign exchange to ensure that appropriation and application by various sectors are in line with strategic economic

priorities. This foreign exchange management strategic template facilitates the realization and sustenance of favorable balance of payments position anchored on stability of the auspicious exchange rate of the nation's currency to other major currencies in the global arena. In Nigeria in particular, it is considered quintessential to accentuate efficient and effective management of foreign exchange dynamics in view of the macroeconomic connect with external reserves. Where the process runs smoothly, the economy stands to harness critical advantages, including:

- Availability of liquidity for settlement of international transactions especially in periods of temporary constraints on the balance of payments of the nation;
- Sustenance of reasonable import level in the face of high domestic propensity to import;
- Maintenance of high level of reserves required to create high level confidence in the nation's currency;
- Supply of the desired quantum of foreign exchange for intervention in the market in order to keep the exchange rate stable; and
- Enhancement of the country's international credit worthiness rating, as balance of payments represents a veritable line of defense of a country's strategic credibility.

Conventionally, a good level of reserve serves as notice to the international community that a country's economic prospects are good. It also creates the environment for attracting international investors' confidence besides serving as buffer against external shocks and international financial market volatility (Ali & Yusuf, 2011; Onoh, 2007). A constructive foreign exchange management system gives a country the favorable trading position which further increases her stock of external reserves. The increase in reserves equally provides additional cushion against sudden developments such as sharp drop in prices of major exports. It also gives a country adequate time to adjust expenditure patterns to externalities without destabilizing the economy. In the light of these, intermittent intervention by the apex bank in the affairs of the external sector is justified in terms of the desire to realize these strategic macroeconomic targets and further sensitize public authorities to be more constructively involved in the funding of their foreign exchange markets (Imegi, Idoniboye, Maxwell & Okon, 2008; Gbosi, 2005). These issues as they concern the Nigerian economy are examined in this study with critical analysis of current and capital accounts of balance of payments (the criterion variables) in relation to exchange rate, external reserves and external debt (the predictor variables).

3. Research Methodology

In this study, the secondary data required for analysis are drawn from the publications of the Central Bank of Nigeria (CBN), Debt Management Office (DMO), and National Bureau of Statistics. The time series of 23-year frame (1980-2008) are analyzed with the aid of software package for social sciences (SPSS), the main statistical tool being regression method (Kpakol, 2013). The analytical functions are as follows:

$$CUA = a_o + a_1 EXR + a_2 EXTR + a_3 EXTD + u \quad \ldots \quad \text{[Equation 1]}$$
$$CAA = a_o + a_1 EXR + a_2 EXTR + a_3 EXTD + u \quad \ldots \quad \text{[Equation 2]}$$

Where:

CUA = Current account of balance of payments
CAA = Capital account of balance of payments
EXR = Exchange rate
EXTR = External reserves
EXTD = External debt

The time series relating to the designated analytical variables are presented in Tables 1, 2, 3 and 4:

Table 1: Nigeria's Balance of Payments (Current Account)

Years	Current Account (Nm)
1986	8,006.6
1987	17,138.2
1988	31,586.1
1989	59,112.0
1990	79,810.1
1991	51,969.8
1992	93,680.5
1993	-34,414.7
1994	-52,304.3
1995	188,084.8
1996	240,180.0
1997	268,899.4
1998	-331,435.2
1999	46,336.2
2000	713,023.9
2001	108,996.0
2002	-117,035.3
2003	704,560.0
2004	2,056,326.3
2005	4,046,521.3
2006	3,374,806.1
2007	2,703,753.8
2008	4,150,489.2

Source: CBN, DMO & NBS Publications (various years)

Table 2: Nigeria's Balance of Payments (Capital Account)

Years	Capital Account (Nm)
1986	-1,900.9
1987	-16,743.3
1988	-18,447.3
1989	-30,221.9
1990	-49,246.2
1991	-27,482.9
1992	-138,755.6
1993	-23,060.6
1994	11,252.8
1995	-4,254.0
1996	-290,200.5
1997	-263,360.2
1998	116,720.5
1999	-366,820.7
2000	-390.356.3
2001	-77,294.6
2002	-437,210.9
2003	-855,899.2
2004	-914,214.1
2005	-2,572,984.1
2006	-968,461
2007	-324,689.1
2008	-668,212.8

Source: CBN, DMO & NBS Publications (various years)

Table 3: Exchange Rates of N to $

Years	Naira to $
1986	2.02
1987	4.02
1988	4.54
1989	7.39
1990	8.04
1991	9.91
1992	17.30
1993	22.05
1994	21.89
1995	21.89
1996	21.89
1997	21.89
1998	21.89
1999	92.69
2000	102.11
2001	111.94
2002	120.97
2003	129.36
2004	133.50
2005	132.15
2006	128.65
2007	125.83
2008	118.57

Source: CBN, DMO & NBS Publications (various years)

Table 4: Nigeria's External Debt and External Reserves (Nm)

S/No	Year	EXTD	EXTR
1	1986	41,452.4	3,587.4
2	1987	100,789.1	4,643.3
3	1988	133,956.3	3,272.7
4	1989	240,393.7	13,457.1
5	1990	298.614.4	34,953.1
6	1991	328,453.8	44,248.6
7	1992	544,264.1	13,992.5
8	1993	633,144.4	67,245.6
9	1994	648,813.0	30,455.9
10	1995	716,965.6	40,353.2
11	1996	617,320.0	174,309.9
12	1997	595,931.9	262,198.5
13	1998	633,017.0	226,702.4
14	1999	2,577,374.4	546.0
15	2000	3,097,383.9	1,090,148.0
16	2001	3,176,291.0	1,181,652.0
17	2002	3,932,884.8	1,013,514.0
18	2003	4,478,329.3	1,065,303.0
19	2004	4,890,269.6	2,232,837.0
20	2005	2,695,072.2	3,647,998.7
21	2006	451,461.7	5,425,375.6
22	2007	428.1	6,055,717.0
23	2008	491.0	7,025,727.7

Source: CBN, DMO & NBS Publications (various years)

4. Findings & Discussion

Harnessing the available time series and subjecting them through the regression analytical apparatus, the

statistical results are presented in Tables 5 and 6:

Table 5: Test of Research Hypothesis one (RH_1)

Dependent Variable: CUA				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t - Statistic**	**Prob.**
C	-91942.72	234595.5	-0.391920	0.6995
EXR	27068.62	5748.957	4.708440	0.0002
EXTR	0.057003	0.084173	0.677217	0.5064
EXTD	-0.606341	0.146319	-4.143958	0.0006
R-squared	0.757195	Mean dependent var.		800351.7
Adjusted R-squared	0.718857	S.D. dependent var.		1400169.
S.E. of regression	742410.0	Akaike info criterion		30.02996
Sum squared resid.	1.05E+13	Schwarz criterion		30.22744
Log likelihood	-341.3446	F-Statistic		19.75089
Durbin-Watson Stat.	1.306109	Prob. (F-Statistic)		0.000005

Highlights: R^2 = 0.76; Explanatory capacity = 76%
F-Statistic = 19.75; P-Value = 0.00
t - Statistic = 0.39; P-Value = 0.70

Source: Research Data (SPSS-aided)

Table 6: Test of Research Hypothesis Two (RH_2)

Dependent Variable: LOG (CAA)				
Method: Least Squares				
Variable	**Coefficient**	**Std. Error**	**t – Statistic**	**Prob.**
C	7.496309	1.261333	5.943162	0.0000
LOG (EXR)	0.578196	0.202160	2.860085	0.0119
LOG (EXTR)	0.342695	0.095053	3.605292	0.0026
LOG (EXTD)	-0.093835	0.071487	-1.312626	0.2090
R-squared	0.871805	Mean dependent var.		12.35947
Adjusted R-squared	0.846166	S.D. dependent var.		1.948584
S.E. of regression	0.764260	Akaike info criterion		2.484846
Sum squared resid.	8.761393	Schwarz criterion		2.683675
Log likelihood	-19.60603	F – Statistic		34.00305
Durbin-Watson stat.	1.304335	Prob. (F - Statistic)		0.000001

Highlights: R^2 = 0.87; Explanatory capacity = 87%
F-Statistic = 34.0; P-Value = 0.00
t - Statistic = 5.94; P-Value = 0.00

Source: Research Data (SPSS-aided)

In Table 5 which relates to Research Hypothesis One (RH_1), the coefficient of determination (R^2) is 0.76. This indicates that the dynamics of exchange rate, external reserves and external debt explain 76% of the variations in current account of balance of payments in Nigeria, in the period under consideration. In Table 6 which relates to Research Hypothesis Two (RH_2), the coefficient of determination (R^2) is 0.87. This indicates that the dynamics of exchange rate, external reserves and external debt explain 87% of the variations in capital account of balance of payments in Nigeria, in the period under consideration. The F - Statistic in each hypothetical case, also affirms the overall model fit at 95% confidence level. Furthermore, the t – Statistic of 5.94 is significant and indicates that balance of payments is significantly related to the foreign exchange dynamics. Categorically considering the hypothetical specifications, it is clearly established that:

- The current account of balance of payments is significantly related to exchange rate, external reserves and external debt; and
- The capital account of balance of payments is significantly related to exchange rate, external reserves and external debt.

These analytical revelations are crucial to repositioning foreign exchange management systems for sustainable efficiency and efficacy. With respect to exchange rate dynamics, various management systems/regimes had sought to achieve fundamental macroeconomic objectives including increase in domestic production, boost in non-oil exports, improved export competitiveness while reducing the demand for imports, and higher confidence in the nation's currency. However, the criticality of such national targets in relation to the exchange rate dynamics remains vitally relevant in furtherance of the macroeconomic task of attaining and sustaining favorable balance of payments stability, low unemployment rate, auspicious general price level, and competitive economic growth rate. The pursuit of these objectives, though quite challenging in the face of fluctuations in the exchange rate, had actually aggravated many nation's fortunes and balance of payments profiles. This is the quintessential thrust of policy redirection and systemic repositioning as the nations brace up for more competitive growth and development imperatives in the global economy.

5. Conclusion

In the early 1980s, the Nigerian government closed the nation's borders to allow old currency (the naira) notes to be replaced with new ones. Exchange control and related regulations were also designed to forestall possible repatriation of the Nigerian naira which may have been smuggled to foreign countries. The measures were to further address the challenges bordering on future convertibility of the naira to other major currencies of the world. Subsequently, particularly from 1984 through 1986 and 1990, Nigeria recorded surplus balance of payments. Paradoxically, this was discovered not to have conventionally resulted from export expansion but due to adverse economic vicissitudes which compelled the government to adopt very severe import restriction measures. The prevailing exchange rates then, were expected to contribute towards a more favorable balance of payments, by efficiently and effectively promoting growth in non-oil exports and boosting the nation's current account, but all to no avail. The austere circumstances of the time evolved and eventually culminated in the enunciation and introduction of a structural adjustment program (SAP). Although real wages and government social commitments to the populace continued to decline, the intervention program was endorsed by the World Bank as veritable blueprint for the restoration of national economic viability, stability and sustainability, with a view to regaining strategic relevance in the domestic and international economic arena.

This study, therefore, examined the relationship between foreign exchange dynamics and balance of payments in Nigeria; the proxies being exchange rate, external reserves, and external debt for the predictor variables as well as current and capital accounts for the criterion variable. The study covered a 23-year period (1986- 2008), time series drawn from the publications of the Central bank of Nigeria (CBN), Debt Management Office (DMO) and National Bureau of Statistics (NBS). Two research hypotheses were formulated and tested using multiple regression and log linear methods of data analysis, aided by software package for social sciences (SPSS). The analytical outcomes are quite revealing, viewed against several contemporary theoretical submissions and contributions (Nwidobie, 2011; Richardson, Edeme & Sunday, 2009; Ojo, 2008). The variations in balance of payments are significantly explained by the dynamics of exchange rate, external reserves and external debt (the predictor variables).

It is, therefore, recommended that the current and capital accounts of the balance of payments should be closely monitored in view of their significant relationship with foreign exchange dynamics. The apex bank should intermittently intervene to ensure that there is relative stability in the exchange rate in order to achieve favorable account balances. Exchange rate volatility should not make the forecasting of future trends of the accounts an exercise in futility. There should be a more conscientious national disposition towards institutionalizing:

- Highly functional exchange rate management system;
- Highly robust external reserves management system; and
- Highly constructive external debt management system.

With respect to the management of Nigeria's external reserves, relative tightening while the monetization regime and strategic financing budget deficits are shortfalls are controlled to avert further adverse effects on the critical accounts. Market determined exchange rates should be relatively adopted and sustained to make the prevailing policy framework more efficient and effective in promoting export growth. The country should also target higher economies in non-oil export lines in order to boost the accounts and by extension enhance the nation's balance of payments. For exports which are not critically susceptible to the influence of domestic policies, more competitive trade policy should be pursued to reinvent a robust non-oil export profile that drive the nation's quest for economic diversification and vantage balance of payments. A more acceptable and competitive exchange rate should prevail in lieu of the equilibrium exchange rate to check the overbearing operations of

parallel markets. All these well considered and conscientiously applied will meaningfully prevent distortions and attendant systemic contagion in the economy.

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