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Implication of Adopting a Floating Exchange Rate: A Pre and Post Analysis of Nigeria Economic Growth

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Abstract
Nigeria exchange rate has undergone a lot of different policy and reform, in 2016 we adopted the floating exchange, has this different reform thus impacted on our economy positively?Thereforewe analyzed the implication of adopting a floating exchange rate: a pre and post analysis of Nigeria economic growth, therefore we used a paired sample t-statistic which is one of the best statistical analysis used in considering a post and pre adoption of policy with more recent data from 2013 to 2015 and 2017 to 2019. Our findings revealed that Nigeria economy did better during the pre-adoption of the policy than the post adoption of the floating exchange rate policy in 2016 therefore we recommended that: proper parameters and policies need to be set in place to boost our exchange rate and will result in economic growth; good economic policy should be put in place to reduce inflation because in the long run will affect our economic growth if not properly handled; and an enabling economic policy that will encourage local production and encourage export should be encourage because this will help our currency to appreciate in value in the global market

Keywords: *Exchange Rate, Interest Rate, Inflation and Economic Growth*

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I. Introduction

It is useful to look at how money operates and its relationship with foreign trade to understand the international currency exchange mechanism and its effect on the growth of our economy.We frequently learn that our currency's value against other currencies has risen or decreased.Or, we could read that importers are satisfied with, or exporters are not satisfied with, or vice versa, the latest current exchange rate. So many countries have accepted the value fluctuation which is viewed as a floating exchange rate. Exchange rate is of essence to any economy this is because export and import consist a colossal part of every economy, most importantly any changes in exchange rate affect the price of imported goods, export and services. Therefore when the value of the naira falls it will automatically increase the prices of the imported commodities or services and vice-versa (Central bank of Nigeria research department, 2016). However holding other factors constant, this may encourage local production which will boost the economy but an import depending nation will suffer in the global market.

Obadan(2006) exchange rate is an essential macroeconomic variable that any economy of the world gives a special attention and is used in making economic decisions while trying to reform an economy.For any developing country to maintain a competitive advantage she must adopt and maintain a good exchange rate policy which is one of the key macroeconomic variable is attaining sustainable growth.Odubogun (1995) Nigeria has adopted different exchange rate policy despite that our currency (naira) is not appreciating which has affected our foreign exchange in all sphere. This concurred with Obi, Oniore and Nnad, (2016) which opined that Nigeria has adopted different exchange rate policy in the past however this has not given us a competitive advantage over other developing countries. Prior to the adopted the floating exchange rate in 2016, the two major exchange rate that was in operation are the fixed exchange rate policy between 1960 to 1985 and flexible exchange rate between 1986 to 2015 (Sani, 2006).Klein and Shambaugh, (2010a,b); Rose, (2011); Ghosh, et al (2014) as in Mohammed, Retia, Gaidi&Boudeghdegh, (2018) in the post-crisis environment, exchange rates and the selection of the exchange rate regime remain the centre stage , especially for emerging economies.In particular, the effect of foreign exchange policies on growth is a major gap between policymakers and economists. Economist perceived that exchange rate is an outside force that may be hard to disentangle the contribution to growth, although the political class conceived that the lower exchange rate would promote growth.

Akpan (2009) the rate at which the naira can be exchange with another currency of any other nation of the world at fair market value is called exchange rate, which is the relative worth of an economy with respect to another. Prior now, most developing economy of the world pegged rate and Nigeria is not left, she normally pegged her currency with the United States dollar, which is a policy approached adopted to curb inflation and stabilized the economy. In the Nigerian scenario, the Central Bank of Nigeria has ensured that the country has a realistic exchange rate of the naira but endured an exchange rate management policy. This is because the simultaneous achievement of internal and external balances will benefit from a realistic exchange rate and promote the achievement of sustainable economic growth and development.However, the most important factor and obstacle remains how to improve the domestic economy's productivity.The greater the efficiency, the less the pressure on the exchange rate of the naira and its volatility.All structural rigidities facing the economy must be reduced to the lowest minimum if they cannot be removed entirely.

In light of the above, a lot of literature has considered the exchange rate and economic growth however to the best of our knowledge, literature reviewed thus far has not considered the implication of adopting a floating exchange rate: a pre and post analysis of Nigeria economic growth, therefore we used a paired sample t-statistic which is one of the best statistical analysis used in considering a post and pre adoption of policy with more recent data from 2013 to 2015 and 2017 to 2019 to ascertain whether it is favorable or otherwise.

The following section of this paper is arranged as follows: section two review of related literature, section three discussed the methodology and the fourth section discussed the presentation of data, data analysis, and test of hypotheses and discussion of findings. While in section five is the conclusion and recommendations.

II. Review Of Related Literature

2.1 Conceptual Clarifications

2.1.1 Exchange Rate Reforms

The exchange rate is the price of one currency in comparison to another currency, i.e. the actual market price at which it is possible to exchange one national currency for another.It is usually expressed as the number of domestic currency units that will buy one foreign currency unit or the number of foreign currency units that will buy one domestic currency unit.

Every global economytry to come up with a policy that will favor her economy with the aim of preserving the value of its currency and Nigeria is not an exception to that. In 1962 the exchange control act was enacted, during this period Nigeria currency was tied to the British sterling at an equal value and in 1980s oil glut Nigeria devalued the naira under a Structural Adjustment Program (SAP) imposed by the international monetary fund (IMF), which was controversially blamed for the resulting record inflation and high unemployment.The Nigeria foreign exchange market has gone through a lot of structure and phases such as; the second tier foreign exchange market (SFEM) which was established in 1986 with the aim of deregulating the financial sector so that the forces of demand and supply can interact freely; the autonomous foreign exchange market (AFEM) in 1995 with the aim of authorizing dealers to transact with consumers; and the inter-bank foreign exchange market (IFEM) in 1999 with the aim of making available cash or near cash to foreign exchange participants in order to encourage the flow of liquidity and information. Therefore ever since the liberalization of the Nigeria foreign exchange market, the naira has been fluctuating from one rate to the other.

2.1 Empirical Review

Akpan (2009) examined the different economic reform that has taking place in line with the millennium development goals in his study rethinking economic reforms and foreign exchange behavior in an emerging economy: evidence from Nigeria. He therefore opined that in order to achieve the macroeconomic goal and to improve the economy policy adopted by government should be stable. However it was just a conceptual paper, no statistical analysis was carryout to support his evidence.

Amassoma (2017) examined the nexus between exchange rate variation and economic growth in Nigeria, employed data from 1970 to 2013 using econometric techniques such as; Multiple Regression Model, Augmented Dickey Fuller (ADF) test, Johansen Co-integration test and the Error Correction Model (ECM), and revealed a positive but insignificant impact of exchange rate fluctuation on Nigerian economic growth in both the long run and short run. He therefore opined that in order to maintain a stable exchange rate, domestic production should be encourage.

Obi, Oniore and Nnadi (2016) analyzed the relationship between exchange rate regimes and output growth in Nigeria employing data from 1970 to 2014 using the Generalized Method of Moments (GMM) and revealed that exchange rate has impacted on Nigeria economic growth, their findings revealed that the fixed exchange rate policy operated has impacted negatively on Nigeria economic growth therefore opined that the deregulation of the exchange rate regime hasspur economic growth in Nigeria.

Akpan and Atan (2012) examined the effect of exchange rate movements on Nigeria real output growth with data from 1986 to 2010 a generalized method of moments technique was used,the result revealed that there is no evidence of a strong direct relationship between changes in exchange rate gross domestic product, however Nigeria's economic growth has been directly affected by monetary variables. Therefore opined that improvements in exchange rate management are necessary however this will not revive the Nigerian economy, they also advocated for a broad program of economic reform is required to complement the exchange rate policy adopted.

Ibrahim (2011) investigated the effect of real exchange rate misalignment on economic growth in Nigeria with data ranging from 1960 to 2011, augmented growth model was estimated vis a vis purchasing power parity (PPP) and generalized method of moment and revealed that the period of flexible exchange rate regime is characterized by a relatively lower real exchange rate misalignment over time compared with the fixed exchange rate regime while the generalized method of moment estimate reveals that real exchange rate misalignment has negative but significant impact on economic growth therefore opined that appropriate exchange rate is needed to minimize the problem of exchange rate misalignment and to ensure sustainable economic growth.

2.3 Evidence of research gap

Nigeria exchanged rate system has undergone a lot of policy from 1960 to date, between the period of 1960 to 1974 Nigeria adopted the fixed change rate system, in 1971 to 1975 a managed float system was adopted, while in 1980 to 1985 a pegged system was adopted, 1986 to 1998 a floating system was adopted and in 1999 to 2015 a floating and a flexible exchange rate was adopted interchangeably (Akpan, 2009). In 2016 Nigeria officially adopted the floating exchange rate, due to the different policy adopted thus far, we have deem it necessary to analysis a pre and post analysis for know which of the system is economically beneficial to the economy using a more recent data 2013-2015 and 2017-2019.

III. Methodology

Research design

We adopted ex-post factor to analysed secondary data selected from Nigeria statistical bulletin of pre and post adoption of the policy, this approached was to ensure data used are reliable as the researchers have no power to manipulate the data. Descriptive statistics and a paired t-test was adopted to analysed implication of adopting a floating exchange rate, a pre and post analysis of Nigeria economic growth by the researchers using SPSS. The hypotheses were tested using the paired t-test to analysed result from the study, the decision rule was to reject the hypotheses if the calculated the p-value is less than 5% (0.05).

Sources of Data

Secondary data was extracted from Nigeria statistical bulletin from 2013 to 2019, how 2016 was omitted because it was the year the officially floating exchange rate was adopted, the analysis cover six (6) years data. The variables for the study are: exchange rate (EXR) pre adoption and post adoption of the floating exchange rate, Gross domestic product (GDP) of Nigeria of pre and post adoption of the floating exchange rate and Inflation rate (INF) of pre and post adoption of the floating exchange rate.

IV. Data Presentation And Analysis

The data used and presented in our study were extracted from statistical bulletin of Nigeria.

4.1 Operationalizing ratios

PERIODS	PRE-EXR	POST-EXR	PRE-GDP	POST-GDP	PRE-INF	POST-INF
2019&2015	192.44	361	7.839	2.557507	9.01	11.4
2018&2014	158.55	306.08	7.827064	2.485835	8.06	12.09
2017&2013	157.31	305.79	7.800846	2.485423	8.48	16.52

Source: *Statistical Bulletin*, 2020.

The operationalizing ratios above showed that the pre exchange rate (PR-EXR) are:192.44, 158.55and 157.31for 2015, 2014 and 2013 respectively, 2015has the highest rate192.44and 2013has the lowest rate157.31while the post exchange rate(POST-EXR) are:361, 306.08and 305.79for 2019, 2018 and 2017 respectively, 2019has the highest rate361 and 2017 has the lowest 305.79,this indicated that the exchange rate is on the increase, therefore the post-exchange rate has a highest rate. The pre gross domestic product (PRE-GDP) are: 7.839, 7.827064and 7.800846in 2015, 2014 and 2013 respectively, 2015 has the highest 7.839 and 2013 the lowest 7.800846, while post-gross domestic product (POST-GDP) are:2.557507, 2.485835and 2.485423 for 2019, 2018 and 2017 respectively,2019 has the highest 2.557507and 20172.485423was the lowest, this indicated that the pre gross domestic has the highest values prior the adoption of the floating exchange rate. The pre inflation rate (PRE-INF) are: 9.01, 8.06and 8.48for in 2015, 2014 and 2013 respectively, 2015 has the highest rate while 2014has the lowest rate while post inflation rate (POST-INF) are:11.4, 12.09and 16.52for 2019, 2018 and 2017 respectively, 2017 has the highest rate16.52and 2019 has the lowest rate11.4, this therefore depicted that the exchange rate has been on the increased however it reduced in the post exchange rate.

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pre-adoption (EXR)	169.4333	3	19.93400	11.50890
Post-adoption(EXR)	324.2900	3	31.79212	18.35519
Pre-adoption(GDP)	7.8223	3	.01952	.01127
Post-adoption(GDP)	2.5096	3	.04150	.02396
Pre-adoption(INF)	8.5167	3	.47606	.27485
Post-adoption(INF)	13.3367	3	2.77835	1.60408

Source: Authors computations using SPSS

The above descriptive statistics showed that the post-adoption of the floating exchange rate has the highest mean 324.2900 of exchange rate and inflation rate 13.3367, this supported Kara and Nelson (2002) that opined that exchange rate is influenced by inflation. While the pre-adoption has the highest GDP 7.8223. The post adoption of exchange rate 31.79212, gross domestic product .04150 and inflation rate 2.77835 are most dispersed while the pre-exchange rates 19.93400, gross domestic product .01952 and inflation rate .47606 are the least dispersed.

4.2 Data analysis and hypothesis testing

The adoption of floating has rate has no significant on Nigeria economic growth

Paired Samples Test

Pre-adoption (2013-2015) AND Post adoption (2017-2019)	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
PRE & POST EXR	-154.857	11.8769	6.85715	-184.36061	-125.35272	-22.583	2	.002
PRE & POST GDP	5.3127	.0300	.01730	5.23829	5.38714	307.140	2	.000
PRE & POST INF	-4.8200	2.9067	1.67816	-12.04056	2.40056	-2.872	2	.103

Source: Authors computations using SPSS

The data presented in the table above has showed that the adoption of the floating exchange rate is statistical significant at 0.02 and GDP at .000 which is less 1%, however our inflation rate is not statistical significant .103.

Test of hypotheses

The paired t test result above was used in testing the objective and hypotheses of the study in this sections below:

- There is no significance difference between the means of pre and post adoption of floating exchange rate (PRE & POST EXR)

the result in table above showed that the means calculated of the respective p-value 002 of pre and post adoption of floating exchange rate (PRE NCDE – POST NCDE) is statistically significant since the calculated value is less than 0.05, therefore the null hypothesis should be rejected.

- There is no significance difference between the means of pre and post adoption of gross domestic product (PRE & POST GDP)

The result in table above showed that the means calculated of the respective p-value .000 of pre and post of gross domestic product (PRE & POST GDP) is statistically significant since the calculated value is less than 0.05, therefore the null hypothesis should be rejected.

- There is no significance difference between the means of pre and post adoption of inflation rate (PRE & POST INF)

The result in table above showed that the means calculated of the respective p-value .103 of pre and post adoption of inflation rate (PRE & POST INF) is statistically not significant since the calculated value is greater than 0.05, therefore the null hypothesis should be rejected.

V. Conclusion And Recommendations

We analyzed implication of adopting a floating exchange rate: a pre (2013 to 2015) and post (2017 to 2019) analysis of Nigeria economic growth, we used a paired sample t-statistic with data collected from Nigeria statistical bulletin and our finding revealed that the adoption of the floating exchange rate policy has a significant on Nigeria economy.Nigeria economy did better during the pre-adoption of the policy than the post adoption of the floating exchange rate policy in 2016.

We therefore recommended that:

i. The adoption of the floating exchange is a good move however it has not favor the economy therefore proper parameters and policies need to be set in place to boost the economy;

ii. Our finding revealed that our inflation rate is not statistical significant, therefore good economic policy should be put in place to reduce inflation because in the long run will affect our economic growth; and

iii. The government should create an enabling economic policy that will encourage local production and encourage export which will help our currency to appreciate in in value.

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