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MACROECONOMIC IMPLICATIONS OF THE NEW CURRENCY REFURBISHMENT AND CAPITAL FORMATION IN NIGERIA

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Abstract

This paper is an effort to investigate the economic implications and justification for the adoption of the policy of currency redesign by the monetary authority in Nigeria. In order to fulfil this objective, based on the available data over the period spanning 1973 to 2022. A panel data analysis was employed for the estimation in which preference was shown for the fixed effect over the random effects as suggested by the Hausman test, with the panel unit root test, which enables us to test for the stationary of the variables involves, This is followed by the panel co-integration test, which makes it possible to determine the long run relationship between money supply and the CBN policy of currency redesign. Thirdly, we then proceed to present the result of the scientific enquiry using Pedroni residual cointegration test estimation techniques to test the macroeconomics implications. The findings of the study shows that currency redesigning by the CBN is another means to reduce excess of money supply in circulation and reinforced more monetary policy effectiveness in curbing inflationary pressure and enhanced the exchange rate policy of the CBN. The study recommends more stabilization focus of pegging the exchange rate of dollar to naira, Harmonization of both monetary and fiscal policies effectiveness of the government.

Keywords: Macroeconomics Policy, Currency Redesign, Interest Rates and Inflation Rate, Money Multiplier, Exchange Rate and Capital Accumulations

1. INTRODUCTION

Currency reforms was regarded as the foundation to further strengthening the macroeconomic framework, particularly monetary transmission, the more the population relies on the local currency rather than U.S. dollars, the more control the government has over macroeconomic policy. Over years, Nigeria has experienced the introduction and redesigning of her currencies in circulations with the CBN playing pivoted roles in protecting its stability (Naseem, '2012). This sector's operations and performance have a direct impact on achieving macroeconomics goals while also improving the economy, recently the Central Bank of Nigeria (CBN 2022) issued a statement that it has concluded plans to redesign the Naira. The CBN Governor cited money hoarding, inflation, and counterfeiting as major reasons for its unusual decision. The CBN claims that about N 2. 73 trillion of the N 3.23 trillion currency in circulation in Nigeria, is outside the bank vaults. This is about 85% of the total money in circulation. Also, the Naira is not as secured as it ought to be, as it is easier to counterfeit the N 500 and N 1000 denominations

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This policy has elicited serious debate amongst Economists, Lawyers, and other policy experts. Many of them hold the view that this policy changes holds no significant economic benefits for the people, and is a distraction in the midst of serious ravaging economic issues, The CBN in its most recent report, 2020 Currency Report, states that a total of 67,265 pieces of counterfeit notes with a nominal value of N 56.83 million was confiscated in 2020, indicating a 20.80% decrease in volume and 12.18% decrease in value, compared with 84,934 pieces valued at N 64.71 million in 2019. The Global standard for number of counterfeits per million, is 100. The ratio of counterfeit notes to volume of banknotes in circulation was 13 pieces per million in 2020, compared to 20 pieces per million banknotes in 2019. This shows that the issue of currency counterfeit, is not as rampant as to warrant a currency redesign.

For example, Afghanistan in recent years, of decline in its currency value, a new Afghanistan designed was introduced, with much zeroes abolished, which meant to herald Afghanistan from the emergence of civil war, in 2008 the total and orderly overhaul of Turkmenistan's currency system in many respects serves as a model for other countries. The refurbishment of existing currencies is not undertaken lightly. The motivation could be hyperinflation, exchange rate collapse, massive counterfeiting of the existing currency, or even war, insecurities and political instabilities. Or it could be an intentional change—for example joining a monetary union, such as the European Monetary Union. Changing a national currency is a highly political decision. Sometimes the existing currency does not meet the economy's needs. The typical economy in need of currency reform is cash based and highly dollarized, with multiple currencies circulating at the same time.

Recently several countries have been considering the relative merits of "Dollarization" that is, adopting the currency of an anchor country, one of the main potential costs of dollarization is that macroeconomics stability may be reduced by the loss of monetary policy autonomy, the optimal currency areas, literatures emphasizes that the costs of dollarization are inversely proportional to the correlation between increase in productivity, wealth and capital accumulation of the home country and the foreign country whose country serves as an anchor, Thus the home country is worse off under dollarization to the extent that it faces idiosyncratic shocks, To evaluate the magnitude of these stabilization cost looking at several literatures on currency reforms and it effect on nationals monetary policies

The following research questions, however, necessitated practical answers in light of the above submission. What are the effects of this currency redesign on interest rate, inflation and macroeconomics of capital formation in Nigeria?

The remaining of the paper is structured such that, section 2 review several literatures on currency Redesigning, immediately following this, provides the overview of several adopted policies of monetary policies of Nigeria in curtailing inflations and excess of money out of money deposit banks in Nigeria follows by the theoretical considerations and model specifications, data analyzes and source while the last section dwells much more on analyzing the impact of this policy on key areas of the economy. Summaries and recommendations of some policy options as well as conclusions on the study

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2. LITERATURE REVIEW

Under the dollarization regime, both domestic price inflation and the output gap rise in response to the domestic productivity shock as well as the foreign demand shock. The reason happens to be that both shock raise permanent income and stimulate domestic demand, which raises desired expenditure on imported goods as well as increase in the prices of domestically produced goods.

Lucas (1976) reacted appropriately to the changes in the monetary regime, the paper asserted that authorities can make a perfectly credible commitment to a particular monetary policy regime, dollarization can be represented as a perfectly credible exchange rate peg, dollarization to him implies that the home country interest rate is identical to that of the foreign country whose currency serves as an anchor, he also considered two alternative monetary policy regimes of "strict consumer price inflation(CPI) and price targeting also the Taylor's (1993) rule in which the nominal interest rate responds to the output gap as well as CPI inflation

In (2016), the Indian government under Prime Minister Narendra Modi had a plan to stop corruption and reduce the amount of money in circulation by withdrawing and reintroducing the 500 and 1,000 denominations of the Indian rupee within six months In 2018, a Bloomberg report stated that the scheme froze "agriculture and small businesses with a liquidity shock, put people through unnecessary hardship, disrupted supply chains, and destroyed demand for everything from autos to property". Net savings in India were reduced by 50 per cent a year after the policy was implemented. The currency in circulation also increased to 20 trillion rupees from 18 trillion rupees before the policy.

According to Earnest S.O (2011), opined that, Nigeria being an highly import-dependent nation which severely eroded the strength of her currency(naira) relative to other currencies, in which the major function of the central banks is to achieve price and exchange rate stability, he's of the opinion that Nigeria has not fare well in this regards, he critically evaluate the effect of the new currency re-design exercise of the CBN, he sees the currency redesign as the means by which government attempted to reassert monetary sovereignty, in other words if citizen loses confidence in the national currency, they may begin to use foreign currencies, in which he termed the process as "Dollarization" reasons the Central Bank of Nigeria initiated the ideas of currency redesign exercise tagged "PROJECT CURE". Against this backdrop the study also examines the potential benefits of the redesign policy implications on the Nigeria economy.

(Aurangzeb, 2012) posit that a well-structured, strong and developed financial sector is required to achieve a sustained capital growth. More importantly, the financial sector also serves as the avenue through which the monetary policies of the government are carried out. The banking industry is one of the sectors that play an imperative duty in the allocation of capital resources, wealth and risk sharing of future flows in any given economy or country. An efficient and effective banking industry in any economy is likely to facilitate increased growth and welfare, and it will smooth business cycles. These functions give banks a central position within the process of saving and investment allocation. However, these functions make banks vulnerable to different sources of shocks, and they have a negative effect on the economy

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because of banks' central role. Because of the type of functions banks perform, there is need to have in place proper monetary policy involving issues such as barriers to entry, market concentration, the borrower-lender relationship, deposit insurance, and the taxation of financial intermediation, bureau de-change in order to improve the performance of monetary policy on the new currencies (Ibrahim & Muritala, 2015).

Leaner (2011) and Mass(2007) use the terms currency reform and "redenomination" interchangeably, However Bhaghavan (2003) used the former to refer to exchange rate-based liberalization while the latter was defined as the specific act of removing Zeros from the currency, currency redenomination to him is a way by the government attempt to reverse its currency substituting behavior. Nicaragua, as reported by Mosley (2005), suffered hyperinflation of 4,770 per cent in 1989 which escalated to 7,485 per cent in 1990 despite the redenomination of its currency in1988 as a result of civil war in the country. Their macroeconomic indicators of per-capital incomes appears distinctively poor

As for Taiwan, Li (2005) conducted an investigation on Taiwan's role in the currency conversion during the post-war of 1946 to 1950 and the results show that the policy produced severe hyperinflation that the government nearly exhausted the country's reserves to cover much of its deficit. The inflation arose from suppressed pent-up demand, due to rationing and price control during the war. In addition, Shangai's retail price index moved from 130 to 1819 between 1945 and 1948 respectively. In the end, government had to introduce the Gold standard in order to engender public confidence in the currency which had plummeted, resulting in social and economic unrest

In 1985, Vietnam adopted the monetary policy of currency restructuring called, the General Adjustment of Price on Wage and Money. The policy adversely affected monetary system, such that it brought about paucity of cash and funds for ordinary operation of public firms. The policy could not curtail the runaway inflation between 1986 and 1987. However, by late 1980, the government had complimented the stabilization programme with a combination of various supply-side policies to offset the adverse effects of the use of these instruments. In addition, the government also engaged in prudent fiscal and monetary policies to ease thepressure occasioned by the policy.

There is a general consensus in the above literatures that both official dollarization and official semi dollarization can succeed in fighting hyper-inflation and bring about economic stabilization and increase capital accumulations for example, in Ecuador annual inflation rate declined from over 90 percent in 2000 when the country officially replaced its currency with U.S dollar, to a single digit in 2003 also, the adoption of South Africa Rand and the U.S dollar as a legal tender in Zimbabwe in January 2009, which force her inflation rate down from 231,150,889% in February to an annual average of 6.7% in 2010

3. EMPIRICAL LITERATURE ON THE NEW CURRENCY REFORMS

There has been several literature analyzing the relationship between monetary policy and the new currency reforms in Nigeria, according to (Muse 2007) the study discovered that currency

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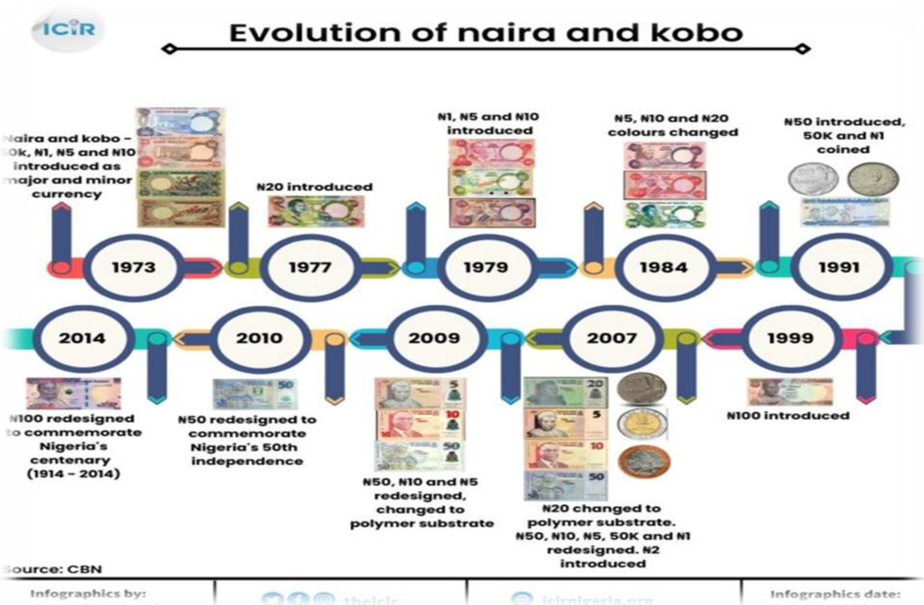
reform is also the major forms of controlling inflation, by recalling the old currency through all the deposit money banks which also reduce excess of money in the economy and currency redesigned can also largely be politically driven

Table 1: Currency redesigned & inflationary trends in Nigeria since 1959

Annual Inflation Rates (%)	Years	Currency	
		Old	New
2.06%	1912-1959	West African Currency Board (WACB)	Federation of Nigeria
-0.48%	1962- 1968	Federation of Nigeria	Federal Republic of Nigeria
5.40%	1973	Pound (£1)	Kobo
15.09%	1977	(₦20)	New banknote Naira (₦) was introduced
11.71%	1979		₦1, ₦5 and ₦10
17.82%	1984	Banknotes in circulations	Re-modified & colored
13.01%	1991	50k and ₦1	Coined
17.86%	1999-2005	₦100, ₦200, ₦500 and ₦1000	Were introduced
5.39%	2007	₦20 ₦50, ₦10 ₦5 and ₦1, and 50k	Issued in Polymer substrate Re-issued in New designs
12.55%	2009	₦50, ₦10, ₦5	Redesigned were converted to polymer substrate
13.72%	2010-2014	₦50, ₦100	Were issued in polymer Banknotes
20.77%	2022	₦100, ₦200, ₦500, ₦1000	Redesign to

Source: Authors computations (Guardian 2022)

Also as depicted below



Source: CBN

The First major predominant currency issue in Nigeria was undertaken, during the pre-colonial era following the colonial ordinance of 1880 which introduce the shillings and pence as legal tender where different cultures used a variety of items as means of exchange, which includes

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Cowries, Manilas, beads, bottles and salt amongst others. The Units of coins managed by the Bank of England were one shilling, ½, one penny ½

From 1912 to 1959, the West African Currency, currency Board (WACB) issued the first set of bank notes and coin in Nigeria, Ghana, Sierra Leone. The highest banknote denomination was one pound and the one shilling coin was the highest in coin denominations, on July 1st, 1959 CBN issued Nigerian currency Banknotes and coins were withdrawn. It was until 1962 that the currency was changed to reflect the country's "republican status" away from it initial inscription of "Federation of Nigeria to bear "Federal Republic of Nigeria" inscription.

The Notes were again change in 1968 following the intense abuse of the currencies banknotes that bedeviled Nigeria Civil- war, also the decision by the government to change her currency digit from the metric to decimal, the name of the Nigeria currency was changed in January 1973 from the major unit of currency of £1 ceased to exist and one naira equivalent of ten shilling became the major unit, while the minor units was called the Kobo; which hundreds of it made one naira. In 1977, a new banknotes with the value of twenty naira was issued, it was the highest denomination introduced at the time due to the growth of the economy and the more preference for cash transactions and the needs of more convenience, it bears the portrait of one of Naira prominent Head of State "Murtala, Muhammed (1938-1976) also, on 1979 three new currency banknotes of ₦1, ₦5 and ₦10 was introduced and for more identification distinctive colors were used for the various denominations, in which it bears portraits of key eminent Nigerians . In 1984, the colors of all the banknotes in circulation was also changed with the exception of the 50 kobo banknote to derails the issues of currency trafficking, capital flight prevailing at that time.

As part of the economic reforms of expansion and increase in economic activities of wealth creation and efficient payment system the currencies were re-modified and issued in polymer substrate and in the celebrations of Nigeria's independence and her centenary years of existence as nation, both ₦50 polymer & ₦100 as commemorative note.

3.1. Overview of some major monetary reforms towards inflations, currency stability and Capital accumulations in Nigeria (1959 to date)

Table 2:Monetary Policies Reforms On Currency Stabilization In Nigeria Overtime

S/N	Direct control regime (Pre-SAP era 1959 – 85)	Short-term regime Post-SAP era (1986 – 2001)	Medium-term regime (2007- to Date)
1	Policy regime was passive, focusing mainly on developing & maintaining a sound domestic currency	Adoption of deregulation and liberalization policies (Note: some repressive policies were still retained such as the requirements of banks to deposit in a non-interest bearing deposit account at the CBN and also the reduction in the rate of credit expansion by banks). These policies were utilized to stem the pressure of excess liquidity in the economy during that period	Under this regime, the monetary policy guidelines were now subjected to half yearly review. The OMO, reserve requirements, discount window operations, foreign exchange market intervention and in/out movement of public sector deposits from banks were all combined by the CBN in implementing its policies under this regime
2	Fixed Parity solely with the pound sterling (1959-1967)	Aftermath of the 1967 devaluation of the pound and the emergence of a strong US dollar	Re-introduction of the Dutch Action system (DAS)

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		• To prevent arbitrage prevalent in the basket of currencies	• Retain DAS was implemented at first instant with CBN selling dollars to end-users through the authorized users (Banks)
3	Revert to fixed parity with the British pounds	To minimize the effect of devaluation of the nation's currency • Merger between the autonomous and the FEM rates	Adoption of the second-tier Foreign Exchange Market (SFEM) • Deregulation of the economy • Merger of rates • Re-introduction of the inter-bank foreign exchange market(IFEM)
4	Exchange rate targeting policy framework adopted	Introduction of a tight exchange rate band of +/-3% and the two-week maintenance period of cash reserve requirement	Rationalization of Sectorial Credit Controls. Banks were given larger discretionary measures in regards to credit allocations. The formulation of the two tiered foreign exchange market
5	Domestic aggregate output & curtail inflation through re-adopting selective credit control	Enhancement of commercial banks' minimum paid-up capital from N20m to N50m.	Adoption of Standing Lending and D eposit facilities measures. In 2004, Minimum recapitalization of banking sector from N2billion to N25 billion in 2005
6	A combination of repressive policies such as direct credit ceiling, prescription of the sectoral allocation of banks' loans and advances to preferred sectors of the economy, selective credit controls, mandatory cash reserve requirement, and use of stabilization securities, interest rate controls quotas) were all adopted by the CBN.	1996 – Abolition of all mandatory credit allocation mechanisms. Subsequent deregulation of interest rates	Strengthen the use of instruments such as open market operations and special sale of foreign exchange Raise the MPR by 25 basis points from 10.25% and increase the CRR by 100 basis points from 3.0 percent to 4.0 percent with effect from June 2008 In 2022, the monetary policy committee decided to **3.2** Raise the MPR to 16.5% **3.2** Retain CRR at32.5% **3.2** And liquidity Ratio at 30%
7	Strengthen public confidence in the naira	Reverse every tendencies of currency substitutions	The new "Strategic Agenda for the Naira" announced by CBN on August 2007 as a 4- point agenda resigned solely to make the naira the "Reference Currency in Africa" as part of CBN financial system strategy of 2022 • Currency Re-domination • Adoption of inflation- targeting Framework for the conduct of monetary policy • Current Account liberalization /convertibility
8	Deepen the forex market	Introduction of Wholesale DAS • Further liberalized the market	Sharing part of the Federation Account Funds in US Dollars to Deepen the Forex Market

Source: Computed by the Author

3.2 Effects Of Adopting The Policy Of Currency Redesign On The Nigerian Economy Overtime

From the available statistic, prior to the introduction of the N 20 naira note in 1973, the country was experiencing a high inflation rate which stood at 5.40% in 1973. Immediately after the

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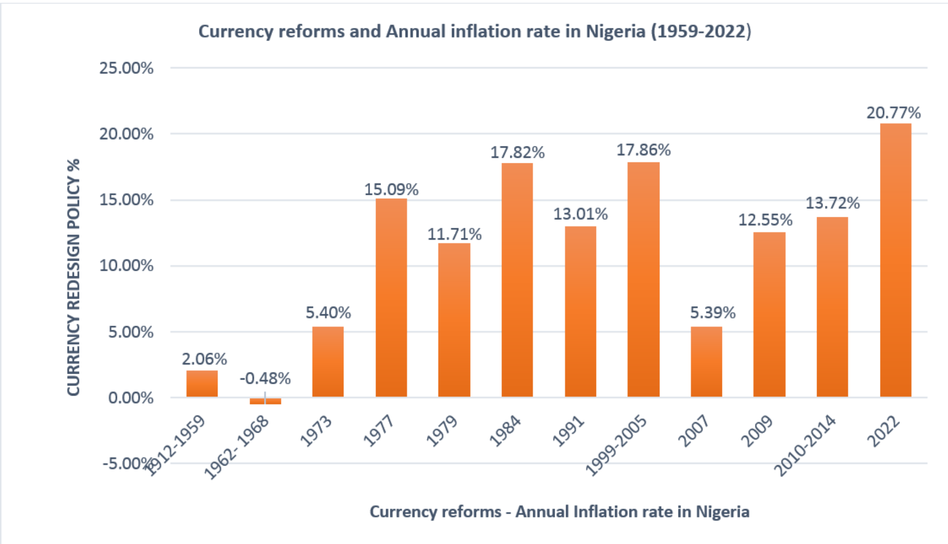
introduction of this currency the country witnessed a drastic decrease in the rate of inflation. As at 1978, the inflation rate stood at 15.09% while in 1991 the inflation rate fell further to 13.01%, indicating a positive impact of such policy on the Nigerian economy. However, the inflation rate rose to 17.8% in 1999 which call for the introduction of new currency denomination since money is the measure of value. In October 1984, the currency was re-modified by coloring. At the end of that year the inflation rate stood at 17.86%, higher than previous years. Nevertheless, the rate fell to 5.72% in 1986.

However, when the Structural Adjustment Programmed (SAP) was introduced same year and after the inflation rate doing this period. In 1988 and 1989 the inflation rate stood at 54.51% and 50.47% respectively. This called for another introduction of new currency denomination and as a result the N 50 note was introduced in 1991. Unlike previous experience of the country, this policy did not yield a desirable result or the impact of this policy on the economy was not as expected. For after the introduction of the new currency, the inflation rate sky rocketed to 72.84% in 1995. During the period 1992 to 1995, of around (57.08%-72.84%) the country experienced high inflation rate which has never occurred in the history of the country Three years after, the N 100, N 200 and N 500 naira was introduced in November 1999, November 2000 and April 2001 respectively. Immediately after the introduction of these currencies, the inflation rate which was single digit in 2000 (6.94) became double digit throughout the period 2001 to 2005. This further attracted the adoption of policy restructuring in October 12, 2005 and this gave birth to the N 1000 note or led to the introduction of the N 1000 note. The resulting effect of this on inflation rate is that it turned into a single digit in 2006 and 2007 (8.24 and 5.36 respectively) but became double digit ever since, even between the period 2008, 2010 till date as shown in the below diagram which shows how inflationary induced the policy

Nigeria Annual inflation rate since 1959 in-line with CBN Monetary policies of currency reforms



As illustrated by the author

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Prior to the adoption of this policy , the correct answer should be given to the following questions or they should serve as a guide as well as help to determine if such country should embark on such policies of currency redesigning. In line with this thought, the objective of this paper is to investigate if it is economically viable and justifiable for this policy to be introduced as announced by the current CBN governor by examining the effects of such policy on the Nigerian economy for previous years. Therefore, the research question this paper seeks to answer include: what were the effects of such policy on the economy for previous years, for instance what was the rate of output or income, exchange rate (external value of the currency), performance of the capital market and price level or inflation rate, treasuring bill rate after the introduction of this policy.

3.3 Analysis of The Effect of Currency Redesign on Interest Rate, Exchange Rate and Capital Formation In Nigeria

The new note reflects the impact of long-term inflation in Nigeria, if inflation keeps being about 10 percent more than in the US, it Wii probably end up being worth about $1 by 2030, when it used to be ₦1 equaled 1 dollar in 1983(Charlie Robertson), Nigeria's inflation increased for the eight straight month from 20.77% to 20.52% in September 2022, in which the main objectives of the policy exercise of currency redesign is to enlarge access to money outside the commercial deposit money banks as explained by the CBN Governor with statistics showing over 85% of the nation's currency outside the banks vaults using the instrumentality of currency redesign as a recoups against the failed financial inclusion policy of the CBN. However, both inflation and interest rate though fluctuating were higher than dollarization over the above said period. The question is whether the inflation rate or the interest rate is responsible for the increase in dollarization or dollarization can help to explain the high inflation and interest rate in Nigeria? This paper tends to provide answers to these questions.

Since the 1980s, the U.S dollar has increasingly been usurping the legal role of the naira as the medium of exchange within the Nigerian markets for foreign exchange, savings and commodities. In addition, there is an economic law that explains why the U.S dollars and other financial convertible currencies of the west can thus encroach quite vicariously in the domestic turf of the naira in Nigeria. It is called the dollarization theorem. Dollarization in Nigeria is a situation which occurs where the residents use foreign currency (US dollar) along with their own domestic currency dollarization is not only applicable to the use of the United States dollar, but also to the use of any other country's foreign currency as the accepted means of exchange. The Euro, the South African Rand, the Russian Rubble, and both the New Zealand and Australian dollars are other foreign currencies widely accepted outside of their issuing country of origin (Ghalayini, 2011).Various countries, specifically emerging countries and Nigeria inclusive, have already embraced dollarization to some extent due to the volatility of the purchasing power of their domestic currencies.

Generally, the loss of the domestic currency's external value and appeal as a store of value prompt dollarization and the national currency for the three classic uses as a medium of exchange, a unit of account, and a store of value, It has been indicated in the literature that one of the reasons adduce for currencyredesign is the need to fight inflation. The literature,

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has however established that, the fundamentals of the economy which determine sustainable economic growth are prudent fiscal and monetary policies. In effect, currency restructuring will work only in concert with an economic stabilization programme involving exchange rates stability, price level and overall level of interest rate Macroeconomic stabilization is a condition in which a complex framework for monetary and fiscal institutions and policies is establish to reduce volatility and encourage welfare –enhancing growth, achieving this condition requires aligning currency to market levels, managing inflation, establishing foreign exchange facilities, developing the national budget, Stabilizing the exchange rate through a foreign exchange market, by establishing and organized foreign exchange markets that allows countries to buy and sell currency aids stabilization, develop more transparency policies for participations in foreign exchange auctions and the exchange rate is often over-valued because of restrictions on imports and other distortions that favor those with access to the foreign exchange at the official rate For example, countries like Singapore, Europe, and Japan, China, whose highest denominations do have low inflation rates, apart from the fact that these are highly industrialized countries, many of their economic sectors are functioning optimally, giving them multiple streams of revenue. Nigeria, on the other hand, is mono-culture and heavily dependent on crude oil exports. From the macroeconomic perspectives, the indicators, such as Gross National Product (NP) and Human Capital Index, mostly in the developing nations including Nigeria, indicating that currency management has not brought much economic significance to these countries. Thus, effective currency restructuring policy must be accompanied by other prudent fiscal and monetary policy and an increase in the level of production.

3.4. How Monetary Policy Of CBN Currency Redesigned Affect Interest Rate Overtime In Nigeria.

The Central Bank of Nigeria (CBN) may decide to make a change in the Minimum Rediscount Rate (MRR). The MRR is the official interest rate of the CBN, which anchors all other interest rates in the money market and the economy. CBN's decision on the (MRR of 16.50% November 2022) affects the level of economic activities and prices in the country through a number of channels. The purpose of this brief is to examine how a change in the country currency affects interest rate and the economy.

A decision by the CBN to change the MRR affects the market interest rate in different ways. When the Bank makes an announcement on the MRR of 16.50% (2022), it affects the expectations of the people and economic agents about the future direction of the economy. Such decisions also affect the prices of financial assets (like shares) and the exchange rate of the naira to other currencies as well as the ability of people and economic agents to save and spend money. For instance, when the interest rate is increased, people are encouraged to save instead of spend their money. An increase in interest rate would also lead to foreigners paying more to buy our local currency, thereby making foreign goods to be cheaper than goods produced in the country, which will also necessitate inflationary pressure on domestic prices of goods and services and vice versa. This could encourage imports and discourages exports of goods and services

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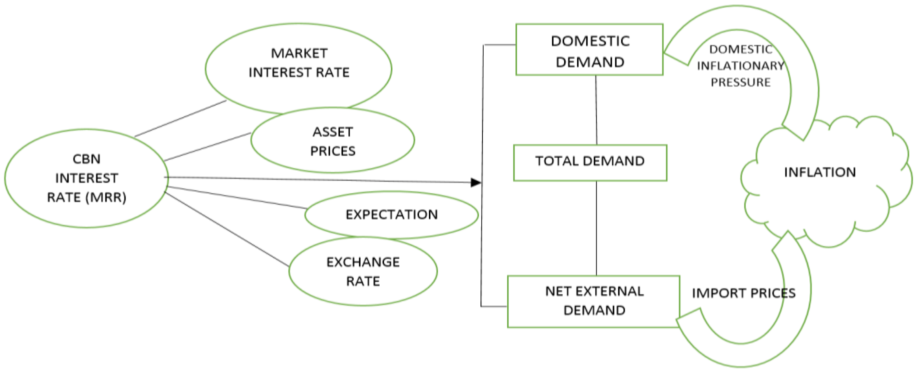
The link can easily be demonstrated with the below chart



Source: The Author

4. THEORETICAL FRAMEWORK AND MODEL SPECIFICATION

Money multiplier is another basis with which we can gauge the economic justification for the adoption of the policy of currency redesign by the monetary authority that is to consider the money multiplier and currency in circulation

That is, the stock of printing new currency H (high-powered money) which is called monetary base and is partly stocked at the commercial banks, which is calculated as

$\square = CU + R$ ………………………………………………….. (1)

R denotes the reserves of banks, CU for 'currency' (cash money); today usually money supply is defined as M1, the sum of currency and demand deposits:

$M = CU + D$ ……………………………………………….... (2)

The banks can create money far beyond the monetary base, they face two restrictions

1. The minimum reserves required by the central bank, which are kept by the banks at low or no interest, lock the ratio $\phi = R/D$ from below,
2. The economic agents determine their own, cash demand coefficient $c = \frac{CU}{M}$.

From the equation (2), we obtain the demand deposit money D

$D = M - CU = (1-c)\,M$…………………………………………… (3)

And therefore for the monetary base

$$H = CU + R = cM + \phi D = \left(\frac{c}{1-c} + \phi\right) D = \frac{c+\emptyset(1-c)}{1-c}\, D$$

And thus by inverting the ratio for demand deposit money

$$D = \frac{1-c}{c+\emptyset(1-c)}\, H \text{ and for total "money' } M = \frac{1}{1-c}\, D = \frac{1}{c+\emptyset(1-c)}\, H$$

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The value $1/\{c+\emptyset(1-c)\}$………(4) is called the money multiplier, as it indicates by how much the money supply increases, if the central bank prints one additional unit of money for c &$\emptyset$, the multiplier becomes particularly large.

4.1 Model Specification

Based on the above theoretical consideration the empirical model can be specified as

$$\text{RGDP} = \mathbf{F}(\text{CRD}, \text{INTR}, \text{INFL}, \text{MPR}, \text{MM}, \text{CFA}, \text{EXCH}) \quad \ldots\ldots (5)$$

The econometric model of the above functional form to be estimate is as follows

$$\text{RGDP} = \phi_0 + \psi_1\text{CR} + \psi_2\text{INTR} + \psi_3\text{INFL} + \psi_3\text{MPR} + \psi_4\text{MM} + \psi_5\text{CFM} + \psi_5\text{EXCH} + \mathcal{E} \ldots\ldots (6)$$

Where RGDP is considered proxy of all Macroeconomic variables, CR is the new currency ratio in circulation, INTR is the interest rate, INFL connotes inflationary pressure as resulting factor of the policies, MPR is the monetary policy of government, MM is the money multiplier indicating the ratio at which money supply increases, CFM capital accumulation and EXCH is the effect of the currency on the country's exchange rate, ψ_1- ψ_5 = Parameters, $\mathcal{E}$=Error term

4.1 Methodology

The study employed the panel data analysis approach and the data for this study covers the period 1973 -2022 since the currency restructuring policies of CBN started based on the data available with the descriptive statistic to highlight potential relationships between variables employed

4.1.1 Descriptive Analysis

Table 4.0: Summary of Descriptive Statistics

	RGDP	CRD	INTR	INFL	MPR	MM	CFA	EXCH
Mean	0.774649	0.450433	6987.9617	-26.20751	16.94566	205.0785	-0.743021	10.54028
Median	0.000000	0.008001	254.6821	-19.82873	16.00735	4.916565	-0.838253	10.91303
Maximum	6.234411	0.023784	6.72E+09	-164.5590	59.72307	24411.03	0.643524	22.02110
Minimum	0.000000	0.040217	-0.010014	-114.6937	2.000441	-9.797647	-1.884151	0.232608
Std. Dev.	1.156591	0.003527	5.54E+08	-31.09502	8.691100	1726.279	0.594013	4.861368
Skewness	1.693497	0.037639	9.063382	0.150464	0.828360	11.66111	0.241574	0.008152
Kurtosis	5.622881	-0.051430	93.29116	-5.983106	4.747671	151.8344	1.990394	2.052279
Jarque-Bera	207.9806	0.630004	96118.84	101.8808	65.72285	257217.0	14.19766	10.18233
Probability	0.000000	-0.060634	0.000000	0.000000	0.000000	0.000000	0.000826	0.006151
Sum	210.7045	0.466072	1.90E+10	-7128.443	4609.221	55781.34	-202.1016	2866.956
Sum Sq. Dev.	362.5177	1.000000	8.31E+19	262030.0	20470.05	8.08E+08	95.62289	6404.515
Observations	49		49	49	49	49	49	49

Source: Author's Computation 2022

The result in Table 4.0 above shows that the average values for all the variables were positive with the exception of inflation rate. However, the mean value of interest rate which is

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6987.9617 units was the highest for the period and this is closely followed by the mean value of money multiplier with an average value of 205.0785. The maximum and minimum values indicate the highest points and lowest points of the variables throughout the study period

4.1.2 Panel unit root test result

Table 4.1 Panel unit root

Regressors	Homogeneous Unit Root Process		Heterogeneous Unit Root Process	
	1st difference		1st difference	
	Levin et al. (2002)	Breitung (2000)	Im et al. (2003)	ADF–Fisher
RGDP	1.582	-2.383***	-3.291***	87.52***
INTR	-4.564***	–2.744***	-1.172***	37.33***
INFL	-0.416	-1.625**	-1.482*	43.50**
MPR	-4.757***	-3.900***	-3.846***	70.09***
MM	0.634	-5.424***	-9.781***	140.9***
CFA	13.69	-6.140***	-5.402***	87.01***
EXCH	-9.899***	-2.280**	-5.123***	75.84***
CRD	-9.200***	1.000	-8.922***	88.92***

Note. *** and **, * indicate 1%, 5% and 10% level of significance

In Table 4.1, the homogenous panel unit root tests of Breitung (2000), Levin et al. (2002), and the heterogeneous panel unit root test of Im et al. (2003), are presented. In the Table, result suggests that some of the variables are not stationary at levels for both the homogeneous and the heterogeneous unit root processes. However, at first difference, all the variables are stationary. That is, using the various test criteria for both the homogeneous unit root process and the heterogenous unit root process, we reject the null hypothesis that there is unit root and accept the alternate hypothesis at 1% and 5% significance levels that all the data are stationary.

Table 4.2 Empirical estimates of fixed, random and pooled effects panel models

	Pooled regression model		Fixed effect model		Random effect Model	
Regressors	Coefficient	Standard Errors	Coefficient	Standard Errors	Coefficient	Standard Errors
Constant	7.8298***	1.8113	15.9950	1.4553	1.9493**	0.9489
RGDP	-	-	-	-	-0.0636**	0.0318
INTR	-03529	0.0346	-0.03127	0.3412	-0.0458	0.0061
INFL	-0.3936***	0.0905	0.0096	0.0801	-0.0636**	0.0127
MPR	0.3649***	0.0895	-0.3901***	0.0994	-0.0270	0.0299
MM	-0.0239**	0.0188	-0.0852***	0.0148	-0.0243***	0.7624
CFA	0.4671**	0.6711	0.2371*	0.4351	0.3428	0.1167
EXCH	-0.0895*	0.0369	0.6712**	0.0032	0.1234	0.4161
CRD	-0.5114**	0.0317	0.2311	0.5611	0.6341	0.3112
R-squared	0.411		0.205			
F-statistic	36.85 (0.00)		12.97 (0.00)			
No of instruments	8					
Hausman Test			19.35 (0.00)			
AR(-1)						0.0347
AR(-2)						0.0217
Hansen						0.1562

Note: ***, ** and * implies significant at 1%, 5% and 10 % respectively

Source: Authors computation

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According to the pooled OLS result above the main results of inflation (-0.3936***), which in this context examined the impact of currency redesigned policy of CBN on the purchasing power and prices of goods and services in Nigeria which is significantly negative of 5% as indicated by the priori expectations which is inflationary induced as stated above, with all other control variables as indicated with their attributive level of significant relative to RGDP with the exception of CFA capital formation appears to be positively related and statistically significant to RGDP as it will enhance rapid recoupment of all idle funds outside the money deposits banks, the fixed effects or within groups estimation model is chosen because the Hausman test above rejects the null hypothesis that both random effects and the fixed effects are consistent with much concentration on the fixed effect.

In addition, to assess the validity of the instruments employed, autocorrelation tests and the Hansen test of over-identifying restrictions are performed, The Hansen J-test, tests the null hypothesis that the instruments are valid instruments, uncorrelated with error terms, the test for AR(1) process in first differences rejects the null hypothesis, while the test for AR(2) in first difference is far more important, because it detect first-order autocorrelation in all levels and the Hansen test fails to detect any problem with instrument validity as the P-value for the Hansen test is higher than the conventional 5% level but not as higher as 1.000 which appears valid and informative

4.1.3 Panel cointegration result

The panel co-integration tests for long run relationship among the variables are presented in Table 4.3 to make this possible; we use between-dimension tests and within-dimension tests. As presented in Table 4.2 below, the within group statistics are computed on the basis that the estimators are pooled in the panel across the different countries on the estimated residuals while the statistics of the between-dimension are estimated on the basis of individual calculation of every country's coefficient in the panel.

Table 4.3: Pedroni residual cointegration test

	Within-dimension		**Between-dimension**	
	Statistics	**Weighted Statistics**		**Statistics**
Panel v	3.54***	–2.84**	Group rho	0.86
Panel rho	4.34	6.94	Group PP	–8.34***
Panel PP	–5.94***	–2.09**	Group ADF	–1.76***
Panel ADF	–1.98**	–1.25**		

Note. *** and ** indicate 1% and 5% level of significance

A cursory look at the Pedroni residual cointegration test presented in Table 4.3 suggests that except for the panel rho, panel v, panel PP, and panel ADF are all statistically significant at both 1% and 5% in terms of the statistics and their weighted statistics values. Moreover, the result of the between group statistics suggests that apart from the group rho, both group PP and group ADF are statistically significant at 1% significance level. This means that we reject the null hypothesis of no cointegration for both the within and between groups and confirms that long run relationship exists among the series employed in the study.

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5. SOURCE OF DATA

The data used for the study covered the periods of currency redesign policy in Nigeria of (1973-2022) and it after effect inflationary trend of (1912-2022) distributively. These are data obtained from the Central Bank of Nigeria Statistical Bulletin for various years as shown in table 1 above

6. POLICY IMPLICATIONS OF THE NEW CURRENCY REDESIGN ON CAPITAL FORMATIONS AND MACROECONOMICS DEVELOPMENT OF NIGERIA

The following includes the Macroeconomics implications of the new currency redesign by CBN on Nigeria Economy

- The economic implication of this policies despite the assurance of the CBN governor that the policies will not cause inflation and that excess of money supply in circulation will be reduced , this study can prove the potential inflationary consequence of the policy idea: M1 = CC + DD, where M1: narrow money supply; CC: currency in circulation and DD: demand deposits. As more currency notes are being introduced in the economy, Currency in Circulation (CC) also rises, thereby causing the Narrow Money Supply (M1) to escalate. This will promote expected inflation within the economy on one hand and positioning the Nigeria currency as worthless and without real economic value thus promoting movement in the supply and demand for dollars by making people now believes that the dollar is stronger. Also due to possible reluctance to hold coins, most traders are likely to charge higher prices and consequently cause inflation
- The cost implication of this exercise is the fact that the country is borrowing for over 60% of government expenditure, of where the redesign will be funded, it should be of high priority to the CBN that by printing of more money not supported with high value or increased purchasing power is fuelling more inflationary pressure
- The CBN has attributed the new release to the rate of currency hoarding and its quest to nip kidnappings in the bud, these reasons are non-economically classified, and it can be argued that in fact they do not directly address the current challenges that the Nigerian economy faces
- The policy of currency redesign may not result in de-dollarization per say as long as Nigeria economy relies much more heavily on importation of almost all commodities
- In the emerging economies of which Nigeria is one of them, the literature indicates that the policy of currency redesigned produces some positive macroeconomic results, while a lot of them witnessed macroeconomic disequilibrium due to ineffective or weak monetary and fiscal policy, low production level and hyperinflation. The failure of the currency to compete bearably on the global market, thus, effective currency redesign policy must be accompanied by other prudent fiscal and monetary policy and an increase in the level of production.

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- The CBN regulates monetary policy of the government it is a quintessential regulatory agency and the benchmark for regulatory decisions like this is when the benefits of the policy are much greater than the costs. Cost benefits which includes social and political costs, not just financial and commercial costs benefits
- Money which plays much crucial roles in a country's economy such as general price level, labor and productivity, aggregate national income, balance of payment and exchange rates, redesigning the currencies will curb intense money counterfeiting by re-intensifying it security measures
- To curb the condescending inflationary pressure the economy is grappling with, markedly attributed to diminishing in values of currency and the exponential increases in general price level causes in-line with the general phenomenon of " lots of money chasing few goods" an increase in banks(deposit money banks) reserve rate by CBN through recouping of the old currency outside the banks vault will goes a long way in mopping up the volume of money in circulation
- The policy of currency redesign will also enhance the informal sector capacity of doing business, small scale business enterprise by introducing more people at different remote locations into banking services and regulate financial flow across the country

6.1 Policy Recommendations

This paper suggest that the policy of currency redesign is usually motivated by disequilibrium in the macroeconomic fundamentals of the country, essentially on the basis of poor macroeconomic performance, particularly with hyper-inflationary level. The success or otherwise of the currency redesign policy of CBN depends on several other factors.

The following are the recommended policies objectives for the attainment of macroeconomic impact of currency redesigned in Nigeria

- Comprehensive harmonization of both monetary and fiscal policies: For ultimate attainment of CBN goals of exchange rate stability, both the Central Bank of Nigeria and government (at all levels) should work hand-in-hand. For instance, if government pursues expansionary fiscal policy and CBN pursues contractionary monetary policy, there shouldn't be any contradictions or conflict of interest in attainment of steady interest rates
- Increasing exports of internally or domestically manufactured goods and services; Nigeria being a highly import dependent nation, Nigeria should improve the production and exports of manufactured good, this Wii have much solid effect on the currency purchasing power and reduce the prevailing issues of dollarization rather than the policy of redesigning
- Central Bank of Nigeria must implement robust measures to control Nigeria's monetary policy to ensure a stable macroeconomic variable suitable for steering the country's economic growth, away from the existing policies of which directly affects the stock market's results.

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- Redesigning currencies should be driven by much more legal and political Wii, to improve a currency's security by enabling countries to keep counterfeiting low and stay afloat of any counterfeiting threat
- CBN should encourage more cashless economy, and stave-off cash hoarding this will bring more people into the financial sector, and even more ambitiously, reduce the incidences of kidnapping and terrorism because there will be no notes in circulation for ransom payments

7. CONCLUSIONS

In conclusion, the policy of currency redesign by the CBN may hurt the Nigerian economy by creating a distortive impacts in the economy giving previous experience in terms of the cost of undertaking this exercise and the prevailing rates of Nigeria external debt, except the monetary authority is committed to stabilizing the economy. This does not imply that the policy itself is not good but the structural and institutional rigidity or features of the Nigerian economy before and after the introduction of the naira in 1973 has being the one that experienced immense and continuous structural bottle neck in the economy, weak institution, poor regulatory frame work, lack of adequate infrastructures, good roads and communication network and excessive reliance on crude oil since its discovery (mono-economy) which has subjected the economy into lopsided development in the international market. For instance, a fall in the international market price of crude oil without a corresponding decrease in the growth of government expenditure has resulted in high budget deficits that stimulate high external debt with its adverse implication on monetary and price stability.

However, in Nigeria it could certainly be seen that this policy will have more of negative than positive effects on the Nigerian economy, due majorly to the peculiarity of Nigerian political system in terms of its deeply ingrained corruptive nature and the volatility of it political, security and exchange rate policies, therefore the crave for currency redesign may not singlehandedly resolved the bedeviling economic issues but through a more agriculturally productive and broad base domestically secured economy inspired by patriotism and diversifications, therefore the aforementioned policy recommendations should be considered.

References

- Antinolfi, G. Landeo, C.M and Nikitin, M. (2007). "Dollarization and the inflation threshold". Canadian Journal of Economics, 40(2).
- Anietie Vincent Essien (2012) "Currency Restructuring and the Economy: the Nigerian Experience"
- Berholz, Peter (2005), "Hyperinflation and Currency Reform in Bolivia: Studied from a General Perspective" Pp 227-254 Pierre L.Siklos, ed,. Great Inflations of the 20th Century: Theories, Policies and Evidence Aldershot, UK: Edward Wlgar
- Berg, A., and Borensztein, E. (2000). "The Pros and Cons of Full Dollarization."IMF Working Papers WP/00/50.Washington, D.C. International Monetary Fund.
- Central Bank of Nigeria (2014). Statistics Database [Online]. Available: http://statistics.cbn.gov.ng/cbn-onlinestats/Default.aspx [Accessed 05 October 2014]

ISSN 1533-9211

DOI 10.17605/OSF.IO/3JYD6

- Central Bank of Nigeria (2011a). Annual Statistical Bulletin. Abuja: Central Bank of Nigeria. --- (2011b). What Is Monetary Policy? Abuja:
- Central Bank of Nigeria (Understanding Monetary Policy Series No. 1). --- (2013). Annual Statistical Bulletin. Abuja: Central Bank of Nigeria.
- Cazoneri, M. and Diba, B. (1993)."Currency Substitution and Exchange Rate Volatility in European Community".Journal of International Economics, 35:351-365
- Ghalayini, L. (2011). "The Impact of Dollarization on the Efficiency of Monetary in Lebanon": Interaction between Dollarization and Inflation. Middle Eastern Finance and Economics- Issue 14 (2).
- Miles, M. (1978)."Currency Substitution, Flexible Exchange rates, Monetary Independence".American Economic Review, 68:428-436
- Yinusa, D.O. (2009). "Macroeconomic Flunctuations and Deposit Dollarization in sub-Saharan Africa: Evidence from Panel Data". Online at http://mpra.ub.uni-muechen.de/16259/MPRA Paper No. 16259.
- Obaseki P.J. (2001) Issues in Exchange Rate Policy Design and Management, Central Bank of Nigeria Eonomic and Financial Review, vol.39, N0 2.
- Obadan, (2009) Exchange rate regimes for developing and emerging markets, foundation of Education and development 8.
- Pierre-richard a. and luiz, a.p. (2011), macroeconomics stability, financial stability and Monetary Policies rules,Working Paper and Development polities.