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CONTENTS

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CENTRAL BANK OF NIGERIA

The Nigerian Economy, Monetary Policy And COVID-19: An Unholy Trinity

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Abstract

The COVID-19 pandemic has subjected the Nigerian economy to an unprecedented crisis resulting in revenue losses, negative growth rate, rising inflation, high interest rates etc. With the economy finally in recession, monetary policy must take the lead in a bid to re-ignite economic activities and usher Nigeria out of this COVID-19 related economic quagmire. This article presents the dynamics of an unholy trinity involving the interplay of economic forces in the thick of a crippling health crisis with monetary policy to the rescue through activation of relevant instruments. In response to the outbreak, the Monetary Policy Committee announced several policy measures which include: granting of extension of loan moratorium on principal repayments, interest rate reduction on all intervention loan facilities from 9% to 5%, establishment of a N50bn targeted credit facility to household and MSMEs and regulatory forbearance to banks and credit support to the healthcare industry among others. it is worthy to state that monetary policy alone cannot solve the economic problems caused by COVID-19 pandemic in Nigeria, but the Central Bank of Nigeria (CBN) needs to work alongside other critical players beyond the financial sector and ensure pragmatic policies that strive towards diversification towards agriculture, strong protection for jobs through support to small and medium-sized enterprises, and enhancement of the existing support to the health sector among others.

Introduction

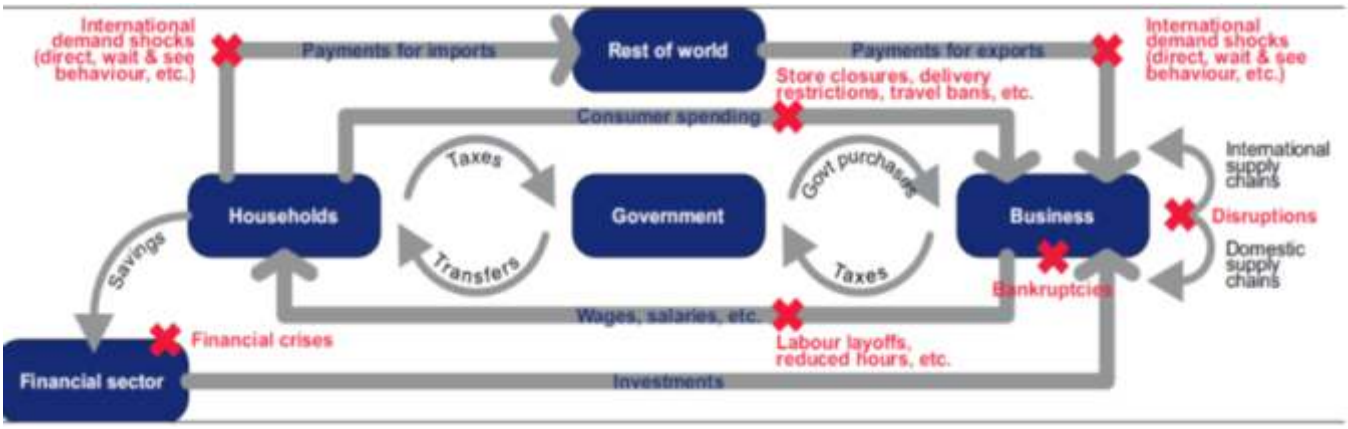
The global spread of the COVID-19 pandemic that led to collapse of international oil prices has put the economy of Nigeria in crisis mode. Oil revenues have constituted over 80 per cent of the counties export, 30 per cent of credit by the banking sector and about 50 per cent of revenue to government coffers (PriceWaterHouseCoopers, 2020). A large proportion of the non-oil industrial and service sectors in the country rely on foreign-exchange inflows from the oil services industry. According to the World Bank (2020), the long decline in oil prices globally has caused a decline in Nigeria's general government revenue from 8 percent of GDP in 2019 to a projected 5 percent in 2020. Consequently, after the 3rd quarter of 2020 and with two consecutive quarters of economic contraction, Nigeria slipped into recession (Financial Times, 2020).

The domestic spread of the COVID-19 pandemic is expected to inter alia, lead to drastic changes in consumer behaviour, negatively alter consumer and business confidence, and cause disruption in production, with grave outcomes for the national economy. COVID-19 threatens the economy and financial markets of Nigeria in the following ways: forced lockdown of economic activities in the major cities that can lead to gross economic loss particularly, for petty and daily income earners as well as micro, small-medium scale enterprises in general; withdrawal of funds by portfolio investors from the stock market and drop in oil prices (Ozili, 2020).

Figure 1 summarizes the transmission channels through which COVID-19 affects the economy. Most notably, the pandemic's spread within Nigeria will likely weaken domestic demand as consumers and producers adopt anticipatory behaviours and government control measures will hamper economic activities to a remarkable level. Operators in the informal sector are particularly a vulnerable critical mass to the latter type of disruptive outcomes due to the fact that their kinds of jobs by nature lack protection and uncovered by social safety nets. This is indeed significant for Nigeria because it has a large informal economy that represents 41 percent of GDP and employs 53 per cent of the country's active labour force. The outbreak of the pandemic is leading to more spending on public health and related segments as well as social protection and economic support actions devised to tackle disruptions in the market. According to Stanbic IBTC Bank (2020), the impact of the pandemic on the Nigerian economy has been negative with the economy declining by 6.1% year on year in quarter 2 of 2020, as lockdown measures taken to stem the spread depressed economic activity across the

country. To provide some context, the oil sector contracted by 6.6% year on year and 10.1% quarter on quarter, which is the largest contraction since the attack on the country's Trans-forcados pipeline in 2016.

Figure 1 Transmission channels through which COVID-19 affects the economy



Source (World Bank, 2020)

Sound macroeconomic policies (namely monetary and fiscal policies) are therefore required to put the economy of Nigeria back on track. The Central Bank of Nigeria (CBN) being the key regulator in the nation's financial system, has been engaged in the formulation and implementation of monetary policy especially as a means of stimulating economic activities during the COVID-19 induced slump in economic activities.

This article seeks to explore the dynamics involved in the activation of these monetary policy tools in the Nigerian economy during the pandemic. The paper is divided into six parts. Section 2 presents an overview on monetary Policy while Section 3 discuss Global / Domestic Economic Developments and the COVID-19 Pandemic. Section 4 delves into Monetary Policy Responses by Other Central Banks to the COVID-19 Pandemic while Section 5 reviews Nigerian Monetary Policy Decisions Under COVID-19 Pandemic. Section 6 Concludes the paper with Policy Recommendations.

2.0 An Overview of Monetary Policy

2.1 What is Monetary Policy

Monetary policy has to do with actions by central banks, taken to influence the amount of money and credit in the economy. The quantity and availability of money and credit has an effect on interest rates (the cost of credit) and the overall performance of the economy. The goals of monetary policy are to promote maximum employment, stable prices and moderate long-term interest rates among others. During the course of the implementation of effective monetary policy, the Central Bank maintains stability in the price level and there by, supporting and enhancing the necessary conditions for long-term economic growth and employment at the maximal level (Federal Reserve Bank Education, 2020).

The three instruments available to central banks in the conduct of monetary policy are open market operations, the discount rate and reserve requirements.

- Open market operations: This has to do with the buying and selling of government securities. Open market operations are flexible, and therefore, the most commonly applied tool of monetary policy.
- The discount rate is the interest rate charged on commercial banks and other depository institutions by central banks on short-term loans.
- Reserve requirements refers to the portion of deposits that commercial banks must maintain either in their vaults or on deposit at a Central Bank.

2.2 Monetary Policy in Nigeria

In order to facilitate the attainment of price stability and to support the economic policy of the Federal Government of Nigeria, there is a 12-member Monetary Policy Committee (MPC) charged with the responsibility of formulation of monetary and credit policies. Monetary policy which falls under the mandate of the Central Bank of Nigeria (CBN), includes the actions of the CBN to regulate the value, supply and cost of money consistent with the absorptive capacity of the economy. Accordingly, a key goal of monetary policy in Nigeria is to achieve

macroeconomic stability, through stability in aggregate prices (inflation, interest and exchange rates), and growth in output and employment.

According to the CBN ACT 2007, the CBN is saddled with the mandate of:

a) Ensuring monetary and price stability;
b) Issuing legal tender currency in Nigeria;
c) Maintaining external reserves to safeguard the international value of the legal tender currency;
d) Promoting a sound financial system in Nigeria; and
e) Acting as banker and providing economic and financial advice to the Federal Government.

In order to achieve these, the Bank's monetary policy has been designed to:

i) Influence the growth of money supply consistent with the required aggregate GDP growth rate;
ii) Ensure financial stability;
iii) Maintain a stable and competitive exchange rate of the naira; and
iv) Achieve positive real interest rate.

Since the reported index case of COVID-19 on February 27, 2020, the CBN being the key player/regulator in the nation's financial system, has been engaged in the formulation and implementation of monetary policy especially as a means of stimulating economic activities during the COVID-19 induced slump in economic activities.

3.0 Global / Domestic Economic Developments and the COVID-19 Pandemic

3.1. Trends in the Global Economy Based on IMF forecasts

The International Monetary Fund (IMF, 2020) in its October forecasts, projects the growth of the global economy to be at –4.4 per cent in 2020. This represents a 0.8 percentage point greater than the earlier figures published in the WEO Update Forecast of June 2020 (Table 1). The improvement reported in October 2020 in comparison to that of June 2020, presented the net effect of two factors in competition with each other, these are the upward trend in the second quarter GDP forecast results in developed economies against the downward trend due to social distancing regulations and delayed re-openings in the second half of 2020. The forecast for global growth and that of regional aggregates in Table 1 adopted a set of purchasing-power-parity weights that has been updated for individual economies. This followed the issuance of the year 2017 survey of the International Comparison Program.

The third quarter of 2020 witnessed a trend of economic recovery which is expected to gradually grow stronger towards the year 2021. This recovery is expected to be associated with tenacious social distancing by nations until risks associated with health are suppressed or alleviated and countries may have to continue a strict regime of mitigation measures based on how the virus spreads going forward. Growth of the global economy is projected at 5.2 per cent in 2021, which is 0.2 per cent lower than the WEO Update of June 2020. The recovery that is projected in 2021 after the deep decline denotes a low increase in the value of expected global GDP over 2020–21 of 0.6 per cent for emerging economies against the value of 2019.

The projected economic growth in developed economies is put at –5.8 percent in 2020, which is 2.3 per cent stronger than the value reported in the WEO Update of June 2020. The upward revies is a reflection of the better-than-foreseen US and euro area GDP results in the second quarter. In the year, 2021 the growth rate in the developed economies is projected to reinforce to 3.9 percent. the forecast also show that the US economy will contract by 4.3 percent, before increasing to 3.1 percent in 2021. A drop of 8.3 percent is projected for the euro area in 2020, indicating a more severe decline than in the United States in the first half of 2021. The rebound of 5.2 percent forecasted for 2021 is sturdier from a lower base. Projections show advanced economies in Asia to have milder downturns than their European counterparts, following more containment of COVID-19. A forecast of –3.3 per cent growth has been made for emerging market and developing economies in 2020. This is 0.2 percentage point weaker than in the June 2020 WEO Update. This will further strengthen to 6 percent in 2021. With the economy projected to grow by about 10 percent over 2020–21 (1.9 percent this year and 8.2 percent next year), China exhibits better prospects than most other countries in this group.

For countries that constitute the emerging market and developing economies excluding China, the projections continue to be associated with certain risks. This is a reflection of a number of factors: the unending spread of COVID-19 and health care systems over-stretch; the larger importance of deeply affected sectors, e.g. tourism; and the continued dependence on finance sourced externally, including remittances. Emerging markets and developing economies are expected to exhibit some level of contraction in 2020. This includes emerging Asia, where the large economies, like Indonesia and India, continue to observe rules towards controlling the spread and effects of the pandemic. The IMF revisions of forecasts for India was tremendous due to the fact that the country's GDP declined much more

deeply than the second quarter forecasts. This will eventually lead to a contraction by 10.3 per cent in 2020 followed by a resurgence by 8.8 per cent in 2021 according to economic projections. Variations in regional outlook remains profound with several South American countries reacting to the effect of COVID-19 facing economic downturns and decrease in output for Middle Eastern and Central Asia countries as well as oil rich sub-Saharan African countries that are facing challenges due to declining oil prices, instability or economic crises.

Table 1: World Economic Growth Projections by the International Monetary Fund (IMF)

	2019	Projections		Difference from June 2020 WEO Update	
		2020	2021	2020	2021
World Output	**2.8**	**-4.4**	**5.2**	**0.8**	**-0.2**
Advanced Economies	**1.7**	**-5.8**	**3.9**	**2.3**	**-0.9**
United States	2.2	-4.3	3.1	3.7	-1.4
Euro Area	1.3	-8.3	5.2	1.9	-0.8
Germany	0.6	-6.0	4.2	1.8	-1.2
France	1.5	-9.8	6.0	2.7	-1.3
Italy	0.3	-10.6	5.2	2.2	-1.1
Spain	2.0	-12.8	7.2	0.0	0.9
Japan	0.7	-5.3	2.3	0.5	-0.1
United Kingdom	1.5	-9.8	5.9	0.4	-0.4
Canada	1.7	-7.1	5.2	1.3	0.3
Other Advanced Economies	1.7	-3.8	3.6	1.1	-0.6
Emerging Market and developing Economies	**3.7**	**-3.3**	**6.0**	**-0.2**	**0.2**
Emerging and Developing Asia	5.5	-1.7	8.0	-0.9	0.6
China	6.1	1.9	8.2	0.9	0.0
India	4.2	-10.3	8.8	-5.8	2.8
ASEAN-5	4.9	-3.4	6.2	-1.4	0.0
Emerging and Developing Europe	2.1	-4.6	3.9	1.2	-0.3
Russia	1.3	-4.1	2.8	2.5	-1.3
Latin America and the Caribbean	0.0	-8.1	3.6	1.3	-0.1
Brazil	1.1	-5.8	2.8	3.3	-0.8
Mexico	-0.3	-9.0	3.5	1.5	0.2
Middle East and Central Asia	1.4	-4.1	3.0	0.4	-0.5
Saudi Arabia	0.3	-5.4	3.1	1.4	0.0
Sub-Saharan Africa	3.2	-3.0	3.1	0.2	-0.3
Nigeria	2.2	-4.3	1.7	1.1	-0.9
South Africa	0.2	-8.0	3.0	0.0	-0.5

Source (IMF WEO, October, 2020)

A projection of -3.3 per cent for year 2020 and 6.0 per cent for 2021 has been made for emerging market and developing economies. The rebound that is forecasted in 2021 is not like to be enough to lead to a regaining of the 2019 level of activity by 2021. For low income developing counties, growth forecast is put at -1.2 per cent in 2020 firming up to 4.9 in 2021. Higher growth rate of the population and meagre starting income levels indicate that even this more moderate shrinkage compared with most emerging economies will take a very drastic toll on standards of living, particularly for the poor segment of the population.

In terms of monetary conditions, policy rates have largely been on the downward trend since the setting in of the pandemic in the advanced economies. In the United States of America, with a policy rate of 0.25 per cent, economic activity and employment have continued to recover but remain well below their levels at the beginning of the year. Weakened

demand and purchasing power as well as declines in oil prices have been curtailing the consumer price inflation levels. On the overall, the conditions of financial indices have remained relatively accommodative, partly a reflection of monetary policy measures put in place to support the overall economy and the flow of credit to households and micro small and medium enterprises in the US. The US Federal Reserve seeks to maintain a monetary policy that is accommodative as well as to achieve maximum employment level and inflation at the rate of 2 percent in the long run.

The Bank of Japan (BOJ) is adopting a negative interest rate of -0.1 per cent to the Policy-Rate Balances in current accounts that are held by financial institutions in its vaults. The BOJ stated that it will continue with "Quantitative and Qualitative Monetary Easing (QQE) measures with Yield Curve Control," with the aim of achieving the price stability target of 2 per cent, as long as it is necessary for maintaining that target in a stable manner (Bank of Japan, 2020).

The Bank of England (BOE) set monetary policy to meet the 2 per cent inflation target, and in a way that helps to sustain growth and employment. The MPC at its meeting of November 4, 2020 through a unanimous vote maintained the Bank Rate at 0.1 per cent. In addition, the BOE will maintain all stock purchases of sterling corporate non-financial investment-grade that were financed by the issuance of central bank reserves valued £20 billion. It will also continue with the existing programme of £100 billion of UK government bond purchases, financed by the issuance of central bank reserves and also increase the target stock of purchased UK government bonds by an additional £150 billion to take the total stock of government bond purchases to £875 billion (Bank of England, 2020).

The monetary policy measures taken by the European Central Bank (ECB) since early March 2020 are in place to preserve favourable financing conditions for all economic sectors and jurisdictions across the entire euro area. This provides crucial support to economic activity and to safeguard medium-term price stability. The ECB has maintained an accommodative stance of monetary policy thereby keeping the key ECB interest rates unchanged. This will remain at the same level until the inflation outlook robustly converges to a level sufficiently close to, but below, 2 per cent. The pandemic emergency purchase programme (PEPP) of the ECB will continue with a purchase envelope amounting to €1,350 billion. These purchases are contributing to easing the overall monetary policy stance, thereby helping to reduce the downward impact of the pandemic on the projected path of inflation.

Table 2: Comparative Macroeconomic Indicators for Selected Countries

	Country	Inflation (%) (Oct. 2020)	Policy Rate (%) (Oct. 2020)	GDP (%) Growth Rate Q2 2020	Coronavirus Cases (Oct. 2020)	Coronavirus Deaths (Oct. 2020)	External Reserves US$ Million (Oct. 2020)
1.	Nigeria	13.71	11.5	-0.5	64,884	1,163	35,686
2.	Kenya	4.84	7.0	-9.1	68,193	1,249	13,681
3.	Botswana	2.2	3.75	-24.8	8,225	27	5,391
4.	Ghana	10.1	14.5	-0.8	50,018	320	9,171
5.	South Africa	0.2	3.5	5.1	746,945	20,153	53,658
6.	Egypt	4.5	8.25	5.0	110,319	6,442	39,220
7.	Uganda	4.5	7.0	-4.3	15,402	144	3,991
8.	China	0.5	3.85	2.7	92,428	4,634	3,127,982
9.	Hong Kong	-2.2	0.86	2.8	5,437	108	475,000
10.	India	7.61	4.0	-25.2	8,814,579	129,118	568,494
11.	Japan	0.0	-0.1	-7.9	116,677	1,900	1,384,400
12.	Malaysia	-1.4	1.75	18.2	45,095	306	107,398
13.	Philippines	2.5	2.25	8.0	404,713	7,791	100,490
14.	Singapore	0.3	0.08	7.9	58,114	28	461,595
15.	South Korea	0.1	0.5	1.9	28,546	492	426,510
16.	Taiwan	-0.24	1.13	4.42	597	7	5,012
17.	Thailand	-0.5	0.5	-9.7	3,861	60	248,511

Source: www.tradingeconomics.com

3.2 Domestic Economic and Financial Developments under the COVID-19 Pandemic

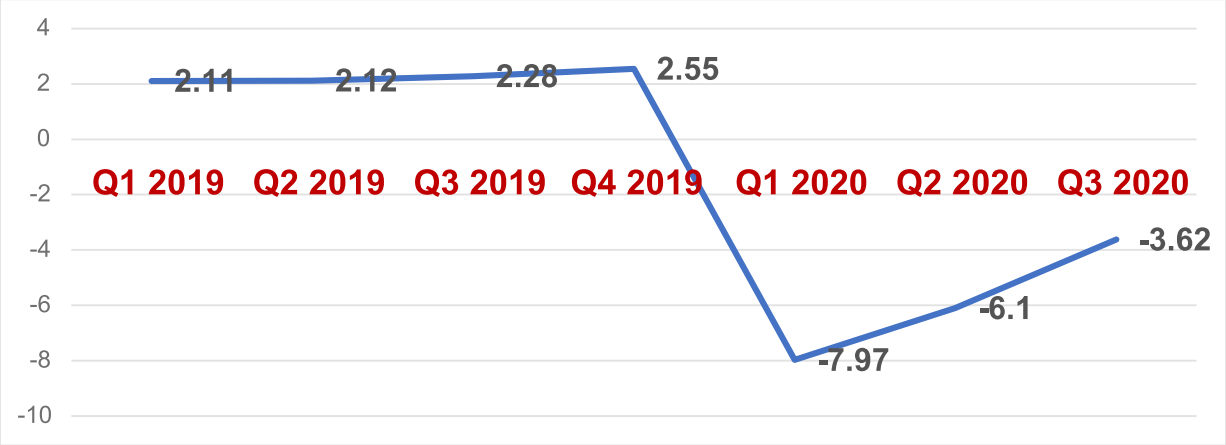
Data on domestic and financial developments from NBS (2020) as presented on table 3, showed that there was a reduction in the real Gross Domestic Product (GDP) by -3.62 per cent in third quarter of 2020, against a contraction of -6.10 in the previous quarter and 2.28 per cent in the corresponding period of 2019, thereby forcing the Nigerian economy into a recession. There was a further contraction in the oil sector by -13.89 per cent in third quarter 2020 from -6.63 per cent in the previous quarter. The non-oil sector on the other hand exhibited a decline by -2.51 per cent in the third quarter of 2020, against the preceding quarter which stood at -6.05 per cent. A number of factors led to this feeble trend namely decline in oil prices, and the outcomes associated with the Coronavirus Pandemic resulting in the lull in economic activities.

Table 3: GDP Growth Rates (2019Q1 - 2020Q2)

Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020
2.11	2.12	2.28	2.55	-7.97	-6.1	-3.62

Source: www.nbs.gov.ng

Figure 2: GDP Growth Rates (2019Q1 - 2020Q3)



Source: www.nbs.gov.ng

The Nigerian economy demonstrated a slow uptick in the Manufacturing and Non-Manufacturing Purchasing Managers' Indices (PMIs) which increased to 50.2 and 47.6 index points, respectively, in November 2020, against 49.4 and 46.8 index points that was published in the month of October 2020. This outcome is an indication of augmentation in economic activities, induced by more efficient supply delivery time, rise in new orders, growing levels of production and new export orders. Improvements were also recorded in the employment level index component of the manufacturing and non-manufacturing PMIs in November 2020 to 47.3 index points and 46.7 index points, respectively, against 46.0 index points and 44.2 index points reported in October 2020. On the other hand, growing security challenges posed some downside risk to growth with adverse impacts on the economic recovery efforts in the short run.

With respect to inflation, data showed headline inflation (year-on-year) increased to 14.23 per cent in October 2020 from 13.71 per cent in September 2020. This represents a continual rise in the fourteenth consecutive month (Table 4). This was attributed by CBN (2020) to the increase in food and core inflation components, which showed an increase to 17.38 and 11.14 per cent respectively in October 2020 from the earlier 16.66 and 10.58 per cent reported in the preceding month of September, 2020 for food and core inflation components. The trend of insecurity and disruptions in supply chain affecting movement of agricultural products, bad road conditions, poor power supply and other infrastructural challenges all added up to constitute the drivers of the rising inflation figures. In addition, recent increases in the price of energy products (PMS and electricity), coronavirus-related supply chain interruptions and declining crude oil prices also contributed to the continued rising inflation trend (ibid).

Table 4: Inflation Rates (September 2019- September 2020)

Year/Month	Headline		Food		Core	
	Y-on-Y	12 MMA	Y-on-Y	12 MMA	Y-on-Y	12 MMA
Sep-19	11.24	11.27	13.51	13.47	9.43	9.97
Oct-19	11.61	11.3	14.09	13.54	9.45	9.88
Nov-19	11.85	11.35	14.48	13.65	9.48	9.8
Dec-19	11.98	11.4	14.67	13.74	9.95	9.76
Jan-20	12.13	11.46	14.85	13.86	9.81	9.7
Feb-20	12.2	11.54	14.9	13.98	9.95	9.66
Mar-20	12.26	11.62	14.98	14.11	10.22	9.66
Apr-20	12.34	11.71	15.03	14.22	10.57	9.72
May-20	12.4	11.79	15.04	14.33	10.7	9.81
Jun-20	12.56	11.9	15.18	14.46	10.57	9.93
Jul-20	12.82	12.05	15.48	14.63	10.64	10.03
Aug-20	13.22	12.23	16	14.87	11.07	10.18
Sep-20	13.71	12.44	16.66	15.13	11.16	10.33

Source: www.cbn.gov.ng

An augmentation in Net Foreign Assets (NFA) was witnessed following a marginal rise in broad money supply (M3) to 3.53 per cent in October 2020 from 3.20 per cent in September 2020. In the same period, a mild reduction in Net Domestic Assets (NDA) from -5.05 per cent to -2.19 per cent was also reported. Owing to the CBNs interventions as well as policy on Loan-to-Deposit Ratio (LDR), aggregate domestic credit, increased by 7.61 per cent in October 2020 compared with 7.35 per cent in September 2020. An increase of ₦290.13 billion was witnessed in the total gross credit by the banking industry which was ₦19.54 trillion in November 2020 against ₦19.33 trillion in August 2020. When a comparison is made at the pronouncement of the LDR policy in May 2019, it was ₦15.56 with total gross credit increasing by ₦3.97 trillion. According to CBN (2020), the loans were accessed by the following sectors: manufacturing (₦738 billion), General Commerce (₦874 billion), Agric and Forestry (₦301 billion), Construction (₦291 billion), ICT (₦231 billion) among others. There was a decrease in the rate of interest on loans by Banks. About 86.23 per cent of total loans given, to over one (1) million clients by banks were at rates lower than 20 per cent which reflected some level of improvement from the 76.43 per cent that was reported the preceding year, July 2019.

Financial Soundness Indicators of banks exhibited some level of improvement in October 2020. The Capital Adequacy Ratio (CAR) rallied at 15.5 per cent while Non-Performing Loans (NPLs) were at 5.73 per cent. In addition, Liquidity Ratio (LR) was reported at 35.6 per cent. The ratio of non- performing loans (NPLs) was still above the prudential benchmark requirement of 5.0 per cent. The data from Other Financial Institutions (OFIs) also showed some improvements in financial soundness indicators. This was reflected by a growth amounting to ₦582 billion in aggregate assets to ₦4.02 trillion or 16.94 per cent (year-on- year), as at end-September 2020. In the same vein, there was a growth of ₦217 billion, or 12.27 per cent (year-on-year), to ₦1.99 trillion in aggregate credit during the period. The subsector also maintained a Capital Adequacy Ratio that exceeded the minimum prudential ratio requirement of 10 per cent.

The developmental mandates of the CBN towards revamping economic activities during the pandemic also continued in the period under review. These include disbursements under key interventions like the Agri-Business/Small and Medium Enterprise Investment Scheme (AGSMEIS) in which about ₦92.90 billion was disbursed to 24,702 beneficiaries. In addition, under the Anchor Borrowers Programme (ABP), the sum of ₦164.91 billion was disbursed to 954,279 beneficiaries. Another key intervention was the COVID-19 Targeted Credit Facility (TCF) to household and SMEs where ₦149.21 billion was disbursed to 316,869 beneficiaries.

Also, based on demand and supply forces, banking system liquidity situations continued to determine rates in the money market. Following rising liquidity levels in the banking system, the Open Buy Back (OBB) rate witnessed a decline on a progressive basis, while there were no reported operations at the uncollateralized inter-bank call window. As a result, in October 2020, the monthly weighted average OBB rate declined to 1.88 per cent from 3.50 per cent in September 2020. In the equities market, a rising

patronage by domestic investors largely driven by low yields in the money market was witnessed. There was augmentation in the All-Share Index (ASI) by 20.55 per cent to 30,530.69 in October 2020 from 25,327.13 in the month of September, 2020. In addition, a 20.82 per cent growth was observed in Market Capitalization to ₦15.96 trillion from ₦13.21 trillion in the review period attributable to positive third quarter corporate earnings due to move by investors to pick-up bargain stocks.

The position of the country's external reserves on the other hand, exhibited a mild reduction standing at US$35.18 billion on November 19, 2020 against S$35.95 billion at end-September 2020, in the face of the reality of fluctuating prices of crude oil.

The above developments informed the CBN during the MPC meeting of November 2020 to focus not only on price stability, but also on the need to speedily take actions to exit the recession. The MPC therefore, adopted the following measures:

i. Retain the Monetary Policy Rate (MPR) at 11.5 per cent;
ii. Retain the asymmetric corridor of +100/-700 basis points around the MPR;
iii. Retain the Cash Reserve Requirement (CRR) at 27.5 per cent; and
iv. Retain the Liquidity Ratio (LR) at 30 per cent.

4.0 Monetary Policy Responses by Other Central Banks to the COVID-19 Pandemic

The IMF (2020) posted a policy tracker that summarizes the key economic responses central banks are taking to limit the economic impact of the COVID-19 pandemic. Below is the position of some selected countries as at June 5, 2020:

a. Bahrain

The Central Bank of Bahrain (CBB) in its response to the COVID-19 pandemic took several measures including expansion of lending facilities to banks by up to BHD 3.7 billion ($10 billion or 28 percent of GDP) to facilitate deferred debt payments and extension of additional credit. The CBB has introduced interest rate cuts. In this regard, a cut was introduced in two steps on the one-week deposit facility rate from 2.25% to 1.0%, the overnight deposit rate from 2.0% to 0.75%, and the overnight lending rate (in one step) from 4.0% to 2.45%.

Other key measures taken by CBB to support banks and their clients include: (i) reducing the cash reserve ratio for retail banks from 5% to 3%; (ii) loan-to-value ratios were relaxed for fresh residential mortgages; (iii) introduction of capping fees debit cards; and (iv) inviting banks to offer a six-month deferred repayment without charging interest or penalties and also to desist from blocking customers' accounts in situations where customers have lost their jobs.

b. Bangladesh

As part of the response to COVID-19 pandemic, the focus of Bangladesh Bank (BB) is to ensure that there was adequate liquidity in the financial system to support the operations of financial institutions. In this regard, BB announced a massive purchase of treasury bonds and bills from banks. In addition, the repo rate was lowered from 6 percent to 5.75 percent in March, 2020 and was further reduced to 5.25 percent in April, 2020.

The Bank of Bangladesh as a first line of action, reduced Cash Reserve Ratio from 5 percent to 4.5 percent (daily-basis). This was followed with other levels of reduction from 5.5 per cent to 5 per cent (bi-weekly basis), and to 3.5 percent and 4 percent, respectively, from April 2020. The advance-deposit ratio (ADR) and investment-deposit ratio (IDR) was also increased by 2 percent to enable improved liquidity in the banking system as well as flow of credit to the private sector. There was a $5 billion increase in the country's Export Development Fund and rate of interest set at 2 per cent. BB increased the limit for refinancing and also established a number of refinancing programmes summing up to Tk380 billion. A 360-day tenor special repo facility was also set up with the objective of supporting farmers, exporters, as well as facilitation of the government stimulus packages.

In a bid to ensure farmers get additional support, the Bank of Bangladesh also established a 15-month agriculture subsidy programme expected to run until mid-2021. Other actions taken by BB include introduction of a delay in the classification of non-performing loans, a waiver on interest and credit card fees, suspension of payment of interest on loans, extension of tenures of trade instruments, imposition of restrictions on bank dividend payments and ensuring access to financial services.

c. Botswana

In a bid to support the economy and to inject liquidity into the system, the Monetary Policy Committee (MPC) of the Bank of Botswana (BOB) in April, 2020 reduced the Bank Rate by 0.5 from 4.75 percent to 4.25 percent as well as the primary reserve requirement (PRR) from 5 percent to 2.5 percent. Other relief packages include; loan restructuring for mortgages and vehicles by Banks and Non-bank Financial Institutions.

There was a minimum of three months rescheduling for life insurance payment premiums and retirement fund contributions. There was a relaxation of rules towards meeting capital requirements and the introduction of measures to facilitate improvement in liquidity conditions. Other measures include introduction of regulatory forbearance introduced for non-performing loans as well as reduction in capital adequacy ratio for banks from 15 to 12.5 percent. In addition, there was a reduction in overnight funding costs and broadening of access to repo facilities. The BOB also announced an extension to borrowing to include corporate bonds and traded stocks and removal of collateral constraints for bank borrowing.

d. Brazil

In Brazil, the Central Bank reduced the policy rate by 1.25 per cent in February to 3 percent. Other decisions taken by the MPC include cut in reserve requirements and capital conservation buffers, as well as a temporary relaxation of rules on provisioning with a view to increasing liquidity in the financial system. In addition, a reduction was announced in the reserve requirement from 25 per cent to 17 per cent. A special window was created by the Central Bank to provide loans to financial institutions that is covered by private corporate bonds as collateral. In addition, an arrangement was made for the provision of about US$60 billion to the Central Bank for six months through a swap facility. An agreement was reached to consider requests by individuals and MSMEs for a 60-day extension of their maturing debt liabilities by the five largest banks in Brazil.

The following are some of the key measures undertaken by the Central Bank of Chile to mitigate the effect of the COVID-19 pandemic on the economy: (i) A cut in policy rate from 1.25 per cent to 0.5 percent; (ii) Establishment of a new funding mechanism for banks contingent on them increasing credit; (iii) A policy that incorporates corporate securities in the classification of collaterals for the Central Bank's liquidity operations as well as including high-profile commercial loans as collateral for the operations of the new funding facility mechanism (iv) Commencement of a scheme for purchase of bank bonds (up to US$8 billion); (v) Easing of eligibility for additional currencies to be classified among reserve requirements in foreign currencies; (vi) Central Bank rules and regulations for commercial banks liquidity made more flexible; (vii)The window for facilitating liquidity in pesos and US dollars was expanded through repo operations and swap deals; and (viii) Easing of liquidity coverage ratio (the ratio did not change, but deviations deemed temporary may be tolerated depending on specificity of the case). Correspondingly, the Financial Market Commission of Chile announced some measures towards facilitating credit flow to MSMEs and households, these included: (i) Distinctive treatment in provisioning for deferred loans; (ii) Safeguard MSME loans using mortgage guarantees (iii) Adjusting the system of treating assets that are received as payment and margins in transactions involving derivatives; and (iv) Revising the implementation timetable for Basel III standards.

f. China

In a bid to provide support through monetary policy in response to the COVID-19 pandemic, the Peoples Bank of China (PBC) took the following measures to safeguard the stability of financial markets:

(i) About RMB 4.2 trillion (gross) was injected into the banking system through open market operations (reverse repos and medium-term lending facilities), (ii) process of expanding re-lending and re-discounting facilities by RMB 1.8 trillion towards supporting producers of medical equipment and essential goods, MSMEs and the agricultural sector at low interest rates, (iii) reduction by 0.3 and 0.1 per cent, the 7-day and 14-day reverse repo rates respectively, as well as the 1-year medium-term lending facility (MLF) rate and targeted MLF rate by 0.3 and 0.2 per cent, respectively, (iv) targeted Reserve Requirement Ratio (RRR) reduction by 0.5-1.0 per cent for large- and medium-sized banks (v) cut in the interest on excess reserves from 0.72 to 0.35 per cent, and (vii) establishment of new lending support mechanisms to MSMEs, including a zero-interest "funding-for-lending" scheme (RMB 400 billion) to finance 40 percent of local banks' new unsecured loans and providing incentives to them towards extending payment holidays for eligible borrowers (RMB 40 billion).

g. Euro Area

Monetary Policy actions by the European Central Bank (ECB) following the outbreak of Covid-19 include the following: (i) further purchase of assets valued at €120 billion until end-2020 under the Asset Purchase Programme (APP) (ii) more favourable terms on existing longer-term refinancing operations between June 2020 and June 2021, with interest rates as low as 0.50 per cent below the average deposit facility rate (iii) introduction of a new liquidity facility (PELTRO), which consists of a series of non-targeted Pandemic Emergency Longer-Term Refinancing Operations with an interest rate that is 0.25 per cent below the average MRO rate (iv) enlarging the size of the Pandemic Emergency Purchase Programme (PEPP) by €600 billion to €1.35 trillion until June 2021 due to weaker inflation outlook (v) expansion of the range of eligible assets under the corporate sector purchase program (CSPP) and relaxation of collateral standards for Eurosystem refinancing operations (MROs, LTROs, TLTROs) (vi) announcement of a broad

package of collateral easing measures for Eurosytem credit operations in April, 2020.

h. United States

Monetary policy responses to COVID-19 in the United States of America include the following: (i) the Federal funds rate was reduced by 1.50 per cent in March, 2020 (II) overnight and term repos were expended; cost of discount window lending and existing cost of swap lines with major central banks were reduced (iii) maturity of FX operations was extended (iv) U.S. dollar swap lines to more central banks was broadened; temporary repo facility for foreign and international monetary authorities were offered (v) introduction of facilities to support the flow of credit by the Federal reserve (vi) depository institutions were encouraged by the Federal banking supervisors to use their capital and liquidity buffers to lend, and to work constructively with borrowers affected by COVID-19 (vii). The Federal banking supervisors of the US also provided a regulatory reporting relief and adjusting supervisory approach to reduce scope and frequency of examinations on a temporary basis and give more time for the resolution of non-critical, existing supervisory findings.

I. Malaysia

Policy measures put in place by the monetary authorities in Malaysia to mitigate the effect of the Covid-19 pandemic included the following: (i) The Bank Negara Malaysia (BNM) lowered the Overnight Policy Rate (OPR) by 0.25 per cent to 2.5 per cent in March, 2020. In addition, the BNM lowered the OPR again to 2 percent in May 2020 citing weakening global economic conditions and subdued inflationary pressures due to Covid-19 (ii) The Statutory Reserve Requirement Ratio (SRR) was also reduced by 1.0 per cent to 2 percent effective March 20, 2020. Also, the BNM announced in May 2020 that banking institutions can use Malaysian government securities (MGS) and Shariah-compliant Islamic government bonds—the Malaysian Government Investment Issue (MGII to fully meet the Statutory Reserve Requirements (SRR) compliance until May 2021.

Furthermore, BNM increased its Financing Facilities by RM4 billion to RM13.1 billion ($968.82 million to $3.17 billion) (0.9 percent of GDP) on March 27, 2020 and also declared temporary easing of regulatory and supervisory compliance on banks towards supporting them in areas of loan deferment and restructuring as well as relief measures for insurance and takaful policy holders (iii) On March 23, 2020, the Securities Commission Malaysia (SC) and Bursa Malaysia suspended short selling until April 30; 2020 and on April 28, 2020 the suspension was extended through June 30, 2020. Securities Commission Malaysia also waived annual licensing fees for capital market licensed entities. And on April 16, 2020, it announced regulatory relief measures for public listed companies. On April 10, 2020, the Companies Commission of Malaysia declared measures to enhance protection of distressed companies against liquidation.

j. Ghana

The Monetary Policy Committee (MPC) in Ghana took the following measures as a result of the crippling effect of the pandemic on the Ghanaian economy: It reduced the policy rate by 1.5 per cent to 14.5 percent in March 2020. Other measures were also put in place to mitigate the impact of the Covid-19 pandemic. These include: cutting the primary reserve requirement from 10 to 8 per cent, reducing the capital conservation buffer from 3 to 1.5 per cent, revising provisioning and classification rules for specific loan categories, and taking steps to facilitate and lower the cost of mobile payments.

The Committee also took decisions towards the continued monitoring of the economic impact of the pandemic and take additional measures when necessary. In May, 2020 , the MPC at its meeting maintained the policy rate and instituted a new bond purchasing program to provide emergency financing to the government following a higher projected fiscal financing gap. The MPC also in conjunction with the U.S. Federal Reserve announced some relief measures for small depository institutions and a US$1 billion repo agreement under the Facility for Foreign and International Monetary Authorities (FIMA).

k. Saudi Arabia

Responding to the effect of the pandemic to the economy, the Saudi Arabian Monetary Authority (SAMA) cut the policy rate twice in March, 2020. In addition, SAMA reduced the reverse repo and repo rates by 1.25 basis points (bp) -0.5 and 1 per cent respectively. In addition, SAMA on March 14, 2020, implemented a SAR 50 billion ($13.3 billion, 2 percent of GDP) package. This was meant to support the private sector, specifically the MSMEs, by delivering funding to banks to enable them defer repayments on loans and intensify lending to businesses. Fees for point-of-sale and e-commerce operations would also be covered by the apex bank for 3 months. SAMA also directed banks to defer payments of loans granted to all Saudi Arabian workers by three months without extra charges. The banks are also expected to offer financing needed by clients who lost their jobs and to ensure exemption to their customers from various banking fees. On June 1, 2020, SAMA announced the introduction of SAR 50 billion ($13.33 billion) into the Saudi banking sector by way of deposit placements towards supporting banking sector liquidity and credit to the private sector.

l. South Africa

Reacting to the ravaging pandemic, the South African Reserve Bank (SARB) cut the policy rate about 3 times. First by 100 basis points (bps) to 5.25 percent on March 19, 2020, second by another 100 bps to 4.25 percent on April 14, 2020 and third by 50 bps to 3.75 percent on May 21, 2020. In addition, on March 20, 2020, SARB announced some liquidity easing conditions as follows: (i) Raising the number of repo auctions to two to facilitate support for intraday liquidity to clearing banks at the Reserve Bank's policy rate; (ii) cutting the upper and lower limits of the standing facility to enable lending at the repo-rate and allow borrowing at repo-rate less 200 bps; and (iii) increasing the quantum of the main weekly refinancing operations as required.

On March 23, 2020 the South African government announced the introduction of a unified approach to facilitate banks offer debt relief to borrowers. The SARB also announced on March 25, 2020, additional measures to ease liquidity strains prevalent in fund markets. This was targeted at buying government securities in the secondary market throughout the yield curve and spreading the maturities of the main refinancing instrument from 3 to 12 months. Furthermore, on March 26, 2020, SARB released guidelines on modalities for debt relief to bank clients. A temporary relief was also announced by SARB on March 28, 2020 on bank capital requirements that decreased the liquidity coverage ratio from 100 to 80 percent with a view to providing additional liquidity to banks and mitigate against financial system risks. The SARB on April 6, 2020, released guidance on dividend and cash bonuses distribution with the objective of ensuring bank capital preservation. With effect from May 11, 2020, the number of repo auctions was reduced to once a day by the SARB and, on May 12, 2020 an announcement was made in respect of a series of prudential priority procedures for financial co-operatives on prudential matters, supervisory procedures including governance and issues of operations.

m. Kenya

The Central Bank of Kenya on March 24, 2020 announced the following measures in response to the effect of Coronavirus on the economy: (1) reduction of the policy rate by 1.0 per cent to 7.25 percent (2) cutting cash reserve ratio of banks by 1.0 per cent to 4.25 per cent; (3) Raising the tenor of repurchase agreements from 28 to a maximum of 91 days; and (4) introducing flexibility to banks in respect of classification of loans and provisioning of those loans that were performing as at March 2, 2020, but were restructured as a result of COVID-19. The Central Bank also encouraged banks to increase flexibility to loan terms for clients based on occurrences related to COVID-19 and also encouraged waivers or reduction of charges on mobile money transactions to discourage the use of cash.

The Central Bank of Kenya on April 15, 2020, stopped for a period of six months, the listing of negative credit-related information for borrowers whose loans became non-performing after April 1, 2020. The Bank also set a new minimum threshold of $10 for negative credit information submitted to credit bureaus. On April 29, 2020, the central bank of Kenya cut its policy rate by 25 bps to 7.0 per cent.

n. West-African Economic and Monetary Union (WAEMU AREA)

The regional central bank (BCEAO) for the West-African Economic and Monetary Union (WAEMU) adopted some measures to meet the demand for liquidity by banks in the region and also diminish the negative impact of COVID-19 on the economies of member States. An allotment strategy at a fixed rate of 2.5 per cent (the minimum monetary policy rate) was adopted thus allowing banks to fully meet their liquidity requirements at a rate of about 25 basis point. A rate lower than the period prior to the setting in of the COVID-19 pandemic.

The following were also undertaken by the BCEAO: (i) extension of a collateral framework to obtain refinancing to include bank loans to 1,700 private companies that were prequalified; (ii) articulating a framework inviting banks and microfinance institutions to treat demands from clients with COVID-19 related repayment challenges to reschedule debt service falling due for a 3-month period; and (iii) initiated measures to support the use of electronic payments. Also, the BCEAO commenced a special 3-month window of refinancing at a fixed rate of 2.5 per cent for specific amounts of 3-month "COVID-19 T-Bills" issued by each member State to help provide immediate funding requirements caused by COVID-19.

o. Economic and Monetary Community of Central Africa (CEMAC AREA)

The Bank of Central African States (BEAC), on March 27, 2020, adopted some monetary easing measures that included a cut in the policy rate by 25 bps to 3.25 per cent, a reduction of the Marginal Lending Facility (MLF) rate by 100 bps to 5 percent, suspension of all absorption operations in the banking system, a rise in the provision of liquidity from FCFA 240 to 500 billion, and a broadening of the range of the private instruments that were accepted as collaterals in monetary operations. The MPC also maintained BEAC's management's resolution for a reduction in asset values that are applicable to private instruments accepted by banks as collateral for refinancing

transactions. The MPC also announced a postponement by one-year of principal repayments of consolidated central bank's credits to all member states. The COBAC (Commission Bancaire de l'Afrique Centrale), on March 25, 2020, communicated to banks that they can use their 2.5% capital conservation buffers as absorption mechanisms to COVID-19-related losses but entreated them to implement a restrictive policy in relation to distribution of dividends.

5.0 Nigerian Monetary Policy Decisions Under COVID-19 Pandemic

The usual policy prescription by several countries during the COVID-19 Pandemic is to adopt an easing monetary policy stance in order to support domestic economic activities. This prescriptive approach is theoretically motivated by the postulation of Keynesian models and illustrated in practice by the offerings of Taylor rule approach to monetary policy. In this setting, an expansionary monetary policy is essential to help close the negative output gap and re-establish full employment. The Central Bank of Nigeria also responded to the crisis through several monetary policy interventions.

According to Nigeria Centre for Disease Control (2020), the first confirmed case of COVID-19 in Nigeria was announced on February 27, 2020. Since then, MPC meetings decisions have been taken in consideration of the effects of the pandemic on the Nigerian economy. A summary of MPC key decisions are summarized on Table 5.

Table 5: Summary of MPC Decisions During the Covid-19 Period

March 2020	• Retain the Monetary Policy Rate at 13.5 percent • Retain the asymmetric corridor of +200/-500 basis points around the Monetary Policy Rate • Retain the Cash Reserve Requirement at 27.5 percent • Retain the Liquidity Ratio at 30 percent.
May 2020	• Reduce the Monetary Policy Rate by 100 basis points to 12.5 percent • Retain the asymmetric corridor at +200/–500 basis points • Retain the Cash Reserve Requirement at 27.5 percent • Retain liquidity ratio at 30.0 percent.
July 2020	• Retain the Monetary Policy Rate at 12.5 percent • Retain the asymmetric corridor of +200/-500 basis points around the Monetary Policy Rate • Retain the Cash Reserve Requirement at 27.5 percent • Retain the Liquidity Ratio at 30 percent
September 2020	• Reduce the Monetary Policy Rate by 100 basis points from 12.5 to 11.5 per cent; • Adjust the asymmetric corridor from +200/-500 basis points to +100/-700 basis points around the MPR; • Retain the Cash Reserve Requirement at 27.5 per cent; and • Retain the Liquidity Ratio at 30 per cent.
November 2020	• Retain the Monetary Policy Rate at 11.5 per cent; • Retain the asymmetric corridor of +100/-700 basis points around the Monetary Policy Rate; • Retain the Cash Reserve Requirement at 27.5 per cent; and • Retain the Liquidity Ratio at 30 per cent.

In response to the COVID-19 outbreak, the Monetary Policy Committee, announced extension of support to affected households, businesses, regulated financial institutions and other stakeholders to reduce the adverse economic impact of the COVID-19 outbreak. The MPC announced support in six ways.

1. Granted extension of loan moratorium on principal repayments from March 1, 2020. This implies that any loan under CBN intervention that is under moratorium would enjoy a one year extension.

2. Offered interest rate reduction on all intervention loan facilities from 9% to 5% beginning from March 1, 2020.

3. Offered a N50 billion (US$131.6m) targeted credit facility to hotels, airline service providers, health care merchants, among others.

4. Provided credit support to the healthcare industry to meet the increasing demand for healthcare services during the outbreak.

5. Provided regulatory forbearance to banks which allowed them to temporarily restructure the tenor of existing loan within a specific time period particularly loans to the oil and gas, agricultural and manufacturing sectors.

6. Strengthened the loan to deposit ratio (LDR) policy which allowed banks to extend more credit to the economy.

On the other hand, the fiscal authorities had to review and revise the 2020 national budget of ₦10.59 trillion (US$28 billion). An announcement was made by the government reducing the budget by NGN1.5 trillion among the measures taken due to the impact of the pandemic as well as in response to the oil price crash. Oil price was benchmarked at US$30 per barrel in the reviewed budget down from US$57 per barrel in the earlier budget.

Other policy actions that complemented the MPC decisions include the following:

- Provision of extended moratorium on loans by an additional 1 year beginning from March 2020. This was to ease pressure on loan repayments.

- Introduced regulatory forbearance to consider temporary and time-limited restructuring of loan terms and tenors to households and businesses affected by COVID-19, and strengthened the loan- to-deposit ratio (LDR) policy

- Announcement of an intervention fund of ₦1.1trillion to cushion the adverse effects of the Coronavirus outbreak on the economy. The sum of ₦1.0 trillion from this amount would be used to support local manufacturing to boost import substitution, while the balance of ₦100 billion would be used as support to the health services sector through provision of credit facilities to hospitals, pharmaceutical companies and other eligible health sector stakeholders. These loans are meant for building of new hospitals, upgrading of health facilities and/or expansion of existing ones to first class health centers. This was in addition to the ₦1.5 trillion private sector driven Infraco Project fund, designed to target the construction of critical infrastructure across the country. Furthermore, pharmaceutical businesses would be supported through loan interventions to re-position drug manufacturing companies in the country and curb the spread of the COVID-19 pandemic. In summary, it was expected that through these interventions, about ₦3.5 trillion would be injected as stimulus to support the Nigerian economy during this trying time.

- A CBN-led Infrastructure Development Company was also instituted by the Federal Government. The company is expected to leverage local and international funds sources for reconstructing of critical infrastructure across Nigeria. The ownership structure of this business concern includes Central Bank of Nigeria (CBN), the Nigeria Sovereign Investment Authority (NSIA) and the Africa Finance Corporation (AFC). It would be managed exclusively by an Independent Infrastructure Fund Manager (IIFM) that would mobilize local and foreign capital to support the Federal Government in building the transport infrastructure essential to enhance movement of farm and non-farm other products to processors, raw materials to factories for processing, and finished goods to markets for distribution. The sum of ₦15 trillion has been projected over 5 years for the initial operation of the company.

6.0 Conclusion and Recommendations

This article discussed the interactions of the effect of coronavirus on Nigerian economy and role of monetary policy in revamping economic activities. The findings reveal that the coronavirus outbreak in Nigeria affected the economy by forcing it into recession with three consecutive negative growth rates in the first, second and third quarters of 2020.

The implication of the findings is that a biological crisis can be transformed to an economic one. At the moment, it is impossible to fully know how long the coronavirus crisis will last and how many Nigerian citizens will be infected or even die. However, with the announcement of discovery of vaccines and mass vaccinations to commence in Europe and America, the outlook is optimistic.

Finally, it is worthy to state that monetary policy alone cannot solve the economic problems caused by COVID-19 pandemic in Nigeria but can work

alongside other critical areas/sectors like the fiscal, medical, national planning, infrastructure etc. Some key recommendations are presented below:

- Monetary policy should continue to strive towards strong protection for micro small and medium enterprises (MSMEs) during crises. The survival of MSMEs is critical during this pandemic. Monetary Policy Committee should continue to ascribe policies that would protect and support MSMEs by providing guarantees to banks and other lenders, favourable lending rates as well as credit flow so that lenders can provide liquidity to Nigerian MSMEs. Also, MSMEs that have the greatest coverage to the national supply chain should receive more support than others.

- MPC decisions should also be geared towards protecting jobs and workers. Protection of the critical sectors of the economy, assets, technology and infrastructure is important, and above all, jobs and workers must be covered. Alongside monetary policy efforts, government should introduce new legislation to protect the livelihoods of citizens which is essential to reboot the economy when this pandemic is over. New legislations should be created to mitigate against unemployment risks during crises. These kinds of legislations can help to preserve families' income, sustain the productive capacity of workers, the human capital of MSMEs and the overall economy.

- Welfare legislation and financial support intervention programmes are essential. Legislation and programmes should be created to support those in need especially the poorest who are the most vulnerable during a health or economic crisis. The existing CBN COVID-19 Targeted Credit Facility should be deepened for maximum impact and outreach. In addition, the government should offer assistance, including food, clothing and other essential items for those citizens that are deprived of basic subsistence during the crisis. These interventions should ensure the distribution of food aid and other basic items through electronic vouchers, thus, reducing the risk of infection during the pandemic.

- Support for the agricultural sector. One sector where MPC decisions should target is agriculture. All stakeholders especially government should not tolerate any disruption in food supply in this period of crisis. There should be a range of measures to ensure that farmers and other MSME operators get the support they need in terms of low interest loans, favourable moratorium periods, longer tenure for credit facilities, less emphasis on fixed assets as collaterals etc.

- The Nigerian government principally, must lead the economic diversification drive. It is one practicable way to outlive the current economic uncertainties and instabilities. As a matter of fact, the consequences of COVID-19 pandemic should further offer the Nigerian economic managers, a hard lesson that the one-tracked, monolithic reliance on oil is failing and lacks a future. Priorities for diversification to alternative sectors that Nigeria enjoys comparative and competitive advantage such as agriculture, solid minerals, manufacturing and services sectors, should be further intensified.

- Developing the capacity of Nigerian health systems. Whenever there is a public health crisis, the first priority in the country is to protect the health of its people. As a result, Nigeria should consider adopting a policy that would ensure sufficient budgetary liquidity to the health sector. In addition, policy measures should also be put in place to increase the capacity of health systems to withstand public health crises in future as well as mechanisms for provision of relief packages to citizens severely affected by the health crisis. CBN is already supporting the health sector but cannot do it alone. The fiscal sector has a role to play in this dynamic endeavour as well.

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The Predictive Power of Banks' Liquidity on Profitability In Nigeria

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Abstract

This study investigated the predictive power of banks' statutory liquidity on their profitability in Nigeria between 1990 and 2019. The vector autoregression and variance decomposition methodology were employed. The findings showed that a change in return on asset (ROA) was weakly associated with itself, with liquidity variables, liquidity risk and real gross domestic product growth rates. In a five-year prediction, a 100% change in ROA was explained by itself in the short-run. Other variables showed strong exogeneity with ROA, from short to long-run, an indication that banks in Nigeria face bleak future in using statutory liquidity to positively and significantly affect profitability. Understanding these findings would assist policymakers in their liquidity/profitability policy making, and the banks to re-strategize in their liquidity management.

Keywords: *Statutory Liquidity, Return on Asset, Prediction*

JEL Classification: *G29 G21 G32*

INTRODUCTION

Predicting bank performance is important for numerous reasons. It is important for banks because it aids banks in deciding how much liquidity will be needed to meet future demand. It is important for the central bank in deciding the stance of current monetary policy. It is important for the governments when forecasting budgetary surpluses and deficits. Banks' liquidity embodies expectations of their future profitability. Using statutory liquidity to predict bank profits, therefore, is fairly commonplace.

Idowu, Essien and Adegboyega (2017) point out that liquidity and profitability can be likened to two centrifugal forces with contradictory objectives which at all times threaten to pull the bank apart. Olugaunju, et al (2011) findings suggest that there is a significant relationship between liquidity and profitability. Also, Lartey, Samuel and Bodadi (2013) find that there is a positive and statistically significant relationship between liquidity and profitability of the listed banks. On the contrary, Obi-Nwosu, et al (2017), find that liquidity mechanism is not significantly related to Deposit Money Banks (DMBs) profitability in the short.

The problem with the above studies is that they focus on levels of liquidity rather than on the predictive contents of liquidity for future bank returns. In their study, Ogbulu and Eze (2017), using ordinary least squares, error correction method, vector autoregression and variance decomposition, find that liquidity has significant impact on DMBs' return on assets in the short-run, but insignificant impact in the long-run. In this study, the researcher hypothesizes that Nigeria's Deposit Money Banks' statutory liquidity has insignificant predictive effects on their future profitability, both in the short and long-run.

The motivation and relevance of this study lies in the fact that banks, all over the world, are evaluated on their liquidity creation or their ability to meet cash and collateral obligations without incurring substantial losses. This means that liquidity is crucial in arriving at sound banking decisions in any economy. Surprisingly, this is as far as theory goes. In practice a wide gap exists between theory and practice. There is thus the controversy as to whether banks in Nigeria actually rely on statutory liquidity and other controlled liquidity measures to make profit, both in the short run and long run.

This study is organized in sections. In addition to Section 1- Introduction – are Section 2 (Literature Review); Section 3 (Methodology); and Section 4 (Data Analysis and Interpretation). Others are Section 5 (Discussion of Findings); Sction 6 (Conclusion); and Section 7 – Recommendations.

2. LITERATURE REVIEW

According to Nwaezeaku (2006), liquidity in banks measures the availability of cash and the rate at which current assets are converted into cash to meet ordinary and extraordinary request. Liquidity management, from the view point of regulations, ensures that banks do not easily become insolvent. The availability of liquidity is particularly very important because lack of liquidity may provoke fear in depositors and uncertainty in banks. Therefore, there is need to strictly monitor and control liquidity by regulators.

Eljelly (2004) suggests that efficient liquidity management is associated with planning and controlling of current assets and current liabilities in an efficient manner so as to eliminate the risk of non-payment of dues for short term requirements and to also avoid excessive investment in these assets. The planning and control must be executed in compliance with monetary authorities' and supervisory policies.

Adequate liquidity serves as a veritable tool through which banks maintain the statutory requirements of the central banks as well as their liquidity creation and the risks involved. It reduces the incidence of bankruptcy in banks. It helps them to achieve some margin of safety for their customer's deposits. In other words, liquidity is the life blood of banks. Adequate liquidity helps to generate and sustain public confidence of the depositors and the financial markets. It is also needed to avoid forced sale of assets at unfavourable market conditions and at a heavy loss. Having adequate liquidity to meet a central bank's compliance, and also liquidity to meet all day-to-day obligations, is indispensable for the growth of banks.

Nwankwo (1991) opines that risks are created as banks manage their statutory liquidity. Such risks include funding risk-the ability to replace net outflows either through withdrawals of retail deposits or nonrenewal of wholesale funds; liquidity risk- the ability of banks to compensate for the non-receipt of inflow of funds if borrowers fail to meet their commitments; and credit risk, which arises from calls to debtors to honour mature obligations. When banks operate across multiple time zones, experience seasonal fluctuations in their incoming and outgoing cash flows and pulling together different information technology systems with heavy resources, liquidity risk, credit and other risks are created (Pyle 1997; Isa 2014; Kanchu and Kumar 2013). Any attempt by banks to downplay these risks in the management of liquidity can lead to a variety of problems which are very potent in pulling them into ill health.

2.1 Conceptual Framework

The conceptual framework of liquidity-bank profitability relationship in this study, follows the fact that banks manage their statutory liquidity, their internal liquidity creation, risks, in compliance with central bank's statutory cash reserve requirements, with a view to generating good returns for stockholders in the economy. Our conceptual framework is shown in chart 2.1

Chart 2.1 Author's concept of liquidity-bank profitability relationship

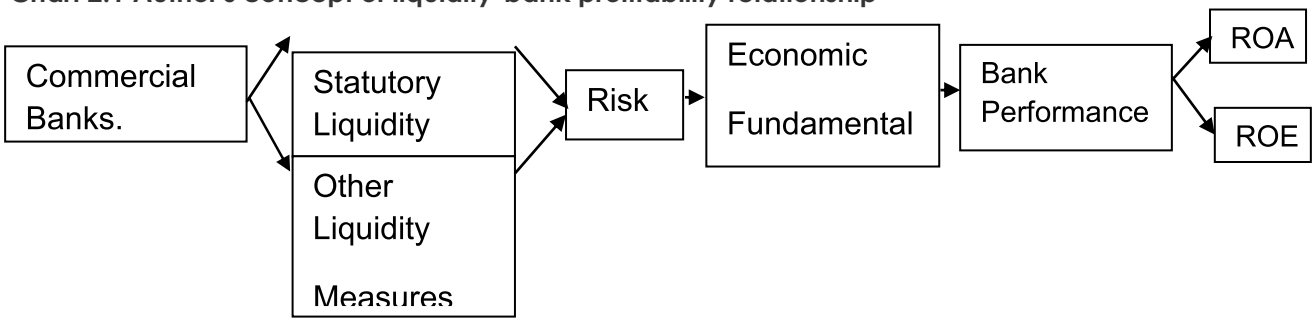

Chart 2.1, which represents the focus of this paper, shows that commercial banks' liquidity remains largely the use of their statutory liquidity to grant loans and invest in short-term securities. Banks must comply with the central bank's policy of maintaining cash reserves. In the process of granting loans and investing in short-term securities, banks create liquidity and liquidity risk in the midst of economic fundamentals. Adequate liquidity ensures that the banks can continue to serve their functions and make profit.

2.2 Theoretical Literature

The theories of liquidity and liquidity management include the following:

Anticipated Income Theory

This theory was developed by Prochanow in 1944. The theory holds that a bank's liquidity can be managed through the proper phasing and structuring of the loan commitments made by a bank to the customers.

Here the liquidity can be planned if the scheduled loan payments by a customer are based on the future of the borrower. According to Nzotta (1997) the theory emphasizes the earning potential and the credit worthiness of a borrower as the ultimate guarantee for ensuring adequate liquidity.

Shiftability Theory

This theory was propounded by Moulton in 1944(see Nwakwo,1991). It is an approach to keep banks liquid by supporting the shifting of assets. When a bank is short of ready money, it is able to sell its assets to a more liquid bank. The approach lets the system of banks run more efficiently with fewer reserves or investing in long-term assets. Under shiftability, the banking system tries to avoid liquidity crises by enabling banks to always sell at good prices.

Liability Management Theory

This theory states that there is no need to follow old liquidity norms like maintaining liquid assets and investments. Banks have focused on liabilities side of the balance sheet. According to this theory, banks can satisfy liquidity needs by borrowing from the money and capital markets. The fundamental contribution of this theory was to consider both sides of a bank's balance sheet as sources of liquidity.

Commercial Loan Theory

This theory was proposed by Prochanow (1960). It states that the liquidity of the commercial bank achieved automatically through self-liquidation of loan, which being granted for short periods and to finance the working capital, where borrowers refund the borrowed funds after completion of their trade cycles successfully. This theory has been subjected to various criticisms (see Dodds,1982). From their various points of view, the major limitation is that the theory is inconsistent with the demands of economic development especially for developing countries since it excludes long term loans which are the engine of growth. The theory also emphasizes the maturity structure of bank assets (loan and investments) and not necessarily the marketability or the shiftability of the assets.

2.3 Empirical Review

Empirical reviews on liquidity management–bank performance relationships are numerous. Many are on selected banks in one country; many are on aggregated averages of a country – specific; and others are on regional aggregated averages. Arif and Anees (2012) showed in their study that there was a strong liquidity risk factors on banks profitability. The researchers used a sample of 22 Pakistani banks to investigate the impact of liquidity risk factor on the Pakistani banks during the period of 2004 to 2009. Akter and Mahmud (2014) appraised the existence of a relationship between liquidity and banks profitability in Bangladesh. The data for the study were taken from the specific commercial banks' income statements and balance sheets as published in the website of the banks. The overall finding was that insignificant relationships exist amongst banks' liquidity and profitability in all categories of banks in the country.

Khan and Ali (2016) showed that there was a positive association between banks' liquidity and profitability. The current ratio and quick ratio were considered as measures of liquidity, while net profit margin ratio was considered as a measure of profitability. The data was taken from the annual account of Habib Bank Limited for the last five years, (2008-2014). Nedunchezhian and Premalatha (2015) showed in their study that there is no significant relationship between the cash at bank and return on assets (ROA). Also, in the same study, they found that there was no significant relationship between total assets and return on assets (ROA). The sample size was taken from five banks out of twenty in India. Alshatti (2015) conducted a study to find the impact of liquidity management on commercial banks' profitability in Jordan. In the study liquidity management was the independent variable, while return on assets (ROA) and return on equity (ROE) was the dependent variables that measure the profitability of the banks. Quantitative approaches and ratio analysis were used to analysis the data. The findings show quick ratio (QR) was positively related to return on equity, while capital ratio was positively related to return on assest (ROA), and other independent variables had negative impact on the profitability measures return on assets (ROA) and return on equity (ROE). Agbada and Osuji (2013) investigated the impact of effective liquidity management on banks performance in Nigeria. The outcomes of this research showed significant link amongst effective liquidity management and banks performance/ soundness.

Adebayo et al. (2011) examined liquidity management and commercial banks' profitability in Nigeria. Findings of this study indicate that there is a significant relationship between liquidity and profitability. That means profitability in commercial banks is significantly influenced by liquidity and vice versa.

2.4 Gap in Literature

The various empirical studies reviewed here showed mixed results and conclusions. In some studies, strong positive relationship was found to exist between liquidity and bank performance,

and in some, weak relationship existed. This mixture of findings and conclusions emanate from the different

methodologies, variables used, and the period of study. This study adopted some of the variables in the empirical studies reviewed. However, a novel was added when the study considered purely the predictive content of statutory liquidity and control variables. In terms of methodology, this study, in contrast to the reviewed empirical studies, employed Vector Autoregressive (VAR),Vector Error Correction Method (VECM) (a multiple-equation mechanism which links long-run behaviour with short run adjustment behaviour of independent variables on the target, dependent variable), and Variance Decomposition method (error forecast method) meant to check the long run shocks being exerted on banks' profits by liquidity variables). This is in contrast to the commonly used Error Correction Method (ECM) – a single equation method of establishing a link between the long run and short run behaviours.

3 METHODOLOGIES

3.1 Research Design

This study is aimed at establishing the long-run, dynamic predictive relationship among liquidity variables and profitability variable of the Nigerian deposit money banks (DMBs). Specifically, the study investigates the long-run predictive power of DMBs' statutory liquidity on their return on assets. The relationships due to future shocks (innovations) are determined. The sample of this study is confined to DMBs. Data were collected from CBN annual reports and Statistical Bulletins.

3.2 Theoretical Framework of Methodology

Vector Autoregression (VAR) models were made popular by Sims (1980). A VAR is an n-equation with n-variable linear model in which each current value of a variable is explained by its own lagged value and lagged values of other variables. In a VAR model, all variables are endogenous. The simple framework of VAR provides a systemic way to capture rich dynamics in multiple time series. As Sims (1980) and others argue, VAR held out the promise of providing a coherent and credible approach to data description, forecasting, structural inference and policy analysis. In this study, we assess how well VARs have addressed these four macroeconomic variables of interest. In data description and forecasting, VARs have proven to be powerful and reliable tools that are now, commonly adopted in empirical analysis (Ukwuoma and Imandojemu, 2019). There are three varieties of VAR. They are reduced form, recursive and structural VARs. This study adopts the reduced form. A reduced form VAR expresses each variable as a linear function of its own past values, the past values of other variables and a serially uncorrelated error term. The reduced form VAR is: $Xt = a0 + \sum_{t=1}^{p} \beta 1\, X_{t-1} + \epsilon t$ **Eq. 1**

In the above equation, Xt is a vector of endogenous variables.a0 is a constant (intercept). β1 are (n x n) coefficient matrices and $\epsilon t$is an (n x 1) white noise vector error term (serially uncorrelated or independent) with time invariant covariance matrix, which is also known as innovation or shock. Vector Error Correction Method (VECM), in theory, is just a restricted VAR designed for use with non-stationary series that are cointegrated. The cointegrated term is the error correction term since the deviation from the long- run equilibrium is corrected gradually through a series of partial short run adjustments. VECM restricts long- run behaviour of endogenous variables to converge to their cointegrating relationships while allowing for short run equilibrium. The generalized VECM equation is:

$$\Delta y_t = \beta_0 + \underbrace{\sum_{t-1}^{n} \beta 1 \Delta y_{t-1} + \sum_{t-1}^{n} \delta 1\, \Delta X_{t-1}}_{A} + \underbrace{\phi z_{t-1} + \mu}_{B} \qquad \textbf{Eq. 2}$$

The A part of VECM is the short run restricted VAR while the B part is the long run error correcting co-integrating equation. The coefficients are $\beta 1$, $\delta 1$and ϕ. The long run equilibrium error correction equation is:

$$Z_{t-1} = ECT_{t-1} = \phi\,(y_{t-1} - \beta_0 - \beta_1 X_{t-1}) \qquad \textbf{Eq. 3}$$

VECM, a long run equilibrium multiple equation model based on a restricted VAR, is more efficient than VAR estimates because it has a long run VAR representation while a reduced form VAR does not take this into account. The variance decomposition (VD), a forecast error variance method, is adopted in this study to indicate which variables have short run and long run impact on another variable on a fitted VAR. It is used to indicate how much of the variability in Y is explained by lagged Y and lagged X overtime. The forecast error variance is calculated from a vector moving average (VMA) representation of a VAR variable as (The Horizons, 2019):

$$[y_t] = [\,\bar{y}\,] + \sum_{i=0}^{\infty} [\phi 1\ \phi 2]\ [\varepsilon y_{t-i}] \qquad \textbf{Eq. 4}$$

Shown in a standard form as:.

$$y_t = \bar{y} + \sum_{i=1}^{\infty} \phi 1\, y_{t-i} + \sum_{i=1}^{\infty} \phi 12\, \varepsilon_{Zt-i} \qquad \textbf{Eq. 5}$$

The above equations emphasize that deviations from the long run averages only occur because of shocks (innovations) to either the y or z error term.

3.3 Model Specifications

The VAR variables specified in log form are as follows:

$$LROA_t = \alpha 1 + \Sigma \pi 1 LROAAt - 1 + \Sigma \beta 1 LLQRt - 1 + \Sigma \varrho 1 LCRRt - 1 + \Sigma \zeta 1 LLTRt - 1 + \Sigma \upsilon 1 LRGDPGt - 1 + \epsilon t1 \qquad \textbf{Eq. 6}$$

$$LLQRt = \alpha 2 + \Sigma \pi 2 LLQRt - 1 + \Sigma \beta 2 LROAt - 1 + \Sigma \varrho 2 LLTRt - 1 + \Sigma \zeta 2 LRGDPGt - 1 + \Sigma \upsilon 2 LCRRt - 1 + \epsilon t2 \qquad \textbf{Eq. 7}$$

$$LLTRt = \alpha 3 + \Sigma \pi 3 LLTRt - 1 + \Sigma \beta 3 LROAt - 1 + \Sigma \gamma 3 LLQRt - 1 + \cdots + \epsilon t3 \qquad \textbf{Eq. 8}$$

$$LRGDPGt = \alpha 4 + \Sigma \pi 4 LRGDPGt - 1 + \Sigma \beta 4 LROAt - 1 + \Sigma \gamma 4 LLQRt - 1 + \cdots + \epsilon t4 \qquad \textbf{Eq. 9}$$

$$LCRRt = \alpha 5 + \Sigma \pi 5 LCRRt - 1 + \Sigma \beta 5 LROAt - 1 + \Sigma \gamma 5 LLQRt - 1 + \cdots + \epsilon t5 \qquad \textbf{Eq. 10}$$

In the models, statutory liquidity ratio (LQR) and cash reserve ratio (CRR) are the indices for liquidity

(independent variables) and return on assets (ROA) standing for bank profitability (dependent variable). ROA is chosen in this study because it is a measure of the total performance of a firm, and is associated with a privately owned firm, financed by individuals/groups whose interests are to maximize profits. Since DMBs are privately owned firms, ROA seems to be the best measure of profits. In the course of compliance to CBN monetary policy and statutory reserve requirements, the banks create liquidity and liquidity risk (LTR). Since the CBN uses the banks' cash reserve requirement (maintained by it, not by the banks, and banks do not manage the cash reserves) to control inflation, money flows and liquidity in the economy, cash reserve ratio (CRR) comes into the model as a control variable. The proxy for the economy is real GDP growth rate. LQR is maintained by the bank and used by the bank to earn interest on investments. Both CRR and LQR are used to control banks' capacity of lending.

3.3 Variables and Apriori Expectation.

(a) Dependant Variable		**Apriori Expectation**
ROA	ROA as a measure of firm profitability is associated with privately owned firms financed by individuals/groups whose interest is to maximize profit. Since DMBs are privately owned firms with strong interest to maximize profit, ROA is chosen as bank profitability index.	With efficient liquidity and credit management ROA is expected to increase
(b) Explanatory Variables		**Apriori expectation**
CRR	THE cash reserve ratio is the compulsory ratio of cash deposits that banks keep in CBN which is maintained by CBN. Banks do not maintain cash reserves and do not earn interest on it	An increase in the ratio tends to decrease bank capacity to lend, hence increase interest rate, making borrowing expensive, decreasing flow of money, liquidity and inflation in the economy. The reverse is the case when the ratio is decreased.
LQR	A liquidity ratio is a measure of the ability of the bank to maintain enough cash to meet immediate obligations and day to day operations. It is the compulsory part of deposits that banks must maintain in the form of cash, gold and other securities prescribed by CBN. Banks earn interest on statutory deposits	A fall in the ratio leaves a bank with less cash to meet immediate obligations, and a rise is the opposite.
RGDPG	The real domestic product growth rate (inflation-corrected or constant naira GDP) is a macroeconomic statistic that measures the real percentage change in prices of all goods and services produced in an economy. RGDP is calculated by dividing nominal GDP over a GDP price deflator (investopedia.com/terms/r/realgdp.asp).	A fall in real GDP means less loan investments in the economy. A rise means more loan investments by banks, creating opportunities for profitability.
LTR	A liquidity risk is a probability that over a specified period, the bank will become unable to settle obligations with immediacy (Adusei, 2015). In this study, it is proxied by DMBs unclassified current assets or cash and due from balances held at other institutions, divided by banks' total assets.	A fall in the risk leaves banks with more ability to lend and make profit. The reserve is the case for a higher risk ratio.

4. DATA ANALYSIS AND INTERPRETATION

Table 4.1 Data for regression

	LCRR	LLQR	LLTR	LRGDPG	LROA
1990	1.131402	3.790985	3.781914	0.336472	0.262364
1991	1.064711	3.653252	3.864931	0.000000	0.095310
1992	1.481605	3.370738	3.566712	1.360977	0.095310
1993	1.791759	3.742420	3.443618	0.095310	0.182322
1994	1.740466	3.881564	3.277145	0.182322	0.336472
1995	1.757858	3.499533	3.054001	0.587787	0.095310
1996	2.014903	3.763523	2.995732	1.410987	0.741937
1997	2.054124	3.693867	3.194583	0.875469	1.064711
1998	2.116256	3.845883	3.254243	0.875469	0.336472
1999	2.459589	4.110874	2.928524	0.095310	0.182322
2000	2.282382	4.160444	3.068053	1.686399	0.955511
2001	2.379546	3.968403	2.917771	1.887070	0.262364
2002	2.360854	3.960813	2.766319	2.687847	0.095310
2003	2.302585	3.929863	2.653242	2.230014	0.470004
2004	2.151762	3.921973	2.580217	2.351375	0.182322
2005	2.272126	3.916015	2.667228	2.001480	0.693147
2006	0.955511	4.019980	2.740840	1.887070	0.993252
2007	2.415914	3.887730	2.879198	1.987874	1.280934
2008	2.208274	3.788725	2.985682	1.974081	0.875469
2009	0.832909	3.424263	2.844909	1.902108	0.095310
2010	0.095310	3.414443	2.687847	2.424803	1.360977
2011	2.079442	2.884801	2.990720	1.667707	0.405465
2012	2.302585	3.877432	3.353407	1.435085	0.955511
2013	2.484907	4.570579	2.844909	1.704748	0.788457
2014	2.564949	3.645450	3.303217	1.774952	0.405465
2015	3.122365	3.744787	2.821379	1.029619	0.832909
2016	3.113515	3.828641	3.095578	0.470004	0.405465
2017	3.020425	4.003690	3.725693	0.095310	0.336472
2018	2.734368	4.195697	3.658420	1.526056	0.741937
2019	3.139833	4.225373	3.430756	1.589235	0.916291

Key: LCRR=Log of cash reserve ratio; LLQR=Log of statutory liquidity; LLTR=Log of liquidity risk; LROA= Log of return on assets; LRGDPG= Log of real gross domestic product growth rate
Source: Computed from Central Bank of Nigeria Statistical Bulletins, 2015 –2019
In this study, we employed log- linear models in which both regressand and regressor are logged. A log is used to measure a growth rate of a variable. In this case, a 1% change in a regressand is associated with (or influenced by) a 1% change in a regressor.

Table 4.2 ADF Unit Root Test

First Difference							
Variable	**Critical Value**	**1%**	**5%**	**10%**	**p-Value**	**Order of Integration**	**Remark**
LROA	-6.737463	-3.699871	-2.976263	-2.627420	0.0000	I(1)	Stationary
LLQR	-5.960660	-.3699871	-2.976263	-2.627420	0.0000	I(1)	,,
LLTR	-6.545443	-.3.689194	-2.971853	-2.625121	0.0000	I(1)	,,
LRGDPG	-4.902778	-3.711457	-2.981038	-2.629906	0.0006	I(1)	,,
LCRR	-5.726222	-3.699871	-2.976263	-2.627420	0.0001	I(1)	,,

Source: Arrangement from E-View by the author

For the five tests of the logged values of the variables in table4.2, the critical values are higher than those of 1%, 5% and 10% significance levels. The probability values are less than 1% and 5% significance levels, an indication that the variables are integrated of order 1 or I (1) and stationary at first differences. In this case the study applied the VAR and VECM.

Table 4.3 Johansen Cointegration Test

Series: LCDR, LCRR, LLDR, LLQR, LLTR, LROA				
Log interval (in first differences) : 1 to 1				
Sample (adjusted) : 1992, 2019				
Tests	Statistics	0.05 critical value	Probability	Cointqn (s)
Trace Rank	142.4368	95.75366	0.0000	1
Max – Eigenvalue	73.79728	40.07757	0.0000	1

Source: Arrangement from E-View by the author

The results of the co-integration tests in table 4.3 show that there is one co-integrating equation in both the trace test and the max-eigenvalue test at 0.05% level. This denotes rejection of the hypothesis at the 0.05% level.

Table 4.3 Johansen Cointegration Test

Series: LCRR, LLQR, LLTR, LRGDPG, LROA
Log interval (in first differences): 1 to 1
Sample (adjusted): 1992, 2019

Tests	Hypothesized No. of CE(s)	Statistics	0.05% Critical Value	Probability	Cointqn(s)
Trace Rank	None*	70.35964	69.81889	0.0452	1
Max-Eigenvalue	None*	34.09512	33.87687	0.0471	1

Source: Arranged from E-View by the author

The results of the cointegration tests in table 4.3 show that there is one co-integrating equation in both the trace test and the max-eigenvalue test at 0.05% level. This denotes rejection of the hypothesis at the 0.05% level.

Table 4.4 VAR Lag Order
Selection Criteria
Endogenous variables: LROA LLQR LCRR
LLTR LRGDPG
Exogenous variables: C
Date: 04/05/21 Time: 18:31
Sample: 1990 2019
Included observations: 28

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-74.02824	NA	0.000195	5.644875	5.882768*	5.717601
1	-39.39484	54.42392*	0.000101*	4.956775*	6.384136	5.393133*
2	-27.02391	15.02185	0.000301	5.858851	8.475681	6.658842

* indicates lag order selected by the criterion
Note: FPE=Final prediction error; AIC=Akaike information criterion; SC=Schwarz information criterion; HQ=Hannan-Quinn information criterion
In this study, the researcher adopts the AIC in the VAR lag order selection because it is more encompassing and of higher precision than the other selection criteria

Table 4.5 VAR(OLS) estimates

	Variable	lroa (-1)	lroa(-2)	llqr(-1)	llqr (-2	ltr(-1)	lltr(-2	lcrr (-1)	lcrr(-2	lrgdpg(-1)	Lrgdpg(-2)	C
1	LROA											
	Coeffi	- 0.054	- 0.001	-0.063	-0.111	0.044	- 0.506	- 0.073	0.060	0.018	-0.047	2.76
	t-stat	-0.192	0.003	-0.144	-0.313	0.100	-1.126	-0.449	0.308	0.105	-0.248	1.12
	p-value	0.8481	0.9970	0.8855	0.7551	0.9204	0.2635	0.6546	0.7588	0.9167	0.8049	0.27
	R^2	0.154										
	DW_1	2.142										
2	LLQR											
	Coeffi	-0.272	-0.053	0.396	-0.437	0.407	-0.458	0.274	-0.025	0.074	-0.027	3.73
	t-stat	-1.820	-0.388	1.714	-2.312	1.758	-1.922	3.175	-0.245	0.835	-0.273	2.85
	p-value	0.0722	0.6989	0.0902	0.0232	0.0823	0.0579	0.0031	0.8074	0.4063	0.7857	0.006
	R^2	0.662										
	DW_2	2.065										
3	LLTR											
	Coeffi	0.178	0.099	-0.144	-0.080	0.238	0.119	0.094	-0.031.	-0.134	-0.074	2.816
	t-stat	1.156	0.700	-0.605	-0.415	0.998	0.485	1.061	-0.296	-1.455	-0.711	2.085
	p-value	0.2509	0.4860	0.5468	0.6794	0.3213	0.6289	0.2919	0.7677	0.1494	0.4789	0.040
	R^2	0.629										
	DW_3	1.965										

4	LCRR											
	Coeffi	0.456	-0.161	-0.037	0.111	0.159	0.007	0.611	-0.053	0.049	-0.127	0.136
	t-stat	1.067	-0.407	0.056	0.206	0.240	0.010	2.477	-0.180	0.192	-0.442	0.036
	p-value	0.2891	0.6849	0.9556	0.8371	0.8112	0.9922	0.0152	0.8576	0.8485	0.6595	0.971
	R^2	0.403										
	DW_4	1.999										
5	LRGDPG											
	Coeffi	-0.449	0.050	1.233	0.261	0.387	-0.698	-0299	-0.131	0.405	0.159	-2.97
	t-stat	-1.123	0.136	1.996	0.518	0.626	-1096.	-1.299	-0.478	1.699	0.591	-0.85
	p-value	0.2647	0.8921	0.0492	0.6059	0.5327	0.2760	0.1975	0.6335	0.0928	0.5558	0.398
	R^2	0.561										
	DW_5	2.027										

Source: Arrangement from E-View by the author

Table 4.5 shows the five VAR (OLS) system endogenous models. In the study's target model 1, a 1% change in banks' current return on assets (ROA) is weakly and negatively associated with 0.06% and 0.11% changes in statutory liquidity lag 1 and 2 respectively. Also, it is weakly associated with itself at lags 1 and 2 respectively, and other variables, except with liquidity risk at 0.51%. In summary, ROA is weakly associated with LQR at both lags.Although, only about 15% of the regressors explains the variation in ROA, and there is no serial autocorrelation in the model as the Durbin- Watson (DW) is 2.142.

In model 2, a 1% change in LQR- a target variable- is weakly, insignificantly and negatively associated with 27% and 0.1% of ROA at lags 1 and 2 respectively. However, LQR is significantly but negatively associated with itself (about 44%) at lag 1 and positively (27%) at lag 2. In summary, a1% change in LQR showed a weak endogeneuity with other variables. About 66% of the variation in LQR is explained by the other variables, and there is no autocorrelation in the model as shown by DW of 2.1Model 3 shows that a 1% change in CRR- a target variable- is weakly associated with other variables, except with itself (61%) at lag 1. About 40% of the variations in CRR is explained by other variables, with no autocorrelation in the model as DW is 2.

Model 4 shows that a 1% change in LTR is weakly and insignificantly associated with other variables and itself. About 63% of variations in LTR is explained by other variables. There is no serial correlation in the model as DW is 1.965. In model 5, a 1% change in RGDPG is negatively and insignificantly associated with ROA (45%) at lag 1. It is negatively and insignificantly associated with about 70% change in LTR. That is, as RGDP is growing LTR is declining. About 56% of variations in the model is explained by the other variables, with no autocorrelation(DW=2.0).

Table 4.6 VAR Diagnostic Tests

1	Residual Serial Correlation LM-Test	Lag	LM-Statistic		Probability
		1	25.98700		0.4083
		2	19.04867		0.7948
2	Normality Test	Component	Jarque-Bera	Df	Probability
		1	1.699605	2	0.4275
		2	1.457378	2	0.4825
		3	3.099002	2	0.2124
		4	0.009429	2	0.9953
		5	0.713054	2	0.7001
		Joint	6.978468	10	0.7275
3	Residual Heteroskedasticity Test	Chi-sq		Df	Probability
		306.7081		300	0.3825

Source: Arrangement of E-View results by author

Table 4.7 VECM

	Coefficients						
		LROA (-1)	LLQR (-1)	LCRR (-1)	LLTR (-1)	LRGDPG (-1)	C
Cointegrating Equation (long-run model)	ECT (-1)	1.000	63.637	-20.064	15.597	-0.870	-248.20
Vector Error Correction Estimates		D(LROA)	D(LLQR)	D(LCRR)	D(LLTR)	D(LRGDPG)	
	ECT (-1)	-0.005	-0.014	0.007	-0.005	0.024	
	D(LROA(-1))	-0.468	-0.099	0.409	0.081	-0274	
	D(LLQR(-1))	0.001	0,344	-0.453	0.114	-0.021	
	D(LCRR(-1))	-0.208	0.002	-0.034	0.010	0.130	
	D(LLTR(-1))	-0.063	0.433	-0.032	-0.321	0.308	
	D(LRGDPG(-1))	-0.002	0.045	0.042	-0.064	-0.394	
	C	0.049	0.017	0.074	-0.018	0.075	
	R^2	0.287	0.615	0.169	0.218	0.348	

Source: Arrangement from E-View by the author

VECM ESTIMATION

(A) The cointegrating equation (long-run model) is:

ECT_{t-1} = 1.00LROA(-1) +63.637LLQR(-1) -20.064LCRR(-1) +15.597LLTR(-1)
-0.870LRGDPG(-1) - 284.195 **Eq. 11**

(B) The Error Correction Cointegrating Equation (Short-run models) is:

$\Delta y_{t-1} = \phi ECT(-1) + \sum_{t=1}^{n} \beta 1 \Delta Y_{t-1} + \sum_{t=1}^{n} \delta 1 \Delta X_{t-1} + \ldots\ldots + et$ **Eq.12**

The VECM error correcting system equation of the target, dependent variable, [D(LROA)], of model 1 is:

D(LROA) = - 0.005ECT(-1) - 0.468D(LROA(-1)) + 0.001D(LLQR(-1)0.208D(LCRR(-1))
- 0.063D(LLTR(-1)) - 0.002D (LRGDPG(-1))+ 0.049 **Eq.13**

Other variable target equations can be derived from table 4.7 above. The A section of VECM estimation shows the long-run cointegrating equations. ECT is the OLS residual from the long-run cointegrating regression. The term, ECT, relates to the fact that last period's deviation from long-run equilibrium (the error) influences the short-run dynamics of the dependant variable. Section B of VECM estimation, shows the coefficients of ECT. The coefficients show the speed of adjustment because they measure the speed at which one dependant variable (target variable) returns to equilibrium after a change in the independent variable.

Taking our target dependant variable, (LROA), the previous period's deviation from long- run equilibrium is corrected in the current period at an adjustment speed of 0.005 or 0.01%. A % change in current ROA is associated with 0.468% decrease in itslf at lag 1, on average, ceteris paribus. Others are 0.001% increase in LQR; 0.208% decrease in CRR; 0.063% decrease in LTR; and 0.002% decrease in RGDPG. None of the other variables has a significant impact on changes in ROA.

It is not surprising that statutory liquidity significantly and statistically does not impact on banks' return on assets. Today banks, as private firms, are able to meet their loan funding and investment needs from a much wider array of financial instruments and institutions than before. Deregulation has allowed banks to move into insurance, pensions and investment banking to provide bigger services. Technological innovations have allowed better management and transfer of risks in financial markets (Genay and Halcomb, 2004).

Table 4.8 VEC Diagnostic Tests

1	Residual Serial Correlation LM-Test	Lag	LM-Statistic		Probability
		1	25.56890		0.4309
		2	21.08487		0.6879
2	Normality Test	Component	Jarque-Bera	Df	Probability
		1	1.022631	2	0.5997
		2	0.711859	2	0.7005
		3	1.952729	2	0.3767
		4	0.050205	2	0.9752
		5	0.695194	2	0.7064
		Joint	4.432618	10	0.9257
3	Residual Heteroskedasticity Joint Test	Chi-sq		Df	Probability
		187.2738		180	0.3397

Source: E-View, arranged by author

Table 4.8 shows the results of VECM residual diagnostic tests. There is no serial autocorrelation in the VEC residuals as indicated in the p-values of 0.4309 and 0.6879 at the two lags being greater than 0.05% significance level. The Jarque-Bera normality test shows that the residuals are normally distributed as the joint p-value is 0.9257, greater than 0.05% significance level. The homogeneity of residuals is assured by the residual Heteroskedasticity test with the p-value of 0.3397, a value greater than 0.05% significance level.

Table 4.9 Variance Decomposition

LROA						
Period	S.E.	LROA	LLQR	LCRR	LLTR	LRGDPG
1	0.444	100.000	0.000	0.000	0.000	0.000
2	0.448	98.382	0.426	1.104	0.035	0.053
3	0.465	91.906	0.683	1.539	5.344	0.528
4	0.472	89.437	0.666	3.287	5.669	0.942
5	0.477	87.840	1.006	3.939	5.545	1.670

Source: E-View 10 results

Generally, in a 5-year prediction into the future, consisting of 1-2 years (short-run) and 3-5 years (long-run), a 100% forecast error variance decomposition in ROA is explained by itself in the short-run, and the index decreases marginally into the future. LQR, CRR, LTR, and RGDPG show strong exogenous (weak endogenous) influence on ROA both in the short and long-run into the future.

Specifically, ROA decreases as LQR increases marginally into the future. ROA decreases on marginal increase in CRR into the future. ROA decreases on marginal and insignificant increase in LLTR in the short run and into the future. ROA decreases as RGDPG marginally increases into the future. In summary, only ROA strongly predicts itself in the future. Other variables showed weak endogeneity (strong exogeneity) with ROA in the future.

5 DISCUSSION OF FINDINGS

The inability of statutory liquidity to stimulate growth in ROA of deposit money banks in the last 30 years in Nigeria is consistent with known theories. For example, the liability management and shiftability theories tell us that banks look beyond maintaining liquid assets and investment to borrow from money and capital markets. In other words, the banks consider other sources of liquidity to invest for profitability.

The insignificant increase in forecast error variance of LQR as ROA progressively decreases is not consistent with a apriori expectation in this study. Rather, it is

consistent with the findings of Lartey, Samuel and Bodadi (2013), Akter and Mahmud (2014), and Nedunchezhian and Premalatha (2015).

The insignificant rise in the forecast error variance of LTR to progressive decrease in ROA is consistent with apriori expectation. Although not strong, it is inconsistent with the works of Arif and Anees (2012) which work found strong impact on Pakistani banks. Liquidity risk exposes banks to financial hardship. Now, we are in the period of post- coronavirus disease, 2019 and financial crisis, banks are exposed to higher liquidity risk which can leave them with fleeing investors, depositor runs, rating downgrades and tougher financing.

The insignificant rise in forecast variance of CRR to a progressive decrease in ROA tends to confirm this study's apriori expectation that a rise in CRR limits available liquidity to banks, adversely affecting liquidity, inflation and flow of money in the economy. The response of CRR to ROA is consistent with the work of Maccarthy (2016), in which the author found a statistical, insignificant effect on the long-run (also see Bawa, Akinniyi and Njarendy, 2018). Steven (1993) sees cash reserve as a non-interest bearing deposit in the central bank waiting for overnight borrowing by banks. This confirms our result of very weak response of CRR to ROA.

RGDPG's rising response to decreasing changes in ROA, though insignificant and marginal, is not consistent with apriori expectation which states that a rise in RGDP results to an increase in ROA (see Ejoh and Acquah, 2014). As can be observed, this finding implies that banks are not consistent in their effective deposit mobilization and loan investment strategies, and are not stable. This accords with the empirical literature that low loan investment and deposit mobilization limit loans to investing public and earnings to the banks (Adusei, 2015, Perry 1992).

6. CONCLUSION

In this study, effort had been made to examine the long-run and dynamic relationship between bank profitability and statutory liquidity variables, using reduced VAR, VECM and VD analysis techniques in accordance with Sims (1980) and Luktepol (1991). The reduced form VAR models help us to estimate the intertemporal variations between banks' liquidity and their profitability. The VAR results showed that there existed insignificant short-run relationships between banks' return on assets (ROA) and their statutory liquidity. To tie the short-run behaviour of ROA to liquidity measures efficiently, we applied VECM-a restricted VAR representation, which is more efficient than VAR estimates. The 0.01% error correction was quick enough to restrict long-run behaviour of all endogenous variables to converge to their cointegrating relationships while allowing for short-run equilibrium between ROA and liquidity. This implies that the stationary process in the relationships among the endogenous variables does not drift too far away from their respective mean values. This has made it possible for us to study the behaviours between the dependent and independent variables for a longer period.

With the forecast error variance decomposition, we established the future shocks (innovations) existing between bank profitability and their explanatory liquidity variables. In a 5-year forecast, 100% of forecast error variance in logged ROA was explained by itself in the short-run and insignificantly by other variables into the long-run period.

7. RECOMMENDATIONS

In this study, statutory liquidity's rising responses to ROA are insignificant. Since the future looks bleak for these banks to significantly create liquidity and manage statutory liquidity to improve profitability, we suggest that banks be more transparent, raise the confidence of customers by accumulation of deposits from the financial markets. If they can easily access other sources of funding, then they may be liquid enough and be able to fund loan growth at lower interest rates.

The fact that liquidity risk insignificantly rises in response to changes in ROA, we suggest that banks should control their risk factors by balancing cash inflows and outflows and possibly hold liquidity cushion for strategic purposes. In mitigating the risks banks should apply the best practices in the management of risk. Some of the best practices are risk revaluation and improvement in credit granting processes. They should begin to restructure credit lines for existing obligors, especially in the post-COVID 19.

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Understanding Balance of Payments and its Link With Monetary Policy in Nigeria

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Abstract

Developments in the balance of payments of any country is generally of interest to national policymakers, international investors, financial and economic analysts as well as international financial institutions. In recent times, Nigeria recorded persistent current account as well as overall BOP deficits and these created discomfort among policy makers with regards to its sustainability and possible implications for the economy. This paper explores some of the major developments and trends in Nigeria's BOP as well as their interrelationship with other macroeconomic accounts. It also provided clarity to the structure and components of Nigeria's BOP statistics as compiled in line with the 6th edition of the balance of payments and international investments position manual of the IMF. This will deepen understanding of balance of payments among policy makers, analysts, researchers and compilers of macroeconomic statistics. It will also serve as a guide to policy makers in the design of appropriate monetary policy

Key Words: *Balance of Payments, Monetary Policy, Overall Balance*

JEL Classification: *E52, F32*

1.0 Introduction

The evolution of macroeconomic statistics, especially the Balance of Payments (BOP) statistics, started since the 14th century and gained prominence after the 1st world war when the need for more quantitative analysis of economic variables for decision making became inevitable. This led to the publication of a BOP manual by the International Monetary Fund (IMF) and a System of National Accounts (SNA) manual by the United Nations (UN) in 1948 and 1953, respectively. These manuals were developed with the primary objective of standardizing the definition, measurement and classification of concepts in economic transactions for uniformity and comparability of the macroeconomic statistics compiled by member states (Van der Merwe, 2002). The BOP is a systematic record of transactions between residents of an economy with the rest of the world during a particular period. It is an important economic indicator, which reflects the relative strength of an economy through the financial and non – financial transactions between residents of the economy and the rest of the world (Udoette, 2015). The behavior of a country's BOP is usually associated with movements in exchange rates, interest rates, asset prices, as well as the accretion or depletion of foreign exchange reserves and, sometimes, economic crises. As a result, developments in the BOP of any country is naturally of interest to national policymakers, international investors, and international financial institutions.

In Nigeria, the primary goal of monetary policy is to achieve price stability and BOP equilibrium. Other objectives of monetary policy include growth in Gross Domestic Product (GDP), employment generation and sustainable economic development (Udude, 2015). To achieve these objectives, the Central Bank of Nigeria (CBN) employs a variety of measures aimed at controlling the value, supply and cost of money in the economy in line with a desired goal. In order to achieve BOP Equilibrium, an optimal level of money supply has to be attained amongst other measures. For instance, a high level of money supply in the system could result in a rise in income and consequently imports. This may lead to deterioration in the country's BOP position and trigger the central bank to reduce money supply. A drop in money supply is expected to shrink import bills and bring the BOP to equilibrium. However, this will cause a decline in domestic income and cause the authorities to want to increase money supply once again. Hence the cycle continues. This is a very simple illustration which could be much more complex in reality (Keran, 1967).

A temporary BOP deficit is not always considered undesirable and detrimental to the economy as long as a surplus is expected later in the near future. However, a persistent BOP disequilibrium could affect price stability, employment and economic growth. Aside from the BOP position, other aspects of the BOP statistics are relevant to monetary policy decisions as they provide insights to policy makers on the state of the economy. The current account balance is a very useful indicator of external imbalance. It shows whether residents of an economy are living within their means or accumulating foreign assets/liabilities. If the current account is in surplus, it means that residents of the economy are spending less than they earn and channeling their savings into investments abroad thereby accumulating foreign assets. On the other hand, a deficit current account balance is an indication that residents of the economy are spending more than they earn, and the deficit is being financed by the savings of non-residents in the form of foreign liabilities.

In recent times, Nigeria recorded persistent current account as well as overall BOP deficits and these created discomfort among policy makers with regards to its sustainability and possible implications for the economy. Efforts had been made to ascertain the potential cause of the deficits and a number of monetary policy measures had been adopted to bring the BOP back to equilibrium. This paper explores movements in Nigeria's BOP account and their interrelationship with other macroeconomic accounts with a view to create a better understanding of these linkages and highlight possible monetary policy actions. This will serve as a guide to policy makers and analysts in the design of appropriate monetary policy adjustment mechanism for the correction of BOP disequilibrium.

The rest of the paper is as follows: section 2 presents a conceptual framework of BOP and monetary policy while a review of relevant literature was undertaken in section 3. Section 4 looks at the structure of the BOP Account and Its Interrelationship with other Macroeconomic Accounts. In section 5, the link between BOP and Monetary Policy was discussed and section 6 concludes the paper.

2. CONCEPTUAL FRAMEWORK

2.1 Key Balance of Payments Concepts

Nigeria's BOP statistics is compiled in line with the sixth edition of the Balance of Payments and International Investment Position Manual (BPM6, 2008). According to the manual, The BOP is a statistical statement that summarizes transactions between residents and nonresidents during a period. Transactions could be in goods and services, income or other financial items. The manual, which was published in 2008 by the IMF, provides detailed methodological guide for the treatment of the different transactions that take place between residents of an economy and the rest of the world. Some of the basic concepts and treatments are discussed below.

I. **Residency:** An institutional unit is considered to be resident in the economic territory where it has its center of predominant economic interest. This means the economy with which it has the strongest ties usually identified by the location, dwelling, place of production/business or by the length of time it stays or intend to stay in the economy (i.e. one year or more). For individuals, their residence is the same as the households they belong to and this is in the economic territory where the place of principal dwelling of the household is located. In this regard, students, patients, crew of ships, aircrafts etc., diplomats, military attachés etc. and short time cross-border workers are considered residents of the economy in which their households have its principal dwelling or closest ties irrespective of how long they stay abroad. Embassies, consulates, military bases and other enclaves of foreign governments are not residents of the host territories where they are located but are residents of their home territories as they are considered to be an extension of the home country's government under international laws. Also, International organizations are not residents of any economic territory but are economic territories on their own (BPM6, 2008). In general, a country's residents are its households, nonfinancial and financial businesses, its government, monetary authorities, and other agencies. On the other hand, non-residents are persons and businesses resident in other countries as well as foreign governments and monetary authorities, and international financial institutions. In other words, Non-residents are all other individuals and entities that are not considered residents of an economic territory as defined above.

II. **Economic Territory:** BPM6 (2008) stipulates that economic territories are land area, air space, territorial waters, territorial enclaves in the rest of the world (embassies, consulates, military bases

etc.) and special zones under the control and jurisdiction of a single government.

The concepts of economic territory and residency in BOP statistics is meant to ensure that every individual or entity is resident in only one economic territory based on their location and the legal jurisdiction they are subject to. This way there is a clear distinction between each country and the rest of the world as well as residents and non-residents.

III. **Transactions:** In the BOP, transactions are interactions between a resident and a non-resident which could be by mutual agreement or by operation of the law. Transactions could be an exchange of value or a transfer and include the sale or purchase of goods and services, financial assets, non-produced non-financial assets, or liabilities, compensation of employees, dividends etc. A transaction involving a transfer has to do with the provision or receipt of something of economic value without receiving or providing anything in return. For BOP purpose, all transactions between residents and non-residents are captured irrespective of whether they are legal or illegal. Transactions in the BOP are recorded as flows. That is, transactions that happened within a particular period for which the BOP is being compiled.

IV. **Accounting Principles:** The compilation of the BOP account follows some basic accounting conventions. This is to ensure a comprehensive recording of transactions and uniformity in the data recorded by counterparties. Principal among the accounting principles adopted in the compilation of BOP is the double entry accounting system. This means that each transaction gives rise to two entries of equal value but opposite signs: a positive and a negative. Hence, every credit entry signifying receipt from a non-resident, has a corresponding debit entry and every debit entry representing payment to a non-resident has a corresponding credit entry. This principle ensures that the BOP account is in balance as sum of all the credits should equal the sum of all the debits (but with opposite signs) and the total sum of all the transactions should be zero. BOP transactions are also recorded on an accrual basis. This means that the transaction is recorded at the time when economic value is created, transformed, exchanged, transferred, or extinguished. In other words, transactions are recorded at the time when a change in economic ownership of the goods, assets etc. occurs irrespective of whether payment has been made or not. The concept of change in economic ownership means that all risks, rights, responsibilities of ownership has been transferred. Another accounting principle of note is that transactions are valued at market prices. Market price most often refer to the value in the contract between the transacting parties (BPM6, 2008).

2.2 Foremost Monetary Policy Concepts

Monetary policy simply refers to the actions and policies of monetary authorities aimed at controlling the supply and cost of money with the objective of attaining price stability and achieving other macroeconomic objectives such as low inflation, high growth rate, low unemployment, BOP equilibrium etc. Monetary policy may be expansionary (aimed at increasing the level of money supply) or contractionary (aimed at reducing the level of money supply) depending on the policy objective a monetary authority is pursuing at any point in time. Irrespective of the monetary policy stance of a monetary authority, it requires the use of one or more policy instruments to achieve its goal (CBN, 2016).

Monetary Policy Instruments

With globalization and high level of technological advancement, most economies are becoming increasingly more open. This has made it difficult for most central banks to have direct control over their macroeconomic objectives thus resorting to the use of indirect monetary policy instruments. Direct Instruments have lost their appeal as they have gradually become less effective in the conduct of monetary policy. The indirect policy instruments are used to either increase or reduce the quantity of money in an economy. The monetary policy tools used by a central bank are usually influenced by the depth and complexity of its financial system. While some have an array of instruments in their toolbox, others have just a few. There are however, three main instruments that are commonly used by most central banks. They are as discussed below.

I. Open Market Operations: This occur when central banks engage in the purchase or sale of government securities from or to commercial banks in the open market. This is usually done for the purpose of either increasing or reducing the money supply to the economy. By buying

government securities, the central bank makes more money available to the banks for onward lending to customers. This action of the central bank is considered an expansionary monetary policy. With so much money at their disposal, interest rates are likely to come down and more customers are likely to take loans and engage in economic activities. Also, because interest rates are low, savings will generate less income and bank customers are likely to channel their savings to investments. Consequently, this will stimulate economic growth and reduce unemployment. On the other hand, when the central bank sells securities, it is performing a contractionary monetary policy as it restricts money supply to the banks which in turn affects the lending capacity and thus leads to increase in interest rates. An increase in interest rates would discourage borrowing and by implication slow down economic activities. In this case, the goal of the central bank is to slow down inflation and economic growth.

II. **Reserve Requirement:** The reserve requirement is another tool a central bank can use to control the volume of money in an economy. It refers to a specified percentage of a bank's deposit liabilities that the bank is required by law to keep as reserves. It is also sometimes referred to as cash reserve ratio. Aside from being an instrument for controlling the money supply in an economy, it also serves as a buffer to enable a bank meets its obligation in case of a sudden excessive demand for withdrawals by the bank's customers (for instance, a bank run). A low reserve requirement is expansionary monetary policy as it makes more money available to the banks for lending. On the other hand, a high reserve requirement is contractionary as this will reduce the amount of money available to banks for lending to customers.

III. **Discount Rate:** When banks experience liquidity challenges, they source for funds by borrowing from other banks. However, in a situation such as a bank run where a bank's liquidity needs could not be met entirely by other banks, it accesses a special window of the central bank called the discount window to borrow the required funds at a discount rate. This is why central banks are often referred to as "lender of last resort". The discount rate is the interest rate banks pay when they access such loans from the central bank through its discount window. Monetary authorities, however, discourage banks from accessing this window and encourage them to sort out liquidity problems by borrowing amongst themselves. For this reason, the discount rate is often higher than the interest rate charged by other banks hence most banks borrow very little at the discount window. The central bank and other industry players consider excessive borrowing from this window by any bank a distress signal. The use of this instrument in the conduct of monetary policy is such that when the discount rate is increased, commercial banks will reduce their borrowing from the central bank and hence give out fewer loans. Thus, money supply drops and interest rates rise. Conversely, if the central bank decides to lower the discount rate, the opposite happens.

Quantitative Easing

With the recourse to unconventional monetary policy following the global financial crisis of 2007/2008 when conventional monetary policy became ineffective on macroeconomic outcomes, Quantitative Easing was introduced as an unconventional monetary policy tool. Unconventional monetary policy are non-traditional monetary policy actions taken during periods of abnormal economic conditions when conventional monetary policies fail to have the desired impact. Quantitative Easing isan unconventional monetary policy tool used to increase money supply to the economy in order to spur economic activities. It usually involves the purchase or sales of long-term government bonds as well as other types of assets, direct bailout of financial institutions, direct intervention in the economy and other unusual actions. Other unconventional monetary policy tools include Credit Easing, Forward Guidance and Negative Interest Rates (CBN 2016).

3. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

3.1 Review of Theoretical Literature

In times of BOP imbalances, monetary authorities in different countries adopt different approaches to address the imbalance. Approaches to addressing BOP imbalance have evolved over the years from the Classical approach between 1800 and 1900 when the focus was on gold standards and the influence of prices and interest rates. The Keynesian approach, which emphasizes the effect of changes in National Income to BOP adjustments, gained prominence from 1930 to date while the monetary approach and modern monetary approach evolved from 1960 with particular interest on effecting BOP adjustments

through changes in money supply/demand (Tijani, 2014). All the different approaches have different assumptions, limitations and criticisms against them; however, the monetary approach is considered the most realistic by many schools of thought. The monetary approach to BOP dates back to 1749 when David Hume developed the price-specie-flow mechanism. This approach has come to be the most preferred approach in BOP analysis due largely to the increasing acceptance of monetarism as well as its simplicity considering that the BOP is basically a monetary phenomenon. It also has the advantage of analyzing the overall balance of payments (current & capital account and financial account put together) unlike the income – absorption approach and the elasticities approach that deals only with the current account of the BOP (Rhomberg and Heller, 1977).

The monetary approach attempts to explain BOP deficits/surpluses through the demand for and supply of money. It views changes in the external reserves of a country as a reflection of disequilibrium in the domestic money market. The connection between the external reserves and the money market is that the change in the external reserves must equal the difference between changes in the demand for money and the supply of money in the domestic money market. In the monetary approach, a balance of payments deficit/surplus occurs as a result of decrease/increase in the external reserves. As such, it focuses on the overall balance of payments and not the components. Inimino, Akpan, Otubu & Alex (2019) further explained that, if the demand for money is not equal to the supply of money ($M_d \neq M_s$), the BOP will be in disequilibrium. However, it will be in equilibrium, if otherwise ($M_d \neq M_s$). A BOP disequilibrium could mean either of the following: on the one hand, it could be that demand for money is less than supply of money ($M_d < M_s$) leading to too much money in the hands of economic agents and therefore, higher purchasing power which will eventually cause a rise in inflation thereby making domestic goods and services more expensive. The consequence of this is that imports will increase, export will decline, there will be net financial outflow, hence, depletion of external reserves and BOP will be in deficit. On the other hand, it may be that demand for money is greater than supply of money ($M_d > M_s$) leading to less purchasing power and consequently drop in prices of domestic goods and services. As a result, domestic products will become more competitive, imports will decline, exports will increase, there will be a net financial inflow leading to an increase in external reserves and a BOP surplus.

According to Thirlwall (1980), "the monetary approach assumes that exchange rates are pegged, that the economy is in long-run full-employment equilibrium, that the demand for money is a stable function of income, that changes in the money supply do not affect real variables, that in the long run a country's price level and interest rate converge on the world level because of the high elasticity of substitution between goods in international trade and highly mobile capital, and that the changes in the money supply brought about by changes in the level of foreign-exchange reserves are not sterilized by the monetary authorities". However, the monetary approach has been variously criticized because of the shortcomings of these assumptions. The criticisms include, amongst many others, the view that the money demand function may be stable in the long run but not in the short run. Also, the assumption of full employment and single price for identical products is not realistic in real life. Critics of the approach also countered the assumption that sterilization of currency under a system of pegged exchange rates is impossible. Despite these criticisms, proponents of the approach are of the view that the limitations of the assumptions would be taken care of in the long run and the proportional relationship between changes in the domestic money supply and the change in external reserves would still hold (Aghevli and Khan, 1977).

According to Dhliwayo (1996), The prescribed model for the monetary approach to balance of payments requires a money demand and supply identity and an equilibrium stock of money condition.

The model can be expressed as follows:

$$M_s = (R + D) \quad (1)$$

$$M_d = L(Y, P, I) \quad (2)$$

$$M_s = M = M_d \quad (3)$$

Where:

M_s = Money Supply; R =External Reserves;
D =Domestic Credit;

M_d = Money Demand; Y =Level of Real Domestic Income; P = Price Level;
I = Interest Rate; and M = Equilibrium Stock of Money.

Equation (1) shows that money supply is made up of external reserves and domestic credit while Equation (2) provides that money demand is a function of real income, inflation rate and interest rate. Equation (3) is the state of equilibrium in the money market.

The monetary theory states that the relationship between money demand and the level of real domestic income $\left(\frac{\partial M_d}{\partial Y} > 0\right)$ as well as money demand and the price level $\left(\frac{\partial M_d}{\partial P} > 0\right)$, are positive while the relationship between money demand and interest rate $\left(\frac{\partial M_d}{\partial I} > 0\right)$ is negative.

Now, putting Equations 1,2 and 3 together and reflecting the variables in percentage changes while making external reserves the dependent variable, we have the reserve flow as

$$\Delta R = \Delta[L(Y, P, I)] - \Delta D \quad (4)$$

Equation (4) represents the monetary approach to balance of payments.

3.2 Review of Empirical Literature

Due to the considerable interest generated by the monetary approach to BOP adjustments, the literature is replete with empirical studies on the subject matter. Aghevli and Khan (1977) conducted a cross-sectional study of 39 developing countries with a view to assess the long run behavior of the BOP as a result of adjustment to exogeneous variables. From their findings, they asserted that there exists a relationship between domestic credit and overall BOP, even though, it is not a one to one relationship as a much larger change in net domestic asset will be required to attain an expected BOP position. Secondly, they established that there is a positive relationship between economic growth and the BOP and concluded that it is unlikely to achieve growth without taking the BOP position into consideration. Finally, they are of the opinion that their findings are further confirmation that the monetary approach is best suited for long-run BOP analysis since the tests were conducted under the strict assumptions of fixed exchange rates, full employment, infinite capital mobility, and free trade which were not satisfied in the group of countries studied. This goes to show the robust nature of the approach as its main propositions were still substantiated by the results.

Sinyakov and Yudaeva (2016) explored the most appropriate monetary policy response to severe BOP shocks in a small open oil-exporting economy. They posited that a floating exchange rate provides the best means of absorbing BOP shocks when inflation expectations are anchored. According to them, it helps reduce the negative impact of external shocks on output and limit the economic recession as much as possible to its structural component. However, if inflation expectations are unanchored, the impact of a floating exchange rate is lower than that of a fixed exchange rate regime.

Imoughele and Ismaila (2015) studied the impact of monetary policy on BOP in Nigeria using Error Correction Mechanism on time-series data from 1986 – 2013and found that Exchange rate and interest rate both has positive and significant impact on BOP in Nigeria. Also, other monetary policy variables such as broad money supply and credit to the private sector directly affect BOP significantly. However, inflation rate negatively impacts BOP as a rise in inflation is likely to distort BOP equilibrium in Nigeria. They concluded that BOP is essentially a monetary phenomenon and monetary policy can be used to stabilize external sector imbalance. Similarly, in their study of the impact of monetary policy on BOP adjustments between 1980 and 2015, Osisanwo, Tella & Adesoye (2019) utilized the AutoRegressive Distributed Lag bounds test to show that money supply and trade balance have a long-run positive impact on BOP adjustment in Nigeria while domestic credit, exchange rate, inflation rate and gross domestic product suggest a negative impact on Nigeria's BOP.

Proso, Inaya & Okoye (2016) examined the relationship between BOP and monetary policy in Nigeria using Ordinary Least Squares estimation technique to analyze time series data from 1980 to 2015. They established that money supply, interest rate and exchange rate have positive relationship with BOP and that 76% variation in balance of payments is explained by money supply, interest rate and exchange rate. They recommended improved international competitiveness through increased production and export promotion especially of non-oil products.

Mukolu, Illugbemi & Otalu (2017) assessed the impact of monetary policy on balance of payments in Nigeria from 1986 – 2015.Their results showed that all the variables analyzed in the study exhibited some form of relationship with BOP. While net trade, money supply and bank credit to private sector showed long run impact on the balance of payments, differenced money supply, net trade and bank credit exhibited short run relationships. They advised that monetary authorities should guard against excess liquidity in the system as well as overvaluation of the exchange rate. Also, the government should promote export diversification to boost non-oil exports.

Dunne and Makanza (2016) utilized Structural VAR models to analyze the effect of monetary policy on current account dynamics in South Africa in a bid to deepen understanding of the country's external balance as reflected in the huge current account deficit. They also investigated the channels of transmission of monetary shocks to the current account to ascertain how monetary policy affects the savings-investment gap. Their findings revealed that South Africa's current account deficit could be narrowed if domestic interest rates fail to rise as much as foreign interest rates implying that the current account is affected by global monetary shocks.

Onuchuku, Chukueggu, Nenbee & Wosu (2018) examined the impact monetary policy has on Nigeria's BOP with the aid of descriptive statistics and Dynamic Ordinary Least Square multiple regression. They analyzed data from 1980 to 2016 and found out that broad money, interest rate, exchange rate and GDP influence BOP in line with a priori expectations. They recommended that to maintain BOP equilibrium, the monetary authority should work at creating a sound and stable macroeconomic environment.

Dhliwayo (1996) tested the validity of the monetary approach to BOP using Zimbabwe as a case study from 1980 to 1991 to ascertain whether changes in the country's demand for and supply of money was responsible for changes in her external reserves. using multivariate cointegration and error-correction modelling, they found out that money contributed immensely to the Country's BOP position. He concluded that with a stable demand function, adjustments to Zimbabwe's BOP could be achieved with proper financial programming and monetary targeting.

Boateng and Ayentimi (2013), analysed the monetary approach to Ghana's BOP using annual data from 1980 to 2010. Overall, their results confirmed the theory in literature that monetary variables influence BOP outcomes. However, they observed that BOP is not wholly controlled by monetary variables but by other variables especially in developing economies. Specifically, while GDP positively affects BOP; domestic credit, interest rate and price level all have inverse relationship with BOP. Furthermore, they are of the opinion that when analyzing the BOP, there is the need to take other variables such as exchange rates, public debt and investor confidence into consideration. Similarly, Mushendami, Manuel, Shifotoka & Nakusera (2017) also confirmed that monetary variables are not the only variables that influence BOP. In their study to test the efficacy of the monetary approach to BOP in Namibia, they applied the Vector Error Correction Model to quarterly data from 1991 to 2015 and concluded that fiscal balance also has some impact on the BOP. They, therefore, recommended a mix of monetary and fiscal policies to address BOP disequilibrium.

4. STRUCTURE OF THE BOP ACCOUNT AND ITS INTERRELATIONSHIP WITH OTHER MACROECONOMIC ACCOUNTS

4.1 Structure of the BOP Account

In analyzing macroeconomic developments in any economy, four major macroeconomic sectors are usually scrutinized. These are the external sector, monetary sector, real sector and general government. The external sector is the portion of a country's economy that interacts with economic agents in other economies. The BOP captures information on such interactions and present them in a standardized format for international comparability. The BOP account is broadly divided into three major accounts, namely: Current Account, Capital Account and Financial Account.

4.1.1 Current Account

The current account captures transactions in goods, services, primary income and secondary income between residents of an economy and the rest of the world. In the goods and services sub-accounts, export of goods and services are recorded as credit entries while import of goods and services are debit entries. The primary income sub-account captures transactions in compensation of employees and investment income. Receipts of salaries and wages, dividends, interests, reinvested earnings, rent, taxes and subsidies on products from non-residents are recorded as credit entries while out-payments to non-residents for these categories of transactions are debit entries. Personal transfers in form of workers' remittances, official development assistance, technical assistance as well as nonlife insurance premiums and claims are recorded in the secondary income sub-account[1]. Inflows from these transactions are credit entries while outflows are

[1]These transactions are also called current transfers. They are transactions where the recipient of the inflow is not expected to provide anything of economic value in return. That is, they are gifts and could be in cash or in kind

debit entries. Each of the sub-accounts in the current account has a net balance arrived at by summing up all the credit and debit entries. If the value of the credit entries is higher than that of the debit entries, the balance will be a net credit indicating a surplus. A net debit or deficit is arrived at if the opposite is the case. The sum of all the balances in the sub-accounts gives the Current Account Balance (CAB).

CAB = Balance on Goods and Services + Balance on Primary Income + Balance on Secondary Income (5)

4.1.2 Capital Account

The capital account captures transactions in capital transfers as well as acquisition/disposal of non-produced, nonfinancial assets. Capital transfers consist of the transfer of ownership of an asset (other than cash or inventories) such as fixed asset, valuables or non-produced asset to another party without charge. They also include debt forgiveness without receipt of anything of corresponding value. The acquisition/disposal of non-produced, non-financial assets refers to purchase/sale of intangible, non-financial assets, such as patents, copyrights, trademarks, franchises and licenses; and the acquisition/disposal of natural resources such as land by a government or international organization. Acquisition of non-produced, non-financial assets are debit entries while the disposal of same are credit entries. The Capital Account Balance (KAB) is a sum of net capital transfers and net acquisition/disposal of non-produced, nonfinancial assets.

KAB = net capital transfers + net acquisition/disposal of non-produced, nonfinancial assets (6)

There is also the Current and Capital Account Balance (CCAB) which is same as net lending/net borrowing from Current and Capital Account. It is simply a sum of CAB and KAB.

CCAB = CAB + KAB (7)

A positive CCAB imply that the country is a net lender to the rest of the world while a negative CCAB means the economy is a net borrower from the rest of the world.

4.1.3 Financial Account

The financial account covers transactions in financial assets and liabilities between residents and non-residents of an economy. The transactions are recorded as net acquisition of financial assets (NAFA) or net incurrence of financial liabilities (NIFL) depending on whether residents of the country are acquiring foreign assets or incurring foreign liabilities. Transactions in the financial account are recorded in terms of functional categories (direct investments, portfolio investments, other investments and reserve asset), instruments (equity and investment fund shares, debt instruments and other financial assets and liabilities such as monetary gold, financial derivatives and employee stock options), institutional sectors (general government, monetary authorities, deposit taking corporations other than the central bank and other sectors) and maturities (short term and long term). The Financial Account Balance (FAB), also known as net lending/net borrowing from the Financial account, is NAFA minus NIFL.

FAB = NAFA – NIFL (8)

A positive FAB imply that the country is a net lender to the rest of the world while a negative FAB means the economy is a net borrower from the rest of the world.

All things being equal, CCAB should be equal to FAB implying that the BOP is balanced.

4.1.4 Net Errors and Omission

As earlier mentioned, the compilation of BOP follows the double entry accounting principle. Therefore, the account should always be balance in line with accounting principle. That is, the sum of credit entries and debit entries should be equal to zero. However, this is hardly the case due to imperfections in data collection and compilation. The imperfections may be as a result of incomplete coverage, misreporting, double counting etc. In view of this, a balancing item is introduced to balance the account. This is derived residually by subtracting the CCAB from the FAB and is called the Net Errors and Omission (NEO).

NEO = FAB – CCAB (9)

Hence,

FAB – CCAB – NEO= 0 (10)

Equation (10) indicates that the BOP is in balance. Ideally, in the absence of errors and omissions, FAB should be equal to CCAB, thus, FAB minus CCAB should be equal to zero.

The size and sign of the NEO is often used to identify issues with the BOP. A very large NEO could cast doubt on the quality of the BOP and affect interpretation of its outcomes. Generally, a positive NEO means that the credits in the current and capital account is underreported and/or the debits are overreported. It could also be that the value of the net increase in assets in the financial account is overreported and/or the value of the net increase in liabilities in the financial account is underreported. A negative NEO would imply the opposite of some or all of the above conditions. A persistent sign could mean a major bias in one or more items and volatility in the sign could be attributed to timing issues. Overall, the use of the NEO to spot problems with the BOP account should be done with caution as errors and omissions with opposite signs would net themselves out.

4.1.5 Overall Balance of Payments

The overall BOP of a country is the net inflow/outflow of foreign currency during a reference period. In the BOP account, it is the non-reserve portion of the financial account[3] minus CCAB and NEO. This will be of equal value but different signs with reserve asset. In other words, the overall BOP is the exact mirror image of change in reserve assets (ΔRES).

$$\text{Overall BOP} = \text{NRFA} - \text{CCAB} - \text{NEO} = -\Delta RES \qquad (11)$$

Where: NRFA = Non-reserve portion of the financial account

The overall BOP of a country is in surplus when the inflow of foreign currencies from international transactions (such as exports, transfers, income etc.) outweighs the outflow of foreign currency during a particular period. This is reflected in an accretion to the country's external reserves[4]. On the other hand, an overall BOP deficit means that outflow of foreign currencies outweighs inflows, and this will result in the depletion of the country's external reserves[5].

Fig 1: Summarized BOP Statement

Balance of Payments		
	Credits	**Debits**
1 Current Account		
Current account balance (+ Surplus; - Deficit)		
1.A Goods and services		
Balance on goods and services (+ Surplus; - Deficit)		
1.A.a Goods		
Balance on trade in goods (+ Surplus; - Deficit)		
1.A.b Services		
Balance on trade in services (+ Surplus; - Deficit)		
1.B Primary income		
Balance on primary income (+ Surplus; - Deficit)		
1.B.1 Compensation of employees		
1.B.2 Investment income		
1.B.3 Other primary income		
Balance on goods, services, and primary income		
1.C Secondary income		
Balance on secondary income (+ Surplus; - Deficit)		
1.C.1 General government		
1.C.2 Financial corporations, nonfinancial corporations, households, and NPISHs		
2 Capital account		
Capital account balance (+ Surplus; - Deficit)		
2.1 Gross acquisitions /disposals of nonproduced nonfinancial assets		
2.2 Capital transfers		
Net lending (+) / net borrowing (-) (Balance from current and capital accounts)		
	Net acquisition of financial assets	**Net incurrence of liabilities**
3 Financial account		
Net lending / net borrowing (from financial account) (+ net lending; - net borrowing)		
3.1 Direct investment		
3.2 Portfolio investment		
3.3 Financial derivatives (other than reserves) and employee stock options		
3.4 Other investment		
3.5 Reserve assets		
	Credit	**Debit**
Net errors and omissions		

Adapted from BPM6

[3] it could also be referred to as the net financial inflow into the economy excluding reserve assets
[4] It could also be an increase in other foreign assets or a reduction in foreign liabilities
[5] It could also be a reduction in other foreign assets or increase in foreign liabilities

4.2 Trends in Nigeria's BOP

Over the years, the different components of the BOP account for Nigeria had exhibited some distinctive behavior. These behaviors are largely responsible for the balances in the different sub accounts and the overall BOP outcome.

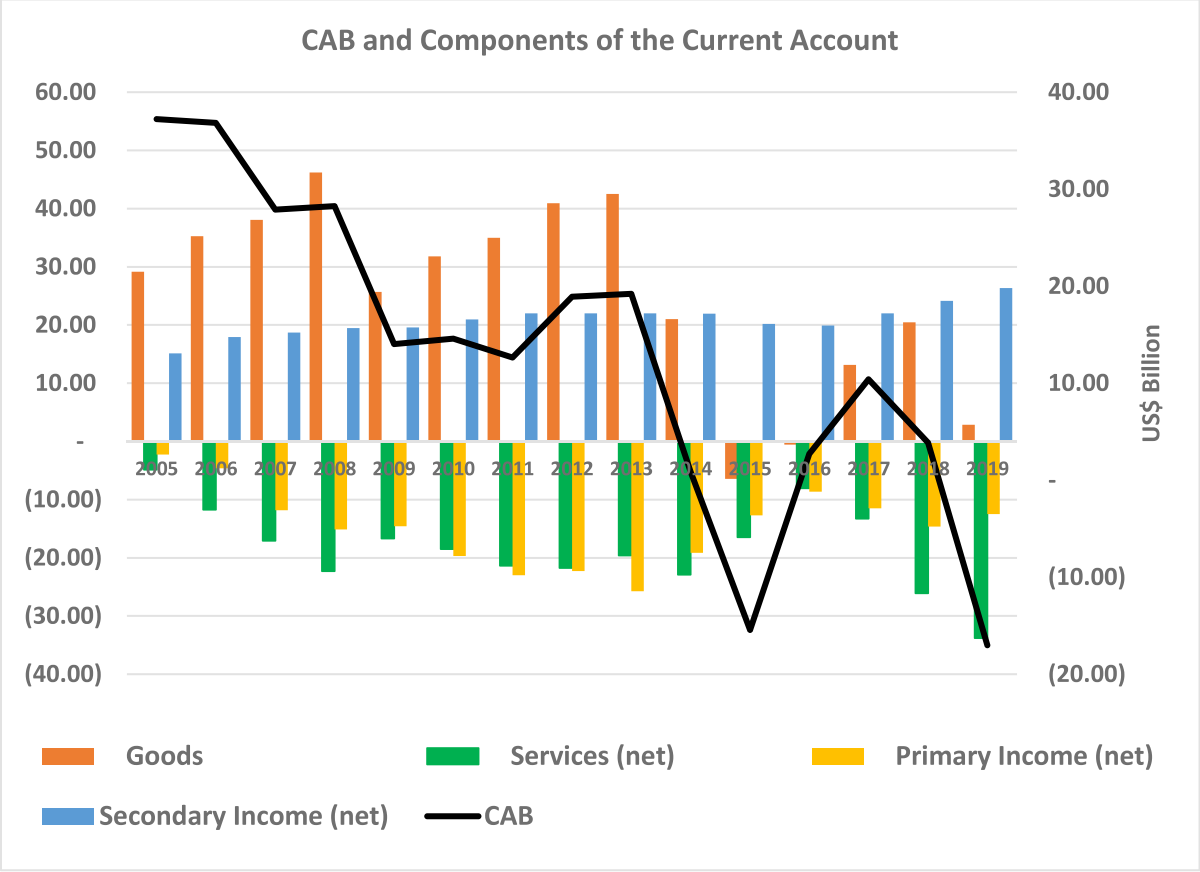
In the current account, the goods sub-account is predominantly in surplus with exports of goods exceeding imports most of the time. This is easily attributable to crude oil and gas export which accounts for about 90 per cent of total export. The country, however, experienced deficit balances in the goods account during the 2015/2016 recession.

The services sub-account is perpetually in deficit as Nigeria has been a net importer of services through the years with transportation, travels and other business services accounting for the bulk of the country's import of services. This is not farfetched as the country is largely import dependent and spends a lot on freight services. Also, medical tourism and education related travels is common among Nigerians and are major contributors to the persistent deficit in the services account.

Similarly, the primary income sub-account is always in net deficit. This is mainly due to out-payments of dividends on direct investments and reinvested earnings. The secondary income sub-account, on the other hand, is always in surplus because Nigeria is a net recipient of remittances and official development assistance.

As a result of these established trends, the CAB will be in surplus if the surplus in the goods sub-account and the secondary income sub-account outweighs the deficits recorded in the services sub-account and the primary income sub-account. A current account deficit will be recorded if the reverse is the case.

Fig 2: Movements in Nigeria's Current Account (2005 – 2019)



The capital account is in zero balance most of the time as there's hardly any transaction in this account. Capital transfers and acquisition/disposal of nonproduced, nonfinancial assets are not common occurrences. Since the Paris Club debt forgiveness in 2005/2006, there has not been any transaction in the capital account till date. Hence, the CCAB is same as the CAB most of the time.

Transactions in the financial account are mostly counterpart entries to corresponding transactions in the current and capital account as well as other components of the financial account based on the double entry accounting principle. The financial account basically finances the transactions in the current and capital accounts such that debit entries in the current account leads to corresponding draw down in financial assets or incurrence of financial liabilities while credit entries will cause acquisition of financial asset or reduction in financial liabilities.

4.3 Interrelationship between BOP and Other Macroeconomic Accounts

The BOP and other external sector accounts show the connections between sectors in the domestic economy and the rest of the world. The connections are most often associated with factors that instigate international transactions as well as contribute to BOP financing and adjustments. The relationships between these sectors are shown in accounting identities. In relation to the national and fiscal accounts, we have the following identities:

$$GDP = C + I + (X - M) = A + (X - M) \quad (12)$$

$$GNI = GDP + BPI = C + I + (X - M) + BPI = A + (X - M) + BPI \quad (13)$$

$$GNDI = GNI + BSI = C + I + (X - M + BPI + BSI) = A + (X - M + BPI + BSI) \quad (14)$$

$$GNDI - A = X - M + BPI + BSI = CAB \quad (15)$$

$$GNDI - C = I + (X - M + BPI + BSI) = I + CAB \quad (16)$$

$$GNDI - C - I = CAB \quad (17)$$

By definition, $GNDI - C = S$

Therefore, $S - I = X - M + BPI + BSI = CAB$ (18)

Where:

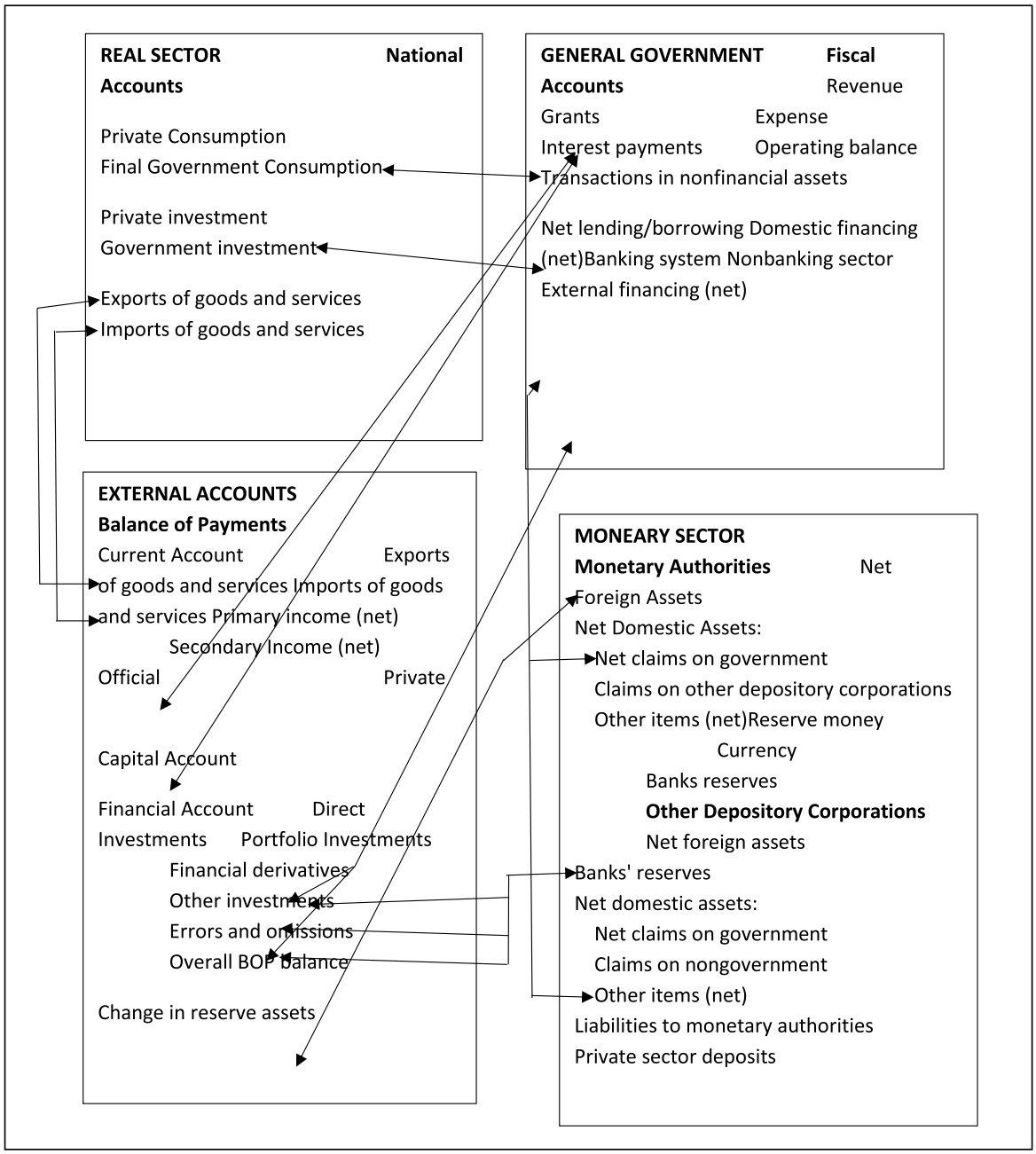
GNI	=	Gross National Product
GNDI	=	Gross National Disposable Income
C	=	Final consumption[7]
I	=	Gross Investment (including changes in inventories)[8]
X	=	Exports of goods and services
M	=	Imports of goods and services
A	=	Domestic absorption (A = C + I) or domestic demand
BPI	=	Balance on Primary Income
BSI	=	Balance on Secondary Income
S	=	Gross National Saving[9]

Equation (17) shows the connection between transactions within the economy and transactions with nonresidents. In this case, a current account surplus would be necessitated by reduced consumption and domestic investment. On the other hand, it could also be an increase in GNDI relative to consumption and investment. However, in using this approach to effect changes in the current account, the propensity of residents to spend in the economy should be taken into consideration[10].

From equation (18), the CAB is equivalent to the savings – investment gap and it reflects the savings/investment behavior of the economy. Therefore, changes in the CAB can be attributed to movements in savings and investment. A current account deficit or surplus means a negative or positive saving – investment gap. Hence, in designing policies aimed at adjusting a country's CAB, policy makers may wish to ascertain the extent to which such policies (such as changes in exchange rate, interest rate, taxes etc.) will affect savings and investment attitude. For greater impact of such policies, it should further be directed at specific types of savings and investment by separating private savings and investment from government savings and investment.

[6]These are fiscal, monetary and real sectors
[7]This comprise Private Consumption, Government Consumption and Intermediate Consumption
[8]This is also known as gross capital formation or investment in nonfinancial assets. It Comprise both government and Private Investment
[9]Comprise both government and private savings
[10]This will help ascertain how much consumption and capital formation is likely to be influenced by an increase in GNDI

Fig 3: Interrelations among Macroeconomic Accounts



The monetary sector serves as a central point for all financial flows as it provides intermediation for the financial resources flowing among the economic sectors. The major players in this sector are the monetary authorities (central banks) and other depository corporations (commercial banks, other deposit taking institutions etc.). Data from the Central Bank and Other Depository Corporations (ODC) is consolidated into the Depository Corporations Survey (DCS) also known as the Monetary Survey and this shows the link between the monetary sector and the other macroeconomic sectors.

As mentioned earlier, a country's overall BOP is basically financed by her change in reserve assets which is the same whether it is derived from the BOP or from the DCS.

In the DCS,

$$\Delta BM = \Delta NFA + \Delta NDA + \Delta OIN \quad (19)$$

$$\Delta NFA = \Delta BM - \Delta NDA - \Delta OIN \quad (20)$$

Where:

ΔBM = change in Broad Money, ΔNFA = change in Net Foreign Asset

ΔNDA = change in Net Domestic Asset and ΔOIN = change in Other Items Net

Since $\Delta NFA = \Delta RES$

Then,

$$\Delta BM - \Delta NDA - \Delta OIN = \Delta RES \quad (21)$$

This implies that changes in the foreign assets and liabilities of the monetary sector could lead to changes in broad money liabilities. Also, when domestic credit grows over and above the increase in broad money stock, external reserves declines. This linkage is at the core of the monetary approach to BOP.

5. BALANCE OF PAYMENTS AND MONETARY POLICY

Price stability is the primary objective of monetary policy in most economies. In a bid to achieve price stability, policy makers pay close attention to developments in the BOP, specifically the CAB and FAB, of a country while deciding on the most suitable monetary policy stance to be adopted. In times of BOP deficits which may be as a result of dwindling or reversal of capital inflows, unfavorable terms of trade or for other reasons, policy makers are usually faced with a number of policy choices. They have the option of either (i) defending the local currency with the external reserves, (ii) devaluing the currency, (iii) introducing capital controls, (iv) increasing interest rates or (v) introducing a mix of import duties and export subsidies. Although, each option has the tendency to improve the BOP imbalance in its own unique way, they all come with some adverse impact on the economy. For instance, an increase in interest rate could lead to a drop in output and employment while a currency devaluation may result in an increase in inflation (Broz et al, 2016).

The BOP identity in equation (18), that is, $CAB = S - I$ is a commonly used indicator to determine whether an economy is living within its means or not. A current account deficit is an indication that the economy is spending more than it is earning. This means that the savings of residents of the economy is not enough to finance her domestic investment and is augmented by savings of non – residents. A surplus implies that savings is more than investment and the surplus savings goes to finance investment in other economies. For a developing economy, a deficit is not entirely undesirable as the inflow of savings from abroad could finance domestic production and enhance economic growth while a surplus may not be entirely desirable as this could mean that much needed capital is being channeled abroad instead of being used for domestic production. When the current account is in deficit, the concern is usually whether it will be for a short run or long run. If the deficit is persistent, the worry would then be whether it is sustainable or not. The sustainability of a current account deficit is dependent on various factors. Principal among these factors, especially for developing countries, is what the inflow of capital from abroad is used for. If the capital is used to finance productive activities which have the potential to boost the countries earning capacity in the future[11], then the deficit is sustainable in the long run. However, if the capital inflow is used for domestic consumption, then the deficit will be considered unsustainable. Where the current account deficit is unsustainable, policy makers would then have to decide on the monetary policy stance to be adopted based on the policy options available to them in order to maintain price stability.

Money supply and money market operations of central banks are also linked to a country's BOP. Movements in money supply guide monetary policy decisions as a rise in money supply is often associated with high prices in the long run. The overall BOP could also be used to explain developments in the liquidity requirements in the money market. An overall BOP surplus is expected to cause the relaxation of money market conditions and reduce money market interest rates, all things being equal. It should, however, be noted that changes in the money market interest rate may not entirely be as a result of the overall BOP but could also be affected by other factors[12] (Van der Merwe, 2002).

6. CONCLUSION

The Balance of Payments provides very useful insights to the developments in an economy if critically analyzed. This has led to increased interest of analysts, both in the private and public sector, in BOP statistics for the purpose of making inferences about the economy as well as sound financial and economic decisions. A sound understanding of the technicalities in a typical BOP statement and its link with other macroeconomic indicators is of great importance to analyzing and gaining greater insights into developments within the economy. By implication, this is critical to efficient and impactful monetary policy decisions.

This paper provided clarity to the structure and components of Nigeria's BOP statistics as compiled in line with BPM6 of the IMF. It also explained some of the major developments and trends in Nigeria's BOP as well as its interrelationship with other macroeconomic accounts. It is hoped that this will promote greater understanding of Nigeria's BOP among policy makers, analysts, researchers and compilers of macroeconomic statistics.

[11]Earnings from such productive activities should, however, exceed the returns on the capital inflow from abroad

[12]These factors include political condition, business and consumer sentiments and expectations on movements in interest and exchange rates as well as other developments in the financial system

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Financing Public Deficits in Nigeria: Groping in the Dark for Taxation

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Abstract

Taxation as the orthodox source of public finance has waned in contemporary Nigeria's fiscal management, due to diminished "service for payment". In the alternative, public debt has gained currency and prominence, irrespective of the high risk complexion. Fiscal renaissance, particularly since the 1990s, has engendered a legion of reforms aimed at repositioning taxation and substantially increasing collections. The objective of this study is to conduct an expository examination of the inhibitions of voluntary tax compliance and to explore prospects of leapfrogging tax contribution from its posterior position, given the lacunae in precious studies. In the descriptive research design, underpinned by the range of structural-functionalist and expectancy theories, salient among the findings of the study is the diminished contribution of taxation to Nigeria's GDP and total revenue due to weak institutional framework and "faded" enthusiasm of tax payers. In the circumstance of the situation, and until drastic reforms are successfully executed, Nigeria may be groping in the dark, in search of huge tax revenues. Accordingly, it is recommended, among others, that far-reaching fiscal reforms should be undertaken, to strengthen the tax administration machinery; and to support the fiscal reformation, against the backdrop of mounting public debt.

Keywords: Taxation, Deficit, Gross Domestic Product, Public Debt, Groping, Tax Reforms

INTRODUCTION

Hornby (2010:1530) defined taxation as "money that has to be paid as taxes", or the system of collecting money by taxes". To Akpa (2013:11), tax is a compulsory levy imposed on the residents and other legal entities in a society by the government, the tax authority. Once levied, the payment of a tax is compulsory, while non-payment attracts severe sanction. In a nutshell, Akpa (2013:12) defines taxation as "a legal demand made on the citizens by a constituted authority to pay a stated amount of what is earned for development purpose".

Implicit in Akpa's definition is the purpose and role of taxation in the life of a country:

1. to raise money for the routine administration of the machinery of government;
2. to generate revenue for providing diverse goods and services for the wellbeing of the society, that is, for the provision of infrastructure required for economic and social development;
3. to redistribute wealth, in order to reduce the incidence of social inequality and injustice;
4. to meet government's obligation to service public debt; and
5. to provide subsidies, in order to make some public goods affordable by the less economically privileged citizens; among others.

Jhingan (2006:772) writes that of all the traditional sources and means of public revenue, taxation is perhaps the most effective instrument of fiscal policy, where fiscal policy is government's policy aimed at raising public revenue and incurring public expenditure and debt. To Jhingan (2006:772), "budget surplus can be achieved through higher prices and tax rates". Implicit in the foregoing is that public debt should be a secondary option in bridging deficits, where further raising of taxation is impracticable or injurious to tax payers or the economy.

As a corollary to the position of Jhingan (2006), the Ricardian Irrelevance of Financing Mode Hypothesis posits that in financing infrastructure by government, using public debt or taxation has equivalent effect on the economy, (Anyanwu & Oaikhenan, 1995: 310). In reality however, evidence from empirical literature reveals that huge public external debt portends high exposure to foreign lenders, and possible imperialism, particularly when improperly conducted. In

contradistinction, beyond the incidence of taxation placed on the citizens who retain and enjoy public goods financed via taxation, not much has been reported about any unfavourable risk complexion for national sovereignty through imperialist tendencies, when taxes are raised. Inspite of the more tolerable or near zero risk colour of taxation, evidence from studies reveal a declining trend in tax revenues as a veritable and preferred financing alternative, vis-à-vis the observed continuous "acquisition" of public debt in Nigeria. Investigating the nationale for this worrisome trend in Nigeria's fiscal management is the motivation for this study.

Statement of the Problem

Given that taxation is the traditional and most potent instrument of generating public revenue, it is confounding that Nigeria, with its enormous population and economic size, has continued to rely substantially on other otherwise "supplemental" revenue sources for budget financing. Roundly put, official sources (Federal Inland Revenue Service, 2018: 15) put Nigeria's tax to gross domestic product (GDP) ratio at only 6 per cent. When compared to sister countries' ratios: India 16 per cent; Ghana 15.9 per cent; South Africa 27 per cent; and most developed countries: between 32 and 35 per cent, Nigeria's ratio is one of the lowest in the world.

Curiously, neither the Nigerian Government nor citizens have hitherto exhibited signs of serious worry about the disturbing fiscal management situation and its implications for economic growth and sustainability. The contention of this study is that the poor attitude towards taxation portends a major governance challenge which all stakeholders (Government and citizens) should address frontally. Interestingly, the contemporary polemics appear to be receiving impetus, given the resurgence of interest in diversifying public revenue sources, and indeed the economy, by Government.

Literature and empirical studies in Public Finance generally, and Fiscal Administration particularly in Nigeria, have focused largely on oil revenues and the prospects of optimizing earnings from the source by overindulging in international oil politics and economic diplomacy. To be sure, discourses and policy focus on taxation have been largely passive, underscoring the tendency of stakeholders to undermine the centrality of taxation as a most veritable public revenue earner. The central problem of this study therefore, is that previous studies had failed to critically examine the relative passive attitude of Government to taxation. Instead, undue emphasis had been laid on oil revenue, notwithstanding the limitations imposed by its endowment, and the often unreadable global oil economics and politics.

Objectives of the Study

With the key objective to examine the key impediments of re-institutionalising and repositioning taxation as a major contributor to public revenue in Nigeria, other objectives include: to examine the critical factors responsible for the observed diminished potentials of taxation as a major source of public revenue in Nigeria; to proffer policy antidotes for raising the awareness of tax payment obligation as unavoidable a cardinal civic responsibility, and to examine. Examine the prospects of repositioning taxation as the core of financing public budget and deficit, vis-à-vis public debt.

Research Questions

The following questions are posed, in order to focus the study:

1. what are the major factors responsible for the observed diminished potentials of taxation as a major source of public revenue in Nigeria?;
2. given that tax revenue is a major source of fiscal empowerment for service delivery and governance, what concrete initiatives had Nigerian Government taken to reposition taxation strategically, for optimal performance and expected contribution?; and
3. what are the policy antidotes for removing the impediments and engendering a new paradigm for taxation, as a major public revenue contributor, away from its observed posterior location?

Review of Literature and Theoretical Framework
Conceptual Clarifications

Taxation

In its simplistic connotation, taxation is a legal imposition of a compulsory financial demand or obligation on the citizens by a government, to meet developmental imperatives of a country. While compliance is commendable, infraction is punishable by law. The all-important role of taxation in the economic development of a developing country, as Nigeria, informs the imperative of the compulsion in its obligation. For one reason, public or social goods provided with tax proceeds are indivisible; and for another reason, public goods are non-excludable. In tandem with the political federalism of Nigeria is the fiscal federalist structure in which various forms of taxes have been assigned to the various government tiers by the Constitutions (as amended). Unfortunately, despite time and resources expended on campaign,

sensitization and education of the citizenry on the need to pay taxes, "a large chunk of individuals and corporate bodies in Nigeria still does not meet this duty" (Sodamola, 2018: 98).

Chief among the reasons for failure to pay taxes include lack of credible database of tax eligible and liable persons (individual and corporate), double taxation by different governmental tiers, ignorance, weak enforcement machinery and corruption. In an opinion, Emefiele (2018: 102) advocated that Nigerian Government "should begin to consider alternative revenue-generating means". The suggestion is that taxing lengthy telephone calls, above three minutes and introducing minimal property taxes across Nigeria could generate additional annual revenue in excess of N100 billion.

Major Inhibitors of Tax Compliance in Nigeria

Given Nigeria's GDP size, it is in excusable confounding that the country's tax to GDP ratio remains dismally low at 6 per cent, when compared to the much higher ratios for Ghana, India and South Africa at 15.9 per cent, 16 per cent and 27 per cent respectively (Federal Inland Revenue Services, 2018: 16). The situation becomes more worrisome when the ratio is compared to the average of 32-35 per cent for the advanced and developed countries (ADCs), as earlier noted.

Tax revenue or yield in Nigeria is low due to pervasive default, through avoidance or evasion, perpetrated in various forms: falsification or manipulation of accounting records; lack of effective mechanism to accurately track the true incomes for assessing the actual tax obligations of residents; failure to register for value added tax (VAT); unduly withholding of deducted VAT; failure to remit VAT to the appropriate tax offices; non-payment of capital gains tax on asset disposal; and outright evasion. In effect:

"there has been a systemic breakdown of compliance with the tax system with various strategies used to evade tax obligations. These include, but not limited to, transfer of assets overseas, the use of offshore companies in tax havens to secure assets, and the registration of assets in nominee names", (FIRS, 2018:39).

Reacting to the losses to Government arising from tax evasion, Vice President Yemi Osinbajo noted that: "the loss to tax evasion in developing countries, especially in African, is three times higher than the money the continent receives in foreign aid every year" (Osinbajo, 2018: 24). In a related reference to Thambo Mbeki's Report on illicit financial flows, which revealed great tax losses to African economies, Professor Osinbajo noted that the Mbeki Report indicted the multinationals and their local collaborators of practices that lead to tax evasion and tax losses. Concluding, the Vice-President noted that challenges are often posed in tax gaps, or disparity between "what we collect and what we could collect" (Osinbajo, 2018: 45).

In Nigeria specifically, the phenomenon of declining contribution of taxation to total revenue profile has been historical. Table 1 presents a bird's-eye-view of the trajectory, for illustrative proposes.

Table 1: Percentage (%) Contribution of Taxation to Total Federal Government of Nigeria's Revenue, 1970-1990

Year	% Share of Direct Tax Revenue	% Share of Indirect Tax Revenue	% Share of Non-Tax Revenue
1970	22.83	58.33	18.84
1971	38.61	42.03	19.32
1972	44.44	34.24	21.32
1973	50.31	30.45	19.24
1974	66.83	10.98	22.19
1975	54.22	13.79	31.99
1976	56.94	13.05	30.01
1977	60.20	14.21	25.59
1978	53.75	23.04	23.21
1979	52.73	10.48	26.79
1980	60.14	11.90	27.96
1981	56.02	20.93	23.06
1982	47.67	21.10	31.23
1983	41.21	18.89	39.90
1984	49.87	14.44	35.69
1985	53.39	14.95	31.66
1986	47.80	19.08	33.12
1987	54.74	14.13	31.16
1988	51.51	15.61	32.87
1989	52.00	11.84	36.17
1990	45.32	13.4	41.64

Sources: Computed from Central Bank of Nigeria (CBN), Nigeria Principal Economic and Financial Indicators, 1970-1990," Lagos; and CBN, Annual Report and Statements of Accounts, (various issues), Lagos, 1970-1990 as culled from Anyanwu, (1995).

From Table 1, it is observable that the phenomenon of tax avoidance or invasion dated back to the 1970's. While the contribution of direct tax to total revenue was at an average 48 per cent, indirect tax's contribution experienced an accelerated downward trajectory from 58.33 percent in 1970 through 20.93 per cent, 14.44 percent and 13.4 per cent in 1981, 1984 and 1990 respectively. The situation may not have improved significantly in recent times, given the preponderance of the attitudinal desire to avoid or evade the more easily avoidable indirect taxes by consumers. The Joint Tax Board (JTB) in 2018 reported that as at May 2017, out of an estimated 69.9 million economically active and taxable people in Nigeria, only 14 million (or 20.02 per cent) were enlisted in the tax net. These highly disproportionate tax revenue figures corroborate Nigeria's low tax to GDP ratios.

In Table 2, the ratios of the various tax types to GDP for the period 1970-1996 are presented, for illustration purposes.

Table 2: Percent Share of tax Revenue in GDP in Nigeria, 1970-1996

Year	Direct Taxes	Indirect Taxes	Other Tax Revenue	Federal Retained Revenue	Total Federal Collected Revenue
1970	2.8	7.1	2.3	7.0	12.2
1971	6.9	7.5	3.5	13.1	17.8
1972	8.7	6.7	4.2	14.9	19.5
1973	8.4	5.1	3.2	13.7	16.8
1974	16.6	2.7	5.5	21.3	24.8
1975	14.3	3.6	8.4	24.4	26.3
1976	14.5	3.3	7.6	21.1	25.4
1977	15.4	3.6	6.5	20.5	25.5
1978	11.5	4.9	5.2	17.8	21.3
1979	13.7	2.7	9.6	21.1	26.0
1980	10.8	3.7	8.6	24.5	30.7
1981	8.0	4.9	5.5	14.5	23.6
1982	8.1	4.8	7.1	14.4	22.6
1983	9.9	3.7	7.7	11.5	19.3
1984	7.2	2.4	6.7	9.1	16.3
1985	12.1	2.8	6.0	8.9	18.5
1986	9.7	2.9	5.7	9.8	15.1
1987	13.3	3.1	6.9	14.2	22.0
1988	n.a.	2.9	6.6	10.7	18.8
1989	n.a.	3.0	9.8	13.6	25.6
1990	n.a.	3.3	n.a.	16.5	28.6
1991	n.a.	3.5	n.a.	11.1	31.2
1992	n.a.	2.9	n.a.	9.5	34.6
1993	n.a.	2.2	n.a.	9.7	27.5
1994	n.a.	2.8	n.a.	14.5	22.1
1995	n.a.	4.1	n.a.	17.4	32.0
1996	n.a.	3.7	n.a.	11.9	22.1

Source: CBN Annual, Report and Statement of Accounts (Various years), culled from Anyanwu (1995: p.91).

At annual average of 11.2 per cent, the ratio of tax to GDP from historical antecedents, which support the more recent evidence, were higher for the relatively unavoidable direct taxes. On annual average also, the ratio of indirect tax to GDP was about 3.7 per cent. When compared to the ratio of 6 per cent as reported in 2010, after 48 years, the rate of growth remained low. The ratio for total collection was however higher at an average 23.7 per cent when compared to the current rate of 6 per cent (2019).

Government's Efforts at Enhancing the Potentiality of Taxation

Although the responsibility of removing the factors that inhibit high tax payment compliance to enable the generation of huge tax revenue is that of Government, an examination devoid of the role of other stakeholders (citizens) may be lopesided, and only blame-trading. To begin, the question is: what has been done to change the paradigm? The apathy to tax payment in Nigeria derives from the poor perception of tax payers (private or corporate) about public accountability adjudged as lacking. In a slogan, FIRS has often stated that "tax is what you pay, value is what you get". On that basis, FIRS enjoins citizens to pay taxes and to expect service. The experience however is that citizens get little or nothing for taxes paid over the years, due to intractable corruption.

To understand the nature and origin of the apathy, several questions maybe asked:

1. what happened to the humongous federally earned revenues, from crude sale, taxation, mining, etc, over the years, vis-à-vis the "underdevelopment" bequeathed to the citizenry by successive Governments?;
2. why has regular supply of electricity remained a mirage in Nigeria?;
3. why are roads in deplorable conditions?;
4. why are the rural areas of Nigeria so undeservedly underdeveloped?
5. why are schools semblances of stores, bereft of instructional materials and facilities?;
6. why are hospitals in dire need of drugs and medical facilities?;
7. why is basic potable water unavailable to citizens?
8. why do the political and bureaucratic elite classes which account for less than 1 per cent of the total population of Nigeria appropriate and amass humongous proportions of the national wealth to themselves through direct, copious and brazen corruption and expensive official life style?: in 2019, Transparency International ranked Nigeria 146 out of 180 countries in terms of transparency);
9. why is unemployment, let alone under-employment, characteristic of the Nigerian state, inspite of the country's resource endowment?; and
10. why has the Nigerian Government yielded to the "indomitability" of corruption, through soft-landing palliatives for known offenders?

Answers to the above and other numerous derivative questions will provide an insight into the observed tax payer-apathy. For a world-be tax-payer, it is the considered view that paying the appropriate tax, or paying a tax at all, tantamounts to contributing from penury to the huge amount already available from other sources (oil revenue, foreign aid, public debt, etc) to public authorities for appriation for corruption.

As to the question of what is being done to reposition taxation in Nigeria, answer can be found in the gamut of policy initiatives covering tax incentives and tax collection among others, all encapsulated in reforms of tax administration within the ambit of enabling fiscal and tax laws. In Nigeria, the cardinal responsibility to drive the above initiatives rests with FIRS which compares with the British and US counterparts: Her Majesty Revenue and Customs (HMRC) and United States Internal Revenue Service (IRS) respectively. The priorities of HRMC traverse three strategic objectives: to maximize revenues due and bear down on avoidance and evasion; to transform tax and payments for customers, and to design and lead an active or organization (Thompson, 2018: 84). Similarly, the role of IRS is to assist the large majority of complicated taxpayers with the tax law, while ensuring that the minority who are unwilling to comply pay their fair share. In the stakeholders' joint responsibility for an efficient and effective tax regime in the US, Congress passes tax laws and requires taxpayers to comply (Koskinen, 2018: 86). In the framework, the taxpayer's role is to understand and meet the tax obligation to the state.

From the foregoing, the structural-functional framework of taxation in Nigeria revolves around FIRS, given its mandate to generate huge revenue to fund governance. To achieve the challenging responsibility, it is imperative that the Service is reformed and

repositioned legally, administratively and operationally. In his regard, several policy initiatives have been undertaken recently, as presented:

1. tax amnesty, to encourage tax defaulters to take a time-limited interest and penalty waiver advantage, for the period 2013-2015;
2. review of the relevant operating laws and policies, to enhance compliance and operational efficiency in tax administration through the reactivation of Section 43 of Companies Income Tax Act, Cap C1, LFN 2004;
3. ease of tax payment, which enables tax payers to file their returns at FIRS offices nearest to them;
4. reorganization of FIRS' operations for effectiveness and efficiency, for proximity to tax payers by appointing State Coordinators;
5. coordination of stamp duty and appointment of 37 Commissioners, supported with the installation of new stamp duty machines;
6. establishment of VAT Coordination Department, to ensure that VAT dedicated officers are readily available in all States;
7. appointment of Relationship Managers in key sectors: Aviation, Telecommunications, Banking, Oil and Gas, Professional Services, Conglomerates and Multinationals, to enhance service delivery and secure voluntary compliance in targeted sectors; and
8. more recently, tax reforms contained in the Finance Act, 2020 hiked VAT rate from 5 per cent to 7.5 per cent. The hike, effective from January 2020, is expected to

"fetch N8.15 trillion in cash". Besides, the "VAT hike will boost states' finances", according to the Minister of Finance (The Nation, 2020; FIRS, 2018: 22).

Other reforms covered expansion of the national tax roll and tax net; collaborations with JTB and State Internal Revenue Services; tax education and education and enlightenment; campaign in major Nigerian languages; upscaling of information and technology infrastructure; automation of tax administration process through the Integrated Tax Administration System (ITAS), in order to achieve ease of doing business with FIRS; e-stamping through Integrated Stamp Duty Services (ISDS); and massive recruitment and training of personnel, among other initiatives, to boost tax generation and revenue (Fowler, 2018: 8).

To be sure, efforts at reforming Nigeria's tax system are not entirely recent. During the Structural Adjustment-related reforms in the 1980s, it was observed among others, that from the supply-side economics, the subsisting personal income tax was inherently biased against work effort because the tax discouraged work and saving, while promoting leisure. The implication of the phenomenon is that while saving was taxed doubly, consumption was taxed singly. By extension, productive investment suffered double taxation, vis-à-vis single taxation, applicable to unproductive investment. Given that high marginal income tax rates aggravated the biases very significantly, reducing marginal income tax rates was expected to increase labour supply, savings and investment (Anyanwu & Oaikhenan, 1995: 160).

To shift the paradigm, an increasing wave of tax reforms blew across the world, Nigeria inclusive, in the 1990s, with focus on reducing marginal income tax rates for huge reliance on indirect taxes, essentially value added tax (VAT), in order to correct the distortion. Generally, there was a strong reawakening in discourses in Public Finance literature that tax structures in most developing countries were complex, inelastic, inefficient, and inequitable, with heavy reliance on customs and excise sources, away from consumption taxes. The levying of personal and company income taxes were premised on narrow bases but at high rates. Anyanwu and Oaikhenan, (1995: 366) noted that the broad goal of such tax reforms was to secure an efficient tax system, based on taxes that were "politically feasible, administratively practicable" and capable of producing sufficient revenue to fund governance, with minimum economic distortions.

In response to the renaissance, Study Groups on the Nigerian Tax System and Administration empanelled in 1991 reviewed the tax structure and system from independence in 1960, and observed the need to revise the existing tax system, to reflect the changing economic and political developments. The outcome of the study gave the needed vent to a comprehensive overhaul of the Nigerian tax system, via the various Federal Government Decrees (Decrees 102, and 3, 1993, etc), as subsequently amended. To be sure, the voyage of tax reforms had continued. But why the contribution of tax revenue to Nigeria's GDP remains abysmally low at the reported 6 per cent (2018), is central to Nigeria's groping in the dark for tax revenue.

Theoretical Framework

Given that the range of inhibitors of taxation in Nigeria could be coalesced into two broad categories or groups: weak and dysfunctional institutions and taxpayers' apathy, it is discernable that an analysis of the poor performance of taxation, vis-à-vis its expected mandate and contribution, should be properly situated in the failure of weak tax structures or institutions, in performing the assigned functions, leading to poor governance and the resultant taxpayer disillusionment. The situation is degenerating into a vicious circle. Against the backdrop of the institutional and attitudinal challenges, a range of theoretical models may be explored in explaining the phenomena. In this wise, structural-functionalism, expectancy and frustration theories, among others, are relevant.

Structural-Functionalism was adopted in Sociology and Anthropology by Emile Durkeim, Talcott Parsons (1961) and Robert Merton (1968), although its origin is the biological sciences, as part of system analysis. Proponents of the theory viewed society as a system comprised of an arrangement of parts (structures) which behave (function) in a coordinated and inter dependent manner, to achieve the objective of the society.

Gabriel Almond (1966) extended the theory to political system with his position that two basic concepts: structures and functions, are important in realising the objective of a system. To Almond therefore, every political system has structures composed of roles; and an individual can perform several roles. In effect, Almond's typology of Structural-Functionalism assumes that all systems have identifiable structures which perform functions within the systems.

Vroom (1964)'s Expectancy Theory has been widely supported and accepted among the contemporary theories of motivation. The cardinal thesis of the theory is the argument that "a person's motivation towards an action would be determined by the expectation that the effort would culminate in a success", where "expectancy is the perceived probability of satisfying a particular need of an individual, based on past experience" (Sapru, 2013:462). Implicit in the thesis is the functional relationship between effort and expected reward. Although the theory was designed for work place motivation of employees, its essence can be extended to a relationship in which favourable expectation can be potent in driving action or effort.

On frustration, Nwachuchwu (2016: 187-191) believes that the situation arises in a problem-solving behaviour which may take the form of variability in thought or action. In extreme situation, the person can abandon the problem and settle for something less. Nwachukwu wrote that Maier (1961) noted that when the individual is blocked from his goal, after several attempts, tension may be built up inside him. Generally, pressure, failure and inability to escape from a problem situation give rise persistent to frustration. In relation to tax-payer-apathy in Nigeria, frustration may be discernable, given the failure of Government in providing the desired public goods for which tax obligation had been met.

The relevance of the theories to this study is discernable: Structural-Functionalism provides an analytical basis for understanding the observed institutional (legal, policy and administrative) failure to perform the function of effective and efficient tax administration in Nigeria. Similarly, the apathy of tax payers to voluntary compliance, and indeed the abandonment of the very critical civic responsibility, may be explainable by the low expectation of service from Government, leading to frustration and resort to "Plan B" through, for example, individual power generation, as opposed to reliance on official sources; private schools versus public schools, private transportation versus public mass transit, et cetera.

Methodology

The study employed descriptive research design. An analysis of available literature and records was undertaken, to gain valuable insights into the challenges of taxation in Nigeria. To complement information obtained from the aforementioned sources, a cross-sectional survey analysis was conducted. The objective was to obtain the opinions of diverse people who are either actual or potential tax payers but who have not been enlisted in the tax net. A mail questionnaire was posted to the electronic mail addresses of 1,000 people in diverse parts of Nigeria, specifically at Lagos, Ibadan, Kaduna, Kafanchan, Benin, Ewu, Kumo, Sokoto, Onitsha, Gboko, Lokoja, Azare, Warri, Abakaliki, Paiko, Akwanga, Gboko, Ikom, Gbagan and Numan. The choice of locations was random; but care was taken to ensure a wide spread in terms of urban and rural statuses and the associated levels of deprivation with respect to available social amenities.

Data Analysis

Table 3 presents a summary of the success rate of the questionnaire administration

Table 3: Questionnaire Administration

S/No	Location	Total Copies of Questionnaire Posted	No. of Responses	% of Responses to Total Posted
1	Lagos	50	50	100
2	Ibadan	50	50	100
3	Kaduna	50	50	100
4	Kafanchan	50	50	100
5	Benin	50	50	100
6	Ewu	50	30	60
7	Kumo	50	40	80
8	Kano	50	50	100
9	Sokoto	50	50	100
11	Lokoja	50	50	100

From Table 3, it is observable that out of the 1,000 copies of the questionnaire posted, 870 were completed and returned, giving a high success rate of 87 per cent.

12	Azare	50	35	70
14	Abakaliki	50	40	80
15	Paiko	50	25	50
16	Akwanga	50	50	100
17	Gboko	50	40	90
18	Ikom	50	50	100
19	Igbaja	50	50	100
20	Numan	50	40	80

Source: Field Survey, 2019

Table 4 highlights the responses to the specific questions on the various factors militating against high voluntary tax payment compliance.

Table 4: Factors Militating Against High Voluntary Tax Payment in Nigeria

		Responses			
S/No	**Parameter/Factor**	**Yes**	**%**	**No**	**%**
1	**Personal Profile**				
	Age				
	Below 20 years	0	0	870	100
	20 year and above	87	100	0	0
	Occupation	Various			
	Location of Respondents	Various			
2	**Service Delivery Expected**				
	Power/Electricity				
	Security	870	100	0	0
	Employment	870	100	0	0
	Communication	870	100	0	0
	Healthcare	870	100	0	0
	Roads	870	100	0	0
	Schools	870	100	0	0
	Housing	870	100	0	0
	Others	870	100	0	0
3	Are the facilities effectively, and efficiently provided?	10	11.50	770	88.50
4	Do you pay your taxes fully and regularly?	320	36.78	550	63.22
5	If, "Yes", how do you pay?				
	Direct Payment (PIT)	320	36.78		
	Company Income Tax (CIT)	550	63.22		
	Value Added Tax (VAT)	870	100		
	Other Taxes	0	0	870	100
6	If "No" why do you not pay taxes?				
	Reasons:				
	a. Lack of public social amenities	550	63.22	320	36.78
	b. Dilapidated infrastructure	550	63.22	320	36.78
	c. Corruption/lack of accountability	550	63.22	320	36.78
	d. Business failure	550	63.22	320	36.78
	e. Double taxation				

Source: Computed from Responses in Questionnaire and Oral Interviews: Field Survey, 2019

From a perusal of Table 4, it is discernable that Nigerians expected high delivery on numerous basic social amenities and infrastructure from Government. Such amenities include electricity, roads, water, efficient mass transportation and communication systems, conducive business environment, food security, employment, schools and affordable housing among others. From the responses, not even the basic needs: food, housing, and security were guaranteed. Instead, pervasive corruption, dilapidated infrastructure, unemployment and, insecurity, among others, had been effectively generated, whether overtly or covertly, by government.

Arising from the responses in the questionnaire, and as expected a-priori, Table 5 presents the low contribution of tax to Nigeria's GDP when compared to peer countries and the developed world, for 2018.

Table 5: Comparative Tax to GDP Ratios for Nigeria and Selected Countries (in percentage)

S/NO	Country	Ratio (%)
1	Nigeria	6
2	India	16
3	Ghana	16
4	South Africa	27
5	Developed Nations (Most)	32-35

Source: Taxpayers money in action, Published by Pesther Brands Ltd, Abuja "FAQs" Special Edition, Vol.1, No.1, 2018. Pp. 38-39.

From Table 5, the low contribution of tax to Nigeria GDP is discernable. It is therefore significant that something critical should be done, to significantly up the contribution.

Summary of Findings

Several findings were made from the analysis, the most salient of which are summarized and presented:

1. voluntary tax compliance has progressively diminished due to payers' waned enthusiasm, ascribable to corruption;

2. as a corollary to 1, tax yield and the contribution to total public revenue has diminished, giving vent to the prominence of public debt as alternative financing mode;

3. the institutional framework for tax administration has been weak and therefore incapable of achieving its mandate effectively. Consequently, tax evasion, particularly in the informal but larger sector of the economy, is prevalent;

4. in the circumstance of the "unfavourable environment", relying on taxation as a major source of public finance may be illusory: Government may therefore be groping in the dark in search of tax revenue in the required quantum, in the short term.

Discussion, Conclusion and Recommendations

For focus, the discussion is patterned along the questions posed. To begin, as reviewed, Nigeria's fiscal trajectory reveals a relatively low contribution of tax revenue to GDP. In answering the question as to the major reasons for the diminished or diminishing potentiality of taxation as a major revenue contributor to federal revenue, several reasons have been adduced. Of critical note is the high resentment by the citizenry to voluntary compliance with any form of taxation or levy by Government, for reason of lack of commensurate governance through provision of social goods and services. In support of this widely held notion, the proportional contributions of direct income tax (PIT) and VAT are higher, leading volumes, when compared to other tax types, as capital gains, property tax and levies which are easily avoidable. The situation is exacerbated by lack of potent tax administration machinery across Nigeria.

Numerous incentives: voluntary assets and income declaration scheme, e-taxation, reorganization and professionalization of revenue service to deliver superior services, measures to ease tax payment, tax education and public enlightenment, among others, may not have successfully assuaged tax payers who believe that there has been no value for payment. Thus, it was a common-place question asked by respondent tax-payers during the field interviews with the researchers: if all the huge earnings from oil resources are "inadequate", is it the paltry tax monies from the meagre salaries or low corporate profits that will do the magic?

A corollary question also asked by respondents was whether or not taxation is actually for developmental funding, or to feather the nest of tax authorities and some public office holders? The notion is that tax revenues are not applied judiciously for the purpose of service delivery, due to pervasive corruption. In the circumstance, any tax demand is viewed as intended to further pauperize the taxpayers masses whose welfare is immaterial to Government. Against this background, the situation in which tax enforcement is conducted may be herculian, except where payment is inescapable, as in Personal Income Tax (PIT). Even VAT collections have been randomly sabotaged by service providers through failure to deduct or remit proceeds to the appropriate tax authority.

Without doubt, Nigerian Government had undertaken previously tax reformation, aimed at reawakening voluntary embracement of tax compliance as a cardinal civic obligation by all eligible citizens. Reforms dated back to the 1990s, following the strong advice by the World Bank and IMF, after the 1990 Conference on the Review of Tax Reforms (Anyanwu, Oaikhenan & Dimowo,1997: 20-256). The challenge was that LDCs' tax structures

were so complex, inelastic and inefficient that major balance of payments disequilibria had their origins in inappropriate fiscal policies (Anyanwu, et.al,1997: 252-256). Consequently, tax system reform was critical for the success of macroeconomic and structural reform policies.

In 1991, therefore, Nigeria established various study groups otherwise known as Nigerian Tax System and Administration for direct taxes and indirect taxes, in January and April respectively, with a mandate to study and recommend on a tax system improvement. One of the major outcomes of the reforms was the abolition of Decree 102 of 1993, which abolished sales tax, but introduced VAT, with effect from January 1994, after a lead period of two years, during which the modified VAT (MVAT) was adopted. Earlier in 1992, reforms in PIT, CIT and Petroleum Profits Tax (PIT) had been undertaken. To be sure, much emphasis has been laid on reforms in VAT, in view of its high contribution to tax revenues.

More recently, reforms aimed at easing tax payment: electronic applications and appointment of Relationship Managers, prompt issuance of tax clearance certificates, minimization of double taxation through the coordinating machinery of JTB, international institutional alliances and cooperations, including Nigerian-Kenyan, Double Taxation Agreement, Quatari and Namibian. Double Taxation Agreements and Indo-Iranian Double Taxation Agreement (DTA) have been undertaken. More precisely, Nigeria had thirteen DTAs in force, with seven others awaiting enactment into law as at 2014 (FIRS, 2014: 39).

Notwithstanding the efforts and the results, it is surmised that much more is required to be done, particularly in the intractable problem of loss of confidence in the government by tax payers, due to service failure or low expectancy. The apathy is ascribable to experience and may be deeply rooted. Until the psyche is reworked and reversed to a positive status, all reforms may be as efficacious as "tax enforcement" can achieve, and as far as tax payers are willing.

Conclusion

Away from the traditional taxation arrangement for financing governance, Nigeria has depended largely on oil revenue since the late 1970's. With the increasing demand for development and the associated huge revenue requirement, government has resorted largely to public debt; because the much needed civic tax obligation consciousness of the citizenry is on the wane and tax revenues are inadequate. The thinking is that unless the key extenuating factors which traverse corruption and poor governance are addressed, government may be groping in the dark, in search of taxation, as a major source of revenue for budget funding.

Recommendations

Arising from the analysis and discussion, the following recommendations are offered:

1. Government should overhaul the existing legal and administrative framework (fiscal), to reposition it for effectiveness and efficiency. While also emphasizing those inescapable indirect taxes (VAT, etc), search light should be beamed on corporate taxation where it is expected that much avoidance and evasion is prevalent, through under reporting and other accounting sharp practices, all amounting to fraud.

2. Tax compliance is a civic obligation. It must be learned and internalised by all citizens, irrespective of status and occupation. Government should therefore institutionalise the teaching of tax payment obligation and hence voluntary compliance in the curriculum of Civics in formal educational institutions. Similarly, regular and sustained public enlightenment on the civic obligation of tax payment should be periodically undertaken, to extend the knowledge and awareness to the informal sector.

3. Government should intensify the anti-graft war, given that tax payers' antipathy towards tax obligation is ascribable to pervasive corruption, leading to absence of value for taxation.

4. Government should minimize the grant of tax concession to powerful business moguls (and taxable items), either for political patronage or reimbursement. The practice tantamounts to tax avoidance and leads to diminished tax yield, or huge losses in tax revenue.
5. It has been estimated by FIRS (2014) that over 70 per cent of the informal sector of Nigeria's economy evade taxation. The tax authority should therefore put in place an effective machinery to expand the tax net in the sector, so as to enlist the otherwise potential tax payers who evade liability.

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Capital Formation And Economic Growth In Nigeria: An Empirical Re-examination

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Abstract

This study re-examines the impact of capital formation on Nigeria's economic growth. The paper adopts the Dynamic Ordinary Least Square (DOLS) technique on annual time series data covering the period 1981 to 2018. Infrastructure, health and skills competitiveness indices computed from the global competitiveness reports were adapted to capture key specifics of physical and human capital formation. The results from the DOLS show that gross fixed capital formation had a negative and significant impact on economic growth. The results also indicate that external debt and total labour force had a negative effect on economic growth. On the other hand, human capital formation and interest rate had positive effect on economic growth in Nigeria. The empirical results clearly show positive relationship between the quality of educational system and overall infrastructure in Nigeria. Thus, the country's education quality and her physical infrastructure are highly correlated. The empirics further reveal that staff training, skill-set of graduates, critical thinking in teaching and quality of vocational training are on the decline. From the empirical findings, the paper recommends that Nigeria should slow down on borrowings, increase expenditure on the human capital formation (health and education) while ensuring that competent persons are employed and deployed to be in charge of key positions in Government.

Keywords: *Gross Fixed Capital Formation; Economic Growth; Human Capital Formation.*

Introduction

It is germane to re-examine the impact of capital formation on economic growth in Nigeria from additional perspective, as capital formation in most studies in Nigeria has been viewed within the narrowed prism of just physical stock of capital. At the theoretical front, some scholars, including (Nurkse, 1953; Becker, 1964, Romer, 1986) have argued that taking cognizance of physical stocks alone underestimate the true value and importance of capital formation in economic growth. In other words, capital formation is not limited to the accumulation of physical capital stock, but it encompasses human capital. Consequently, limiting the impact of capital formation to just physical capital in any empirical studies, as is the case in several empirical literature on the subject matter in Nigeria, grossly underestimates the importance of capital on economic growth of the country.

Kuznets and Jenks (1961) opined that in modern society, capital is the stock of means, separable from human beings and legally disposable in economic transactions, intended for use in producing goods or income. They argued that since slave society does not exist any longer, it is inappropriate to include human capital stock as key components of capital formation since the society does not permit ownership of or trade in person.

Admittedly, as observed by Attanasio (2015), considering the negative connotation of the term human capital or human capital stock in the then slave society, and coupled with the complexity of human capital ranging from health, education, cognition, social-emotional development components that interact with each other to enhance or hinder the productivity of different inputs that affect the accumulation of human capital, (Kuznets and Jenks, 1961), might have been right in their definition.

But despite these complexities, Becker (1964), equated human capital to physical means of production, in line with Adam Smith's fourth category of fixed capital "the acquired and useful abilities of all the inhabitants or members of the society", it is thus essential to expand the scope of capital formation to accommodate human capital stocks to fit the 21st century economic realities.

The traditional neoclassical growth model advanced by Solow and Swan in the 1950s also excluded the human capital component by postulating that economic output is a function of larger inputs of capital and labour (all physical inputs). This theory excluded human health, skills, knowledge from the growth equation of an economy and was called to question following the economic growth and development in the East Asian developing countries, where the economies grew consistently for over three decades, demonstrating the inefficacy of the exogenous growth theory (Onwioduokit, 2019).

Romer (1986) broadened the concept of capital to include human capital. He argued that the law of diminishing returns might not hold as demonstrated in the case for the East Asian economies. The theory holds that if a firm or an economy invest in capital (physical) also employs educated, skilled and healthy workers, then the labour will be productive, as the labour force will utilise capital and technology, more effectively. Human capital formation, therefore, entails the process of acquiring and increasing the number of people who have the skills, education and experience critical for the country's growth and development. The formation of human capital is thus, connected with investment in man and his development as a creative and productive resource. Chani, Hassan and Shahid (2012) have argued that since the classical era, the formation of human capital has been relevant for economic growth and development, just as physical capital. The growth and development of an economy are not dependent on physical stocks

alone but with the management and accumulation of human capital. The developmental strides attained by contemporary industrialised nations have been largely attributable to stock and growth of human capital, hence, human capital formation has been widely acknowledged as a catalyst for development (Umo, 2012). There is increasingly realisation that the growth of tangible capital stock depends extensively on human capital formation.

Thus, human capital formation is an essential ingredient in the medium- and long-term development plan of any well-meaning economy that plans to improve her technological, productivity and standard of living. Capital formation (physical and human) in real sense entails sacrifice, as an economy does not apply all her income in recurrent or immediate consumptions but ensures that the bulk of it goes into her human and physical stock. As noted by Onwioduokit, Inam and Ololorin (2019), a rapid rate of capital formation steadily phases out the need for foreign aids by making a country relatively self-sufficient.

When a country borrows externally, it imposes a heavy strain on the future generation. The debt burden rises with each loan, thus creating the likelihood of higher taxes in the future to service the accumulated debts. As the tax burden increases there is implied capital out-flow in the form of debt repayments. Taken together, capital formation brings decreases foreign debt burdens, and makes the nation more self-reliant. The inflationary pressure on developing economy can be minimised considerably as the production of agricultural products and produced consumer goods, tends to increase with an increase in the pace of capital formation.

Capital accumulation leads to an increase in national income, employment, improved standard of living and enhanced outputs. Despite the obvious benefits of capital formation (physical and human) the successive regimes (military and civilian) in Nigeria have not paid adequate attention to, even the narrow components which theoretically involves public capital formation that directly impacts the rate and productivity of private capital formation, as well as their foreign component over the last six decades. Nigerian workers are poorly equipped. Domestic businesses have been operating at sub-optimal levels as interest rates have been comparatively high, making it rather difficult for the accumulation of adequate capital for meaningful investment. Furthermore, stock market volatilities made financing via the capital market a near impossibility, especially for start-ups in Nigeria.

A cursory perusal of the policy regimes in recent times clearly indicates that rather than intentionally increasing her human capital stock, Nigeria focuses more on increasing tax rates, which is antithetical to productivity enhancement and capital formation. The near-total neglect of incremental addition to the human capital component (education and health) perhaps is a reflection of the inability of policymakers to appreciate the linkages between the critical role of human capital embedded in qualitative education, on the economic growth and development of the society. An education which empowers the recipient with relevant skills, knowledge, ideas, values and attitudes needed to make informed decisions (Tombowua and Eev, 2019)

Nigeria education investment/GDP ratio was consistently below 3.0 per cent over the period (2001-

2017), except for 2001, when a ratio of 3.20 per cent was achieved. The ratio ranged between 3.20 per cent in 2001 (highest) and 1.48 per cent in 2008. Whereas South Africa, had consistently a ratio above 5.0 per cent in all the years under review except 2003, 2007, and 2008, while Tunisia education investment-GDP ratio was consistently above 6.0 per cent, between 2001 and 2017 (Onwioduokit, 2019).

This study is different from previous empirical studies on the subject. While most of the previous studies concentrated almost exclusively on physical capital stock and predominantly adopted the Harrod-Domar and Solow growth model, the present study adopts the Mankiw,

Romer, and Weil (1992) model and incorporates human capital formation component as key determinants for economic growth and development.
The growth potentials of any economy, including Nigeria, can neither be understood nor fully explored and exploited without the knowledge of all the components of its capital formation in a holistic and heuristic manner. This is because any empirical study that centres on physical capital accumulation alone is non- representative of the required determinants of economic growth inputs. Thus, results from such studies leave gaps in the policy trajectory.

The study seeks to investigate the relationship between economic growth and capital formation (physical and human) in Nigeria. The rest of the paper is organised as follows; Section II reviews both theoretical and empirical literature. Section III discusses the methodology. Section IV presents and discusses the findings, while section V concludes the study.

II.0 Literature Review

Protuberant scholars including, Rosenstein-Rodan (1943), Nurkse and Kuznets (1953), Hirschman (1958), Harrod (1939), Harrod (1948), Domar (1946), Domar (1947), Swan (1956), Solow (1956), Romer (1986), Lucas (1988), Rebelo (1991), and Ortigueira and Santos (1997) have contributed to the theories of capital formation and economic growth. The Big Push theory propounded by Rosenstein-Rodan (1943) was among the foremost contribution to the subject matter. The theory stipulates that a critical minimum sum of investment is necessary to solve the developmental challenges in developing economies and put them on a trajectory for development. Nurkse (1953), following Adam Smith's analysis of limits to division of labour, constrained by the market size, first brought into focus the concept of the vicious cycle of poverty. He argued that economic development will only occur when these circles are broken through exogenous capital injection.

One of the theories of capital formation and growth that have gained wider acceptability, though with various modifications, is the Harrod-Domar growth theory that integrates the classical and Keynesian thoughts. Their growth analysis shows that savings and capital-output ratios are the main determinants of growth. They explained that investment expands both aggregate demand and aggregate supply in the economy. This implies that as investment increase, the gross domestic capital formation expands, more businesses are established and output growth. Thus, in the world of Harrod-Domar, the most critical hindrance to economic growth and by extension development in the less developed countries is the relatively low level of new capital formation (Masoud, 2014).

Following the paleness of the classical Harrod-Domar model, which Solow referred to as balance on knife's edge, because he sees their assumptions to represents a very narrow balance, especially, the assumption that for producing one unit of output it is necessary to use a fixed amount of each factor of production (labour and capital), as the cause of equilibrium growth. Solow and Swan (1956), independently developed the neoclassical growth model by introducing the output-capital ratio, labour productivity, as endogenous variables and technological changes consider as an exogenous variable (Sardadvar, 2011). The Solow and
Swan model present economic growth as a sprout of capital formation.

Romer (1986), Lucas (1988) and others, however, contended that economic growth can indeed occur without any exogenous technical progress at the rate that marches tastes and technology parameters and tax policy (McCallum, 1996). Romer (1986), observed that the main drawback of the neoclassical model is related to their assumption that long-run growth is exogenous. The lack of exogenous technical improvement, income per capita would be static in the long-run, and this problem arises from the implication of diminishing marginal return to capital (Dornbusch, Fischer and Startz, 2011). To resolve the neoclassical growth model's problems and weaknesses, Romer (1986), and Lucas (1988) included the human capital component or knowledge capital in the production function and suggested that it is necessary to change the assumption of decreasing marginal capital marginal product of capital to a constant return to capital.

Empirical Literature

Abu and Abdullahi (2010) examined the impact of government investment on economic development in Nigeria. A disaggregated approach was adopted to estimate the data covering the period 1970 to

2008. The study found that government total capital expenditure, total recurrent expenditures, and government expenditure on schooling were all negatively related to economic growth. The study suggested that the insignificant impact of government expenditure was responsible for the poor rating of Nigeria as one of the world's poorest countries.

Karim, Karim, and Ahmad (2010) examined the relationship between economic growth, fixed investment and household consumption in Malaysia. Using the structural vector error correction model (SVAR), they found out that household consumption and fixed investment had a significant influence on economic growth. Fixed investments had a significant impact only on the short-run. Further findings from the study revealed that demand-side strategies that affect household consumption and investment are ineffective in stimulating economic growth.

Bakare (2011) investigated the connection between capital formation and growth in Nigeria using annual data spanning the period 1979 to 2009. Employing the Johansen co-integration and ECM estimation techniques, the study found a positive relationship between economic growth and capital formation in Nigeria.

Orji and Mba (2012) examined the connection between foreign private investment, capital formation and economic growth in Nigeria. Using the two-stage least squares (2SLS) method to estimate annual data spanning the period 1970 to 2007 they found out that the long-term impact of capital formation and foreign private investment on economic growth was greater than their short-run impact.

The effect of capital formation on Nigeria's economy was explored by Ugwuegbe and Uruakpa (2013). The Ordinary Least Square (OLS) method was used to estimate the data covering the period 1982 to 2011. The study found that capital formation had a substantial and beneficial effect on economic growth in Nigeria over the study period.

Uneze (2013) employed causality and panel co-integration methods to examine the causal relationship between capital formation and economic growth in sub-Saharan African countries. He found a bi-directional causal relationship between growth and capital formation, suggesting that increased growth results in greater capital formation and vice versa. These results hold for both private fixed capital formation and public capital formation.

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Rajni (2013) examined the linkages between export, import and capital formation in India, and found bidirectional causality between gross national capital and export and a unidirectional causality between capital formation and import. Kanu and Ozurumba (2014) used multiple regression techniques to examine the effect of capital formation on Nigeria's economic growth. The finding suggested that gross fixed capital formation had no significant effect on economic growth in the short-run, but a significant impact existed in the long-run.

Shuaib, Igbinosun and Ahmed (2015) investigated the impact of agricultural expenditure on the economic development of Nigeria by testing the Harrod-Domar model, with the aid of OLS techniques. Empirical results suggested a significant relationship between capital formation and economic development.

Shuaib and Dania (2015), studied the effect of capital formation on Nigeria's economic development for the period, 1960 to 2013. The empirical results showed a significant association between capital accumulation and economic development in Nigeria.

Ncanywa and Makhenyane (2016) scrutinized the effect of investment operations on South Africa's financial growth from 1960 to 2014. The result of co-integration and vector error correction (VECM) indicated that gross fixed capital formation had a significant relationship both in the short and long-term with economic growth.

Bal, Dash and Subhasish (2016) examined the effect of capital formation on India's economic growth using the autoregressive distributed lag (ARDL) regression techniques for the period 1970 - 2012. Findings from the study revealed a long-run relationship among all the control variables: capital formation and economic growth. The study also suggested that capital formation, exchange rate, trade openness and factor productivity all have positive impact on economic growth, while inflation impacted growth negatively in the short-run. The authors recommended that to attain an increased growth rate, that government should increase the level of capital formation.

The impact of external debt on the growth and development of capital formation in Nigeria was investigated by Abdullahi, Hassan and Bakar (2016). Their analysis was based on the Autoregressive Distributed Lag (ARDL) modelling techniques and covered the period of 1980 to 2013. The outcome of their empirical analysis revealed that external debt had a significant negative impact on capital formation. Both external debt and capital formation were found to have unidirectional causal effects

while savings came out as the only variable with a bidirectional causal relationship with capital formation.

Nweke, Odo and Anoke (2017) investigated the effect of capital formation on economic growth in Nigeria. The outcome of their empirical result using the co-integration and vector error correction model (VECM) revealed that gross capital formation (GCF) has a positive insignificant impact on real gross domestic product (RGDP) in the short-run and the long- run.

Ajose and Oyedokun (2018) investigated the influence of capital accumulation on economic growth in Nigeria from 1981 to 2016. Employing the VECM regression techniques, the results indicated the existence of a causal relationship between capital formation and economic growth in Nigeria and a negative non-significant relationship between economic growth and capital formation in Nigeria.

Onwioduokit, Inam and Ololorin (2019) studied the impact of capital formation on economic growth in Nigeria. The study employed the ARDL regression techniques for the period 1981 -2017. The results revealed that gross fixed capital formation used as a proxy for capital formation was positive in both the long-run and short-run model but had no significant impact on economic growth.

Mainstream studies on capital formation and economic growth in Nigeria, adopted Harrod-Domar growth model as the theoretical framework, while a few implemented the Solow's model. The weaknesses and inadequacies in both models discussed earlier make the models unsuitable, as the theoretical basis for a study on capital formation and economic growth in Nigeria. Consequently, Mankiw, Romer, and Weil (1992) model which incorporates human capital component into the original Solow's model which is considered more appropriate and plausible for a study on capital formation and economic growth was adopted for the present study. This becomes more fitting as none of the previous studies considered major stylised fact that can reveal competitiveness, trend and performance of both the human capital and physical capital in Nigeria. These are the value additions of this paper

III.0. Methodology

This study adopted Mankiw, Romer, and Weil (1992) model to critically re-examine the relationship between capital formation and economic growth. The MRW (1992) model incorporates the human capital component into the original Solow's model., open classroom schools) and home school.

The MRW (1992) model is stated as

$$Y = AK^{\propto}(hL)^{\beta}\mu \quad 1$$

When transformed into a log-linear form, it becomes,

$$\boldsymbol{log}(Y) = \boldsymbol{\delta} + \alpha\, \boldsymbol{log}(K) + \beta \boldsymbol{log}(hL) + V \quad 2$$

Where,
Y= output level, K = Physical capital stock, h= level of human capital, L= labour, A= Level of total factor productivity, a = elasticity of capital input to output and β=elasticity of labour input to output.

To meet the objectives of the study and reflect the Nigerian context, the equation is modified and stated as:

GDPGR= f (GFCF, TLF, INTR, EXDEBT, HCF) 3

When equation 3 is transformed into semi log form, it becomes equation 4 as given below:

$$GDPGR = \boldsymbol{\delta} + \sum_{i=1}^{k} \boldsymbol{\alpha_1 log(GFCF)_{t-i}} + \sum_{i=1}^{k} \boldsymbol{\alpha_2 log(TLF)_{t-i}} + \sum_{i=1}^{k} \boldsymbol{\alpha_3 log(INTR)}$$

$$+ \sum_{i=1}^{k} \boldsymbol{\alpha_4 log(EXDEBT)_{t-i}} + \sum_{i=1}^{k} \boldsymbol{\alpha_5 log(HCF)_{t-i}} + \mu_t \quad 4$$

Where α_1-α_5 are the coefficients, δ represents the intercept, the lags goes from 1 to k and μ is the error term

Table 1: Description of Variables

variable		source	Expected Sign
GDPGR	Gross domestic product growth rate	World development indicator 2019	
GFCF	Gross fixed capital formation (constant local currency)	World development indicator 2019	+
TLF	Labor force, total	World development indicator 2019	+
INTR	MPR (a proxy for interest rate)	CBN Statistical bulletin 2018	+
EXDEBT	External debt stocks, total	World development indicator 2019	+/-
HCF	Total of Government Recurrent Expenditure on Health and Education (also a proxy for Human capital formation)	CBN Statistical bulletin 2018	+

To track the performance and trend of physical and human capital formation, data were also collected and indexed from the global competitiveness report. The data used in the study were mainly from secondary sources and covered the period 1981 to 2018. The Dynamic Ordinary Least Square (DOLS) technique was applied to estimate equation (4). The problem of non-stationarity of most of the economic time series which is likely to render standard ordinary least squares (OLS) estimator bias necessitated the use of the dynamic OLS proposed by Stock and Watson (1993) which corrects for possible simultaneity bias among the regressors. The DOLS is more suitable for estimating long-run equilibrium in systems which involve variables integrated at different order as well as small samples.

Human capital formation entails the process of acquiring and increasing the number of people who have the skills, education and experience critical for the country's growth and development. But a cursory perusal of Table 2, the global competitiveness report on infrastructure, health, education and human skills from 2011 to 2019 indicates that Nigeria has been recording a declining trend. The quality of the educational system declined consistently between 2011 and 2015. However, a significant improvement was registered in 2016 and 2017, nonetheless, the performance deteriorated in 2018 and 2019. The country's ranking on recent survey on the skillset of graduates, critical thinking in teaching and quality of vocation training was among poorest in the world.

IV.0 Data, Results and Discussion

IV.1 Some stylized facts on capital formation and the competitiveness of the Nigeria economy.

Table 2: Infrastructure, Health and Skills Competitiveness Report

Table 2: Infrastructure, Health and Skills Competitiveness Report

		2011		2012		2013		2014		2015		2016		2017		2018		2019	
Countries surveyed		142		144		148		144		140		138		137		140		141	
		Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value
Physical stock	Overall Infrastructure	125	3	117	3.2	104	3.5	133	2.7	133	2.4	132	2.1	131	2.3	124	-	130	-
Human Formation	Capacity for innovation	54	3.2	63	3.2	79	3.4	73	3.7	82	3.8	77	4	82	3.9	93	-	94	-
and skills	Intellectual property protection	104	2.8	110	2.9	82	3.5	126	2.7	119	3.1	112	3.4	127	3.2	129	3.1	132	3
	Organized crime/Terrorism Incidence*	121	4	133	3.5	136	3.4	124	3.7	109	4.1	110	4	110	4	139	0	140	0

	Extent of staff training	58	4.1	57	4.1	85	3.8	48	4.3	62	4	68	3.9	75	3.8	91	3.7	102	3.6
	Quality of educational system	65	3.8	83	3.5	107	3.1	122	2.9	125	2.7	118	2.8	117	2.8	-	-	-	-
	Skillset of graduates	-	-	-	-	-	-	-	-	-	-	-	-	-	-	135	2.9	139	2.8
	Critical thinking in teaching	-	-	-	-	-	-	-	-	-	-	-	-	-	-	131	2.5	135	2.4
	Quality of vocational training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	2.9	139	2.8
	Total		20.9		20.4		20.7		20		20.1		20.2		20		15.1		14.6
Health	Health Life Expectancy	136	**48.1**	134	**51.4**	67	**74**	136	**52.1**	133	**52.5**	134	**52.8**	133	**53**	118	**56.3**	126	**55.1**

Source: *The Global Competitiveness Report 2011-2019*

A key implication of the analysis in Table 2 is that the country ranking on the quality of the educational system has consistently been on the decline. The cursory perusal clearly shows a near positive relationship between the quality of the educational system and overall infrastructure. This to a large extent reveals that the country's educational system declined in tandem with the physical stock (infrastructure) and vice versa as seen between 2013 to 2017, which is an indication that both infrastructural and educational expenditures are necessary ingredient for growth. Also, Table 2 reveals that the capacity for innovation, which is key for domestic capital accumulation, continues to decline, furthermore, the extent of staff training and intellectual property protection declined, while organized crime/Terrorism Incidence worsened which invariably hampered the desire for both domestic and foreign to accumulation of physical stock.

IV.2 Interpretation of the regression results

In this section the analysis differs from previous efforts, including (Onwioduokit, Inam and Otolorin, 2019), in the sense that apart from utilising Mankiw, Romer, and Weil (1992) model rather than the Harod-Domar growth model adopted by most of the reviewed studies, it disaggregated capital formation into physical capital and human capital formation.

The Unit Root result using the Augmented Dickey-Fuller (ADF) is presented in Table 3.

Table 3: Augmented Dickey-Fuller Unit Root Test (Trend and Intercept)

VARIABLES	LEVELS	DIFF.	CRIT. VAL.	DECISION
GDPGR	-3.005938	-11.58264	3.53	I(I)
GFCF	-6.003813		3.54	I(0)
TLF	-4.768989		3.54	I(0)
INTR	-3.196615	-8.388052	3.54	I(1)
EXDEBT	-2.352949	-3.821975	3.54	I(I)
HCF	-3.536601	-6.542906	3.54	I(1)

Source: Author's Compilation Using EViews 10

The result indicates that the variables are integrated of different orders: TLF and GFCF were stationary at level I(0); INTR, EXDEBT, GDPGR and HCF were stationary at first difference I(1).
The regression results using Dynamic OLS for the impact of capital formation on economic growth is presented below:

GDPGR = 1228.37 – 34.599 LOG(GFCF) -8.954LOG(TLF) – 2.148 LOG(EXDBT)
(4.269) (-4.292) (-0.816) (-0.525)

+ 3.300LOG (HCF) + 0.088 INTR
(2.766) (0.214)

R-squared0.723, Adjusted R-squared 0.515, S.E. of regression3.447
D.W Statistics 1.718

Evidence from the estimated DOLS indicates that gross fixed capital formation was significant and negatively related to economic growth, which is contrary to the apriori expectation. The negative relationship implies that as capital accumulation declines economic growth weaken. This is concurrent with earlier findings by Ajose and Oyedokun (2018) and further buttress the point made by Jhingan (2012), that capital accumulation is a decisive factor in economic growth. The decline in gross fixed capital formation might be a major factor in the reoccurring negative growth experienced in recent time.

The coefficient of external debt was also negative but insignificant at the 5% level. This implies that as external debt accumulates growth declines. This agrees with Abdullahi, Hassan and Bakar (2016). The negative impact could be attributable to the leakages of interest and debt repayment as well as the plausibility that borrowed funds were not properly utilised for the capital projects.

The estimated model further suggests a statistically significant relationship at the 5% level, between HCF and economic growth. Human capital formation had the expected sign; implying that increases in human capital expenditure will bring about increase in economic growth. Labour force (TLF) was statistically insignificant and a negative impact on growth. There is no question that both the public and private sector benefits from the stock of skilled manpower which are trained and sustained by investment in education. The Nigerian Government should embark on massive training of manpower and recruit the very best to be in charge of key positions.

The Durbin-Watson statistic of 1.78 indicates that the result is not spurious and free from serial correlation. The normality test, revealed that the residual is normally distributed while the Johansen Cointegration test revealed a long run relationship between the variables in the model.

V.0 Summary and conclusion

This study has re-examined the impact of capital formation on economic growth and brought to the fore the need to include human capital component into the capital formation and economic growth argument, as against previous studies that essentially narrowed capital formation to physical stock alone. The regression result confirms that gross physical capital formation positively correlates with economic growth, while the human capital formation results confirms the postulation that an economy that employs educated and skilled workers who are healthy will yield productive output. In real term the study has brought to the fore the need to disaggregate capital formation into physical and human capital formation for any meaningful analysis and consequential policy proposals. An increase in one without complimentary increase in the other would not yield the expected result, which might be the near positive relationship between quality of educational system and overall infrastructure as revealed in the infrastructure, health and skills competitiveness.

The study shows that despite the poor allocation to health and educational sectors (human capital formation), a positive impact has been seen to exist with growth. This confirms the need to decompose capital formation to better explain the role of human capital formation in the growth process. Therefore, government should consider expenditure on education and health as investment and not just expenditure. In this direction, it is necessary for both private investors and Government to scale-up funding to both sectors.

Teaching should be the exclusive preserve of the best and the brightest. To avoid the declined in skillset of graduates, critical thinking in teaching and quality of vocation training as revealed by the global competitiveness report should be encouraged. There is also need for the institutions in Nigeria to inculcate into Nigerians the need to be productive, resourceful, innovative, and to learn how to build systems that will multiply, optimise their output and help them gain dominance of their market space with ease. This can be achieved by giving more credence to vocational skills, encouraging Nigerians to pursue relevant digital skills and rewarding hard-work and talents adequately. This will lead to wealth creation and sustainable domestic capital accumulation. The total dependency on foreign countries for technology and infrastructure is unsustainable, as it leads to technological backwardness, unproductive populace, poverty and accumulation of obsolete infrastructure among others. Finally, periodic training and retraining of the public labour force should be encouraged with only the best and competent retrained in relevant practical and administrative areas.

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Data

Year	GDPGR	GFCF	EXDBT	INTR	TLF	HCF
Source	**WDI**	**WDI**	**WDI**	**CBN**	**WDI**	**CBN**
1981	4.204831	1.57897E+13	1.14E+10	6	2928696	0.25
1982	-13.1279	1.28938E+13	1.2E+10	8	5857390	0.28
1983	-6.80339	1.01983E+13	1.76E+10	8	8786085	0.24
1984	-10.9241	7.12128E+12	1.78E+10	10	11714779	0.30
1985	-1.11562	6.03226E+12	1.87E+10	10	14643474	0.39
1986	5.913027	6.04546E+12	2.22E+10	10	17572169	0.40
1987	0.060945	5.66887E+12	2.9E+10	12.75	20500863	0.27
1988	3.200125	6.04775E+12	2.96E+10	12.75	23429558	1.88
1989	7.334025	6.4419E+12	3.01E+10	18.5	26358252	3.59
1990	1.919381	7.33116E+12	3.35E+10	18.5	29286947	2.90
1991	11.77689	7.24029E+12	3.35E+10	15.5	30040723	1.87
1992	0.358353	7.27743E+12	2.9E+10	17.5	30825405	0.44
1993	4.631193	7.82569E+12	3.07E+10	26	31635860	12.75
1994	-2.03512	7.63327E+12	3.31E+10	13.5	32492025	9.48
1995	-1.81492	7.12618E+12	3.41E+10	13.5	33394658	13.07
1996	-0.07266	7.61032E+12	3.14E+10	13.5	34217680	14.52
1997	4.195924	8.05521E+12	2.85E+10	13.5	35100936	18.74
1998	2.937099	8.16745E+12	3.03E+10	13.5	36027324	18.33
1999	2.581254	8.38596E+12	2.91E+10	18	37011197	60.25
2000	0.584127	8.99691E+12	3.35E+10	14	37993680	73.17
2001	5.015935	6.86044E+12	3.37E+10	20.5	38927763	64.40
2002	5.917685	7.55973E+12	3.6E+10	16.5	39914966	121.15
2003	15.32916	9.17817E+12	4.11E+10	15	40890770	98.05
2004	7.347195	7.34834E+12	4.46E+10	15	41723316	110.73
2005	9.250558	7.52047E+12	2.91E+10	13	42828205	138.46
2006	6.438517	1.05579E+13	1.3E+10	10	43882211	181.27
2007	6.059428	8.24621E+12	1.55E+10	9.5	45010413	232.69
2008	6.59113	8.03172E+12	1.65E+10	9.75	46203876	262.20
2009	6.764473	8.82881E+12	1.93E+10	6	47453585	227.32
2010	8.036925	9.18306E+12	1.88E+10	6.25	48753690	269.90
2011	8.005656	8.42576E+12	2.1E+10	12	50041195	567.60
2012	5.307924	8.64077E+12	2.15E+10	12	51387354	546.30
2013	4.230061	9.32035E+12	2.45E+10	12	52794893	570.41
2014	6.671335	1.05717E+13	2.86E+10	13	54234993	539.73
2015	6.309719	1.06362E+13	3.24E+10	11	55790869	582.89
2016	2.652693	9.92726E+12	3.44E+10	14	57369993	540.11
2017	-1.61687	9.6317E+12	4.32E+10	14	59012447	649.15
2018	0.805887	1.05696E+13	5.05E+10	14	60698492	761.74

Dependent Variable: GDPGR

Method: Dynamic Least Squares (DOLS)
Date: 03/15/21 Time: 14:21

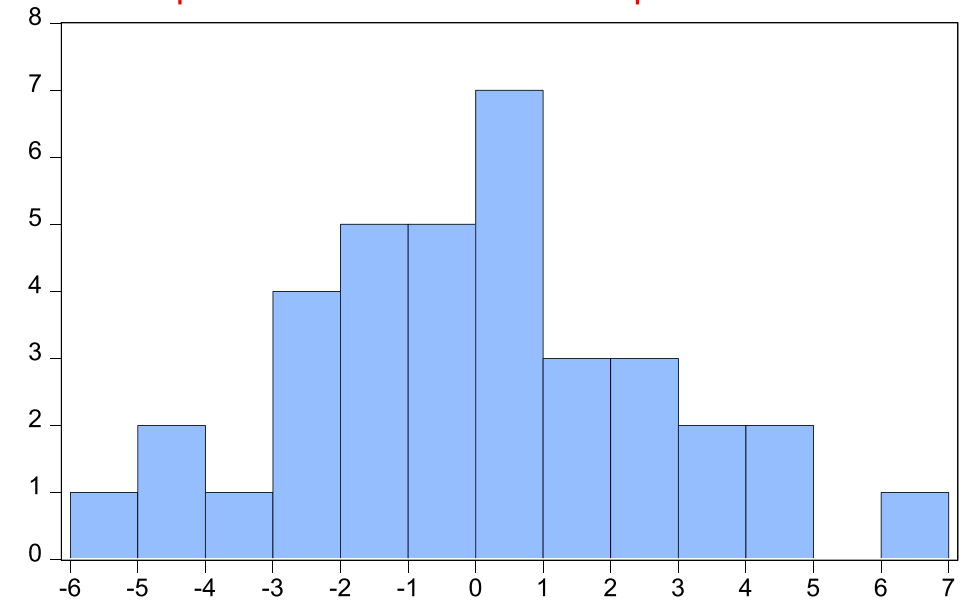
Sample (adjusted): 1983 2018

Included observations: 36 after adjustments
Cointegrating equation deterministics: C
Fixed leads and lags specification (lead=0, lag=1)
Long-run variance estimate (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(EXDBT)	-2.148664	4.090438	-0.525289	0.6052
LOG(GFCF)	-34.59975	8.060683	-4.292409	0.0004
LOG(HCF)	3.300219	1.193136	2.766004	0.0119
INTR	0.088635	0.413956	0.214117	0.8326
LOG(TLF)	-8.954814	10.96625	-0.816580	0.4238
C	1228.375	287.6984	4.269660	0.0004

R-squared	0.723360	Mean dependent var	3.662332
Adjusted R-squared	0.515881	S.D. dependent var	4.954355
S.E. of regression	3.447175	Sum squared resid	237.6602
Long-run variance	10.87367		

DW= Sum of squared difference of residuals/ Sum of squared residuals = 408.403/237.6602= 1.718432225



Series: Residuals
Sample 1983 2018
Observations 36

Mean	-3.37e-13
Median	-0.196795
Maximum	6.316817
Minimum	-5.304409
Std. Dev.	2.605819
Skewness	0.247306
Kurtosis	2.869557
Jarque-Bera	0.392485
Probability	0.821813

Dependent Variable: GDPGR

Method: Dynamic Least Squares (DOLS)
Date: 03/15/21 Time: 14:21

Sample (adjusted): 1983 2018

Included observations: 36 after adjustments
Cointegrating equation deterministics: C
Fixed leads and lags specification (lead=0, lag=1)Long-run variance estimate (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.685897	111.8930	95.75366	0.0025
At most 1 *	0.520125	70.20374	69.81889	0.0466
At most 2	0.409496	43.77145	47.85613	0.1148
At most 3	0.338556	24.80738	29.79707	0.1684
At most 4	0.237686	9.927511	15.49471	0.2863
At most 5	0.004358	0.157248	3.841466	0.6917

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.685897	41.68929	40.07757	0.0326
At most 1	0.520125	26.43229	33.87687	0.2950
At most 2	0.409496	18.96407	27.58434	0.4173
At most 3	0.338556	14.87987	21.13162	0.2974
At most 4	0.237686	9.770263	14.26460	0.2275
At most 5	0.004358	0.157248	3.841466	0.6917

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

GDPGR	GFCF	HCF	INTR	TLF	EXDBT
-0.028962	6.42E-13	-0.002210	0.217932	2.97E-09	-9.66E-11
-0.137939	-2.51E-13	-0.002146	0.388862	1.41E-07	-1.30E-10
0.273098	1.61E-13	0.005368	0.231971	-1.29E-07	5.75E-12
-0.005892	-5.46E-13	0.014085	-0.022926	-2.56E-07	-1.43E-11
-0.071742	-1.29E-13	-0.004068	-0.020128	-6.00E-09	3.10E-11
0.139676	-2.31E-13	-0.003341	0.024905	3.57E-08	-1.48E-10

Unrestricted Adjustment Coefficients (alpha):

D(GDPGR)	-0.555910	1.212912	-1.645980	-0.032191	1.126392	-0.015014
D(GFCF)	-7.56E+11	4.30E+11	9.26E+10	9.46E+10	-2.33E+10	-5.13E+09
D(HCF)	-8.932031	-8.059903	-17.56472	-20.19022	-15.21312	0.117855
D(INTR)	-0.735985	-1.309673	-0.654606	0.284140	-0.008290	0.148028
D(TLF)	-25932.06	-107066.7	-52405.24	126205.5	-68005.19	-6709.631
D(EXDBT)	1.89E+09	9.76E+08	-1.11E+09	7.60E+08	-9.69E+08	90561991

1 Cointegrating Equation(s): Log likelihood -2767.117

Normalized cointegrating coefficients (standard error in parentheses)

GDPGR	GFCF	HCF	INTR	TLF	EXDBT
1.000000	-2.22E-11	0.076314	-7.524800	-1.03E-07	3.34E-09
	(4.1E-12)	(0.06894)	(2.22313)	(1.3E-06)	(9.8E-10)

Adjustment coefficients (standard error in parentheses)

D(GDPGR)	0.016100
	(0.02118)
D(GFCF)	2.19E+10
	(4.5E+09)
D(HCF)	0.258687
	(0.30453)
D(INTR)	0.021315
	(0.01719)
D(TLF)	751.0384
	(1781.01)
D(EXDBT)	-54690873
	(2.0E+07)

2 Cointegrating Equation(s): Log likelihood -2753.901

Normalized cointegrating coefficients (standard error in parentheses)

GDPGR	GFCF	HCF	INTR	TLF	EXDBT
1.000000	0.000000	0.020166	-3.175764	-9.50E-07	1.12E-09
		(0.01727)	(0.62407)	(3.4E-07)	(2.8E-10)
0.000000	1.000000	-2.53E+09	1.96E+11	-38250.85	-99.92586
		(2.6E+09)	(9.5E+10)	(52181.0)	(42.5687)

Adjustment coefficients (standard error in parentheses)

D(GDPGR)	-0.151208	-6.61E-13
	(0.09790)	(4.8E-13)
D(GFCF)	-3.74E+10	-0.592723
	(1.9E+10)	(0.09092)
D(HCF)	1.370466	-3.71E-12
	(1.46643)	(7.2E-12)
D(INTR)	0.201971	-1.44E-13
	(0.07601)	(3.7E-13)
D(TLF)	15519.76	1.02E-08
	(8184.97)	(4.0E-08)
D(EXDBT)	-1.89E+08	0.000967
	(9.6E+07)	(0.00047)

3 Cointegrating Equation(s): Log likelihood -2744.419

Normalized cointegrating coefficients (standard error in parentheses)

GDPGR	GFCF	HCF	INTR	TLF	EXDBT
1.000000	0.000000	0.000000	-83.05212	-1.12E-05	2.24E-08
			(15.8503)	(4.0E-06)	(6.9E-09)
0.000000	1.000000	0.000000	1.02E+13	1246546.	-2774.589
			(1.9E+12)	(481148.)	(831.314)
0.000000	0.000000	1.000000	3960.919	0.000507	-1.06E-06
			(760.025)	(0.00019)	(3.3E-07)

Adjustment coefficients (standard error in parentheses)

D(GDPGR)	-0.600721	-9.27E-13	-0.010210
	(0.19085)	(4.4E-13)	(0.00384)
D(GFCF)	-1.21E+10	-0.577777	1.24E+09
	(4.0E+10)	(0.09256)	(8.1E+08)
D(HCF)	-3.426419	-6.55E-12	-0.057243
	(3.03033)	(7.0E-12)	(0.06103)
D(INTR)	0.023200	-2.50E-13	0.000924
	(0.16132)	(3.7E-13)	(0.00325)
D(TLF)	1208.011	1.74E-09	5.828614
	(17585.3)	(4.0E-08)	(354.149)
D(EXDBT)	-4.91E+08	0.000789	-12202776
	(2.0E+08)	(0.00046)	(4019874)

4 Cointegrating Equation(s): Log likelihood -2736.979

Normalized cointegrating coefficients (standard error in parentheses)

GDPGR	GFCF	HCF	INTR	TLF	EXDBT
1.000000	0.000000	0.000000	0.000000	-6.72E-08	3.49E-10
				(9.6E-08)	(1.3E-10)
0.000000	1.000000	0.000000	0.000000	-122092.1	-56.66304
				(26238.2)	(36.1237)
0.000000	0.000000	1.000000	0.000000	-2.27E-05	-3.50E-09
				(2.4E-06)	(3.4E-09)
0.000000	0.000000	0.000000	1.000000	1.34E-07	-2.66E-10
				(4.2E-08)	(5.8E-11)

Adjustment coefficients (standard error in parentheses)

D(GDPGR)	-0.600532	-9.09E-13	-0.010664	-0.030576
	(0.19088)	(5.6E-13)	(0.00955)	(0.31238)
D(GFCF)	-1.27E+10	-0.629484	2.58E+09	2.17E+10
	(4.0E+10)	(0.11583)	(2.0E+09)	(6.5E+10)
D(HCF)	-3.307452	4.48E-12	-0.341616	-8.692379
	(2.79476)	(8.1E-12)	(0.13988)	(4.57368)
D(INTR)	0.021525	-4.05E-13	0.004926	-0.828039
	(0.16050)	(4.7E-13)	(0.00803)	(0.26266)
D(TLF)	464.3718	-6.72E-08	1783.394	-62335.40
	(15987.8)	(4.7E-08)	(800.194)	(26164.2)
D(EXDBT)	-4.96E+08	0.000374	-1496117.	5.17E+08
	(1.9E+08)	(0.00057)	(9744754)	(3.2E+08)

5 Cointegrating Equation(s): Log likelihood -2732.094

Normalized cointegrating coefficients (standard error in parentheses)

GDPGR	GFCF	HCF	INTR	TLF	EXDBT
1.000000	0.000000	0.000000	0.000000	0.000000	3.32E-10
					(1.4E-10)
0.000000	1.000000	0.000000	0.000000	0.000000	-87.21006
					(61.1080)
0.000000	0.000000	1.000000	0.000000	0.000000	-9.19E-09
					(1.0E-08)
0.000000	0.000000	0.000000	1.000000	0.000000	-2.32E-10
					(8.3E-11)
0.000000	0.000000	0.000000	0.000000	1.000000	-0.000250
					(0.00045)

Adjustment coefficients (standard error in parentheses)

D(GDPGR)	-0.681342	-1.05E-12	-0.015246	-0.053248	3.83E-07
	(0.18413)	(5.3E-13)	(0.00928)	(0.29368)	(1.9E-07)
D(GFCF)	-1.10E+10	-0.626484	2.67E+09	2.22E+10	22150.16
	(4.1E+10)	(0.11696)	(2.1E+09)	(6.5E+10)	(41370.9)
D(HCF)	-2.216030	6.44E-12	-0.279722	-8.386175	6.37E-06
	(2.72262)	(7.8E-12)	(0.13726)	(4.34247)	(2.8E-06)
D(INTR)	0.022120	-4.04E-13	0.004960	-0.827872	-1.75E-07
	(0.16481)	(4.7E-13)	(0.00831)	(0.26287)	(1.7E-07)
D(TLF)	5343.215	-5.85E-08	2060.072	-60966.62	-0.040294
	(15908.4)	(4.6E-08)	(802.037)	(25373.2)	(0.01610)
D(EXDBT)	-4.26E+08	0.000498	2445454.	5.37E+08	96.72689
	(1.9E+08)	(0.00055)	(9649482)	(3.1E+08)	(193.746)

The Implications of The Legal and Policy Framework For E-commerce in Nigeria.

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Abstract

This article reports the policy implications for E-commerce in Nigeria, both for e-consumers and e-vendors. A review of available literature from agencies of the Nigerian Government, United Nations and research organizations was conducted to show landmarks achieved and further actions required in terms of legislations and policy executions that will strengthen trust and confidence in virtual transactions. Researchers also threw some light on guidelines for potential e-commerce firms. Considering the trend towards digitalized economy, a holistic legal framework that adequately protects users and punishes offenders can ultimately address the recurrent issue of trust in online transactions in Nigeria.

1.0 Introduction

The advent of novel Corona Virus first recorded in Wuhan, China in December 2019 has currently spread round the world, necessitating global lockdowns, minimized physical interaction and subsequently, increased online transactions. The Pandemic has hit strongly on the economy of nations. As stated in UNCTAD 2020 report, "it is now evident that the pandemic mitigation efforts and lockdowns around the world will have devastating effects on all economies, independent of their links to global supply networks". Increased online transactions has brought E-commerce (a significant aspect of digital economy) to the front burner in every business circle in Nigeria.

Covid-19 is first a public health issue, which has claimed thousands of lives worldwide. Economic meltdown in both the formal and informal sectors is a heavy burden, which the pandemic throws at businesses and their stakeholders. A business success at these awry times depends on the economic systems of the nations where it is located and where the bulk of its customers exist. The economic system in turn depends on the combination of policies, laws and choices made by a country's government to establish the structures that define what goods and services are to be manufactured and their allocation procedures (Onoja, 2020). As rightly pointed out by a senior Lecturer of Mass Communication at University of Lagos, "Covid-19 gave life to E-commerce in Nigeria and in other parts of the globe" (Adepetun, 2020). To thrive in the new normal, companies must invest in areas they had hitherto ignored before the crisis. Agenda will now, more-than ever, focus on digital and data driven projects rooted in e-commerce and cybersecurity. This is because Covid-19 has redefined how digital platforms can be used in supporting and guaranteeing stability in the business environment through and beyond the crisis (Onoja, 2020).

This article seeks to throw light on the legal implications of E-commerce as it affects users in Nigeria. It outlines basic requirements for smooth running of online business in Nigeria from registration to full operations.

It also looks at the preparedness of the Nigerian Government to position the country alongside its peers on the digital business map in terms of cyber space security.

This paper is structured in the following manner:

Conceptual review of E-commerce is discussed in the first section while the second section outlines Nigeria's Preparedness and the journey so far. The third section briefly explains the global Cyber laws in existence followed by requirements for owning and running online firms in Nigeria. The final section deals with the theoretical concept and recommendation.

2.1. Conceptual Review

Electronic commerce commonly known as e-commerce refers to the internet based industry of buying and selling products or services via electronic means using a combination of internet technology, mobile commerce, electronic funds transfer, escrowing services, electronic data interchange, supply chain management, inventory management systems, internet marketing, data collection systems and many other technologies and innovative business systems(hg.org). It is in simple terms, a process that allows the exchange of goods and services with no barriers of distance and time (Franco & Bulomine, 2016). Developed countries have utilized it to gain competitive advantage over the developing ones. Any nation that fails to join this global trend or develop its E-commerce potentials cannot be a significant player in the global economy currently driven by high-powered e-technology (Akintola, Akinyede & Agbonifo, 2011). Many have hailed E-commerce as an opportunity for developing economies to gain a stronger foothold in the multilateral trading system. This is because it has the ability to play an instrumental role in helping developing nations like Nigeria benefit from trade. It offers potential benefits in the form of enhanced participation in international value chain, increased market access and reach, improved market efficiency and lower transaction costs (Khan, 2016). E-commerce is no doubt growing rapidly in developing countries thereby offering stimulus for economic growth (UNCTAD, 2020)

2.1.1. E-commerce and Policies

The pandemic era has witnessed increased rates of cyber-attacks with African countries as major targets (Paul, 2020). Today, digitalization and the social media occupy important positions on our scheme of doing things and has strong impacts on business. Companies have no options than to review their structures and policies to reflect the new normal (Adepetun, 2019). The new normal is closely tied to information and communication technology (ICT) and as rightly noted by UNCTAD "making ICTs work for development means adapting to the benefits and the legal challenges that go along with their use" (UNCTAD,2020).

2.2. Contextual Review

Nigeria like other countries in the world is invariably pulling its weight in the field of convenient and fast online transactions. Many online stores now operate all over the country, specialising in various merchandise. However, relevant laws that will ensure the smooth running of E-commerce transactions are yet to be adequately provided for (Opemuti, 2020). Worldwide, Nigeria ranks first in data leakages and ranks in the top five for other forms of attack: malware, crptojacking, ransomware etc. (Paul, 2020). A survey by Sophos Group plc, a British security and hardware company showed that the major method of hacking was by a misconfiguration in company's server and through stolen credentials. This is despite the existence of the Nigerian Data Protection Regulation (NDPR), which compels organizations to handle data responsibly (Paul, 2020).

In UNCTAD 2015 information economy report, Nigeria ranked 101 out of 130 countries falling far behind Mali, Egypt, Zambia and Zimbabwe on E-commerce readiness. This means that substantial efforts still needed to be made by the Nigerian state. State policy, specifically legislation, affects in no small measure, the growth and development of E-commerce in any country. A supportive legal and regulatory framework ensures that barriers are tackled headlong. This framework covers enabling laws relating to E-commerce, regulations on consumer protection, online marketing and advertisements, e-transactions, e-banking and cybercrimes. These laws are vital for doing business online as the internet by its very nature exposes customers to possible instances of exploitation, deception and outright fraud (Alyoubi, 2015). The need for consumers to trust online transactions is a recurrent issue both in the developed and developing countries. The utmost need for legal protection for users and providers alike cannot be overemphasized considering that the gains from E-commerce dynamism are only possible where legal, institutional and policy frameworks are in place whether via the internet, mobile phones or the cloud (UNCTAD.org). In Nigeria, e-consumers are exposed to many challenges in the course of and even after conducting online transactions. The Nigerian Government has no doubt made efforts to bridge the

gap but a lot still needs to be done in terms of regulations, legislations and policies. E-commerce revolution in Nigeria has lasted about ten years now and yet despite the opportunities inherent in the industry, not fewer than ten operators have exited the space or completely divested their operations to other sectors. These include OLX, Effritin.com, Dealdey, Gloo.ng, Buyam.com.ng, Buyright Africa.com, Cribpark etc. Among the reasons cited for their exits are policy inconsistencies and tax burdens (Adepetun, 2020). These are issues directly covered by law enactment and executions. It is pertinent to put in place a comprehensive legal framework for the protection of E-consumers in particular and E-commerce as a whole. All the legislations that address issues in electronic transactions, consumer protection, privacy/data protection and cybercrimes in Nigeria are yet to be signed into law (see Tables 1 and 2). The adoption of laws may not be compulsory for E-commerce to commence but laws are indispensable for its sustainable growth. Governments of developing countries are confronted by various bottlenecks in attempts to adopt and enforce E-commerce legislations. Due to bureaucratic hitches, the adoption is delayed and by the time the laws are adopted, the technologies for which these laws are made may have changed. Surveys by UNCTAD for 38 developing countries showed the need to build capacity among lawmakers in order to ensure the making of informed policies and laws in the area of E-commerce and to execute them effectively (Information Economy Report, 2015). Possible legal issues that tend to arise in the course of E-commerce transactions, and for which a robust legislative response is required comprise:

- the degree to which communication between parties is protected (data protection);
- the time of establishment of a contract online;
- legal means of carrying out payment online; and
- concerns around the conflict of laws (Ajayi, 2015)

Table 2 : Availability of legislation or draft legislation in key areas of cyberlaws(2020)

		Nigeria (2020)		
		Legislation	Draft	
1	Electronic transactions	No	Yes	Pending: Electronic Transaction Bill, 2019 (HB.384). First reading 10/10/2019
2	Consumer Protection	Yes	No	Consumer Protection Council Act
3	Privacy & Data Protection	Yes	No	Nigeria Data Protection Regulation, (by NITDA)* Pending: Protection of Personal Information Bill, 2019 (SB 07). First reading 26/11/2019
4	Cybercrime	Yes	No	Cybercrime Act 2015(cited as Cybercrime Act, 2013)

Source: Fieldwork adapted from UNCTAD Cyber law tracker, National Assembly

* National Information Technology Development Agency

2.3 Key Areas of Cyber laws

As covered by the model law on electronic commerce (MLEC)

I. E-transaction Legislation: A prerequisite for conducting commercial transactions online is to have e-transaction laws that recognize the legal equivalence between paper-based and electronic forms of exchange. This has been adopted in 158 countries.

ii. Data Protection and Privacy Legislation: More social and economic activities are currently happening online making privacy and data protection a big subject. Collection, use and sharing of personal information to third parties without notice or consent of consumers is a concern covered by this legislation. One hundred and thirty two countries out of 194 countries have set up legislations to protect the consumers' data and privacy.

iii. Cybercrime Laws: Cybercrime affects both buyers and sellers. It is a growing concern for all countries irrespective of status (i.e. developed, developing or least developed). One hundred and fifty four countries (79%) have enacted cybercrime legislation (UNCTAD, 2020)

The model currently in use in Nigeria is the UNCITRAL (United Nations Commission on International Trade Laws) model, which makes provision for the validity of

contracts, electronic signatures and other business transactions carried out on the internet. This model was adopted on 12th June 1996 by UNESCO, and has the core purpose to equip the legislative arm of Government with internationally accepted rules on transacting business online without legal obstacles. The fundamental principles of the UNCITAL model are non-discrimination, technological neutrality and functional equivalence.

a) Non-discrimination: This ensures electronic documents and communications are accorded legitimacy and validity, bringing additional legality to the use of e-signature. "A communication shall not be denied validity on the sole ground that it is in electronic form"

b) Technological Neutrality: This tackles the dynamic and evolving nature of technology and stipulates that no further legislation will be required in future for provisions whose technological sources have advanced. It creates room for future innovations and technological developments.

c) Functional Equivalence: This principle explains the benchmarks and conditions under which electronic communication matches paper-based communication in achieving stated or required purpose. For example, the requirement is met if the electronic communication is accessible for future reference (Castellani, 2020).

2.4 E-commerce Business in Nigeria

Prior to opening an E-commerce store in Nigeria, it is important a vendor arms himself with knowledge concerning restrictions and regulations that may affect the business directly or indirectly. Knowing the laws prevalent or governing a particular business sector aids in planning and cost saving (Estav, 2020).

1. Registration: A business (E-commerce business inclusive) is illegal in Nigeria if it is not registered with the Corporate Affairs Commission. Detailed processes for registration is available on their website www.cac.gov.ng. It is also compulsory that all companies or individuals engaging in E-commerce activities must register with the National Information Technology Development Agency (NITDA) (Opemuti, 2020). NITDA is the agency authorized by the NITDA Act, 2007 as the ICT policy implementing arm of the Federal Ministry of Communication. The NITDA Act 2007 mandates the agency to create a framework for the planning, research, development, standardization, application, co-ordination, monitoring, evaluation and regulation of Information Technology practices, activities and systems in Nigeria. (nitda.gov.ng).

2. Online Tax Laws: As noted by Organization for Economic Co-operation and Development (OECD), the digital economy is increasingly becoming "the economy" by itself. There is currently no international consensus on taxation policies on the digital economy. Nigeria has however been proactive on this issue by imposing value added tax (VAT) on online transactions. The VAT covers transactions arising from local and foreign businesses with activities within Nigeria's digital space (Iloka & Dushime, 2020). The Finance Act 2020 signed into law on 13th January, 2020 introduced changes to various tax regimes in Nigeria including companies income tax and VAT rate increase from 5 per cent to 7.5 per cent. The Finance Act includes provisions that create nexus for the taxation of income earned by foreign companies from technical, management, consultancy or professional services that are remotely provided to a person resident in Nigeria. *The Finance Act also introduced provisions to tax any foreign company that "transmits, emits or receives signals, sounds, messages, images or data of any kind from cable, radio, electronic or wireless apparatus to Nigeria in respect of any activity, including electronic commerce, application store, high frequency trading, electronic data storage, online adverts, among others, to the extent that the company has significant economic presence in Nigeria and profit can be attributable to such activity"*. Prior to this Act, a company was subject to taxation only if it had a fixed base in Nigeria. In the new dispensation, non-resident companies involved in e-commerce and related online activities such as filming, computing, ride-hailing, media that previously had no fixed base in Nigeria, are now liable to Nigerian income tax provided they meet the significant economic presence (SEP) threshold (KPMG, 2020).

3. Payment Gateways: There are many payment gateways available for e-commerce transactions, such as the PayPal class. As the Central Bank of Nigeria regulate financial transactions with rules restricting or limiting certain products, the gateways also have their rules restricting or limiting certain products. It is therefore important to know these rules as related

to particular gateways so as not to break them or jeopardize one's business interests (Opemuti, 2020).

4. Licenses and Permits: It is important for E-commerce firms to note that there are products that are specially licensed and cannot be sold by just any vendor. Licensed personnel sell certain medical devices and drugs only. The Pharmacists Council of Nigeria Act (1992) regulates all aspects of pharmacy practice in Nigeria. Pharmaceutical practice is also regulated by the National Agency for Food and Drug Administration (NAFDAC) Act. (Igwe, 2017).

5. Intellectual Property: Intellectual property in Nigeria are protected through the paths of trademark, copyrights, patents, trade security and confidential information (Scoth, 2020). It is important that e-commerce platforms acquaint themselves with relevant intellectual property regulations and avoid breaches.

   (i) Trademark is a word, phrase, symbol or design that clearly identifies a product distinguishing it from every other product. By registering a trademark with the Nigeria Trade Marks Registry, an E-commerce business gets exclusive rights to use the trademark in connection with the product and thus prevents any other person or firm from marketing their product/ company under similar trademark.

   (ii) Copyright ensures the works of authorship (writings, music) and creative arts enjoy legal protection.

   (iii) Patents confer legal rights to invent a product protected by law through registration (Opemuti, 2020).

6. Shipping Restrictions: Different shipping companies have varying restrictions on certain products (such as explosives, animals, arms etc.) usually stated on their websites. Insurance, shipping and maritime laws are available to guide potential E-commerce firms and remove bottlenecks.

3.0 Theoretical Framework

3.1 Systems Theory

Systems theory was proposed by Von Bertalanffy in 1945 and explains how complex physical, biological, economic and social systems operate. A system is defined as a set of several independent and regularly interacting or interrelated units (also known as subsystems) that work together to achieve a set of pre-determined objectives. System theory therefore provides a base for detecting the substance of focus, creating a standard model of it and makes studying this substance of focus possible to arrive at results. Systems theory boasts interesting concepts, which adds to its basic advantage. These concepts of system approach include input, output, feedback, control, boundaries- and are very useful in understanding business situations.

E-commerce is a subsystem of the information system that uses information practices to achieve customer acquisition, customer retention and value creation. E-commerce activities are internet related, leaving room for technological uncertainties. The risk associated with these uncertainties heighten the role of trust in virtual business transactions (Kumar & Sareem, 2012). A strong and reliable policy framework minimises suspicion and distrust in online transactions. Thus, systems theory is relevant and relates to our topic as it borders on the issue of trust in E-commerce.

4.0 Conclusion and Recommendation

E-commerce has come to stay and there is no going back on this assertion. More businesses are migrating to the online platform as shown by available data. Covid-19 largely increased digital adoption by Nigerians (the lower class inclusive), consequently increasing their exposure to risk bordering on cyber-attacks and abuse. Significant efforts are thus needed to make Nigeria resilient to cyber-attacks and consequently increase the level of trust accorded to online transactions as is obtainable in Europe. In recognition of the important role of the internet in today's business transactions, Nigeria adopted the UNCITRAL model on e-commerce, which clearly provides for the validity of contracts, matters of evidence, electronic signatures, payment systems and other laws that pertain to business transactions online. There is however need for the Nigerian Government to strengthen existing indigenous laws and convert pending bills that relate to E-commerce into laws in order to ensure e-consumers and e-vendors alike are able to transact businesses online without prejudice of any form.

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