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Financial Integration in the West African Monetary Zone (WAMZ): Towards a Single Insurance Market

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Abstract

Integration of financial markets is a process of unifying markets and enabling convergence of risk-adjusted returns on the assets of comparable maturity across the markets. The insurance markets of the WAMZ countries are relatively not efficient. Although, there are several small insurance companies competing for premiums, only one company within the entire WAMZ region has a gross premium base more than $100 million. The paper recommends that the insurance sector integration 'quick wins should focus on: taking action to make the brown card scheme a more resounding success; increasing the minimum capital requirement of insurance companies in some of the WAMZ countries; developing a programme whereby insurance companies are required to be fair when paying claims to clients; as well as harmonizing insurance laws and regulation.

Key words: Insurance, Financial Integration, West African Monetary Union,

JEL code: G 280, O16, 017

[1] The views contain therein are personal to the author.
[2] Liberia acceded to the Membership of the Zone in 2010.

Introduction

The West African Monetary Zone (WAMZ) was established in December 2000 with the objectives of creating a monetary union for the five-member states (The Gambia, Ghana, Guinea, Nigeria and Sierra Leone); establishing a regional central bank; creating a single financial services supervisor; and, developing a common market for goods and services. The West African monetary institute (WAMI) was established in 2000, but commenced operations in 2011 as the forerunner to the West African Central Bank (WACB). The Institute serves as the Secretariat of the WAMZ's governing bodies with a clear mandate to undertake preparatory work towards the establishment of a common central bank, West African Central Bank (WACB).

Integration of financial markets is a process of unifying markets and enabling convergence of risk-adjusted returns on the assets of comparable maturity across the markets. The process of integration is facilitated by an unrestrained access of participants to diverse market segments. In recent years, financial markets globally have witnessed growing integration prompted by the deregulation and advances in information technology. Central banks in various parts of the world have made concerted efforts to develop financial markets, especially after the experience of numerous financial crises in the 1990s and late 2000s. At the same time, deregulation in emerging market economies (EMEs) has led to removal of restrictions on pricing of various financial assets, which is one of the pre-requisites for market integration.

Capital has become more mobile across national boundaries as countries are increasingly relying on savings from other countries to complement the domestic savings. Technological developments in electronic payment and communication systems have significantly reduced the arbitrage opportunities across financial centres, thus facilitating the cross-border mobility of funds.

The need for integrated financial market in a monetary union is evident. First, integrated markets serve as a medium for authorities to transmit important price signals (Reddy, 2003). Second, efficient and integrated financial markets constitute an important vehicle for promoting domestic savings, investment and consequently economic growth (Mohan, 2005). Third, financial market integration promotes the necessary condition for a country's financial sector to emerge as an international or a regional financial Centre (Reddy, 2003). Fourth, financial market integration, by enhancing competition and efficiency of intermediaries in their operations and allocation of resources, and contributes to financial stability (Trichet, 2005).

Fifth, integrated markets lead to innovations and cost-effective intermediation, thereby improving access to financial services for members of the public, institutions and companies alike (Giannetti *et. al.,* 2007). Sixth, integrated financial markets induce market discipline and informational efficiency. Seventh, financial market integration promotes the adoption of modern technology and payment systems to achieve cost effective financial intermediation services.

An important objective of reforms in most of the WAMZ countries has been to integrate the various segments of the financial market to transform the structure of markets, reduce arbitrage opportunities, achieve higher level of efficiency in market operation of intermediaries and enhance efficacy of monetary policy in an economy (Onwioduokit and Adamu, 2005).

UNCTAD (1964) emphasized the importance of the insurance industry in the development process of a country or region: a resonance insurance sector represents an essential feature of a sound economic system, contributing to economic growth and fostering high employment. Within an integrated economic area such as the one envisaged by the WAMZ, the contribution of member countries' insurance sectors to economic growth can even be more fundamental.

A low and uneven development of insurance, especially in the non-life, increases the level of risk in the economic decisions taken by individuals and firms, hampering, in turn, economic activity. The sound and reliable insurance sector is a *sine qua non* for a well-functioning of the large proportion of the rest of the economy. Without a reliable mechanism for mutualization, pooling and transferring risk, a large portion of the economic activity would simply not take place.

The insurance industry promotes economic growth and structural development through the following channels: providing broader insurance coverage directly to firms, improving their financial soundness; fostering entrepreneurial attitudes, encouraging investment, innovation, market dynamism and competition; enhancing financial intermediation, creating liquidity and mobilizing savings as major institutional investors. Insurers collects dispersed financial resources, and channel them towards investment opportunities, facilitating companies' access to capital; promoting improved risk management by households and firms, contributing to sustainable development; and fostering stable consumption throughout the lifetime of households and firms. Admittedly, these functions and benefits could be gained even at the national levels. Thus, the benefits of the scale economies amplify these benefits in an integrated sub-regional insurance sector.

Insurance allows firms to expand and take on economic risks without the need to set aside capital in liquid contingency funds. The absence of adequate business insurance cover tends to be particularly harmful for small firms. Limited capital and difficulty in accessing financial markets make them vulnerable to adverse shocks/events. Without insurance, large contingency funds would be needed to protect firms against risk. For many small firms this would represent more capital than they presently employ in total. Therefore, without insurance, the population of firms would decrease rapidly.

Being innovative presupposes the willingness to take risks. Since (potential) entrepreneurs, much like ordinary people, are characterized by risk aversion, the willingness to take risks can be considered as a scarce resource (Sinn 1986, 1990). The more willingness to take risk is available, the more will be produced.

Even if the insurance industry cannot change the overall willingness of actors in an economy to take risks (risk aversion does not change with insurance), it does play a key role in freeing entrepreneurial spirit. Insurance decreases the risk supported by entrepreneurs through mitigating and pooling procedures and allows them to take additional risks. Well-developed insurance markets contribute by helping to optimize the allocation of the scarce resource of "risk-taking" by shifting it from conservative to innovative and high profit activities. Underinsured firms, in contrast, usually do not exploit new business opportunities, they invest less in innovation and their degree in participation in global markets is low. The relationship between insurers and their business customers should be considered at least as important as the relationship between banks and their business customers.

Insurers' risk assessment is reflected in price and policy conditions. In this way they offer firms and households an indicator of their risk level. The policy holder can take action to reduce the risk profile, or to reduce the potential damage, or both. Therefore, by means of risk pricing, insurance acts as a precaution improver and encourages responsible and sustainable use of resources; for example: prevention of accidents at work, less polluting technology. The client will clearly see the advantages of taken action to reduce risk. In some cases, this will happen because there will be no insurance if things are left unchanged, at other times this will happen because of a high premium level. This process influences investment decisions and thus contributes to the sustainable development of the economy and society.

Given that consumption constitutes a significant percentage of GDP and represents one of the key drivers of economic growth and citizen welfare, by offering lifelong financial protection, insurance acts as a security net allowing stable consumption throughout an individual's life: house and other damage insurance allow households to secure their assets in case of adverse events; liability insurance protects households from the consequence of damage they may cause to other people; life insurance protects relatives from financial burdens in case of death and/or offers revenue, under the form of capital or annuities, at the time of retirement; health and accident insurance provides resources when they are most needed; and credit insurance eases consumption but also protects the consumer against excessive debt through pricing and acceptation policies.

By offering products relevant to all aspects of life, insurance secures the standard of living and sustains consumption, which is one of the main drivers of economic growth. Guaranteeing a stable lifestyle to millions of Europeans increases their confidence in the future and enhances consumption.

Overall, conducting insurance business in a unified market offers advantages to both market sides compared to a situation of national fragmentation. Suppliers benefit from improved regional diversification of insured risks, the realization of economies of scale and a wider area for investing assets. Consumers benefit from a larger choice among insurance companies and products and a higher degree of competition. Provided that anti-trust policy is effectively safeguarding a competitive situation, policyholders should therefore get a better ratio of "insurance value for premium".

The objective of this paper is to identify the challenges militating against the integration of the insurance sub-sector and proffer strategies that the Zone can implement to facilitate the integration of the sub-sector.

Following this introduction, the rest of the paper is organized thus: Part II contains a brief discussion on the nexus between financial sector integration and economic growth, including dimensions of financial integration. Part III briefly discusses the insurance sector in the WAMZ while Part IV examines the European experience on insurance market integration. In Part V, the challenges and way forward for insurance integration is presented. Part VI contains some concluding remarks.

II Financial Market Integration: Theoretical and Conceptual Issues

Financial market integration at the theoretical level has been postulated in several ways. The most popular economic principles of financial integration include the law of one price, term structure of interest rates, parity conditions including purchasing power parity, covered and uncovered interest parity conditions, capital asset price model, arbitrage price theory and Black-Scholes' principle of pricing derivatives.

The law of one price (LOOP), pioneered by Cournot (1927) and Marshall (1930) constitutes the pivotal principle underlying financial market integration. The LOOP avers that, in the absence of administrative and informational barriers, risk-adjusted returns on identical assets should be comparable across markets. While the LOOP provides a generalized framework for financial market integration, finance literature offers alternative principles, which establish operational linkages among different financial market segments.

The term structure of interest rates, deriving from paradigms of unbiased expectations, liquidity preference, and market segmentation, establishes integration across the maturity spectrum, i.e., short, medium and long ends of the financial market (Blinder, 2004). Generally, the term structure is applied to a particular instrument for example the risk-free government securities. However, in the monetary economics literature, it is recognized that the term structure of interest rate holds useful information about future trajectory of inflation and growth, which described the objective function of policy in most countries.

The capital asset pricing model (CAPM) proposed by Sharpe (1964) is used extensively for valuing systematic risk to financial assets. The CAPM establishes linkage between market instruments and risk-free instruments such as government securities. The CAPM envisages a simplified world with no taxes and transaction costs, and identical investors. In such a world, super-efficient portfolio must be the market portfolio; leveraging or deleveraging would be driven by the risk-free asset in order to achieve a desired level of risk and return.

The Black-Scholes' principle of option pricing, postulates linkage between derivative products on the one hand and cash-spot market of underlying assets on the other. The frequently quoted put-call parity principle in finance theory states that in the absence of arbitrage opportunities, a derivative instrument can be replicated in terms of spot price of underlying asset, coupled with some borrowing or lending activity. The forward-spot parity relation is used broadly for analyzing linkages between foreign exchange forwards and the money market instruments.

Beyond economic and financial principles, financial markets integration could also occur due to

information efficiency as economic agents form expectations about the future course of policy and real sector developments. For instance, even if transactions between residents and non-residents and between markets and intermediaries remain imperfect or limited due to regulatory barriers, participants could form expectation that such restrictions may not continue for long with an anticipated shift in policy regime towards greater openness and liberalization of markets over time. This expectation will drive their behaviour even in the face of regulatory barriers.

Furthermore, the other stance of the theoretical literature outlines the benefits and costs of financial integration from the perspective of sovereigns, individuals, corporate, and financial institutions. In the hierarchy, domestic financial market integration comes first, followed by regional and global integration (Sundarajan *et. al.,* 2003). Unlike international integration, the benefits of domestic financial integration are hardly contested.

Domestic financial markets constitute a vital pillar of a market-based economy as it aids to mobilize savings, allocate risk, absorb external financial shocks, promote good governance through market-based incentives and contribute to more stable investment financing and, thus, higher economic growth, lower macroeconomic volatility and greater financial stability (Mohan, 2005). The development of local financial markets also reduces the risks associated with excessive reliance on foreign capital, including currency and maturity mismatches (Prasad *et. al.,* 2003). Domestic integration provides an effective channel for the transmission of policy impulses (Pétursson, 2011).

The benefits of regional financial market integration depend on size, composition, and quality of capital flows. Regional financial integration involves direct and indirect or collateral benefits (Prasad *et. al.,* 2005). Analytical arguments supporting financial openness revolve around main considerations including the benefits of international risk sharing for consumption smoothing, the positive impact of capital flows on domestic investment and growth, enhanced macroeconomic discipline and increased efficiency as well as greater stability of the domestic financial system associated with financial openness (Agenor and Aizenman, 1999). Regional financial integration could positively affect total factor productivity (Levine, 2011). Financial openness may increase the depth and breadth of domestic financial markets and lead to an increase in the degree of efficiency of the financial intermediation process by lowering costs and excessive profits associated with monopolistic and cartelized markets, thereby lowering the cost of investment and improving the resource allocation (Levine, 1996; Caprio and Honhan, 1999).

Financial market integration also creates some risks and involves costs. A key risk is that of contagion. There are two channels through which the contagion normally works: the real channel, which relates to potential for *domino effects* through real exposures on participants operating in other segments; and the information channel which relates to contagious withdrawals due to lack of accurate and timely information. Increased domestic and international integration accentuates the risk of contagion as problems in one market segment are likely to be transmitted to other market segment with the potential to cause systemic instability (Dadush, Dasgupta and Ratha, 2000).

Also within the context of globalization, potential costs include the high degree of concentration of capital flows, misallocation of flows, which may hamper their growth effects and exacerbate domestic distortions; the loss of macroeconomic stability; the pro-cyclical nature of short-term capital flows and the risk of abrupt reversals; a high degree of volatility of capital flows, which relates in part to herding and contagion effects; and risks associated with foreign bank penetration (Dadush, Dasgupta and Ratha, 2000).

II.1 Conceptual Issues

From an alternative perspective, financial market integration could take place horizontally and vertically. In the horizontal integration, inter-linkages occur among domestic financial market segments, while vertical integration occurs between domestic markets and regional/international financial markets (USAID, 1998).

Domestic financial market integration entails horizontal linkages of various segments, reflecting portfolio diversification by savers, investors and intermediaries. Under horizontal integration, market interest rates typically revolve around a basic reference rate, which is defined as the price of a short-term low-risk financial instrument in a competitive and liquid market. It typically provides the basic liquidity for the formal financial system and monetary authorities often use it to gauge the primary impact of monetary policy. Domestic markets may be closely integrated because intermediaries operate simultaneously in various market segments; for instance, commercial banks operate in both the saving (deposit) and loan markets.

Regional financial integration occurs due to ties between a given region and the major financial Centre serving that region. Economic integration might be easier to achieve at a regional level due to network externalities and the tendency of market makers to concentrate in certain geographical centres. Gravity models, which take into account the

economic sizes and distance between two countries, explain bilateral trade and investment flows. Furthermore, regional financial integration can be an important means of developing local financial markets, for instance, through peer pressure to strengthen institutions and upgrade local practices (BIS, 2006).

Global integration refers to the opening up of domestic markets and institutions to the free cross-border flow of capital and financial services by removing barriers such as capital controls and withholding taxes. A deeper dimension of global integration entails removing obstacles to movement of people, technology and market participants across border (BIS, 2006). Global integration is promoted through harmonization of national standards and laws, either through the adoption of commonly agreed minimum standards or the mutual recognition of standards (Reddy, 2006).

III. Insurance Sector in the WAMZ

The insurance markets of the WAMZ countries are relatively not efficient (Onwioduokit, 2006). Although there are several small insurance companies competing for premiums, only one company within the entire WAMZ region has a gross premium base in excess of $100 million: Nigeria's NICON insurance. The capacity for insurance business in the sub-region is relatively under developed as there is inadequately trained and experienced workforce for the insurance industry as well as the insurance regulators (Onwioduokit, 2006). However, the Insurance Institute based in The Gambia takes care of middle management and senior staff, as do the education and training courses conducted by West African Insurance Companies Association (WAICA) is contributing to building capacity across the sub-region.

The insurance regulators are at various stages of development, with the Nigerian and Ghanaian supervisors best staffed and equipped. Consequently, the degree to which the industry is supervised varies significantly across the countries. The Zone's regulators share little information amongst each other. There are no formal avenues whereby information could be shared. Harmonization and improvements in cross border trade could be brought about by implementing certain courses of action, such as a common approach to supervision, licensing and claims payments.

The Zone's insurance laws and regulations are diverse. There are considerable differences in the amount of minimum capital required for obtaining an insurance license in each of the countries, the extremes being in Sierra Leone, where a life license requires $25,000 of capital, and Nigeria, where that same license requires a minimum capital of $13.5 million.

Each of the WAMZ countries has its own set of insurance laws and regulations. The laws currently do not take risk-based capital into consideration; the accent is on total capital. The comparatively high levels of capital requirements in Nigeria impose a considerable barrier to entering the insurance market for insurers from other WAMZ countries. Space for regulatory arbitrage in respect of capital requirements is invalidated by the fact that branch operations are not allowed in any of the WAMZ countries: separate corporate structures need to be established.

Each of the WAMZ countries has an insurance regulator/supervisor. In Ghana, Nigeria and Sierra Leone, separate quasi-independent insurance regulators exist. In the case of The Gambia, Guinea and Liberia, a department within the central bank is responsible for insurance supervision

The level of staffing and the quality of the insurance regulatory staff is related to its funding. A number of regulators do meet informally, and have done so over a period of time. There are no formal arrangements in place between the insurance regulators of the various WAMZ countries, for such purposes as information sharing. The only formal cross border agreement currently in place is the Brown Card Scheme under the ECOWAS framework. At the moment, companies operating in more than one WAMZ country have not yet established functions which are centralised across all countries, such as claims handling or underwriting.

Almost all of the insurance products sold in the WAMZ region are in the compulsory category, only a small number of people purchase insurance products willingly; thus insurance penetration are at relatively very low levels. There is very little attention to customer satisfaction. Creating the right conditions for healthy cross border trade, benefitting policyholders and the entire insurance industry could be driven through improved supervision and improved insurance laws and regulations, or improved application of existing laws and regulations.

The insurance regulators of all WAMZ countries could improve the environment for growing a viable and healthy long-term insurance industry by making unremitting and concerted regional effort to force insurance companies to pay claims in a timely and fair manner, as measured by a continuously increasing percentage of premiums being allocated to the payment of policyholder claims and benefits.

Consumer education and understanding are also inadequate: throughout the WAMZ region, potential

policyholders are unaware of the benefits to be derived from owning insurance products. A determined effort to increase consumer education, drawing awareness to the benefit of holding insurance policies, could be carried out throughout the WAMZ region by means of production and distribution of published material and advertisements.

IV. The Road to Single Market for Insurance: European Experience

The only monetary arrangement that is functional today that was achieved through the convergence process as the one the WAMZ is currently undertaking is the European Monetary Union (EMU). Therefore, it is germane to take a cursory look at their experience in the insurance market integration to glean some lessons from their experience.

In general, the single market for financial services in Europe is founded on the fulfillment of the three indispensable basic freedoms provided by the Treaty of Rome (1957): the freedom of establishment, the free movement of goods and services and the free movement of capital. With respect to insurance, three generations of insurance directives have been issued and implemented between 1973 and 1992 to enforce these principles.

In the first stage (1973 – 79), the freedom of establishment was realized, Insurance companies were allowed to open up subsidiaries, branch offices or agencies in every EU Member State, though the national authority of the host country was held responsible for prudential supervision (host country control). During the second stage (1983 – 90), the freedom of services was set up. Since then, it was possible to do insurance business without having a fixed branch or subsidiary. The host country control, however, was abolished only for certain industrial risks (e.g. industrial fire) while for private business most EU member nations made use of their option to leave the host country control unchanged; exceptions to this rule were the Netherlands and the United Kingdom. One benign explanation for this may be found in the authorities' attempt to maximize the protection of the private policyholder. But also, protectionist motivations most likely played a role for sticking to host country control. This regulatory regime left the domestic insurance industry being in the more comfortable situation not to operate in a contestable international market environment.

The third generation of insurance directives (1992) was thought to unfold the desired quantum leap for wholly liberalizing the retail business also. It consisted of the subsequent key elements: *abolition of price and product regulations; restriction of host country supervision to solvency control; establishment of the principle of minimum harmonization; introduction of single EU license (+ mutual recognition); and home country control for all insurance classes.*

The most important step was the establishment of the home country control principle since market observers held the opinion that foreign suppliers were reluctant to establish a branch office under the control of the host country. Since then, companies only need a license from their home country supervisory authority to conduct insurance business all over the EU, either under the rule of freedom of establishment or under the rule of freedom to provide services. However, the business of subsidiaries remains regulated by the host country. Additionally, the component home authority of their head office country has to be notified of their intended business plan. Documents indicating the member country in which the branch is to be established, the name and address of the agent or branch and a scheme of operations have to be submitted. With respect to the provisions on the freedom of services it is simply required that the competent home authority be informed about the member country in which they intend to carry on business and about the risks they intend to cover. The respective home country authorities pay attention to the exchange of information between the supervisory authorities.

These efforts for liberalization and deregulation led market observers to expect a strengthening of European cross-border competition and market consolidation. Yet, the ideal of a single insurance market by far has not been achieved during the time, thereafter. Insurance enterprises now have to cope with both newly emerged and well-known obstacles. Many uncertainties have arisen from the exact scope of the freedom to provide services and from the extent to which the *general good* principle can be invoked by national authorities.

The latter principle has been developed by case law. It enables national authorities even now to set individual national rules that possibly deny market access to foreign companies if certain public interests are claimed to be violated. This claim can be based on consumer protection, prevention of fraud or worker protection, for example. The Commissions' communications on "Freedom to Provide Services and the General Good in the Insurance Sector" first announced 1997, but issued only in 2009 clarify its view of the freedom to provide services and the general good principle. However, since the general good principle is being evolved by case law, legal doubts persist and hinder insurance companies to approach foreign EU markets without frictions.

V WAMZ Regional Insurance Integration: Challenges and Wayforward

Several factors have come together to propel the regionalization of financial markets in the WAMZ. The signing of the ECOWAS Protocol on free movement of persons, goods and services coupled with that of right of residence and establishment though still fraud with implementation difficulties forms the lynchpin for the private sector to invest across borders. However, several factors still constrain particularly the growth and integration of the regional financial sector and specifically that of the insurance market. The key challenges and the concomitant proposal towards resolving them are presented below:

I. *Non-harmonization of legal and regulatory frameworks*: As indicated earlier, there exist differential in tax regimes and other regulatory discrepancies which constitute a major hindrance to integration. There is an urgent need to align regulatory and supervisory frameworks and reporting requirements to address this issue.

ii. *Non-existence of a single licensing regime:* the absence of a single licensing hinders integration. If a single licensing regime were to be introduced, for insurance it will significantly reduce cross-border transaction times and costs and barriers to entry.

iii. *Non-mutual recognition among regulators:* at present there are no mutual recognitions among regulators. For the integration to be effective there is need for mutual recognition, this will require that national regulators converge around some broadly defined international principles.

iv. *Inadequate regionally compatible financial infrastructure:* Nigeria and Ghana have already made substantial progress in integrating their real time gross settlement systems (RTGS). Other countries are in the process to aligning their payment systems with those of Nigeria and Ghana. However, these are still stand-alone system. It is necessary to ensure that these infrastructures are compatible and integrated through a central hub at the sub-regional level.

v. *Non-existence of cross-border supervisory practices*: deepening links between financial institutions warrants a similar deepening of cooperation between supervisors. At present, such links do not exist in the WAMZ. Home-host supervisory communication and consolidated supervisions are important to ensuring that weaknesses in one financial institution/market do not put the regional financial system at risk.

vi. *Weak data gathering mechanism*: Information on current volumes of cross-border trade in insurance products is generally imprecise and deficient. This data gap is problematic, not just because policymakers are working with limited information on the issues and opportunities that lie ahead, but it also masks the benefits and costs of further integration by obscuring the extent of cross-border linkages.

Overall, the key challenges to the Insurance Sector Integration in the West African Monetary Zone (WAMZ) include the lack of harmonization of legal and regulatory frameworks governing the sector, the high costs of transaction, and the insolvency regime. Jurisdiction dissimilarities include measurement of assets, minimum capital requirements, regulatory solvency capital, insurance laws, solvency laws, policy holder priority during wind-up, scope and coverage of insurance policies and the existence of other types of policyholder protection.

Others are intervention process and powers, bilateral/multilateral recognition/agreement between home and host regimes, and planning for stress and resolution situations are some of the key areas of divergence in the supervisory structures of member states of the WAMZ.

The need to harmonize the rules and the entire regulatory framework for the insurance sector across the sub-region, necessitate the establishment of an Insurance Supervisors' College to periodically deliberate on issues bordering on the supervision and joint examination of insurance companies with cross-border presence. In this direction, there is strong need to streamline insurance integration efforts in the WAMZ as a precursor; in this regard Guinea had been proposed to be adopted as a member of WAICA, since the country is already a member of WAMZ.

The Institute in collaboration with ECOWAS and WAICA had taken steps to institutionalize the insurance sector integration in the WAMZ. These include agreements to constitute the ***West African Insurance Sector Integration Council*** (WAISIC) made up of the heads of National Insurance Regulation in member countries and the CEOs of Insurance Associations in member countries. The CEO of the ECOWAS Brown Card Scheme and the Private Sector Department of the ECOWAS Commission, WAMI and WAICA as observers, to oversee the integration of the insurance sector in member countries of the WAMZ.

The WAISIC would be supported by two technical committees (TC), to advice on the harmonization of the rules and regulatory frameworks, harmonization of operational processes, and the creation of a

common platform for cross-border insurance operations in the WAMZ

VI. Conclusion

Integrated financial markets, including insurance remain a key element in the transmission process and hence for the smooth conduct of monetary policy in the envisaged common central bank arrangement for the WAMZ. Financial integration also leads to better diversification of risks and makes a positive contribution to financial stability by improving the capacity of economies to absorb shocks. On the other hand, fully integrated financial markets also pave the way for shocks to propagate more quickly among market participants and across countries, which could necessitate appropriate safeguards. To mitigate the risks and maximize benefits from financial integration, it is imperative that the financial markets are developed and integrated further in the Zone.

Enhanced co-operation among various stakeholders including regulatory authorities is also important for ensuring effective integration. As international experience suggests, integration of the insurance sector in a monetary union must be pursued consciously and conscientiously with clear time lines outlined for the various components of the integration efforts. The fierce urgency for the WAMZ is to adopt immediate and workable strategies to accelerate the integration process of the financial sector, particularly the insurance sub-sector in order to facilitate trade in goods and services within the Zone. In this direction, the insurance sector integration 'quick wins' should focus on: taking action in order to make the brown card scheme a more resounding success; increasing the minimum capital requirement in some of the WAMZ countries; developing a programme whereby insurance companies are forced to pay claims fairly; and harmonizing insurance laws and regulation.

References

Agenor, P. R. and J. Aizenman (1999), "Volatility and Welfare Costs of Financial Market Integration" in P.R. Agenor, M. Miller, D. Vine and A. Weber (eds.), *The Asian Crisis: Causes, Contagion and Consequences* (Cambridge University Press).

Blinder, A. (2004), "*The Quiet Revolution*". New Haven, CT: Yale University Press

BIS Quarterly Review, (2006). Available at: http://www.bis.org/statistics/derstats.htm.

Caprio, G. and P. Honohan (1999), "Restoring Banking Stability: Beyond Supervised Capital Requirements". *Journal of Economic Perspectives*, Vol. 13, No. 2: pp. 43-64.

Cournot, A. (1927), "*Researches into the Mathematical Principles of Theory of Wealth*"' Nathaniel T. Bacon (Trans), Macmillan.

Dadush, U., D. Dasgupta, and D. Ratha (2000), "The Role of Short-Term Markets"'. Institute for Monetary and Economic Research, Bank of Korea, *Working Paper*, No. 435: pp. 1-56.

Giannetti, M., L. J. Guiso, T. Padula and M. Pagano (2007), "Financial Market Integration, Corporate Financing and Economic Growth"', *European Economy: Economic Papers* No. 179.

Levine, R. (2011), "International Financial Liberalisation and Economic Growth". *Review of International Economics*, Vol. 2. No. 2; pp 141-153.

Levine, R. (1996), "Foreign Banks, Financial Development and Economic Growth" in *International Financial markets: Harmonization Versus Competition*, ed. Claude E. Barfield, 224-254. Washington, DC: American Enterprise Institute Press.

Marshall, A. (1930)," Principles *of Economics: An Introductory Volume*", 8th ed, Macmillan.

Mohan, R. (2005), "Globalization, Financial Markets and the Operation of Monetary Policy in India", *BIS Papers*. No. 23.

Onwioduokit, E. A. and P. Adamu (2005), "Financial Liberalization in Nigeria: An Assessment of Relative Impact" in *Cost and Benefits of Economic Reforms in Nigeria*. *Selected Paper for the 2005 Annual Conference of Nigeria Economic Society Chapter 14*.

Onwioduokit, E. A. (2006). 'Financial Liberalization and Savings Mobilization in Nigeria'. CBN Bullion, 30(1): 52 – 62

Petursson, T. G. (2011), "The Transmission Medium of Monetary Policy: Analyzing the Financial Market Pass-through", Central

Bank of Iceland *Working Paper* No. 14.

Prasad, E., S. Kenneth Rogoff and M. Kose (2003), "The Effects of Financial Globalisation on Developing Countries: Some Empirical Evidence" *IMF Occasional Paper* No. 220. Washington, DC.

Prasad, E., S. Kenneth Rogoff and M. Kose (2004), Financial Globalisation, Growth and Volatility in Developing Countries' *NBER Working Paper* No. 10942. Cambridge.

Prasad, Eswar, Thomas Rumbaugh, and Qing Wang. (2005), "Putting the Cart Before the Horse? Capital Account Liberalization and Exchange Rate Flexibility in China," IMF Policy Discussion Paper No. 05/1, (January).

Reddy, Y. V. (2003), "The Global Economy and Financial Markets: Outlook, Risks and Policy Responses", *RBI Bulletin* (October).

Reddy, Y. V. (2006), "Reforming India's Financial Sector: Changing Dimensions and Emerging Issues", *RBI Bulletin* (June).

Sharpe, W. (1964)," Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk", Journal of Finance, No. 19, Vol. 2: pp. 425-442.
Sinn, H.-W. (1986). "Risiko als Produktionsfaktor;' Jahrbffcher fiir National6konomie und Statistik 201,557-571.

Sinn, H.-W. (1990). "Expected Utility, tt-tr Preferences, and Linear Distribution Classes: A Further Result" Journal of Risk and Uncertainty 3, 277-281.

Sundarajan, V., U.S. Das and P. Yossifov (2003), "Cross-Country and Cross-Sector Analysis of Transparency of Monetary and Financial Policies", IMF Working Paper No. 94.

Trichet, J.C. (2005), "The Process of European Financial Integration: Where Do We Stand" *Speech delivered at WHU Otto Beisheim School of Management. Vallendar.* January 13.

USAID.1998. *The Fiscal Year Accountability* ***Report. Pp.129.***

UNCTAD I. (1964). *'A Final Act'* In: Proceeding of the United Nations Conference on Trade and Development. Geneva, 23 March – 16 June, United Nations: New York.

States' Fiscal Dependency and Implications on Monetary Management in Nigeria

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Abstract:
This study examines fiscal management by States in Nigeria and its potential to sustain growth and development. The study used secondary data from the Bank's Statistical Bulletin and the Nigeria Bureau of Statistics. Information on monthly allocations to States, internally Generated Revenue, Debt stock, total Revenue, and Total expenditure were used to examine fiscal imbalance in the States. Data were collected on statutory allocations to States by the Federation Account Allocation Committee (FAAC), Internally Generated Revenue (IGR), States' debt stock, capital and recurrent expenditure from the Central Bank of Nigeria (CBN) and the National Bureau of Statistics (NBS).

Descriptive statistics was used to analyze the collected data. The findings from the study indicated that despite a decline in revenue from the statutory allocations, most States in Nigeria were still spending in excess of their revenue. The study recommended that there is need for states to strengthen institutions that would enhance Internally Generated Revenue (IGR) in the states that would engender growth and development.

Key Words: Fiscal Dependency, Monetary Management, Descriptive Statistics, Nigeria.

Jel Code:

1.0 Introduction

Nigeria practices federalism as a system of government, bringing into existence a central government, and sub-national governments, which comprise the 36 state governments and the Federal Capital Territory, as well as 774 local governments. Each tier of government is saddled with constitutional responsibilities that border on provision of public services. The idea of fiscal federalism ensures that the government at various tiers is sovereign in terms of decision making and in the allocation of its resources. The Nigerian federal system achieves its macroeconomic objectives by performing the functions of resource allocation, income distribution, and economic stabilisation between the Federal Government and its units Dang D.Y and Bala A. (2016).

Since the discovery of crude oil in the Niger-Delta region of the country, much of the nation's revenue has been derived from the sale of crude oil and its allied products. Hence, government budgetary allocations are dependent dependent on proceeds from crude oil export and this is one of the major tools for the implementation of fiscal policy initiatives in the country. These proceeds are subsequently allocated to the three tiers of the government on a monthly basis from the federation account. The Revenue Mobilization, Allocation and Fiscal Commission (RMAFC) established in 1999 is responsible for the monitoring of the inflow and outflow of revenue from the Federation Account, review of the revenue sharing formula among other functions. Under the present arrangement, Federal Government share 52.68%, while the States receive 26.72%, the balance (20.60%) accrues to the Local Governments. Apart from the Federal Allocation, internally generated revenue is the other source of funding for the States.

Akintoye I. (2013) pointed out a mismatch between the responsibilities and revenue distribution between the Federal Government and the States. While high-yielding sources of revenue accrue to the Federal Government, the State governments are responsible for substantial and growing expenditures. This requires that State governments develop efficient strategies to drive internal revenue beyond their monthly allocations. This will be very important for sustainable development given the rising cost of running the government and increasing infrastructural deficits in the States (Kiabel and Nwokah, 2009).

However, Nigerian States have struggled with this demand over the years as many have failed to generate enough revenue to match their allocations or surpass it. With the exception of Lagos and Rivers States, no other State has generated enough revenue to match its federal allocation in the last five years. As such, the level of growth and development in many States in Nigeria is very low.

The situation has also been compounded by the fall in the price of crude oil, which is the major source of government revenue, resulting in a decline in the allocation to States and Local Governments. This has become a major problem for States as many of them do not generate enough to meet their proposed expenditures and other obligations. Taxation in the form of employees' Pay As You Earn (P.A.Y.E), road taxes, and levies constitute what should be another main source of government revenue. However, weak tax collection systems have limited the capacity of government at all levels in Nigeria to fully exploit this resource base. Another viable option is the fees charged by Ministries, Departments, and Agencies for the provision of services. This is however dependent on the pace of development of the states.

There has been much analysis on the mismatch between the obligations of the regional governments and the dependent nature of their main revenue source which creates a fiscal imbalance. According to the CBN, an average of 52 percent of the revenue available to the 36 states in the country and the FCT were from the Federation Account between 2011 and 2016, while Internally Generated Revenue (IGR) and Value Added Tax (VAT) accounts for 20 percent and 11 percent respectively. This is an indication of the overdependence of States on federal allocation. This may also act as a disincentive for States to generate sustainable revenue from economic activities within their territories. This lack of incentive has implications for national development and most importantly growth in the non-oil sector of the economy, whose resources are more available to majority of the population.

In addition, State governments are under pressure to win elections and most times engage in ambitious, but costly capital projects from their monthly allocations and borrowings. The decline in the price of crude oil and its revenue implication has weakened the states' capacity to finance these projects from their monthly grants. This is further worsened by the burden of debt servicing of previous debts. Most state governments have therefore struggled to meet their recurrent expenditure obligations. Many of them owe salaries stretching back for months. Although the Federal Government has intervened by providing bail-out funds to mitigate the effect of the current financial crisis ravaging the states, but most states are still struggling to meet their financial obligations. It therefore necessary to carry out in-depth comparative analysis of fiscal dependency among the states to identify the plausible reasons for these fiscal differences and dependence. However, most of the past studies on this subject matter have focused mainly on the fiscal responsibilities of the Federal Government and its relationship with the States and Local Governments. Meanwhile, fiscal prudence among the States represents a very critical element in the life of an economy, especially in its quest for sustainable growth and national prosperity. It is on this premise that we examine the fiscal management by States in Nigeria and its potential to sustain growth and development. The objective is to make recommendations on how the monthly FAAC dependence and the imbalance which has been a subject of discuss in the last few decades. Importantly, there is also the need to strengthen institutions that would by extension enhance Internally Generated Revenue (IGR) in the states so as to boost growth and engender enduring development.

Following the introduction is section two. Section three analyses the methodology, while section four dwells on results and discussion, while section five provides the conclusion and policy recommendations.

2.0 Literature Review and Conceptual Framework

The essence of federalism, wherever it is practiced is to contain the spatial and cultural differences existing among the component units of Federation. The creation of the Federation of Nigeria was directed at finding a constitutional solution to the socio-spatial dynamics in the distribution of our natural resources to engender development. The country continued the search for a solution to accommodate the diversities within the spectrum of a unified and integrated Nigeria. In 1914, the Northern and Southern Protectorates of Nigeria were amalgamated. From the three regions in 1954 the fourth region was carved out of the existing three regions in 1962 - the Midwest Region. From twelve states in 1967, nineteen states were created in 1979, twenty-one in 1987, thirty in 1991, and later thirty-six in 1996. The rapid increase in the number of states in Nigeria' has been posing financial and basic administrative problems for the newer states as many find it difficult to maintain fiscal balance in any given year. The individual capacity of each state to raise revenue has been constrained by weak administrative skills, and a low level of economic activities. Therefore, finding enough revenue to satisfy the development plans has proved difficult for quite a number of states and has also resulted in

weakening the political and economic power of these states.

The ultimate implication of this situation on the fiscal position of the states is an increase in the demand for federal revenue to fund states recurrent expenditure as well as other development projects. Apart from this obvious dependence of state governments on the Federal Government, spatial differences in resource distribution appear to have some effect on the relative weight of dependency. Another issue that has been in the front burner in the past decades is the full dependence by all the tiers of government on one revenue source which is centrally collected and disbursed (monthly FAAC), most states, especially local government can have little or nothing without the allocation. Another notable development in Nigeria's sharing formula is that whenever revenue and new taxes are realised, the Federal Government would always assume larger share or jurisdiction, especially when viewed from the horizontal and vertical transfers.

Currently there is scanty literature on fiscal management of States and its capacity to sustain growth and development. Most of the studies focused on the impact of fiscal federalism on national economic growth. Dang D.Y (2013) examined the impact of revenue allocation on economic development in Nigeria and found out that revenue allocations to the Federal, State, and the Local Governments have a causal relationship with economic development in Nigeria. The study further showed that revenue allocation to States has a negative relationship with growth.

Martinez-Vazquez and McNab (2002) also observed that in developing countries, the allocation of revenue significantly reduces the growth of real GDP per capita. Yilmaz (2000) went further with a comparative analysis of unitary systems of government with the federal systems. Findings from the study indicated that decentralisation results in growth of real GDP per capita in the unitary countries while it is insignificant in the growth of real GDP per capita in federal countries.

In an attempt to establish the effect of the monthly allocation on the socio-economic development in the States, Emengini and Anere (2010) discovered that the monthly allocation has no significant influence on socio-economic development in the States. It only fueled political lobbies for State creation by ethnic minorities across the country as they are disenchanted with the fiscal arrangement in their respective States. The study noted that the effectiveness of revenue mobilisation process is independent on the system of government rather than the effectiveness of the implementation process.

Olowolaju *et. al*. (2014) used regression analysis to show how statutory allocation influences economic performance of Ekiti State, Nigeria. The results from the study revealed that internally generated revenue is not a significant contributor to GDP. Statutory allocation, on the other hand, positively influenced the Gross Domestic Product.

Gabriel and Charles (2015) showed that the Federal Government allocation share and the State Governments' internally generated revenue both have positive and significant relationship with growth, while State governments' monthly allocation has a negative and significant impact on growth.

According to Eyraud and Lusinyan (2012), the combination of vertical and horizontal imbalances is damaging to fiscal outcomes. Ezeabasili *et. al*. (2012) also found evidence that fiscal deficit affects economic growth negatively. A 1 percent increase in fiscal deficit reduces economic growth by about 0.023 percent. Also, there is a strong negative association between government consumption expenditure and economic growth. The conclusion from the review of literature is that most studies have focused more on how fiscal allocation among the three tiers of government affects growth at the national level. It is, however, of more importance to examine its impact on the economic fortunes of the states.

Romanus, O. O., & Monday, O. C. (2014) examined the Nigerian fiscal structure and the challenges facing the Revenue Mobilisation, Allocation and Fiscal Commission (RMAFC) in determining an acceptable revenue sharing formula. It also inquired into the revenue generation efforts of the three tiers of government and how the application of true fiscal federalism will boost the Internally Generated Revenue (IGR) which will lead to rapid economic growth and development. The paper employed descriptive survey with secondary method of data collection. Findings revealed near total dependence on the revenue from the Federation Account among the three tiers of government and total abandonment of internal revenue generation efforts. The neglect of IGR efforts have been seen to be responsible for the slow economic growth in the country as revealed by the study.

In the same vein, Ezeabasili, V., & Herbert, W. (2013) analysed the imperatives of Fiscal Responsibility Act. It drew some lessons from Brazil and situated these lessons in Nigeria. The paper explored some theoretical issues surrounding fiscal responsibility in an economy. Major features and similarities of the fiscal responsibility laws in Nigeria and Brazil were highlighted. Some of the fundamental flaws in Nigeria's democracy that impede economic development, as well as, the imperatives of the fiscal

responsibly law in Nigeria were analyzed. The paper concluded that strict adherence to the new fiscal policy law is bound to promote macroeconomic stability in Nigeria.

Babatunde, S. A. (2018) investigated government spending on infrastructure in Nigeria from 1980 to 2016 with the use of both primary and secondary data. The secondary data comprised reported annual spendings on selected infrastructure and annual Gross Domestic Products for Nigeria. Weighted least square was used to test the sample of 37-year annual time series data using vector error correction model. For the primary data, a sample of 242 respondents was utilised for the study. The data analysis was done with descriptive statistics. Findings from the study indicated that government spending on transport and communication, education and health infrastructure had significant effects on economic growth, while spendings on agriculture and natural resources infrastructure recorded a significant inverse effect on economic growth in Nigeria. An element of fiscal illusion was observed in the government spending on agriculture and natural resources indicating that government is not contributing as much as the private sector in spendings on agriculture and natural resources infrastructure in Nigeria.

Nwoba, M. O. E. (2015) examined the fiscal crisis and its impact on the local government Administration in South Eastern Nigeria with descriptive analysis. The study was deemed necessary because of the need for the local government Administrators to be alive to their responsibilities and challenges. The specific objectives of the study were to determine the viability of local government internal revenue and identify the relationship between inadequate tax jurisdiction and the rate of corruption noticed in the local government Administration in South Eastern Nigeria. The study adopted the theory of fiscal federalism as its theoretical framework and stratified sampling technique and simplified random sampling techniques. The outcomes revealed that the internal generation revenue source of local government in south Eastern Nigeria was not viable and the non-specification of local government revenue jurisdiction encourages corruption in the system. The implication of the above findings is inadequate delivery of services by the councils which hampered effective local government administration in the review period.

Ojide, M., & Charles, O. (2014) examined growth evidence of the Federal Government allocation share, state governments' allocation share, and state governments' internally generated revenue in Nigeria from 1970 to 2009. Dynamic Model and Correlation methods were used with aggregate annual data obtained from the Central Bank of Nigeria and Statistical Bulletin. The results revealed that at 5 percent level of significant, the regression result showed that allocations to the federal government (FGAS), allocations to the state governments (SGAS) and state governments' internally generated revenue (SIGR) significantly impact growth. However, while allocations to the Federal Government (FGAS) and state governments' internally generated revenue (SIGR) impacted on positively on growth, allocations to the state governments (SGAS) had negative impact. In addition, civilian administration as against military rule, has led to about 0.35 percent increase in growth vis-à-vis the management of Federation Account.

Oyeleke, O. J., & Ajilore, O. T. (2014) investigated the sustainability of fiscal policy in Nigeria over the period of 1980-2010 to determine whether or not the government has violated intertemporal government budget constraint. Using error correction method of analysis, the study revealed that fiscal policy was weakly sustainable in the economy of Nigeria in the review period.

2.1 The Concept of Inter-governmental Fiscal Relations

The concept of inter-governmental fiscal relations is an integral part of fiscal federalism. Inter-governmental fiscal relations are concerned with issues ranging from tax jurisdiction, to the allocation of revenue accruing to common accounts and component units of government within a federation.

Understanding intergovernmental fiscal relations requires some knowledge of inter-governmental functions, the constitutional tax power of different tiers of government and the appropriation of revenue in the collective (federation) account.

Federalism is generally concerned with the decentralization of government functions from the central (federal) government to other component units of government (ie, the states and the local governments). This naturally results in decentralization of the fiscal system, which is the idea embedded in fiscal federalism: that is, the existence within one country of different expenditure responsibilities and taxing powers among the different levels of government that constitute the federation. Fiscal federalism, therefore, is an all-embracing concept that explains the fiscal activities that take place within a federation. Inter-governmental fiscal relations, on the other hand, refer to the fiscal transactions and coordinating arrangements among the various tiers of government in a federation (Musgrave and Musgrave, 1989).

Inter-governmental fiscal relations involves the balancing of fiscal responsibility with the revenue collection powers of the different levels of government within the Federation. The allocation of responsibilities among the different units of government is normally handled by the constitution.

In Nigeria, the list of responsibilities is stated in the constitution. Basically, there are three lists: the exclusive list of responsibilities, the concurrent list and the residual list. The exclusive list comprised responsibilities which are funded 'exclusively' by the Federal Government; the concurrent list consists of responsibilities shared by both the Federal and state governments; and the residual list is the sole responsibility of the state. The residual list comprise those responsibilities that are not in the first two lists and are not assigned to the local governments.

Issues concerning functions and responsibilities, and the allocation of tax powers to different tiers of government have been variously discussed in detail by Mbanefoh (1993) and Anyanwu (2011). Apart from their discourse, a number of observations about the allocation of responsibilities and tax powers are pertinent. First, the distribution of responsibilities and tax powers usually take into account the effects of such allocation on the general ease of system control and on policy interaction. That is why the local governments are responsible for rates and fees levied on people and activities at the grassroots level. Similarly, for economy of administration, almost all personal income taxes are levied by the state government. The Federal Government, because of its ability to ensure compliance, is vested with the power to collect company income tax.

Second, in allocating responsibilities and tax collection powers, there must be a balance between the principles of efficiency and equity among the tiers of government. Efficiency principles relate to the minimisation of cost in the administration of tax/revenue collection by the different tiers of government, while equity demands an alignment of revenue powers with fiscal responsibilities (Mbanefoh, 1993). In the real world, the issue of balancing responsibilities with tax power has to do with the balance between fiscal concentration and efficiency. There are usually some trade-offs between efficiency and equity in fiscal practices.

The Federal Government, by reason of more robust structure and instrument of state powers may be more efficient at tax collection and administration. The temptation is thus, to concentrate fiscal powers in the Federal Government. The lower levels of government, however, have to begin from somewhere to attain fiscal efficiency and independence (Mbanefoh, 1999). In a developing country like Nigeria with various factors warranting inefficiency, it is only reasonable to highlight the need for fiscal independence without disparaging the esteem of efficiency.

Another issue with the analysis of inter-governmental fiscal relations is revenue allocation among the different units of government. Revenue allocation denotes the consignment of revenue to the different sectors (horizontal allocation) and to different units of government (vertical allocation). Revenue allocation has been discussed extensively with respect to fiscal federalism in Nigeria. Some of the conclusions include: excessive fiscal concentration and control (over 70 per cent) at the Federal level, due to the prolonged impact of military rule (Akpan, 1999). With respect to the horizontal allocation of revenue among states, the various criteria used are controversial, even among scholars in Nigeria. Revenue allocation controversial because of lack of general acceptance of the revenue allocation formulae, which has been adopted in the country. Those states with a rich revenue base are insisting on an allocation formula based on derivation, those with a poor revenue base have insisted on using the principles of equity, population and land mass in the allocation (Mbanefoh, 1999). The allocation formulae is unacceptable to many Nigerians because of its 'exclusive reliance on political rather than efficiency factors as indices for revenue allocation. This has been the fundamental cause of the increasing dependency of the state and local governments on statutory allocation from the federal government. The proliferation of states has reduced the size and capacity of the new states and made them inherently weak and excessively dependent on fiscal subventions from the Federal Government. Shiyanbade, B. W. (2017) was critical of the impact of state creation on political power and resource capability. He warned that the existence of numerous weak states is dangerous in that it erodes the influence, which the states would have on checking the Federal Government excesses. What does the constitution say about the responsibilities on both the concurrent and exclusive list? I think the argument should be made about fiscal federalism with fiscal responsibility).

2.2 States Fiscal Imbalance and Implications on Monetary Policy

2.2.1 Monthly Federal Account Allocations Committee (FAAC): The injection from the monthly allocation through the Federal Account Allocation Committee (FAAC) into the economy without a corresponding instrument at the disposal of monetary authority (CBN) to mop-up the liquidity is worrisome. This has several implications to the price stability mandate of the Bank. The global financial crisis that ravaged the whole world in 2008-2009 invoked heated debate on the appropriateness of

the use of financing/bailout in fighting recessions. Policy makers have continued to argue the rationale behind borrowing and the combination of monetary and fiscal policy in fighting recessions and this has persistently be a reoccurring debate. In Japan, North America and Europe the contentious argument has been how to counter a large recession brought on by an unprecedented fall in private consumption and investment spending. During this period, policy makers in almost all the countries resorted to reduced interest rates. By mid-2009, most central banks' policy rates were close to their minimum feasible levels.

In Nigeria, the Monetary Policy Rate (MPR) directly influences the interest rates at which businesses can obtain debt financing. Therefore, the sale of government securities (Treasury bills) by the CBN decreases the money supply in the whole economy, leading to higher interest rates. Central banks have turned to expansionary fiscal policies as it was agreed to have the ability to further lower interest rates. At the municipal level, literature argues that government spending may be very effective in such environments as it has a critical element of the stimulus packages, especially the use of deficit financing and tax reductions.

To ensure the sanctity of the financial system, Nigeria equally took some measures which included a lot of qualitative and quantitative easing aimed at ameliorating the severity of the crisis on the nation's financial sector. The efforts also resulted in to the slash of CRR from 5.0 percent to 1.0 per cent, liquidity ratio from 40.0 per cent to 30.0 per cent and all FGN bonds traded in the secondary market qualified as eligible instruments for computation of Liquidity Ratio. Tenor of repo at CBN window expanded from 1-7 days to 1-360 days, the up country and local cheques clearing circle were reduced to T+2 days, Discount Houses were allowed to undertake other financial services outside trading in government securities to which they were hitherto restricted to among others. During this period, the MPR was set at 9.50 per cent and remained in force till April, 2008 when the MPC increased it to 10.0 and 10.25 per cent in April and June 2008, respectively. Thereafter, the MPR assumed a downward trend of 9.75, 8.0 and 6.0 per cent in September 2008, April 2009, and July, 2009 respectively. The stance of Monetary Policy has been contractionary standing at 14.0 per cent since 2015 till date.

However, in March, 2016, the oil price crashed to $39.07 per barrel, representing 30.0 per cent lower compared with the level in the corresponding period of 2015. This reduced the Gross revenue allocation shared at the FAAC monthly meeting to N306, 08,757.53 billion, compared with N720, 83 billion in the corresponding period of 2014.

Thus, the FGN took some fiscal measures, including the enforcement of Treasury Single Account, zero-based budget and creation of the ministry of national planning and budget, removal of subsidy on petroleum products, among others aimed at introducing a measure of sanity into the Nation's budgetary system.

The short fall in oil proceeds and the tight monetary policy stance led to the shrinking revenue positions of MDAs. It was on record that at end -December 2015, out of the 36 states of the Federation 22 were in payment of salary arrears to their civil servants between 6 – 8 months. In that regard, the FGN through the CBN embarked on palliatives measure to the states to cushion the effects of the dwindling revenue to the Federation Account:

- The Bank gave 31 states 415.59 billion from the accumulated CRR Arrears domiciled with CBN; and
- The Bank also gave N538.115 billion to 35 states as conditional budget facility with the exception of Lagos.

The bailout fund approved by the Federal Government to assist state governments to pay the arrears of their civil servants has continued to draw criticism especially the monetary policy authority.

2.2.2 The Gravity of State Governments' Indebtedness

States debt, which can be either internal or external, arises when such government borrows to offset its deficits or for the development of its economy. Such debt are incurred by the state through borrowing from the domestic or international markets so as to finance its domestic obligations for its citizenry. It is the resource use at that level, which is not contributed by its owner and does not in any other way belong to them. States debts may be classified into reproductive and dead weight. It is reproductive when the borrowed fund is used to finance some kind of capital projects such as electricity, road, factories, refineries among others. On the other hand, a debt is termed as dead weight, where such is used to finance wars and other recurrent expenditures. The sources of state debt include: the money creation processes by the CBN called Ways and Means. This can be used by the state government to fund budgetary gap. That is why the amended Act of the CBN 2007 stipulated that "the government should not be allowed to borrow more than 5.0 per cent of it previous year actual total revenue".

In specific terms, the 36 states of the Federation and the Federal Capital Territory have been facing serious fiscal challenges as a result of their rising debt profiles. According to data available from the National Bureau of Statistics, Nigeria's total foreign and domestic debt stock at end June 2017 stood at US$15.05 billion and 14.06 trillion respectively. A further breakdown showed that State Governments' debt accounted for about 26 per cent and 21.34 per cent of the country's total foreign debt and domestic debt stock, respectively. This showed that a significant proportion of the country's total debt stock was accumulated by the 36 states of the Federation and the Federal Capital Territory.

In terms of foreign debt stock, Lagos state accumulated the highest with about 37 per cent of the total, followed by Kaduna, Edo, Cross River and Ogun states which accounted for 6, 5, 4 and 3 per cent of the total foreign debt among the 36 states and the FCT respectively. Also, among the 36 states of the Federation and the FCT, Lagos state accounted for the highest proportion of domestic debt stock with 10.39 per cent followed by Delta, Akwa Ibom, and the FCT with 10.39, 8.04, 5.185 and 5.09 per cent, respectively.

As a result of low internally generated revenue collections and federal allocations, State governments have in recent times found it difficult to pay pension, salaries and their contractors which have added to their debt profiles.

Despite the efforts of the Federal Government's efforts to bail out states, so that they can pay the backlog of salaries and pension, arrears, many have failed to utilize the funds for such purpose. Delta State government have about N38.00 billion of unpaid pension while Kebbi state still owes its pensioners a total of N9.90 billion. The Oyo state government owes 41.00 billion to three different categories of pensioners who are the state government pensioners, local government pensioners and primary school teachers. Kano State government pension arrears stood at 11.20 billion at end July 2017.

Similarly, Abia, Anambra, Bauchi, Benue, Borno, Cross River, Edo, Enugu, Ebonyi and Gombe State Governments are yet to clear the backlog of their worker salaries. At end- September 2017, Edo state owed workers between 5 and 10 months, while Benue State owed between 6 and 10 months in salaries. Ondo State government have also a backlog of 5 months arrears yet to be paid, while Nassarawa State owed 9 month workers' wages.

2.2.3 Implications on Monetary Policy Management

Monetary policy and its management is aimed at controlling money supply and the level, as well as structure of interest rates and other factors affecting the availability of domestic credit. The achievement of price and financial system stability objectives of central banks are primarily anchored on liquidity management. The Central Bank owe it as a duty and part of their day-to-day duty to determine optimum liquidity consistent with stability objective for the economy. Fundamentally, an efficient liquidity management serves to foster confidence in the financial system as well as mitigate systemic risk in the entire economy. Stability is achieved in an environment of appropriate liquidity management to mitigate any eventual market failures. The question that occupies the minds of policy makers is whether or not the monetary policy authority has the necessary instruments –besides the traditional treasury bills, FGN bills that the Bank uses at its bi-weekly liquidity mop-up /Open Market Operations (OMO) auction.

When states get the bailout funds, it is expected that the proceeds would enter the monetary system as money in circulation thereby increasing the amount of money in the system. This expansionary tendency lowers interest rates and attract business and personal borrowing because the cost of borrowing is less expensive. As this happens, businesses are expected to borrow to finance new plant and equipment, new hires and expanded their inventory. In the same vein, individuals have the ability to borrow to finance, purchases of homes, cars, appliances, clothing and vacations. At the state levels therefore, businesses would expand and there would also be increased consumer purchases which would results in more business activity, which in turn results in more employment.

Commentators on public policy have equally opined that states fiscal liquidity is pro-cyclical in nature. This is because, they respond to the erosion of illiquidity when they are starved from the federal monthly allocation. Assuming states had used monthly allocation for investment or borrow more from the market, and then the proceeds would in turn raises the asset's price and further strengthens the balance sheets. If states were buoyant – have saved during boom era, one way to avert recourse to monetary authority for bailout is to sell some assets, then use the proceeds to pay down debt. Thus, a fall in the price of the asset can lead to an increase in the supply of the asset, overturning the normal supply response to a drop in asset price. During downturns, the mechanism works in reverse. In a situation when asset prices decline especially following the 2007/08 global crisis, if the states have invested in equity market, then, the net worth of states/institutions will fall faster than the rate at which their assets decrease in value. As the states/institutions' balance sheets weakens, their leverage for bailout will increase. Weaker balance sheets of states will lead to greater

sales of their asset (if any), and this outcome in turn depresses the asset's price and leads to even weaker balance sheets. But weaker balance sheets will kick off another cycle of selling and price declines. Overall, when monetary policy is "loose" relative to macroeconomic fundamentals, central bank expands their balance sheets through collateralised borrowing; as a consequence, the supply of liquidity increases. Conversely, when monetary policy is "tight," institutions shrink their balance sheets, reducing the stock of repos and the overall supply of liquidity.

Milton Friedman in 1969, was of the view that monetary policy affects output at least in part, especially through its impact on the supply of loans to firms. During a recession, central banks that are charged with the responsibility of regulating the nation's economy adds money to the system to make credit more easily available. Easy credit results in greater economic activity as businesses and individuals borrow to finance purchases and operations. This is called the liquidity effect in economics. This expansionary monetary policy affects three macro-economic variables of the: interest rates, income and inflation.

When viewed from interest perspectives, when the Central Bank adds money to the system through its open market operations, which involve open market purchases of Treasury securities, such as treasury bills, notes and bonds. Through bailout funds CBN injects money with short term interest. This maintains liquidity in the Government capital market by helping bank and brokerage house bond trading desks to carry inventory of bonds for their trading activities. When there is liquidity in the system, interest rates would go down. Secondly, when business activity increases, companies hire more employees. As the demand for new employees grows, the supply of available workers diminishes and companies must pay higher wages to attract the best employees, so average income rises. As consumers take advantage of low interest rates to buy houses, prices of those houses rise because of the increased demand. Homeowners experience increased income as their houses appreciate in value, and they refinance to secure lower mortgage rates or sell the houses to take a profit. This also adds to the average income. The result of higher average income is more money in the system and even greater liquidity.

Thirdly, as more money comes into the system through the bailout funds, it tends to cause inflation. Many people think inflation comes from higher prices, but this is incorrect. Inflation refers to an inflation of the money supply. As there are more Naira chasing a finite supply of goods and services, the prices of those goods and services will rise as consumers have more liquidity at their disposal thus, increasing their ability to acquire the goods and services they desire. The liquidity effect on monetary management is that when the central banks pursues a tight monetary policy, it takes money out of the system by selling Treasury securities and raising the reserve requirement at banks. This raises interest rates because the demand for credit is so high that lenders price their loans higher to take advantage of the demand. Tight money and high interest rates tend to slow economic activity and could lead to recession. During periods of tight money, companies terminate employees and consumers cut back on their spending. Prices will decline as fewer people are able to afford the boom time prices. So, low liquidity has the opposite effect on the economy from high liquidity.

3.0 Methodology

This study collected data on statutory allocations to States by the Federation Account Allocation Committee (FAAC), Internally Generated Revenue (IGR), States' debt stock, capital and recurrent expenditure from the central bank of Nigeria (CBN) and the National Bureau of Statistics (NBS). Descriptive statistics was adopted to analyse the collected data because of the nature of the study. This investigation is limited by availability of data on the finances of States in Nigeria, especially as most of them do not have transparent accounting systems. There is lack of data on States' Gross Domestic Product, not even by the National Bureau of Statistics. Therefore, we attempt to proxy development using the States' Human Development Indices as reported by the United Nations Development Programme (UNDP). This is because of the central role of infrastructure in promoting socioeconomic development. Moreover, human development encompasses both social and economic dimensions of development. An increase in internally generated funds to complement statutory allocations from the National Treasury should translate into increased income for its citizens, employment and productivity gains, amongst others. We therefore explored the relationship between the States' IGR per capita and Human Development Indices (HDI) in the respective States.

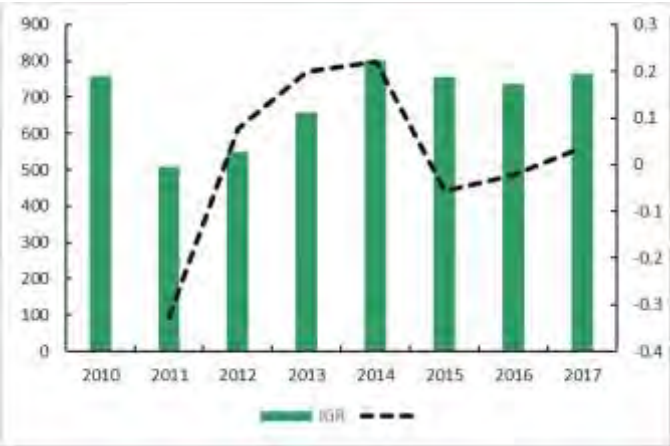
4.0 Results and Discussion

4.1 States' Internally Generated Revenue (IGR)

The total annual amount of internally generated revenue between 2010 and 2017 is shown in Figure 1. The movement of internally generated revenue by States has been in tandem with the general macroeconomic environment. The year 2014 marked the beginning of a tumultuous period for oil dependent countries like Nigeria as oil prices came tumbling down, the result of which was the

economic recession in the country. At the peak of the oil boom, IGR grew by 19.86 per cent and 21.96 per cent in 2013 and 2014 respectively. By 2015 however, States' IGR recorded a huge decline, falling from 801.29billion in 2014 to 755.75billion in 2015, representing a 27 per cent decline in growth rates. The slight improvement on the states IGR recorded in 2017 was occasioned by the need to reduce dependency on the central source for revenue as a result of dwindling oil fortune.

Figure 1: Internally Generated Revenue of States
Source: Central bank of Nigeria, National Bureau of Statistics (2017)

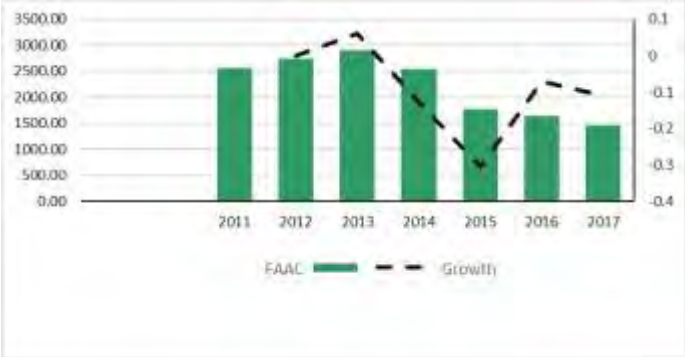


4.2 Statutory Allocations to States

The effect of the fall in oil prices is also clearly reflected in the allocation to States (see Figure 2). Prior to the oil price bust, the allocation to States was trending upwards. However, with the sharp decline in oil prices, allocation to States took a sharp decline too. Governments at all levels had to take a pay-cut as oil revenue shrunk.

In light of the reduction in allocations from the Federation Account, States were forced to become fiscally responsible and took adequate steps towards effective fiscal management. The significant reduction in statutory allocations to sub-national units exposed States' huge dependence on federal allocations. It became evidently clear that almost all states in the country had become lax in their revenue generation efforts and had become totally reliant on these allocations to run their activities.

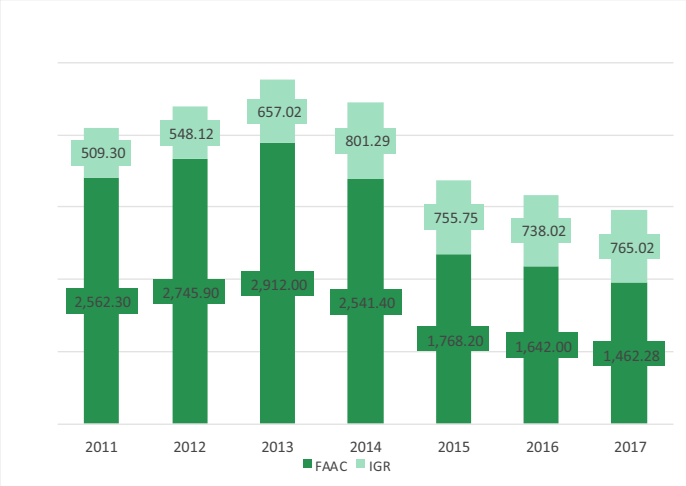
Figure 2: Monthly Statutory Allocations 2011-2017
Source: Central bank of Nigeria, National Bureau of Statistics (2017)



4.3 Statutory Allocation and Internally Generated Revenue (IGR)

The monthly statutory allocation to States and the internally generated revenue (IGR) in billions of naira between 2011 and 2017 are shown in Figure 3. From the graph, there was a steady rise in statutory allocations between 2011 and 2013. This period coincided with periods of high crude oil prices. During this period, statutory allocation to States rose by 13.65 per cent. However, in 2014 when the global price of crude oil took a plunge, statutory allocation declined by 12.73 per cent, and as at end of 2016, it had declined by 43.61 per cent from the value in 2013. By contrast, internally generated revenue only rose by a moderate 12.33 per cent level in the same corresponding period. The result of this weakened financial position is the struggle by most States in the Federation to meet their financial obligations, hence the rampant incidences of unpaid salaries and inability to complete ongoing capital projects in their respective jurisdictions.

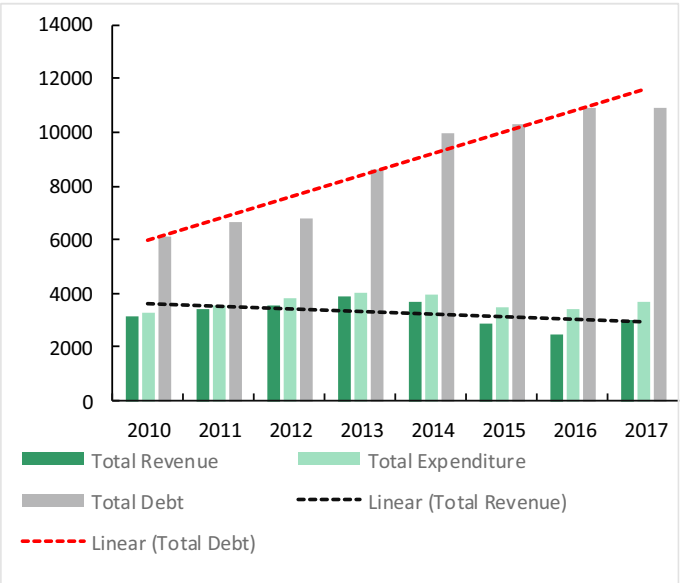
Figure 3: States' FAAC Allocations and IGR
Source: Central bank of Nigeria, National Bureau of Statistics (2017)



4.4 Total Revenue, Total Expenditure, and Total Debt

The difference between the total revenue and total expenditure is a measure of the fiscal imbalance in the States. Figure 4 presents the States total revenue, expenditure, and debt between 2010 and 2017. While total revenue and total expenditure rose at an annual average of 7 per cent between 2010 and 2013, total debt rose faster, at an annual average of 13 per cent. Also, from 2014 to 2016, the total revenue declined by 32.69 per cent as oil revenue shrunk as a result of the crash in oil prices. Total expenditure also declined on aggregate by 13.65 per cent below the same period. Total debt, however, rose sharply by 9 per cent over 9.99trn between 2014 and 2016. There exists a widening fiscal deficit among the States of the federation and this has been growing at an annual average of 7 per cent since 2010. This trend is not sustainable for growth and development in the States and the national economy in general. Also, the rising debt stock in the face of dwindling revenue to service these debts portends grave economic implications for many States in the near and medium-term. To reverse this trend, State governments will have to be more aggressive and efficient in widening their tax base especially the informal sector to improve on their IGR over which they have more control.

Figure 4: Total Revenue, Total Debt, and Total Expenditure
Source: Central bank of Nigeria, National Bureau of Statistics (2017)



4.5 Total Revenue to Total Expenditure

Table 1 below shows ratio of total revenue to total expenditure and total revenue to total debt. These ratios serve as indicators of fiscal imbalance and poor fiscal management in many States across Nigeria. From Table 1, it is clear that fiscal deficit of the States has been widening in the last 7 years. The States have been consistent in spending in excess of their revenue. The analysis also reveals the shrinking share of total revenue relative to total debt. The implication of this is reflected in much weakened ability to meet basic financial obligations such as salary payment given the burden of debt servicing. As stated earlier, states have taken a relaxed approach towards the internal generation of revenue. With the exception of Lagos State and Rivers State, others have struggled in generating enough revenue to match the allocations from the Federal government or even surpass that which accrues to them from the Federation Account.

Table 1: Total Revenue to Total Expenditure and Total Debt

Year	Total Revenue/Total Expenditure	Total Revenue/Total Debt
2010	0.9683	0.0052
2011	0.9628	0.0051
2012	0.9292	0.0053
2013	0.9651	0.0045
2014	0.9219	0.0037
2015	0.8241	0.0028
2016	0.7187	0.0023
2017	0.8081	0.0237

Source: Central bank of Nigeria, National Bureau of Statistics (2017)

Table 2 below shows descriptive statistics of variables considered in this study. The State Governments recorded their highest revenue, IGR and expenditure when oil prices were at peak levels. However, following the crisis in the crude oil market in 2014, debt levels were at their highest when oil prices were bottoming out.

	Total Revenue	Total Expenditure	Total Debt	IGR	FAAC
Average	3,293.34	3,655.90	4,830.56	681.06	1,450.62
Max	3,905.38	4,046.80	10943.71	801.29	2,912.00
Min	2,471.81	3,266.23	6,113.15	509.30	1462.28

4.6 IGR per capita and Human Development Index (HDI)

IGR per capita was calculated as the ratio of a State's internally generated revenue (IGR) in 2016 by the corresponding population of the State, as projected by the National Bureau of Statistics. The HDIs of States and their IGR per capita are presented in Tables 3 and 4, respectively. The average IGR per capita of the States was ₦3,151.00, with Lagos State recording the highest IGR at ₦21,530.00, while Borno State generated the least revenue per head (₦428.00). It is therefore not surprising that Lagos State was the most highly ranked State, while Borno State ranked 34th out of the 36 States in the country. This is consistent with expectations that an increase in IGR should translate to more spending on infrastructure and consequently the standard of living of citizens of the State.

Table 3: States' Human Development Index (UNDP)

S/N	State	HDI	Rank	S/N	State	HDI	Rank
1	Lagos	0.672	1		Plateau	0.400	21
2	Bayelsa	0.612	2	20	Nasarawa	0.398	22
3	Delta	0.609	3	21	Rivers	0.388	23
4	Akwa Ibom	0.570	4	22	Kano	0.381	24
5	Ogun	0.539	5	23	Adamawa	0.365	25
6	Imo	0.520	6	24	Ebonyi	0.343	26
7	Edo	0.509	8	25	Taraba	0.332	27
8	Osun	0.494	9	26	Niger	0.326	28
9	Abia	0.492	10	27	Bauchi	0.264	29
10	Ondo	0.477	11	28	Zamfara	0.262	30
11	Oyo	0.477	12	29	Gombe	0.237	31
12	Cross River	0.473	13	30	Katsina	0.236	32
13	Kaduna	0.443	14	31	Kebbi	0.218	33
14	Enugu	0.437	15	32	Borno	0.214	34
15	Ekiti	0.433	16	33	Jigawa	0.197	35
16	Kwara	0.432	17	34	Sokoto	0.194	36
17	Anambra	0.428	18	35	Yobe	0.125	37
18	Kogi	0.406	19	36	FCT	0.511	7
19	Benue	0.404	20	37			

Source: United Nations Development Program (UNDP) (2015).

Table 4: States and IGR per capita

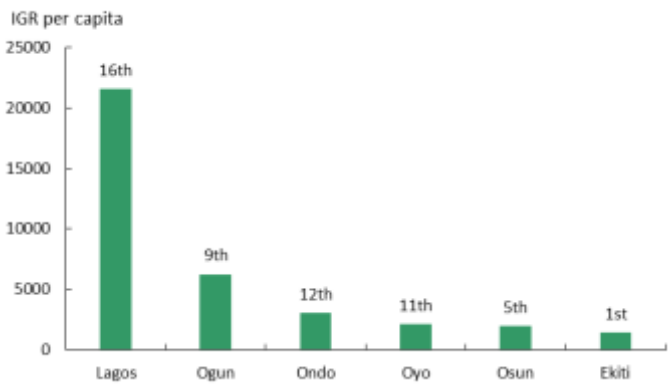
S/N	State	IGR per capita	Rank	S/N	IGR per capita
1	Lagos	21530.21	20	Akwa Ibom	1560.15
2	Rivers	13661.53	21	Gombe	1427.60
3	Taraba	7888.15	22	Ekiti	1416.37
4	Ogun	6252.32	23	Anambra	1405.66
5	Kwara	5476.11	24	Adamawa	1342.16
6	Delta	5415.48	25	Imo	1292.03
7	Edo	5078.46	26	Plateau	1278.27
8	Bayelsa	3602.95	27	Yobe	1149.45
9	Enugu	3227.18	28	Nasarawa	1019.76
10	Cross River	3061.47	29	Benue	1003.09
11	Ondo	3059.45	30	Bauchi	785.55
12	Sokoto	2651.34	31	Niger	777.79
13	Ebonyi	2403.24	32	Kebbi	705.58
14	Abia	2362.35	33	Katsina	630.60
15	Kaduna	2256.67	34	Zamfara	626.43
16	Kogi	2139.07	35	Jigawa	437.46
17	Oyo	2106.34	36	Borno	427.79
18	Kano	2030.40	37	FCT	
19	Osun	1949.04			

Source: National Bureau of Statistics (2017).

4.7 Geopolitical Zones Fiscal Dependence

An examination of this relationship across geopolitical zones in the country also confirmed this expectation although there were a few outliers like Rivers and Sokoto States which had the highest IGR per head in the South-South and North-West zones, respectively, but were the worst ranking States from those regions. This may be due, in part, to the weakness of the HDI as an indicator of efficient public spending, but it is also indicative that other issues bordering on political economy may be responsible for this anomaly. Also, none of the five States, which generated the least revenue, finished higher than 30th based on the HDI rankings. Kebbi, Katsina, Zamfara, Jigawa, and Borno States had the lowest IGR per head and ranked 33rd, 32nd, 30th, 35th, and 34th, respectively. However, of the top ten States that generated the most funds, only 5 ranked in the top 5 of the HDI table (see Table 3). Figures 5-10 show the IGR per capita and HDI of the States across the six geopolitical zones of the country.

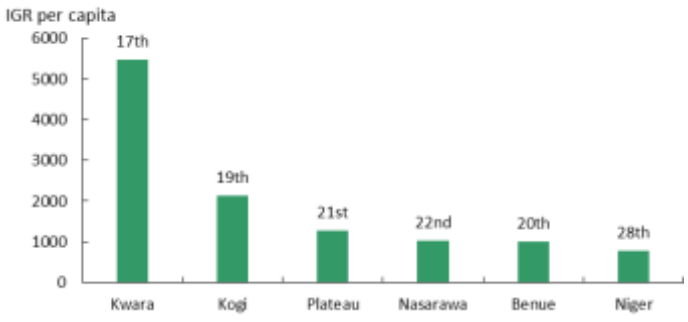
Figure 5: IGR per capita and HDI in the South –West Geopolitical Zone



Source: NBS, UNDP

In figure 5 above, Lagos, Ogun, Ondo, and Oyo States earned more IGR per head and had better human development outcomes accordingly. However, Osun State ranked higher than Ogun, Ondo and Oyo States despite earning significantly less income.

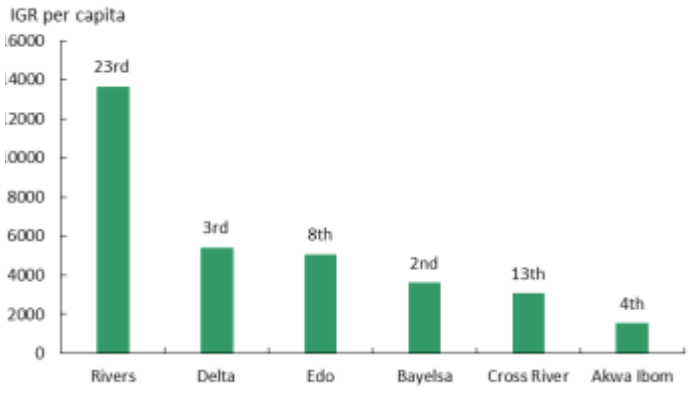
Figure 6: IGR and HDI in the North-Central Geopolitical Zone



Source: NBS, UNDP

In the North-Central geopolitical zone, the same trend can be seen among the States, apart from Benue which had a better human development index having earning a little less than its peers such as Plateau and Nasarawa. States with higher IGR generally fared better in development terms.

Figure 7: IGR per capita and HDI in the South-South Geopolitical Zone

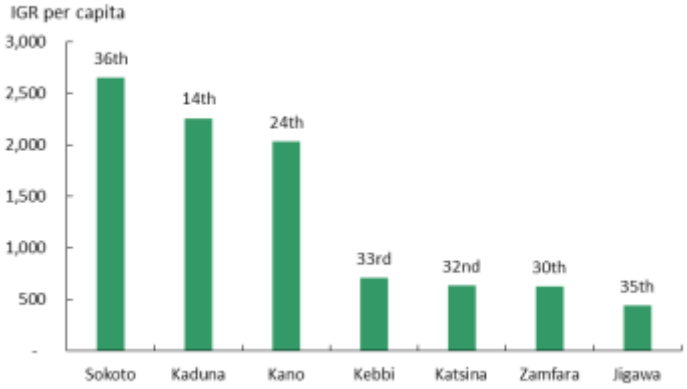


Source: NBS, UNDP

In the South-South zone, Rivers State had the highest internally generated revenue, yet ranked the worst in terms of human development. Akwa Ibom had the least IGR and still performed better than the likes of Rivers and Delta. This is an indication of the limitations of this index as measure of how the IGR of States translate into development in the State. Inferences should therefore be drawn and interpreted with caution.

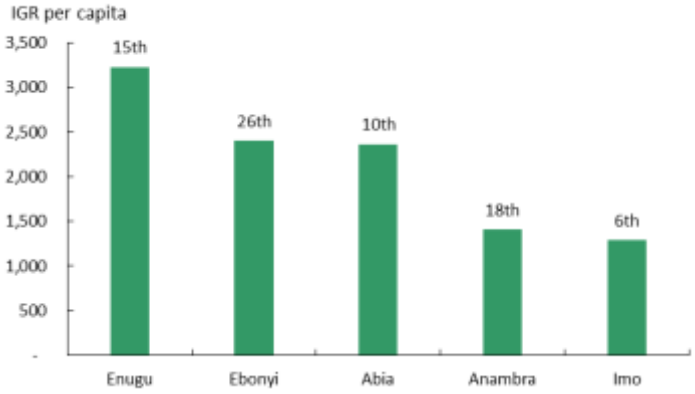
In Figure 8 below, a similar positive relationship is observed between the IGR per capita and the corresponding ranking of a state on the human development index. The States which had the higher IGR ranked higher on the development index, except for Sokoto State, which earned the most, yet ranked the worst. As shown in Figures 9 and 10, there was no consistent pattern between States' IGR and development among States in the South-East and the North East.

Figure 8: IGR per capita and HDI in the North-West Geopolitical Zone



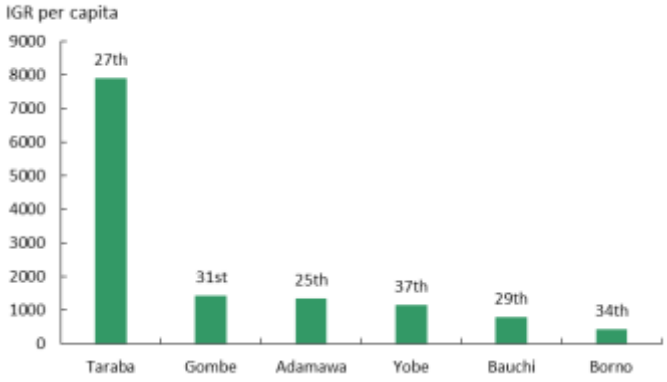
Source: NBS, UNDP

Figure 9: IGR per capita and HDI in the South-East Geopolitical Zone



Source: NBS, UNDP

Figure 10: IGR per capita and HDI in the North-East Geopolitical Zone



Source: NBS, UND

5.0 Conclusion and Recommendations

Fiscal relations between the states and the Federal Government are often described as a one-sided relationship, as the state governments derive over 70 per cent of their budgeted revenue from the Federal Government. Indeed, during the period: 2000-2017, the entire economy depended massively on the oil sector (up to 73.7 per cent) for revenue to finance their fiscal plans (see table 1 above).

The oil sector, or indeed any other sector, does not exist in a vacuum: oil wells are sunk in some states, just as industrial and corporate business activities exist in other states and these activities generate revenue for the Federal Government. The fiscal wealth of the Federal Government is fundamentally dependent on the level of economic exploitation of crude oil in the oil-producing states. The dependency of the states, therefore, on the Federal Government's statutory allocation can be retraced and seen as indirect interstate resource dependency. This dependency is the result of the Federal Government's annexation and exploitation of state resources. Hence, the Federal-state dependency ratio is equal to the ratio of the economy's dependency on oil revenue. It is important that inter-governmental dependency be given a proper anchor on the Federal dependence on states. Importantly, it must be stressed that the burden of this imbalance should be critically looked into in event of any creation of states in Nigeria by successive governments in future. This is because it has weakened the power of states in Nigeria and this situation should be properly debated and analysed in the context of inter-governmental fiscal relations by any successive government.

This study examined fiscal imbalance among States in Nigeria and its implications for fiscal management in these States. The study used secondary data from Statistical Bulletin of the Central Bank of Nigeria and the Nigeria Bureau of Statistics. Information on monthly allocations to States, internally Generated Revenue, Debt level, total Revenue, and Total expenditure were used to examine fiscal imbalance in the States. The data were analysed using descriptive statistics.

The findings from the study indicated that despite a decline in revenue from the statutory allocations, most States in Nigeria were still spending in excess of their revenue. The upward trending in fiscal deficit should be a source of concern given the current dynamics of the global crude oil market. The results of this study also showed that States have not been doing enough in terms of boosting their revenue generation beyond the monthly allocations guaranteed by law. This does not bode well for development both in the States and the national economy in general. As a result, we recommend that State governments should explore alternative sources of revenue, particularly taxation of the informal sector. Mechanisms should be put in place to expand the tax base and other lawful means of jerking up their revenue base. This will boost IGR and allow for a reasonable level of financial dependence that can match the ambition of each State in terms of their deliverables. Also, the success of any aggressive revenue drive will depend on the accountability of the government and prudent use of internally generated revenue.

Ways to Reduce Imbalance between Federal and States

Some of the ways to reduce imbalance and minimise agitations and restructuring currently being canvased across the six geo-political zones of the country include and not limited to the following:

- State governments should initiate incentive programmes that will boost investment in their states. Infrastructural investments by government are one way by which any state can attract investors and so enhance revenue generation opportunities,

- The Federal Government should consciously reduce its tax power and hand over to the states. It is believed that if VAT administration is handled at the state level, more states will become fiscally less dependent on the Federal Government and on oil revenue. However, the regulation of such taxes should be centrally legislated even though the administration is decentralized, and

- The use of the Federal Government power to annex the land resources of states should be discouraged. The Federal Government should only ensure that mining, which is currently on its exclusive list, is carried out according to international requirements for environmental purity and other standards,

Overall, state governments should also provide conducive business environment to attract investments and stimulate economic activities from which they can generate additional revenue. This can also help in the negotiation of public private partnership arrangements, especially in financing developmental projects within their respective States.

References

Anyanwu, J. C. (2011). International remittances and income inequality in Africa. *Review of Economic and Business Studies*, *7*(5), 117-148.

Shiyanbade, B. W. (2017). Interrogating the Revenue Allocation in Intergovernmental Relations, Fiscal Federalism and Local Government Finance in Nigeria. *Public Administration Research*, 6(2), 71.

Akintoye, I. (2013). The effect of tax Compliance on Economic Growth and Development in Nigeria.

Abumere, S. 2008. *Distributional Inequity and the Problem of National Integration.* Inaugural Lecture Series, University of Ibadan, Ibadan.

Akpan, G. E. 1999. Fiscal potentials and dependence in Nigeria. pp. 73-100. In: *Fiscal Federalism and Nigeria's Economic Development,* Proceedings of Annual Conference of the Nigerian Economic Society, Secretariat, University of Ibadan.

CBN (2016) annual statistical bulletin published by the CBN which revealed that

Babatunde, S. A. (2018). Government spending on infrastructure and economic growth in Nigeria. *Economic Research-Ekonomska Istraživanja*, *31*(1), 997-1014.

Dang, D.Y. (2013). Revenue Allocation and Economic Development in Nigeria: An Empirical Study. *Article* DOI: 10.1177/2158244013505602.

Dang, D. Y., & Bala, A. (2016). CONTRIBUTION OF TAX REVENUE FOR NATIONAL DEVELOPMENT IN NIGERIA. *International Journal of Management Science Research*, *1*(1), 207.

Emengini, S. E. and Anere, J. I. (2010). Jurisdiction Impact of Revenue Allocation on States and Local Government Councils in Nigeria. *An International Multi-Disciplinary Journal, Ethiopia Vol. 4 (4), Serial No. 17 Pp. 76-95*

Ezeabasili, V., & Herbert, W. (2013). Fiscal Responsibility Law, Fiscal Discipline and Macroeconomic Stability: Lessons from Brazil and Nigeria. *International Journal of Economics and Management Sciences*, 2(6), 1-10.

Gabriel, O. M. and Charles, O. J. (2015). Fiscal Federalism in Nigeria: Implication for Growth. *British Journal of Economics, Management & Trade,* Vol. *5(4): 442-449.*

Kiabel, B. D., & Nwokah, N. G. (2009). Boosting revenue generation by state governments in Nigeria: The tax consultants option revisited. *European Journal of social sciences*, *8*(4), 532-539.

Eyraud, L. and Lusinyan, L. (2012).Decentralising spending more than revenue: Does it hurt fiscal performance? International Monetary Fund Working Paper No. 11/226.

Friedman, M. (1969). The Optimum Quantity of Money and other Essays.

Martinez-Vazquez, J., & McNab, R. M. (2002). Cross-country Evidence on the Relationship between Fiscal Decentralization, Inflation and Growth. In *Proceedings of the 19th Annual Conference on Taxation, 2001* (pp. 42-47). Washington, DC: National Tax Association.

Mbanefoh, G. F. 1993. Unsettled issues in Nigerian fiscal federalism and the national question. pp.61-77. In: *The National Question and Economic Development in Nigeria.* Proceedings qf Annual Conference of the Nigerian Economic Society, Secretariat, University of Ibadan.

Musgrave, R. A. and P. B. Musgrave. 1989. *Public Finance in Theory and Practice.* McGraw-Hill Book Company, New Y ort.

Nwoba, M. O. E. (2015). Fiscal Crisis and Its Impact on Local Government Administration in Nigeria: A Case of South-Eastern States. *Journal of Policy and Development Studies*, *289*(2533), 1-10.

Ojide, M., & Charles, O. (2014). Fiscal Federalism in Nigeria: Implication for Growth.

Olowolaju, P. S., Ajibola, O., Ishola, A., and Falayi, I. (2014). Federal Government Statutory Fund Allocation to States in Nigeria, West Africa: Any Reasonable Story to Tell? *American International Journal of Social Science Vol. 3, No. 4:152-164.*

Oyeleke, O. J., & Ajilore, O. T. (2014). Analysis of fiscal deficit sustainability in Nigerian economy: An error correction approach. *Asian Economic and Financial Review*, *4*(2), 199.

Ezeabasili, N., Ioraver N., and Wilson Ezi-Herbert (2012). Economic Growth and Fiscal Deficits: Empirical Evidence from Nigeria. *Economics and Finance Review Vol. 2(6) Pp. 85 – 96.*

Romanus, O. O., & Monday, O. C. (2014). An examination of the Nigerian fiscal federalism and its impact on revenue generation for economic development

Yilmaz,S. (2000).The impact of fiscal decentralisation on macroeconomic performance. In *Proceedings of the 92nd Annual Conference on Taxation, 1999* (pp. 251-260). Washington, DC: National Tax Association.

Corporate Income Tax and Manufacturing Sector Performance in Nigeria: A Panel Data Analysis

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NATisolusions & Services

Abstract

The study examined the impact of corporate income tax on the performance of the manufacturing sector in Nigeria from 2013 – 2017. The ex-post facto research design was adopted for this study. The population of this study covered all the 23 registered manufacturing firms dealing with consumable foods in Nigeria. The sample of five manufacturing firms, dealing with consumable foods in Nigeria which represent 35% of the quoted manufacturing firms on the Nigerian Stock Exchange (NSE) market was selected for the study. The data used for this research are secondary data obtained from various issues of Annual financial statement of five selected manufacturing firms in Nigeria namely: Dangote Sugar Refinery Plc, Cadbury Nigeria Plc, Guinness Nigeria Plc, Unilever Nigeria Plc and Nestle Nigeria Plc. This study made use of the fixed and random effect regression technique. The result showed that company income tax had direct significant impact on net income and return on equity of manufacturing companies in Nigeria. It was recommended based on findings that company income tax receipt should be channeled by the government into judicious use such as the provision of social amenities like electricity and good road network. The provision of this social infrastructure would help to reduce cost of production and promote easy distribution of goods and services produced in manufacturing firms.

Keywords: Company Income Tax, Company Performance, Net Income and Return on Equity

Introduction

The conundrum of the Nigerian economy is traceable to its manufacturing sector which is expected to stimulate the value added economy and serve as a catalyst for sustainable economic transformation. Regrettably, Nigeria's Manufacturing sector has been neglected without a clear policy direction with attendant annihilation of the sector from the growth process. This becomes evident following the low share of manufacturing sector contribution to GDP and plummeted employment generation capacity of the sector. Nigeria's ostentatious importation of manufactured products and weak export base of finished goods remains an undeniable signal to the inchoate weakness of the manufacturing sector. Meanwhile, the weak performance of the manufacturing sector is also evidenced in the low share of non-oil exports to total exports earnings, coupled with high share of manufactured goods in total imports.

Prior to the economic recession of 2016, several firms in the manufacturing sector of Nigeria, experienced some forms of business failures. Some of these companies include: Dunlop Nigeria Plc and Michelin (the surviving tyre manufacturing companies in Nigeria) which shut down its plants, laid off hundreds of its workers and relocated to Ghana (Premuim

times, 2017). During the recession of 2016, Erisco Foods Limited (an indigenous tomato paste producer with a production capacity of 450,000 metric tons of tomato paste annually and over 2000 workers) relocated to China due to financial loss of over N3.5billion before and during the economic recession of 2016 in Nigeria. Coupled with less than 20 per cent average capacity utilization, naira exchange rate to dollar depreciation of N320 in the official market and N485 in the parallel market; the President of the Manufacturers Association of Nigeria (MAN) Mr Frank Jacob reported that not less than 272 firms shut down in 2016 while over 56 per cent of the surviving ones are ailing (Premuim times, 2017). Figure 1 provided a thematic view of the performance of the manufacturing sector in Nigeria.

Despite achieving stability in exchange rate in 2017 and a growing external reserve, which stood at US$32.5 billion at the end of the third quarter, manufacturing output declined by 0.21 per cent in 2017 and its share in GDP remained at 9 per cent. The decline in manufacturing output was led by oil refining (-28 %), motor vehicle and assembly (-22 %), other manufacturing (-7%) and cement (-2%) (The Nigerian Economic Summit Group, 2018). The decline of manufacturing output in the third quarter of the year, amidst relative exchange rate stability, revealed that the fundamental challenges facing the manufacturing sector transcended the unavailability of foreign exchange.

The abysmal performance of the manufacturing industries in Nigeria is attributable to inadequate electricity supply, smuggling of foreign products into the country, trade liberalisation, globalisation, infrastructural decay, inadequate financial support and other exogenous variables which has resulted in the reduction in capacity utilization, gross fixed capital formation and economic growth of the economy (Tomola, et al, 2012). The manufacturing sector is further bogged down by internal environment constraints. Aside factors from the internal business environment such as lack of capital (inadequate capitalization), inefficient management, unprofitable expansion (premature expansion), mode of appointment of chief executives, fraud and audit failures –internal or external that may affect corporate performance. Chude and Chude (2015) added that external influences, such as corporate income tax levied on companies might affect the performance of business firms in Nigeria.

Corporate income tax remains a germane fiscal instrument across the globe. The highest corporate tax rate among the 120 countries surveyed by KPMG is recorded in the United Arab Emirates, where corporations pay 55 per cent of their operating profit as a tax. However, this tax is only enforced on foreign oil companies. The US takes the second position with a top tax rate of 40 per cent that is 16 percentage points higher than the average for all 120 countries. In contrast, Montenegro and Hungary have the lowest rate in the world of 9 per cent, while the only major industrialised nation among the bottom 20 countries is Ireland, which is known for its low rate of 12.5 per cent (Ivan, 2018). The Companies Income Tax rate is currently pegged at 30 per cent in Nigeria since 1996, assessed on a preceding year basis (i.e. tax is charged on profits for the accounting year ending in the year preceding assessment). Lower rate of 20 per cent rate applies to manufacturing companies.

Chude and Chude (2015) noted that companies, such as banks and manufacturing companies that contribute largely to the nation's gross domestic product, generate a lot of revenue for the government through tax receipt. In 2016, the revenue target for Companies Income Tax is N1.877 trillion, representing approximately 40 per cent of the total projected tax revenue of N4.957 trillion for the year (Adekunle and Disu, 2018). Governments derive enormous benefits in terms of taxes payable by manufacturing firms. Revenues from the corporate tax rate are an important source of financing infrastructural development, which remain a pre-requisite for transforming the manufacturing sector.

Nigeria is currently ranked 181 out of the 189 countries rated globally with respect to the "Ease of Paying Taxes" on the World Bank Ease of Doing Business Index. In addition to continuing scant electricity supply, multiple-taxation is one of the major impediments to doing business in Nigeria (FIAS, 2008, DFID, 2008). Multiple taxation is a front burner challenge in Nigeria. As a result, tax revenue collection is significantly higher compared to other countries with more unified systems of tax collection. Available evidence shows that many investors have left Nigeria because of burdensome taxes that stifle business, with those that have remained confining themselves to tax evasion and avoidance. This is compounded by the corrupt tendencies of tax officials who envisage this as a leeway to embezzle public funds via charges on tax defaulters.

Against this backdrop, the objective of this paper is to examine the impact of corporate income tax on the performances of the Nigerian manufacturing sector. Although a number of studies have been carried out in the past on this subject, the review of these studies revealed the existence of a research gap, which this study attempts to fill. The rest of this paper is structured as follows. Section 2 provides the review of conceptual issues and related empirical literature, while Section 3 deals with the study methodology. The findings of the study and discussion are presented in Section 4, while Section 5 provides the conclusion and proffered recommendations.

2.1 Conceptual Issues

Taxes are levied on individuals, groups, business or corporate bodies, by constituted authorities for raising funds used by the state in the maintenance of peace, security, economic growth and development and social engineering among others for the benefit of the citizenry. According to Appah (2004), taxation is a compulsory levy imposed on a subject or upon his property by the government to provide security, social amenities and create conditions for the economic well-being of the society. Taxation, in a simple language is a compulsory non-quid-pro-quo withdrawal of resources from the private sector of the economy (Nwosu, 2000). Also Bhartia (2009) argues that a tax is a compulsory levy payable by an economic unit to the government without any corresponding entitlement to receive a definite and direct quid pro quo from the government. Invariably, taxation does not represent a price paid by the tax payer for any definite service rendered or a public good provided by the government. A tax is not levied in return for any specific service rendered by the government to the taxpayer. A tax payer cannot demand for special benefits from the government in return for tax payment.

Nwezeaku (2005) stated that taxation is the compulsory transfer or payment (or occasionally of goods and services) from private individuals, institutions or groups to the government. Similarly, Jhingan (2004), Nzotta (2007), Ola (2001), Osiegbu *et al*. (2010), Bhartia (2009), and Musgrave and Musgrave (2004), defined taxation as : "a compulsory contribution imposed by a public authority, irrespective of the exact amount of service rendered to the taxpayer in return". "A compulsory contribution from a person to the government to defray the expenses incurred in the common interest of all, without references to special benefits conferred". These definitions point towards three characteristics of taxation:

It is a compulsory contribution imposed by the government on the people residing in the country. Since it is a compulsory payment, a person who refuses to pay tax is liable to punishment. But a tax is to be paid only by those who come under its jurisdiction. Similarly, persons who buy a commodity which carries a tax on it, pay the tax while others do not. A tax is a payment made by the taxpayers which is used by the government for the benefit of all the citizens. The state uses the revenue collected from taxes for providing hospitals, schools, public utility services, etc. which benefit all people. The main forms of tax collected are direct and indirect taxes (Abata, 2014). For the direct taxes, it is levied on individuals, and factors of productions e.g. Company Income tax (CIT), Personal Income Tax (PIT), Capital Gain Tax (CGT). However, indirect taxes are levied on goods and services e.g. import and export duties. Thus, the consumers bear the ultimate burden. Company income tax (CIT) is charged on the profits generated by companies, public corporations and unincorporated associations such as industrial and provident societies, clubs and trade associations. CIT was created by the Companies Income Tax Act (CITA) 1979 and has its root from the Income Tax Management Act of 1961. It is one of the taxes administered and collected by the Federal Inland Revenue Service ('FIRS' or 'the Service'). Companies Income Tax (CIT) is a tax chargeable on all resident and non-resident companies (other than those engaged in petroleum operations) incorporated in Nigeria. Also known as corporate tax, the CIT rate is 30% of the profit earned in the year preceding assessment. Resident companies are liable to CIT on their worldwide income (profits accruing in, derived from, brought into, or received in Nigeria) while non-residents are subject to CIT on the income derived from their Nigerian operations. A non-resident company with a fixed base in Nigeria is taxable on the profits attributable to that fixed based. Any WHT deducted at source from its Nigeria-source income is available as offset against the CIT liability.

Company performance (or corporate performance) is a concept that describes the corporate health and stability of a firm (Altman, 2004). For firms in the manufacturing industry, Chude and Chude (2015) noted that company performance is either measured using the input or output approach. The input approach relies on indices that show quality asset, liquidity, managerial quality and quality of staff among others while output approach relies on indices that show manufacturing or production outcomes such as: profit turnover, return on asset (ROA), return on equity (ROE), net income, return on investment (ROI), average manufacturing capacity utilization, manufacturing efficiency index (MEI) among others.

2.2 Empirical Literature

Several studies have been carried out to investigate the nexus between corporate taxation and performance of firms in Nigeria. Ezejiofor et al, (2015) assessed whether tax as a fiscal policy tool affected the performance of the selected manufacturing companies in Nigeria. To achieve this, descriptive statistics was adopted and data were collected through the use of six years financial accounts of the selected companies. The hypothesis formulated for the study was tested with the ANOVA, using the Statistical Package for Social Sciences (SPSS) version 20.0 software package. The study found that taxation, as a fiscal policy instrument, had a significant effect on the performance of Nigerian

manufacturing companies.

Chude and Chude (2015) investigated the impact of taxation on the profitability of companies in Nigeria. Employing secondary data with error correction model to test the variables that most likely to impact the profitability of companies in Nigeria, the study revealed that the level of company tax had significant effect on profitability. They concluded that the positive and significant relation between the profitability and the taxation explanatory variables indicated that policy measures to expand tax, through more effective tax administration, would impact positively on the growth of company's profitability.

Lyndon and Paymaster (2016) examined the impact of companies' income tax, value-added tax on economic growth (proxy by gross domestic product) in Nigeria. Secondary time series panel data was collected for the period 2005 to 2014 from the Statistical Bulletin of the Central Bank of Nigeria (CBN). The study employed ordinary least squares (OLS) technique based on the computer software Windows SPSS 20 version for the analysis of data, where gross domestic product (GDP), was regressed on company income tax (CIT) and value-added tax (VAT). The results showed that both company income tax and value-added tax had positive and significant impact on economic growth.

Chandrasekharan (2012) conducted a study using 87 firms out of the population of 216 firms listed on the Nigeria stock exchange for a period of five years (2007-2011) from static trade-off, agency and pecking order theory point of view. He employed the panel multiple regression analysis and the study reveals that for the Nigerian listed firms; firms' size, growth and age are significant with the debt ratio of the firm, whereas, profitability and tangibility are not significant with the debt ratio of the firm. Bassey, Aniekan, Ikpe and Udo (2013), using a sample of 60 unquoted agro-based firms in Nigeria within a period of six years (2005-2010) from the agency cost theory point of view. They employed the Ordinary Least Square regression and descriptive statistics and revealed that only growth and educational level of firms owners were significant determinants of both long and short term debt ratios, assets structure, age of the firms, gender of owners and export status impacted significantly on long term debt ratios, while business risk, size and profitability of firms were major determinants of short term debt ratio for the firms under investigation.

Anyanwu (1997), in a study of the effects of taxes on Nigeria's GDP/economic growth (1981-1996) reveals that companies' income tax positively and significantly affects GDP, just as do customs and excise duties. However, petroleum profit tax is positively but insignificantly affects Nigeria's GDP. The same is true of other direct taxes (capital gains and stamp duties). However, all direct taxes positively and significantly affect Nigeria's GDP.

Khalaf (2013) using a sample of 45 manufacturing companies listed on the Amman Stock Exchange were used for this study which covers a period of five (5) years from 2005-2009. Multiple regression analysis was applied on performance indicators such as return on asset (ROA) and profit margin (PM) as well as short-term debt to total assets (STDTA), long term debt to total assets (LTDTA) and total debt to equity (TDE) as capital structure variables. The results show that there is a negative and insignificant relationship between STDTA and LTDTA, and ROA and PM; while TDE is positively related to ROA and negatively related with PM. STDTA is significant using ROA while LTDTA is significant using PM. The study concludes that statistically, capital structure is not a major determinant of firm performance. It recommends that managers of manufacturing companies should exercise caution while choosing the amount of debt to use in their capital structure as it affects their performance negatively.

3.0 Research Methodology

The ex-post facto research design was adopted for this study. The population of this study covered all the 23 registered manufacturing firms dealing with consumable foods in Nigeria (Online data from Nigerian facts, 2018). The sample of five manufacturing firms, dealing with consumable foods in Nigeria was selected for the study. The purposive sampling technique was adopted to select only eight quoted manufacturing firms. The data employed were secondary data, obtained from various issues of annual financial statement of five selected manufacturing firms in Nigeria, namely: Dangote Sugar Refinery Plc; Cadbury Nigeria Plc; Guinness Nigeria Plc; Unilever Nigeria Plc and Nestle Nigeria Plc.

This research made use of the fixed and random effect model in analysing the impact of corporate income tax on the performance of the manufacturing sector in Nigeria. According to Salvatore and Reagle (2002), the fixed and random effect model is a technique used to fit the best straight line to the sample of observation in a panel dataset. The cross section components were the individual manufacturing firms which possessed individual heterogeneity of operational qualities while the time component represented the time coverage for the period 2013 to 2017. To determine the model that is appropriate between the fixed and random effect model, the *Hausman* test was used. This test helped to determine the model of best fit in a panel data analysis.

The empirical model of Neghină and Vintilă (2013) was adapted for this study. In their study, they measured determinants (predictors) of corporate performance of manufacturing firm in Luxembourg. They stated corporate performance was measured with return on assets (ROA) and return on equity (ROE) while the predictor variables were: effective tax rate (ETR); firm size (FM); relative increase in total assets (RITA); financial leverage (LF) and effective interest rate (EIR). The model was adapted and modified by replacing ROA with net income (a proxy for corporate performance). Secondly, to capture tax impact, effective tax rate (ETR) was replaced with corporate income tax (CIT), while firm size was proxied with net asset (NETA).

Model 1

$$NETIN = f\ (CIT, NETA, EPS) \quad (1)$$

Taking the natural logarithm to both sides of the equation, equation (1) in econometric form is stated as:

$$logNETIN_{it} = a_0 + a_1 logCIT_{it} + a_2 logNETA_{it} + a_3 logEPS_{it} + e_{it} \quad (2)$$

$$a_0 > 0 \quad a_1 > 0, \quad a_2 > 0, \quad a_3 < 0$$

Model 2

$$ROE = f\ (CIT, NETA, EPS) \quad (3)$$

Taking the natural logarithm to both sides of the equation, equation (3) in econometric form is stated as:

$$Log\ ROE_{it} = \beta_0 + \beta_1 logCIT_{it} + \beta_2 logNETA_{it} + \beta_3 logEPS_{it} + e_{it} \quad (4)$$

$$\beta_0 > 0\ \beta_1 > 0, \quad \beta_2 > 0, \quad \beta_3 > 0$$

The specified variables are defined as follows: NETIN is Net income; ROE is Return on equity (%) (ratio of Net asset to shareholders fund divided by 100%); CIT is Company income tax; NETA is Net asset; EPS is Earnings per share; a_0 and β_0 are constants while a_1, a_2, a_3, β_1, β_2 and β_3 are all parameters to be estimated; $_i$ represent Cross sectional components (individual firms); $_t$ connotes the time period covered and e is the error term.

4.0 Data Presentation, Analysis and Discussion of Results

To test for the stationary of the series, the three panel unit root tests were carried out. These tests included a) Levi, Lin & Chu t; b) Augmented Dickey Fuller (ADF) Fisher Chi square; and c) Philip Perron Fisher Chi-square.

Table 1: Panel Unit Root test on the Variables

Series	Panel Unit rot tests			Order of Integration
	Levi, Lin & Chu test	ADF-Fisher Chi square	PP-Fisher Chi-square	
NETIN	-12.9589 (0.00)**	20.5453 (0.02)*	21.0341 (0.02)*	*I*(1)
ROE	-7.69698 (0.00)**	19.7349 (0.03)*	23.2023 (0.01)*	*I*(1)
CIT	-47.0861 (0.00)**	31.0710 (0.00)**	33.7798 (0.00)**	*I*(1)
NETA	-267.052 (0.00)**	20.4393 (0.03)*	20.2809 (0.03)*	*I*(0)
EPS	-5.54596 (0.00)*	16.2990 (0.09)	20.3699 (0.03)*	*I*(1)

Note: ** *Series is significant at 0.01 level of significance (p<0.01)*
* *Series is significant at 0.05 level of significance (p<0.05)*

Results from Table 1 on the indicated that NETA was stationary at level i.e integrated at order zero *I*(0) while NETIN, ROE, CIT and EPS were stationary at first differencing i.e or integrated at order one *I*(1). The stationary status of the series made it possible to estimate the regression equation, using three regression techniques, namely: Pooled Ordinary Least Square (OLS), Fixed Effect (FE) and Random Effect (RE) regression model. The results of the models were presented in Table 2.

Table 2: Regression Analysis on Model 1

	Pooled OLS	Fixed effect model	Random effect model
Variables			
C	-1.16 (0.22)	0.16 (0.86)	0.83 (0.26)
CIT	0.60** (0.00)	0.33** 0.00	0.50** (0.00)
NETA	0.55** (0.00)	0.50** (0.00)	0.57** (0.00)
EPS	-0.02 (0.67)	0.6216** (0.00)	0.1230* (0.04)
R^2	0.82	0.95	0.72
Adjusted R^2	0.79	0.94	0.69
F-statistics	32.78 (0.00)	57.68 (0.00)	18.86 (0.00)
Durbin –Watson (DW) statistics	1.82	2.04	1.47
Hausman test = 30.05 P-value (0.00)			

Dependent variable: NETIN (Net income)
Note: ** *Estimate is significant at 0.01 level of significance (p<0.01)*
* *Estimate is significant at 0.05 level of significance (p<0.05)*
p-value of each parameter in parenthesis
Source: Regression result from (E-view version 7)

From the pooled OLS model, results in Table 2 showed that CIT and NETA had direct significant impact on net income. The adjusted coefficient of determination (R^{-2}) and coefficient of determination (R^2) in the pooled OLS model showed that the predictors (CIT, NETA and EPS) jointly explained 79.8 to 82.4 per cent variations in net income, respectively. In the fixed effect model, the entire predictors (CIT, NETA and EPS) had direct significant impact on net income (NETIN) while the adjusted coefficient of determination (R^{-2}) and coefficient of determination (R^2) showed that the predictors (CIT, NETA and EPS) jointly accounted for 95.9 to 94.3 per cent variations in net income. Lastly, the random effect model also showed that the entire predictors (CIT, NETA and EPS) had direct significant impact on net income (NETIN) while the adjusted coefficient of determination (R^{-2}) and coefficient of determination (R^2) indicated that the predictors (CIT, NETA and EPS) jointly explained 69.6 to 72.9 per cent variations in net income, respectively.

The F-statistics for the pooled OLS (F = 32.78), fixed effect model (F=57.68) and random effect model (F= 18.86) showed that the estimates are jointly significant, with (p=0.0000). Furthermore, the Durbin Watson (DW) statistics for the pooled OLS, fixed and random effect models were 1.82, 2.04 and 1.47, respectively. Since, the DW value for the pooled OLS and fixed effect model were approximately equal to 2, the results indicated that there is no presence of serial autocorrelation among the variables.

To ascertain the model of best fit for estimation, prediction and forecasting, the Hausman test was carried out as shown in Table 3. With the null hypothesis, that the random effect model was most appropriate for the regression estimate, the test rejected the null hypothesis, which implied that the fixed effect model was appropriate. Hence, the model that best explains net income is the fixed effect model.

Table 3: Regression Analysis on Model 2

	Pooled OLS	Fixed effect model	Random effect model
Variables			
C	-0.84 (0.59)	3.57 (0.07)	-0.83 (0.41)
CIT	0.48* (0.04)	0.09 0.63	0.48** (0.00)
NETA	-0.09 (0.72)	-0.50 (0.08)	-0.09 (0.59)
EPS	0.07 (0.49)	1.08** (0.00)	0.07 (0.29)
R^2	0.26	0.75	0.26
Adjusted R^2	0.15	0.64	0.15
F-statistics	2.46 (0.09)	7.34 (0.00)	2.46 (0.09)
Durbin –Watson statistics	1.47	1.07	1.47
Hausman test =33.26 P-value (0.00)			

Dependent variable: Return on Equity (ROE)
Note: ** *Estimate is significant at 0.01 level of significance (p<0.01)*
* *Estimate is significant at 0.05 level of significance (p<0.05)*
p-value of each parameter in parenthesis
Source: Regression result from (E-view version 7)

From the pooled OLS model, results in Table 3 showed that CIT had direct significant impact on the dependent variable (return on equity). The adjusted coefficient of determination (R^{-2}) and coefficient of determination (R^2) in the pooled OLS model showed that the predictors (CIT, NETA and EPS) jointly explain 15.5 to 26 per cent variations in return on equity. In the fixed effect model, only EPS had direct and significant impact on net income (NETIN). The rest of the estimates (CIT and NETA) were not significant while the adjusted coefficient of determination (R^{-2}) and coefficient of determination (R^2) showed that the predictors (CIT, NETA and EPS) jointly explain 64.9 to 75.2 per cent variations in return on equity. Lastly, the random effect model also showed that only CIT had direct and statistically significant impact on return on equity. The adjusted coefficient of determination (R^{-2}) and coefficient of determination (R^2) in the random effect variables showed that the predictors (CIT, NETA and EPS) jointly explained 15.5 to 26.0 per cent variations in return on equity respectively.

The F-statistics from the pooled OLS and random effect models (F = 2.46 and 2.46) showed that the estimates were not jointly significant (p>0.05) while the F-statistic from the fixed effect model showed that estimates (coefficient of CIT, NETA and EPS) were jointly significant (p<0.05). Furthermore, the Durbin

Watson (DW) statistics for the pooled OLS, fixed and random effect models were 1.47, 1.07 and 1.47, respectively. Since, the DW value for the pooled OLS, random and fixed effect model were approximately equal to 2. This shows that there was presence of serial autocorrelation among the variables in the three models; following the rule of thumb ($1.8 \geq D.W \leq 2.2$).

To ascertain the model of best fit for estimation, prediction and forecasting, the Hausman test was carried out. The Hausman test has the null hypothesis that random effect model is most appropriate for the regression estimate. Hence, the rejection of the null hypothesis implied that the fixed effect model was appropriate. From Table 3, the Hausman test coefficient (33.26) was statistically significant ($p=0.00$). Hence, the null hypothesis was rejected. Hence, the model that best explained return on equity was the fixed effect model. The results have important policy implication for macroeconomic policy direction, especially with respect to taxation in Nigeria. This indicates that corporate income tax can be used to stabilise the economy as an instrument of fiscal policy. In other words, the Nigerian government can use corporate tax to influence performance in the manufacturing sector and thereby boost economic growth.

5.0 Conclusion

Company income tax is a type of direct tax that is levied on corporate bodies. Based on findings, it is concluded that company income tax has direct significant impact on net income and return on equity of manufacturing companies in Nigeria. Although, increase in corporate tax reduced the earning of a company, the result clearly indicates that increasing corporate taxes influence performance in the manufacturing sector in Nigeria, significantly. Perhaps, this may be due to the expansionary impact of tax receipt in the promotion of socio-economic infrastructure for individuals and corporate bodies in the nation.

5.1 Recommendations

The following recommendations were proffered:

1) Company income tax receipt should be channeled by the government into judicious use such as the provision of social amenities like electricity and good road network. This would help to reduce cost of production and ease the distribution of goods and services produced. Hence, it would promote corporate performance.

2) There should be constant training and re-training of tax administrators through seminars, conference to keep them abreast with modern trends in tax administration to ensure efficiency in the collection of corporate tax revenue.

3) Government, through Federal Inland Revenue Service, should create an effective and reliable data base for every viable company to minimise (if not eliminate) the incidence of corporate tax evasion. In addition, government should ensure that the manufacturer sector is not stifled by multiple taxes

References

Abata, M. A. (2014). The impact of tax revenue on Nigerian economy (case of Federal Board of Inland Revenue). *Journal of Policy and Development Studies*, 9(1), 109-121.

Adeyemi a. Adekunle and samson Disu (2018) Contemporary issues in corporate income tax in Nigeria – a review of precept and practice European Journal of Accounting, Auditing and finance research Vol.6, no.4, pp.59-78, may 2018

Altman, K. (2004). Financial ratio analysis and the prediction of corporate bankruptcy, *Journal of Finance*. 12(4), 7-15.

Anyanwu, J.C., (1993). *Monetary Economics: Theory, Policy and Institutions*. Onitsha: Hybrid Publishers.

Anyanwu, J.C.,(1997).Nigerian Public Finance. Onitsha: Joanne Educational Publishers,.

Appah, E., (2010). The relationship between fiscal policy and economic growth in Nigeria (1991-2005). *International Journal Economics Development Research and Investment* 1(2): 37-47.

Appah, E., (2004). *Principles and Practice of Nigerian Taxation*. Port- Harcourt: Ezevin Mint Printers.

Bassey, N. E., Aniekan J. A., Ikpe, I. K. and Udo, U. J. (2013). Analysis of the Determinants of Agricultural Science Volume 1, Issue 4 (2013), 36-47 ISSN 2291-4471 E-ISSN 2291 448X *Published by Science and Education Centre of North America*

Bhartia, H.L(2009). Public Finance 13th Ed.New Delhi:Vikas Publishing House PVT Ltd.

Chandrasekharan, C. V.(2012). Determinant of capital structure in the Nigerian listed firms. *International Journal of Advanced Research in Management and Social Sciences* ISSN: 2278-6236 Vol. 1, No. 2

Chude, D. I. & Chude, N. P. (2015). Impact of company income taxation on the profitability of companies in Nigeria: A study of Nigerian breweries. *European Journal of Accounting, Auditing and Finance Research,* 3(8), 1-11.

Ezejiofor, R. A. & Adigwe, P. K. & Echekoba, F. N. (2015). Tax as a fiscal policy and manufacturing company's performance as an engine for economic growth in Nigeria. *European Journal of Business, Economics and Accountancy,* 3(3), 1-12.

Fashola, M. A. (2001). *Macroeconomics Theory; Highlights and Policy Extensions for Less-Developed Economies*. 3rd Edition; Concept Publication.

The FIAS (2008), DFID (2008), and CIPE (2010) studies on taxation in Nigeria primarily focused on its direct burden.

Hausman, J. A. (1978). Specification tests in econometrics.Econometrica: Journal of theEconometric Society, 46 (6), 1251-1271.

Ivan Lapitskiy (2018) Tax Rates Across The World: Corporate Tax, Income Tax, Indirect Tax, And Social Security Rates. Nigeria Data Portal http://nigeria.opendataforafrica.org/infographics/weafnr/tax-rates-across-the-world-corporate-tax-income-tax-indirect-tax-and-social-security-rates retrieved on 5th July, 2018.

Jhingan, M.L. (2004). *Macro-Economic Theory 11th Ed.,* New Delhi: Vrinda Publications (P) Ltd.

Jhingan, M.L. (2004b). *Money, Banking, International Trade and Public Finance*. 7th Ed. New Delhi: Vrinda Publication (P) Ltd.

Khalaf Al-Taani (2013). The relationship between capital structure and firm performance: evidence from Jordan. *Journal of Finance and Accounting.* 1(3), 41-45. doi: 10.11648/j.jfa.20130103.11

Lyndon, M. E. & Paymaster, F. B. (2016). The impact of company income tax and value-added tax on economic growth: evidence from Nigeria. *European Journal of Accounting, Auditing and Finance Research,* 4(7), 106-112.

Salvatore D. and Reagle D. (2002), "Theory and Problems of Statistics and Econometrics," In: McGraw-Hill, Ed., Schaum's Outline, 2nd Edition, McGraw-Hill Companies, Inc., New York, 2002, p. 252.

Musgrave, R.A. and P.B. Musgrave, (2004). *Public Finance in Theory and Practice. 5th Ed*. New Delhi: Tata McGraw.

Musanga, B. (2007). Effects of taxation on economic growth (Uganda experience: 1987-2005) Unpublished M. Sc qualitative economics. University of Makerere.

Nwosu, E.J., (2000). The Challenge of Poverty in Africa. Owerri: Skill Mark Media Ltd.

Nwezeaku, N.C., (2005). *Taxation in Nigeria: Principles and Practice*. Owerri: Springfield Publishers.

Nzotta, S.M., (2007). Tax evasion problems in Nigeria: A critique. *Nigerian Accountant* 40(2): 40-43.

Okafor, U. O. (2012). Analysis of the impact of Fiscal Policy Measures on Capital Formation in Nigeria. *Nigerian Journal of Management and Administration,* 5(7), 34-56.

Ola, C.S., (2001). *Income Tax Law and Practice in Nigeria*. Ibadan: Heinemann Educational Books (Nigeria) PLC.

Osiegbu, P.I., Onuorah, A. C. and Nnamdi, I. (2010). *Public Finance: Theories and Practices*. Asaba : C.M. Global Company Ltd.

Premuim Times (2017). Nigerian manufacturers lament: 272 firms shut, 20% capacity utilization and other challenges in 2016. Thursday September 28th 2017.

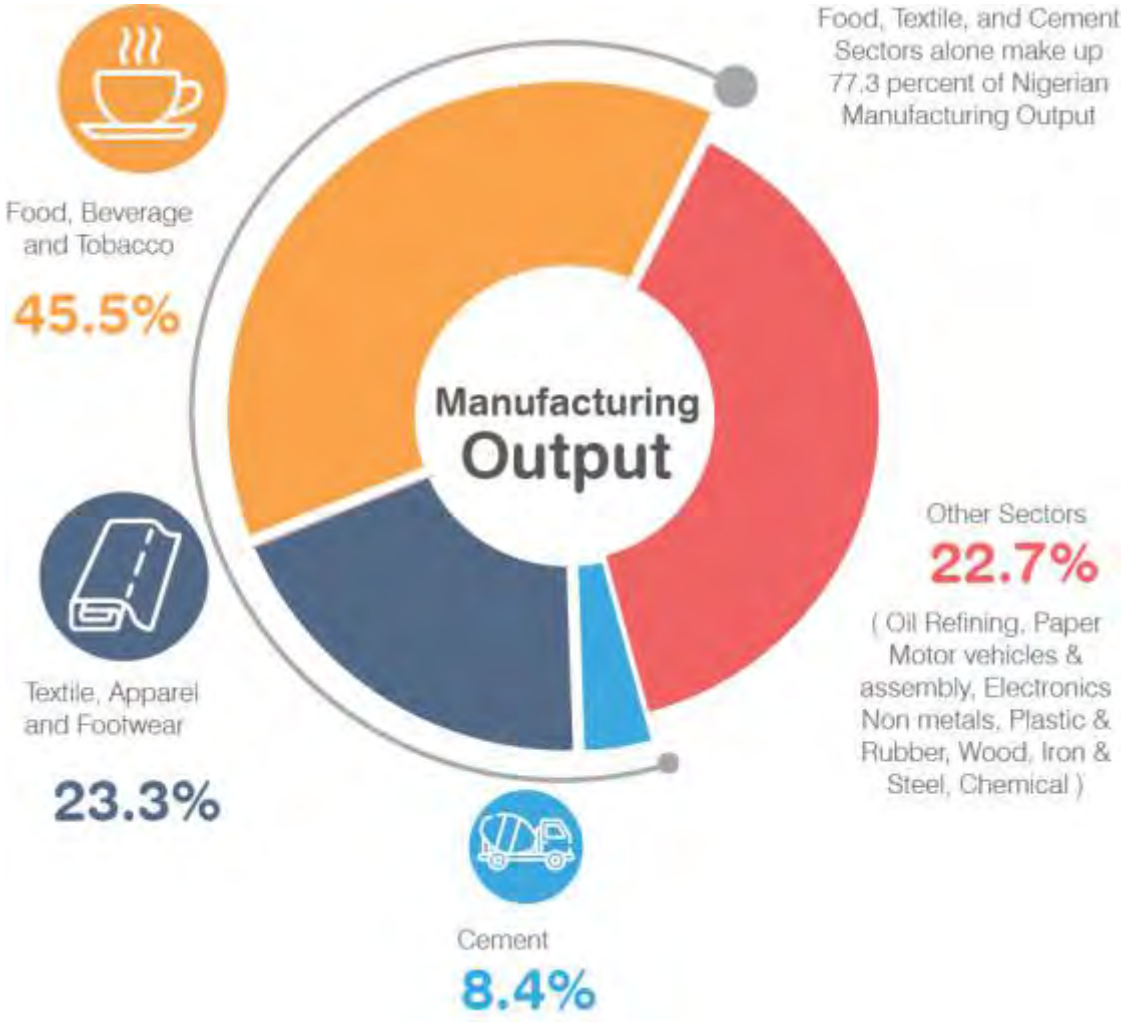
The Nigerian Economic Summit Group (2018) ***Manufacturing Sector and the Nigeria's Economic GrowthPattern*** *www.nesgroup.org/policy---briefs/*

Tomola, M. O., Adedisi, T. E. and Olawale, F. K. (2012). Bank Lending, Economic Growth and the performance of the Manufacturing Sector in Nigeria. *European Scientific Journal,* 8(3), 19-34

Figure 1: Nigeria's Manufacturing GDP Growth

Source: National Bureau of Statistics and NESG Research

Figure 2: Share of Nigeria's Manufacturing GDP in 2017



Source: National Bureau of Statistics and NESG Research

An Empirical Analysis of the Sacrifice Ratio in Nigeria

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Abstract
This study empirically investigates the existence of a sacrifice ratio for Nigeria and to measure it, if one exists over the disinflation episodes. The study adopted the Ball (1994) methodology and the Hodrick-Prescott (HP) filter technique to examine the cost of disinflation to Nigeria. Six (6) disinflation episodes were identified over the 2000Q1 – 2018Q2 period and the results obtained indicated varying amounts of output losses over the different episodes under study. The findings suggested that a 1% disinflation resulted in output losses ranging from -0.02% to 0.44% for the Nigerian economy. Both methods, however, suggested that the latest disinflation episode (2016Q3-2018Q2) promoted output growth

Key words: Sacrifice ratio, Disinflation, Output losses.

JEL codes: E31, O40

1. Introduction

The major macroeconomic objectives of most nations include the attainment of economic growth, price stability, high levels of employment and balance of payments. Of these objectives, most nations give priority to economic growth and price stability because of their influences on other macroeconomic variables. Studies have revealed that price stability fosters economic growth, thus, this suggests that a high level of inflation is capable of undermining practical efforts at achieving economic growth and other macroeconomic objectives. Some other studies suggest that a zero level of inflation is a disincentive to growth (Morar, 2011). Therefore, moderating inflation is an important macroeconomic policy objective.

The rising instability of money demand in the 1980's and increased capital flows' volatility of the 1990's subjected economies globally to high inflation rates with its attendant effects (Goncalves and Salles, 2005). Latin American countries experienced the highest inflation rates with regional inflation averaged at 145% annually in the 1980s. In a bid to achieve low and stable inflation rates, most nations, adopted various forms of inflation targeting regimes suited to their environmental and institutional peculiarities (Khalid, 2005). However, this reduction in inflation rates resulted in lower output levels. This is because of the negative relationship between inflation and unemployment as suggested by the Phillips curve in the absence of a beneficial supply shock. Hence, disinflation would correspond to increasing the unemployment level which will in turn lead to a fall in output. The loss in output as a result of disinflation is termed the sacrifice ratio (Mankiw, 2010).

Nigeria for instance, has for over the past three decades been confronted by high inflation rates, with inflation rates of 39.6% in 1984, 40.9% in 1989, 72.8% in 1995, 29.3% in 1996, 17.9% in 2005, 8.2% in 2006 and 10.3% in 2010. However during this period, the Nigerian GDP has also witnessed some sharp swings as real GDP grew by -2.022% in 1984, 6.47% in 1989, -0.31% in 1995, 4.99% in 1996, 5.39% in 2005, 6.21% in 2006 and 7.98% in 2010 (CBN statistical bulletin, 2010). It is obvious that during these periods of falling inflation rates, Nigeria has also been experiencing some level of economic growth. This scenario (disinflation and economic growth) begs the question as to whether the current level of economic growth experienced in Nigeria ought to have been higher (hampered by high sacrifice ratios) or whether disinflation has no output cost to Nigeria?

[1] We acknowledge the insightful comments and assistance provided by Prof. A. G. Garba.

Several studies have been carried out on the sacrifice ratio globally with the seminal paper by Ball (1994) suggesting that the sacrifice ratio is time sensitive and its value lower when disinflation is quick. The review of literature further revealed that the cost of disinflation is dependent on factors such as Central Bank independence, initial inflation, income policies and wage flexibility. There is ,however, a dearth of studies on the Nigerian sacrifice ratio with Adebayo (2010) estimating the Nigerian sacrifice ratio at 1.306%, Mazumder (2012) at -0.04% and Sanusi (2015) concluding that disinflation has no cost to Nigeria with estimates between -0.05% and 0.46%.

The research on sacrifice ratio in Nigeria has produced inconclusive results. In addition, Mazumdar (2012) and Adebayo (2010) suggest that the cost of disinflation is time insensitive. In light of the recent inflationary trends, it is important to re-search the relationship between disinflation and growth to (a) establish the nature of the relationship and (b) to determine what the sacrifice ratio is for the period 2000 – 2018. This will enable the monetary authorities to have a better set of information in analysing policy options and in choosing and implementing the best policy option in addition to contributing to the literature on the Nigerian cost of disinflation

2. Literature Review

This section reviews the literature on some key concepts, theories and empirical analysis of sacrifice ratio

2.1 Sacrifice Ratio

Mankiw (2010) defines the sacrifice ratio as the number of points of a year's real GDP that must be forgone to reduce inflation by 1% point. This definition is derived from the analysis of the Phillips curve. In the absence of a supply shock, the Phillips curve indicates a negative relationship between inflation and unemployment. This means that in such a scenario, reducing inflation would correspond to increasing the unemployment level which will in turn, lead to a fall in output. The rise in unemployment is illustrated by the Phillips curve, while loss in output is termed the sacrifice ratio.

The sacrifice ratio, therefore, informs policy makers about the amount of employment and output to be lost in disinflation. In other words, the sacrifice ratio is the percentage of the GDP to be lost when inflation is reduced by 1% point. The estimates of the sacrifice ratio vary from country to country and between episodes in the same country. A typical estimate of the sacrifice ratio for the United States in Okun (1982), cited in Mankiw (2010) is about 5%. A sacrifice ratio of 5% implies that 5% of annual GDP must be foregone to reduce inflation by 1%.

In terms of unemployment gap, Okun's law can be used to estimate by how much unemployment will have to rise if inflation is to fall by 1%. According to Okun's law, 1% change in unemployment results in a 2% change in GDP. Therefore using the aforementioned example, reducing inflation by 1% will increase unemployment by 2.5% (Mankiw, 2010).

2.2 Determinants of the Sacrifice Ratio

Ball (1994) identified five determinants of the sacrifice ratio. These are; speed of disinflation, nominal wage rigidity, initial conditions of inflation and income, openness and Central Bank independence. Ball (1994) identified two conflicting theories which were proposed to reduce the sacrifice ratio, to include; (a) gradual disinflation is less expensive (b) cold turkey or speedy disinflation is inexpensive. The former holds that gradualism is less expensive because wages and prices require a long time to adjust to tightening of monetary policies because they possess inertia (the tendency of wages and prices to neither speed up nor slow down until an externality forces them to change). The cold turkey view on the other hand posits that speedy inflation is less costly due to sharp adjustments in expectations. Sargent (1983) cited in Ball (1994) holds that the change in expectations which makes disinflation inexpensive is due to the credibility resulting from sharp disinflation. Ball (1994) concluded that speedy disinflations result in substantially lower output losses and that regardless of the size of disinflation, cold turkey produces lower output losses in relation to gradualism.

Another argument presented by Ball (1994) was whether nominal wage rigidity accounted for the difference in the sacrifice ratio in different countries. Contrary to this stance is the new Keynesian argument that price rigidity rather than wage rigidity determines the cost of disinflation. He concluded that flexibility in wages reduces the sacrifice ratio from his results. However, this may not hold for developing countries like Nigeria with huge inertial.

Ball (1994) stated that the influence of initial inflation on the sacrifice ratio was insignificant as opposed to Ball, Mankiw and Romer (1988) cited in Ball (1994) who stated that the output-inflation trade-off in the new Keynesian model is determined by the trend inflation. He also stated that mandatory income policies lower the sacrifice ratio, while voluntary income policies are ineffective.

Concerning the relationship between openness and the sacrifice ratio, Ball (1994) suggested that the effect of openness on the sacrifice ratio is unclear contrary to Mazumder (2012) who cites Central Bank independence and openness as major determinants of the sacrifice ratio.

2.3 Measures of Estimating the Sacrifice Ratio

Durham (2001) in his study on sacrifice ratio and Monetary Policy Credibility identified various measures of estimating the sacrifice ratio, which are highlighted below.

Phillips Curve Approach

The first method which is the (augmented-expectations) Phillips curve approach captures the trade-off between inflation and output over a given period by quantifying the relationship given time series data on output and the relevant price index. A variant of this method considers a time-varying measure which calculates the trade-off for each disinflation episode.

Under this approach, the sacrifice ratio is calculated as;

$$SR = \Delta Y / \Delta \prod. \quad (2.1)$$

SR is sacrifice ratio, Y is real aggregate output and $\prod$ is the inflation rate.

Ball (1994) Approach

This method which is the most widely recognised was developed by Ball (1994). This method prescribes two ways of calculating the sacrifice ratio; one using quarterly data and the other using annual data. The formula under this method is as follows:

$$SR = [\sum_{t=s}^{E+4}(y_t - y_t^*)] / (\pi_t - \pi_{t-1}) \quad (2.2)$$

Where SR is sacrifice ratio, $(y_t - y_t^*)$ is the sum of output losses over the disinflation period and $(\pi_t - \pi_{t-1})$ is the change in inflation trend. Year t is an inflation peak (trough) if inflation at t is higher (lower) than inflation at t+1 or t-1, that is, troughs and peaks are defined with reference to a year on both sides. Trend output can be calculated by connecting output at an inflation peak to output one year after the trough. The sum of the differences between the various levels of actual output throughout the episode (inclusive of the output one year after the inflation trough) and output at the inflation peak, gives the output loss for each episode. The output values are to be logged as prescribed by Ball (1994).

The formula specified above is guided by the following assumptions:

a) The natural level of output is at the start of a disinflation episode.

b) Output returns to its potential level four quarters after the end of an episode i.e four quarters after an inflation trough. In terms of annual data, output returns to its potential level one year after an inflation trough.

c) Potential output grows log-linearly between two points when actual and potential outputs are equivalent.

Mankiw (2010) Approach

Mankiw (2010) also advanced a measure for the sacrifice ratio during an inflation episode. The formula is given as follows;

$$SR = \frac{\Delta Y_e}{\Delta I_e} \quad (2.3)$$

Where SR is sacrifice ratio, ΔY_e is the loss in GDP over the disinflation period and ΔI_e is the change in inflation trend.

2.4 Theoretical Literature Review

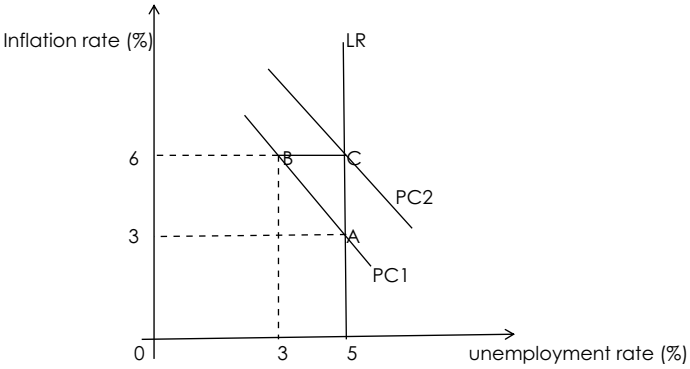
The modern Phillip's curve and Okun's law provide the theoretical foundation for the notion of sacrifice ratio. Consequently, both theories are briefly reviewed.

2.4.1 The Phillips Curve

The modern Phillips curve is based on the work of Milton Friedman which describes a situation in which the trade-off between inflation and unemployment is temporary and occurs only in the short run, while in the long run, the Phillips curve is vertical at the natural rate of unemployment also known as NAIRU (Non-Accelerating Inflation Rate of Unemployment) (Colander, 2006).

Friedman showed how the Phillips curve which is vertical in the long run may have a negative slope in the short run and why the short run Phillips curve might shift using the concept of policy surprises. According to him, workers expectation of inflation is adaptive and this influences their decisions in the labour market which in turn determines the wage rate and the level of employment. To this end, the short run trade-off between inflation and unemployment was possible, if and only if the actual rate of inflation turned out to be different from the expected rate of inflation. This proposition means that when inflation is fully anticipated, no trade-off will occur (Colander, 2006).

Fig 2.1: The Modern Phillips curve



When the economy is at point A on the long run Phillips curve LR, it means that the economy is at equilibrium at the prevailing inflation rate of 3% and natural rate of unemployment of 5%. If the policy makers desire to bring about a reduction in the level of unemployment via the increase in aggregate demand, this policy would move the economy from point A to point B on the short run Phillips curve PC1. At point B, the inflation rate has increased to 6%, while the unemployment rate fell to 3% (Colander, 2006).

In the long run, when workers realise that their real wages have reduced, they go into negotiations to bid up their wages, adjusting their expectations of inflation from 3% to 6%. This leads to an increase in wages which raises firms' cost of production thereby reducing their profits. Firms in return reduce output and employment to maintain their profit level which eventually increases the unemployment rate. This is shown in Fig 2.1 by movement from point B on short run Phillips curve PC1 to point C on the short run Phillips curve PC2. If the aggregate demand is maintained at the current level, the economy will be stabilised at 6% rate of inflation and unemployment will fall back to the 5% natural rate of unemployment since it is the result of both workers expectation of inflation and the actual inflation. Therefore in the long run, inflation and unemployment have undergone all the necessary adjustments resulting in a vertical Phillips curve at the natural rate of unemployment (Colander, 2006).

According to Mankiw (2010), the modern Phillips curve can be derived as a result of its dependence on; expected inflation, cyclical unemployment (deviation of unemployment from its natural rate) and supply shocks. It is given as follows;

$$\pi = E_{\pi} - \beta(U - U^{n}) + V \qquad (2.4)$$

Where; π = inflation

E_{π} = Expected inflation

B = parameter measuring the response of inflation to cyclical unemployment

V = supply shock.

Equation (2.4) implies that changes in expected inflation (ΔE_{π}), cyclical unemployment and supply shocks will affect inflation.

2.4.2 Okun's Law

This is a theory developed by Arthur Melvin Okun to explain the relationship between unemployment and output losses, in other words, the relationship between cyclical unemployment and output gap. The law stated by Okun was in two versions, the difference version, and the gap version.

The gap version as specified by Abel and Bernanke (2005), cited in Odu (2014), is expressed as follows:

$$\tilde{Y} - Y/\tilde{Y} = C(U-\bar{U}) \qquad (2.5)$$

Where; $\tilde{Y}$ = Potential GDP, Y = Actual GDP, $\bar{U}$ = Natural rate of unemployment, U= Actual unemployment rate. C is a factor relating changes in unemployment to changes in output, which has been around 2% and 3% since 1955. This measure is rarely used in practice due to the difficulty in computing $\tilde{Y}$ and $\bar{U}$, which can only be estimated.

The difference version is expressed as follows:

$$\Delta Y/Y = K - c\Delta U \qquad (2.6)$$

ΔY= change in actual output from one year to the next, ΔU= change in unemployment from one year to the next. K= average annual growth rate of full employment output. Currently in the USA, K=3% and c=2%.

The original Okun's law states that a 3% increase in output corresponds to a 1% decline in the rate of unemployment, a 0.5% increase in labour force participation, a 0.5% increase in hours worked per employee and a 1% increase in output per hours worked (labour productivity) (Odu, 2014).

The current version of the law which has been adjusted to fit the current economic conditions and employment trends states that; for every 2% that GDP falls relative to potential GDP, the unemployment rate rises by about 1 percentage point (Samuelson and Nordhaus, 2001).

Frank and Bernanke (2001), states the law as follows; each extra percentage point of cyclical unemployment is associated with about a 2% point increase in the output gap, measured in relation to potential output. This means that if unemployment and output losses were initially at 1% and 2% respectively, an increases in unemployment from 1% to 2%, will lead to an increase in output losses from 2% to 4%. This is because a fall in output results in fewer

workers needed by firms, so no new workers are employed and current workers are laid off.

Fig 2.2: Okun's law illustrated.

According to Okun's law, for cyclical unemployment to be constant, actual GDP has to increase at the same pace as potential GDP and for cyclical unemployment to fall, actual GDP must rise faster than potential GDP.

The mathematical formula for Okun's law is given in Mankiw (2010) as:

Percentage Change in Real GDP= 3% - 2 × Change in Unemployment Rate (2.7)

2.5 Empirical Literature

Cross-country Studies

Ball (1994) investigated the sacrifice ratio for disinflation using data of OECD countries from 1960–1991. In his study, he described two methods for estimating the sacrifice ratio, also introducing a new method. Of the three methods stated in this study, Ball (1994) referred to the Phillips curve approach as the most common which was derived from the relationship between output and inflation in a long time series. He faulted this method as it estimated the sacrifice ratio to be the same for all disinflations within a time series irrespective of the occurrence of factors which influence disinflations such as income policies, wage changes etc. The second method made use of ad hoc estimates of the inflation change and output losses. Mankiw (1991) cited in Ball (1994) determined the sacrifice ratio for the 1981-1985 episode using this method. Inflation fell by 6.7% between 1981-1985 using the GDP deflator measure and assuming a natural rate of unemployment of 6%. He estimated that deviation of unemployment from its natural rate was an excess of 9.5% from 1982-1985. Multiplying this deviation by an Okun's law constant of 2 obtains a total output loss of 19 points. The sacrifice ratio is calculated as the ratio of the total output loss to the change in inflation which yields 2.8%. This is method can also be criticised as the estimates it produces are ad hoc and might not stand the test of time.

Ball (1994) in developing his own method for estimating the sacrifice ratio described disinflation as an episode in which trend inflation falls substantially. He estimated the sacrifice ratio as the ratio of the sum of output losses to the change in trend inflation. The change in trend is the difference between inflation at a peak and a trough, while the numerator is the sum of the differences between the actual output and the trend output.

In relation to the size of the sacrifice ratio, He was interested in finding out if speedy disinflation or gradualism led to a lower sacrifice ratio. Regressing the sacrifice ratio on the speed of disinflation for quarterly and annual data resulted in a negative coefficient signifying that cold turkey reduces the size of the sacrifice ratio.

His results suggest that the USA (2.4), Germany (2.9) and Italy (1.48) have high average sacrifice ratios, while France (0.22), Netherlands (0.31), have the least. Most of the countries also have larger sacrifice ratios during the oil boom in relation to the oil glut.

Mazumder (2012) measured the sacrifice ratio for all countries of the world (OECD and non-OECD); using a sample of 189 countries with data spanning 1969-2009 (40 years), also exploring the determinants of the sacrifice ratio. He adopted the Ball (1994) methodology in his study. His findings suggest that the speed of disinflation is the major determinant of sacrifice ratio value but having insignificant effect on non OECD countries' disinflation cost. Greater Central Bank Independence and openness are responsible for lower ratios in non-OECD countries. He estimated -0.04 as the sacrifice ratio for Nigeria for the 2004-2007 episode.

Zhang (2001) carried out an empirical study on sacrifice ratios with hysteresis (long lived effects) for G-7 countries, in which he used quarterly data spanning Q1-1960 to Q4-1999 on some newly developed methods of calculating the sacrifice ratio. He also used the Hodrick-Prescott (HP) filter to estimate the potential output. Zhang (2001) concluded that ratios with long lived effects have larger values than ratios that do not account for long lived effects. Zhang also stated that the Ball (1994) method has a larger downward bias for countries with larger long-lived effects.

Country Specific Studies

Balanli (2010) in his empirical study on the sacrifice ratio for Turkey made use of 3 disinflation episodes encompassing three financial crises in Turkey's 30 year disinflation period. Applying a HP filter approach, he employed quarterly data to arrive at three different output gaps for the three episodes. For the first episode the sacrifice ratio was –0.011, 0.002 for the second episode and 0.031 for the third episode. He concluded that he found no significant loss of output within the periods for Turkey as the values are too small to be taken into consideration.

This conclusion however, indicates a steady upward trend in sacrifice ratio, indicating that successively higher levels of output have been lost in the disinflation periods under study.

Adebayo (2010) estimated an output gap of 0.306 for Nigeria in his work "Estimating Small Scale Macro-econometric Model for Nigeria: A Dynamic Stochastic General Equilibrium Approach". This gave a sacrifice ratio of 1.306 using the Phillips curve approach. His findings also suggested that the previous rate of inflation has a stronger influence on the current rate of inflation than the expected future rate.

Sanusi (2015) set out to estimate the inclusive growth cost of disinflation to Nigeria for a study period spanning Q1 1960 – Q2 2015 and to determine the influence of central bank independence on the sacrifice ratio. He employed two approaches to estimate the sacrifice ratio viz.; a variant of the Ball (1994) approach and the Phillips curve approach. From his findings, he concludes that disinflation is costless post-central bank independence and that the inclusive growth sacrifice ratio are very small and nearly non-existent. His results however, indicate output costs ranging from -0.16 – 0.46, with negative values in the some recent episodes.

3.0 Methodology

The methodology for measuring the sacrifice ratio for Nigeria consists of the specification of a model to measure the sacrifice ratio for Nigeria's dis-inflation.

3.1 Sacrifice Ratio Model

To estimate the sacrifice ratio for Nigeria, this study adopted the Ball (1994) model which was also used by Coffinet et al (2007) and Mazumder (2012), and is specified as follows;

$$SR=[\sum_{t=s}^{E+4}(y_t - y_t^*)] / (\pi_t - \pi_{t-1}) \qquad (3.1)$$

Where y_t is the actual output level and y_t^* is level of potential output, $\pi_t - \pi_{t-1}$ represents the change in trend inflation (the difference between inflation at a peak and at the trough). represents loss in output during a disinflation episode. A disinflation episode is identified as an episode in which trend inflation falls substantially. Year t is an inflation peak if inflation at t is higher than inflation at t+1 or t-1, while year t is an inflation trough if inflation at t is lower than inflation at t+1 or t-1, that is, troughs and peaks are defined with reference to a year on each side. Trend output can be calculated by connecting output at an inflation peak to output one year after the trough. The sum of the differences between the various levels of actual output through-out the episode (inclusive of the output one year after the inflation trough) and output at the inflation peak, gives the output loss for each episode. Note that the output values are logged as prescribed by Ball (1994).

The model specified above is guided by the following assumptions:

a. The natural level of output is at the start of a disinflation episode.
b. Output returns to its potential level four quarters after the end of an episode i.e four quarters after an inflation trough. In terms of annual data, output returns to its potential level one year after an inflation trough.
c. Potential output grows log-linearly between two points when actual and potential outputs are the same.

3.2 Data Scope and Sources

The data used in this study was sourced from the CBN database. The required macroeconomic variables include inflation rate and real GDP. The data used for the sacrifice ratio analysis covers the period of 18 years ranging from 2000Q1-2018Q2.

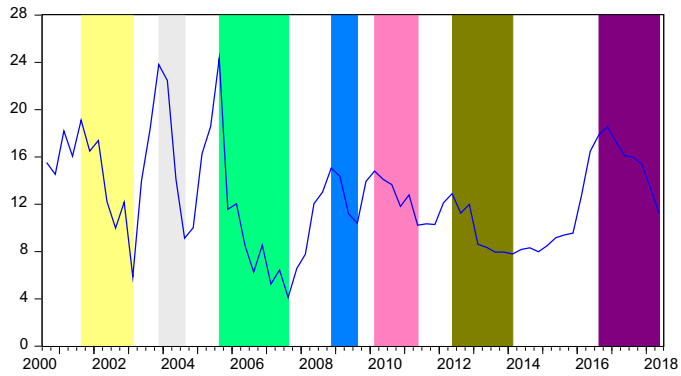
4.0 Data Presentation and Analysis and Interpretation

4.1 Sacrifice Ratio Results

In order to determine the sacrifice ratio for Nigeria, the Ball (1994) methodology was adopted and the following results were arrived at.

Inflation was plotted against time to identify the inflation peaks and troughs, as shown below.

Fig 4.1: An Inflation-Time Graph



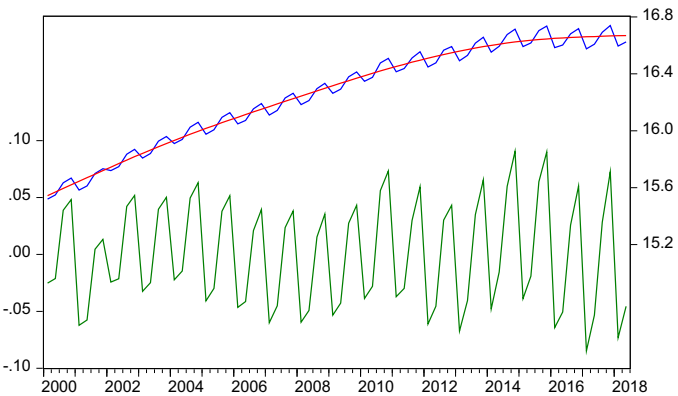
From Fig 4.1 above, the disinflation episodes are identified as the periods in which trend inflation falls substantially, which are shown below in Table 4.2. Out of the seven (7) episodes identified, only six (6) corresponded with periods of inflation tightening by the monetary authorities. The 2003Q4-2004Q3 period was identified as a period of monetary easing as such is not classified as a disinflation episode.

Table 4.1: Trend Inflation Episodes

Episode	Duration (Quarters)	Inflation peak	Inflation trough	Change in Inflation
2001Q3-2003Q1	7	19.12	5.86	13.25
2003Q4-2004Q3	**4**	**23.81**	**9.13**	**14.69**
2005Q3-2007Q3	9	24.32	4.12	20.20
2008Q4-2009Q3	4	15.06	10.39	4.67
2010Q1-2011Q2	6	14.81	10.23	4.58
2012Q2-2014Q1	8	12.89	7.78	5.11
2016Q3-2018Q2	8	17.85	11.23	6.62

To arrive at the sum of output losses during the disinflation episode, two different methods are adopted. The first involves the Ball (1994) method, while the second involves using the Hodrick-Prescott Filter to estimate the potential level of output.

Fig 4.2: A Trend of Logged GDP



Source: Hodrick-Prescott Filter, Eviews 10.

The numerator of the sacrifice ratio is calculated by summing up the differences between the actual levels of output throughout the episode (inclusive of output one year after the trough) and output at inflation peak (trend level or full employment output). The output losses for each identified episode is summarised in Table 4.2.

Table 4.2: Summary of Output losses

Episode	2001Q3 - 2003Q1	2003Q4 - 2004Q3	2005Q3-2007Q3	2008Q4-2009Q3	2010Q1-2011Q2	2012Q2-2014Q1	2016Q3-2018Q2
HP Filter	0.03	0.06	-0.02	-0.03	0.00	-0.03	-0.07
Ball (1994)	1.36	0.64	0.90	0.21	1.07	0.11	-0.06

Given Tables 4.1 and 4.2, the cost of disinflation can be calculated by taking the ratio of the sum of output losses in each episode to the change in trend inflation.

The results of this study are summarised as follows.

Table 4.3: Summary of Sacrifice Ratio

Episode	Length in Quarters	Initial Inflation	Change in Inflation	Sacrifice ratio 1 (Ball, 1994)	Sacrifice ratio 2 (HP Filter)
2001Q3-2003Q1	7	19.12	13.25	0.10	0.00
2003Q4-2004Q3	**4**	**23.81**	**14.69**	**0.04**	**0.00**
2005Q3-2007Q3	9	24.32	20.20	0.04	0.00
2008Q4-2009Q3	4	15.06	10.39	0.05	-0.01
2010Q1-2011Q2	6	14.81	4.58	0.23	0.00
2012Q2-2014Q1	8	12.89	5.11	0.02	-0.01
2016Q3-2018Q2	8	17.85	11.23	-0.01	-0.01
Average				-0.02	0.44

Table 4.3 above shows that the output gap estimated for some episode is positive, which in turn yield positive sacrifice ratios. These results suggest that disinflation has resulted in output losses for some of the disinflation episodes in Nigeria. The information provided above also estimates the average sacrifice ratio for Nigeria to range from -0.02% to 0.44%. The result from the 2016Q3-2018Q2 episode suggests that disinflation promotes output growth using both methods of estimating output losses.

The result of this paper is similar to Adebayo (2010) that is, disinflation causes output losses. The findings are also similar to Mazumder (2012) and Sanusi (2015) who suggest that disinflation raises output. Unlike Adebayo (2010) and Mazumder (2012), this paper shows that different episodes of disinflation generate different costs. The results also suggest that the cost of disinflation is very sensitive to the method of estimating output losses as the HP filter method produces more conservative estimates while the Ball (1994) method, produces higher estimates.

5.1 Summary, Conclusion and Recommendation

This paper set out to estimate the cost of disinflation to Nigeria between 2000Q1 and 2018Q2 using the Ball (1994) method as well as the HP filter technique

which requires the use of Inflation-Time graphs to identify episodes of disinflation. The inflation-Time graph revealed six different disinflation episodes for the sampled period. The Ball (1994) method alongside the HP filter method were used to estimate output losses in calculating the disinflation costs. The results obtained from the six episodes indicated that disinflation generated output losses of between -0.02% and 0.44% in Nigeria using both methods. The findings from both methods also suggested that the 2016Q3-2018Q2 disinflation episode stimulated output gains.

Thus the conclusion of this paper is that disinflation costs output losses but the magnitude of output losses differ from one episode to another. The findings support Adebayo (2010) on the existence of sacrifice ratio in Nigeria. It is important therefore, that the Nigerian monetary authorities take account of sacrifice ratios when tightening monetary policy to reduce inflation.

Reference

Abdullahi, S.A. (2012) "Inflation History in Nigeria, Impending Removal of CBN autonomy and Other Issues" Economic Issues blogspot.

Adamson, K.Y. (1998), "Abachanomics; Economic Stability and Growth in Nigeria". African Development Network.

Abebayo, A.M. (2010), "Estimating Small Scale Macroeconomic Model (SSMM) for Nigeria: A Dynamic Stochastic General Equilibrium (DSGE) Approach".

Ajide, K.B. and Lawanson, O. (2012) "Inflation Thresholds and Economic Growth: Evidence from Nigeria" Asian Economic and Financial Review 2(7): 876-901.

Balanli, M. (2010), "Sacrifice Ratio in Turkey: An Empirical Study of the Change in Inflation on Production Loss", 6th International Students Conference, Izmir University of Economics, Izmir, Turkey.

Ball, L. (1994).What determines the sacrifice ratio? In N. G.Mankiw (Ed.), Monetary Policy, pp. 155.182. University of Chicago Press, Chicago.

Coffinet, J., Matteron, J., Poilly, (2007) "Estimating the Sacrifice Ratio for the Euro Area" Articles, Banque de France Bulletin Digest No.160 April 2007.

Colander, D.C. (2006), "Macroeconomics", 6th ed, Mcgraw Hill, New york.

Durham, J. (2001), "Sacrifice ratios and monetary policy credibility: do smaller budget deficits, inflation-indexed debt, and inflation targets lower disinflation costs?" Finance and Economics Discussion Series 2001-47, Board of Governors of the Federal Reserve System.

Goncalves, C. E. S. and Salles, J. M. (2008). Inflation targeting in emerging economies: What do the data say?, Journal of Development Economics 85: 312–318.

Gujarati, D.N. (2005), "*Basic Econometrics*", 4th ed, McGraw-Hill, New York.

Khadijat, A. (2011), "Impact of Oil Export on Economic Growth in Nigeria in Nigeria from 1970-2006". JCI-UDUS blogspot.

Khalid, A. M. (2005), "Is Inflation Targeting the Best Policy for Emerging Economies? A survey of Emerging Market Experiences and Lessons for Pakistan". Paper presented at the SBP's Conference: Monetary-Cum-Exchange Rate Regime: What Works Best for Emerging Markets? 14-15 November 2015.

Mankiw, N.G (2010), "Macroeconomics",7th ed ,Worth publishers, New york.

Mazumder, S. (2012) "Determinants of the Sacrifice Ratio: Evidence from OECD and non- OECD countries".

McConnell, C.R. and Brue, S.L (2005), "Macroeconomics", Mcgraw Hill, New york, USA.

NCEMA (2005) "Structural Adjustment Program in Nigeria: Causes, Processes and Outcomes: Revised Technical Proposal"

Nigeria-African Economic Outlook (2014) - Country notes.

Obansa, S.A (2005) "Impact of Structural Adjustment Program on Nigeria's Economy" African Update Newsletter. Vol xii, Issue 2 (spring 2005): Nigeria's Economic and Technological Development.

Odu, A. T. (2014) "An Empirical Analysis of the Inflation Threshold and Sacrifice Ratio in Nigeria". An unpublished BSc. Thesis at the Department of Economics, ABU, Zaria.

Online Nigerian Community Portal (2014) "Oil Boom Era (1971-1977)"

Richard, B. (2003) "What is Macro-Economics?", Muffy Proficient printers, Kaduna.

Samuelson, P.A and Nordhaus,W.D. (2001), "Economics", 17th ed, Mcgraw Hill, New york, USA.

Sanusi, A. R. (2015) "Monetary Policy and Inclusive Growth: How costly are disinflations to Inclusion in Nigeria?", A Paper Presented at the 56th Annual NES Conference.

Sloman, J. (2006), "Economic", 6th ed, Prentice Hall, London.

Zhang, L. H. (2005), "Sacrifice ratios with long-lived effects. International Finance 8,231.262.

Monetary Conditions, Oil Revenue and Economic Growth in Nigeria

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Abstract

This study investigated the relationship between macroeconomic conditions, oil revenue, and economic growth in Nigeria within the period 1981-2017. To determine this, annual time series data from the World Development Indicator (WDI) and Central Bank of Nigeria Statistical Bulletin was collected for the dependent variable - Gross Domestic Product (the proxy for economic growth) and the independent variables: Labour force participation of productive working age (POP), Interest rate (INTR), Exchange rate (EXCH), Inflation rate (INF) and Oil revenue growth rate (OILR). Taking all variables in natural logarithm, the Ordinary Least Squares (OLS) method, Augmented Dickey Fuller (ADF) unit-root test and the Auto-Regressive Distributive Lag (ARDL) were employed for the empirical analysis. The result showed that a long-run relationship exist among oil revenue growth rate, exchange rate, interest rate, inflation rate and GDP growth rate. Furthermore, the results showed that there is a direct significant relationship between economic growth rate and all other rate-based variables - interest rate, exchange rate, inflation rate and oil revenue growth rate, while labour force participation of productive working age (POP) had a direct and insignificant impact on GDP. The short –run estimate showed that in the event of a shock or perturbation, the system would restore itself to equilibrium at an adjustment speed of approximately 53.2%. It was recommended that revenue generated from the oil sector should be divested into real sectors such as agriculture and textiles that are known for large scale employment of labour. This would help to increase the production of previously imported goods, promote consumption of "made in Nigerian goods" and help to maintain a stable exchange rate in the country.

Keywords: Macroeconomic conditions, Economic Growth, Oil Revenue, Monetary Policy

Introduction

Monetary conditions are often used to evaluate the monetary policy stance of central banks. Monetary conditions represent the collective effect of interest, inflation and the exchange rates on the economy. These are the key variables through which monetary policy stimulate economic activity. In a period of economic lull, monetary conditions are set in such a way as to support economic growth. Conversely, monetary conditions suppress growth when economic activity tends to the direct opposite; this is referred to as contractionary monetary policy. The Neutral monetary policy, also referred to as the "natural" or "equilibrium" rate, is the monetary conditions that neither stimulates nor restrains economic growth. Neutral monetary policy is efficacious and appropriate if the economy is at full employment with low inflation and steady sustainable growth.

Monetary authorities manipulate exchange, interest rates and preserve the value of local currency to avoid market signal failure. This is germane considering their effects on the achievement of macroeconomic objectives. Like most other central banks, CBN is concerned with ensuring the stability of the tripartite macro prices. However, a seeming trade-off exists among these macroeconomic conditions as enunciated in the Impossible Trinity Theorem. The disequilibria in monetary conditions in Nigeria are not difficult to validate. This is reflected in mass underemployment, external trade imbalance and deficiency in productive investment at prevailing monetary conditions.

Interest rate (otherwise referred to as Monetary policy rate) in Nigeria has been pegged at 14 percent up to June, 2018 and among the highest in the world (Worldwide interest rates, 2018). Banks factors in the necessary adjustment for inflationary

expectation and associated cost of doing the banking business, including overhead cost, insurance and energy cost (self-generation of power). In addition, odious collateral security and short *repayment periods are enshrined in loan contract to reduce bank exposure to credit risk*. Interest rates are also kept high to ensure attractive yields and encourage both local and foreign investors to invest in the FGN bonds. These have devastating impact on real sector financing and job creation since no business can achieve incremental productivity and improved employment generation capacity with high interest and exchange rates.

Equally worrisome, is the non-stationary fluctuations in the price of goods and services. Inflation in Nigeria exhibits a volatile trend. The highest inflation rate recorded in Nigeria was 76.8 per cent in 1994 and the least value of inflation recorded was 0.2 per cent in 1999. Over the years, government have been advocating for single digit inflation, but only 1987, 1990, 1999, 2006 and 2007 were found to be one digit in Nigeria i.e. less than 10 per cent. For the remaining years, inflation was found to be more than one digit. Nonetheless, estimates from the National Bureau of statistics showed that inflationary trends are pointing in affirmative and right direction. Inflation rate plummeted from 14.33 in February to 13.34 in March, 2018. Food inflation declined from 17.59 %y/y in February to 16.02 %y/y in March, 2018. Core inflation also reduced from 11.7%y/y in February to 11.2%y/y in March, 2018. Commodity prices act as a link between the real and financial sectors, and plays fundamental role in economic dynamics. Inflation is capable of enshrining uncertainties in both the inter-temporal and intra-temporal allocation of resources.

Exchange rate management remains a big challenge to the Nigerian economy. From 1981 to 1986, the naira witnessed gradual depreciation such that the foreign exchange rate plummeted from $0.828: N 1.00 in 1981 to $1.121: N 1.00 in 1985. Notwithstanding the introduction of the Second tier foreign exchange market in September 1986 to address this anomaly, the currency still witnessed a downward spiral from N 1.5:$1 at inception of the Market to N 3:$1 at end-December 1988. By 1993, the average official exchange rate stood at N 137.07:$1.0. Historically, the Nigerian Naira reached an all-time high of 365 in August of 2017 (Trading Economics, 2018). The exchange rate depreciated by about 98.0 per cent. Foreign exchange management has been constrained by continuous excess demand relative to supply occasioned by high ostentatious import bills and oil wealth illusion with the consequent low foreign exchange value of the naira, and the attendant high inflation in the economy. The country has contacted the "Dutch disease" with the achievement of macroeconomic and financial development intrinsically dependent on the performance of the oil sector which is subject to vagaries in the international market.

Despite the emphasis on economic diversification by the Nigerian government, crude oil remains the dominant exported product in Nigeria (Nigerian Economic Summit Group, 2018). In addition, oil is mostly exported as a crude product, thereby bypassing opportunities for domestic refinement and the creation of value-added industries as well as employment opportunities for Nigerians (CIA, 2008). The Nigerian economy relies consistently on oil and gas revenues providing about 90.0 per cent of foreign exchange earnings, 80.0 per cent of government revenues with low levels of national savings averaging about 15.0 per cent of GDP. Taxes on oil represent a meager 5.0 per cent of GDP, compared with global threshold of 20.0 per cent. Investment as evident from FGN's recurrent budget is 107.0 per cent of its revenues and the capital budget is only nominally at 30.0 percent of total budget which is entirely borrowed. Yakub (2008) opine that "the problems with Nigerian economy have been traced to failure of successive governments to use oil revenue and excess crude oil income effectively in the development of other sectors of the economy". Hence, it is not an embellishment that the main challenges currently embattling the Nigerian economy are congenial solutions to the gyrating exchange rate, interest rate disequilibria and inflationary pressure amidst her supposed oil wealth. Therefore, the monetary authority is constantly challenged on policy measures to address the dynamic malaises confronting the Nigerian economy.

Empirical evidence on the relationship between monetary condition, oil revenue and economic growth in Nigeria focused on the nexus between each variable in the monetary conditions, oil revenue and economic growth, very few elucidated the combined influence of inflation, exchange rate, interest rate, and oil export earning on economic growth. This, however, is not sufficient enough to explicate the complexity and multi-dimensional nature of economic growth in Nigeria. Hence, this study builds upon the identified knowledge gap to examine the long and short-run effects of oil revenue, interest rate, exchange rate and inflation on economic growth in Nigeria using the ARDL model framework.

2.0 Conceptual Issues and Literature Review

To gain better understanding of what some economic concepts are; it is pertinent to clarify some key variables:

2.1 Interest rate: Interest can be defined as the return or yield on equity or opportunity cost of deferring current consumption into the future (Uchendu, 1993

cited in Acha & Acha, 2011). This definition clearly shows that interest is a concept which can mean different things depending on the perspective it is viewed. Interest rate can therefore be seen as a nebulous concept, a position affirmed by the availability of different types of rates. Some of which are: savings rate, discount rate, lending rate and treasury bill rate (Acha&Acha, 2011). According to Keynes, interest is the reward for not hoarding, but for parting with liquidity for a specific period of time. Keynes' definition of interest rate focuses more on the lending rate. Adebiyi (2002) defined interest rate as the return or yield on equity or opportunity cost of deferring current consumption into the future. Some examples of interest rate include the saving, lending, and discount rate. Professor Lerner, in Jhingan (2003), defined interest as the price which equates the supply of 'Credit' or savings plus the net increase in the amount of money in a period, as the demand for credit or investment plus net 'hoarding' in a period. According to Soludo (2008), there are conflicting and competing views about what constitutes an appropriate interest rate depending on whose perspective-savers or lenders/borrowers. Borrowers prefer plummeting interest rates, while savers prefer a high interest rate regime. High interest rate generally exacerbates the attractiveness of postponing consumption and investment .This leads to weaker domestic demand, slower economic growth and high unemployment. In contrast, if interest rates are low, it is generally better to realise one's consumption and investment plans immediately. The result is upward trend in economic growth and upward pressure on inflation.

2.2 Exchange rate: Exchange rate is the price of a domestic currency in terms of another currency (international) (Olufayo & Fagite, 2014). Exchange rate represents the relative price for the exchange of domestic and foreign goods and services in international trade. It is one of the most important variables in international trade. Exchange rate is the rate at which a currency is exchanged for another currency. It is referred to as the ratio at which a unit of currency of one country is expressed in terms of another currency. Exchange rate between the Naira and the Dollar refers to the number of naira required to buying one dollar. Naira required to buying a Dollar. The rates are generally determined by the foreign exchange market. The foreign exchange market is a market where currencies of different countries are sold and bought. It is a market where the prices of local and foreign currencies are determined. As enunciated by Jhingan (2004), the national currencies of all countries are the stock in trade of the foreign exchange market, and as such, it is the largest market to be found around the world which functions in every country. Consequently, exchange rate levels and movements have far-reaching implications for international capital flow competitiveness and business confidence. Exchange rate plays a crucial role in a small open economy. Exchange rate bears on trade by determining the relationship between international and domestic prices. A rise in Naira raises the price of Nigerian goods on the international market, while a fall in Naira lowers these prices. The fluctuation of exchange rates makes the exports/imports costlier or cheaper and also the unstable tendency of this variable attaches a level of uncertainty or risk to trade (Olufayo&Fagite, 2014).

2.3 Inflation rate: Inflation is the bane of the contemporary economy. It is one of the key tenacious threats that can undermine or even destroy decades of economic growth if not curbed. It is feared by central bankers globally and forces the execution of unconventional monetary policies. Because of its complexity and multi-dimensional nature, there is no universally accepted definition of the term inflation, nor is there a common agreement on what constitutes acceptable levels of inflation. That notwithstanding, there is a consensus among economists that inflation is a continuous rise in the general prices of goods and services. According to Samuelson (1976), "inflation is a general rising price for breed cars, haircut, rising wages, rent." Inflation refers to the persistent and sustained rise in the general level of prices of goods and services in an economy. Manifesting visibly during inflation period is the decline in the value of money. Igbatayo & Agbada (2012) defined it as the continuous and sustained rise in general price level of goods and services in a nation's economy. It also refers to a situation where the volume of money chasing the available goods and services in an economy is too much, consequently resulting in a persistent rise in general price level. In the aforementioned definition of inflation, there are two key emerging terminologies that are pertinent. Firstly, inflation is aggregate or general. This implies rise in prices that constitutes inflation must be encompassing and cover the entire basket of goods in the economy as distinct from an isolated rise in the prices of a single commodity or groups of commodities. The implication here is that changes in the individual prices or any combination of the prices cannot be considered as the occurrence of inflation. Monetary authorities should be concerned with the common price pressures acting across all items (i.e., core inflation). However, a situation may arise such that a change in an individual price could cause the other prices to rise. An example is petroleum product prices in Nigeria which in itself cannot signal inflation unless the price adjustment in the basket is such that the aggregate price level is induced to rise. Second, the rise in the aggregate level of prices must be continuous for inflation to be said to have occurred. The aggregate price level must show a tendency of a sustained and continuous rise over different time periods. This must

be separated from a situation of a one-off rise in the price level.

The effects of high inflation on the economy are generally considered to be predominantly harmful that is why the achievement of price stability has always been one of the fundamental objectives of macroeconomic policy in both developed and less developed countries (Orubu, 2009). Operationally, this can be viewed as the maintenance of a low and stable rate of aggregate price as defined by commonly accepted measures such as the consumer price index. Inflationary spiral increases the uncertainty about future relative prices and about the price level, causing a fixing and inertia inflation and depreciation expectations in the decision-making of economic entities. Premised on the volatility of prices, investors focus on short-term financial investments (speculative activities) and hedging against inflation instead of on longer-term investment projects in the real economy which remains a sin-qua non for development. Inflation also creates tax distortions, misallocates income, and causes implicit tax burden on savers, who are unable to maintain the marginal propensity to save.

2.5 Oil Export Revenue: Oil revenue refers to the income earned from the sale of crude oil. In the word of Hirschman (2015), "it is the total amount of income derived from the sale of crude oil in an economy." The oil revenue generated according to Hirschman (1958), is expected to contribute to the growth of other sectors and the entire economy. Based on this standpoint, oil export earnings can be described as the streams of income receivable to an economy for trading its oil product in the international market. In Nigeria, oil revenue is the major source of the economy upon which budgets and other fiscal policies are majorly estimated. Nigeria is Sub Saharan Africa's largest economy and relies heavily on oil as its main source of foreign exchange earnings and government revenues (CIA, 2018). Oil accounts for well over half of annual government revenues and, since 1974, between 21 and 48 percent of GDP (Ross, 2003). In 2008, oil revenues accounted for 20 percent of GDP, 95 percent of foreign exchange earnings, and 80 percent of government revenues (CIA 2008).

2.6 Economic growth: The term economic growth can be viewed from two different perspectives. Some view it as the total increase in the level of individuals' income within the country. Farah (2008) defined it as a potential growth in the income of each individual that forms the working group in a country as a result of their level and type of education. Economic Growth is defined as the growing capacity of the economy to satisfy the wants of goods and services of economic agents. Economic growth is achievable through improved productivity, with reduced contributions of production inputs (technology, land, energy, labor, capital, etc.) for a given amount of production. Reduced costs raise demand for goods and services. Economic growth is also the outcome of human capital development and innovation. Also, Kathleen (2012) defined it as increase in the bargaining power of individuals to demand more goods and services produced within the economy over time. Coechy (2011) posited that economic growth is conventionally measured by the level of education and commensurate employment opportunity provided. Coechy (2011) views it as the percentage rate of increase in real income of individual over a period of time. Others view economic growth from the gross domestic product(GDP) or real GDP perspective. Of more importance is the growth of the ratio of GDP to population (GDP per capita), which is also called per capita income. An increase in per capita income can be referred to as intensive growth. Some view economic growth as an area of study which is different from development economics. The former is primarily the study of how countries can advance their economies. The latter is the study of the economic aspects of the development process in low-income countries. Erinoso (2010) posited that economic growth typically refers to the growth of potential output, that is, production at full employment.

2.7 Empirical Literature

Although the relationship between oil revenue and economic growth seems to be well established by limited literature, the direction of causality has remained largely unresolved.

Abdul and Marwan (2013) investigated the effect of interest rate, inflation rate, and GDP on real economic growth in Jordan over the period 2000-2010. Unit root test (Augmented Dickey-Fuller test) was exploited to check the integration order of the variables. A cointegration analysis with four variables (economic growth, interest rate, GDP, and inflation level) was employed. The study adopted Johansen test. Findings indicated that both trace test and max eigen value static showed that the four equations have significant existent 1% or 5%. It means that all variables have long-term equilibrium relationship. Finally, regression used to test GDP, interest rate, and inflation rate together indicated that current GDP and one lag GDP influenced growth rate.

Anthony, Uzomba and Olatunji (2009) examined the impact of interest and exchange rates on the Nigerian economy from 1975-2008. Data for the variables were collected from the CBN Statistical Bulletin. The study employed the ordinary least square (OLS) technique in the analysis but due to the fact that data were not stationary, a unit root test was employed; it further resorted to co-integration analysis which established the existence of a long run

relationship between the variables in the models. Their findings showed that an increase in interest rate retards investment and subsequently economic growth; while the lag one of exchange rate showed the expected positive sign, implying that depreciation in exchange rate retarded growth from 1975 to 2008. Thus, interest and exchange rates exerted negative impact on the Nigerian economy during the review period.

Anyingana (2010) investigated the effect of interest rate fluctuation on the economic growth of Nigeria. Two research hypotheses were formulated to investigate the relationship between interest rate and economic growth and the difference in economic growth before and after interest rate deregulation regime in Nigeria. Ex-post facto research design was adopted for the study. The Data for the study were obtained from the Central Bank of Nigeria Statistical Bulletin 2010. Data collected were analyzed and tested using the ordinary least square multiple regression analytical technique. The result of the findings revealed that: there existed an inverse relationship between interest rate and economic growth in Nigeria, meaning that increase in interest rate will decrease GDP of the country, thus retarding growth of the real economy.

Acha and Acha (2010) examined the implications of interest rate for savings and investment in Nigeria. It used data obtained from the Central Bank of Nigeria (CBN). Data were analyzed, using Pearson's Correlation Coefficient and regression. Evidence showed interest rate as a poor determinant of savings and investment, indicating that bank loans are mostly not used for productive purposes. Obamuyi and Olorunfemi (2011), examined the implications of financial reform and interest rate behavior on the economic growth in Nigeria. The result revealed that financial reform and interest rates have significant impact on economic growth in Nigeria. It also, implied that the interest rate behavior is important for economic growth.

Nweze and Edame (2016) examined the relationship between oil revenue and economic growth in Nigeria between 1981 and 2014. Secondary data on gross domestic product (GDP) was used as a proxy for economic growth; oil revenue (OREV), and government expenditure (GEXP) which represented the explanatory variables were sourced mainly from CBN publications. The cointegration result indicated that there is long-run relationship among the variables with three cointegrating equation(s). The result of the error correction mechanism (ECM) test indicated that all the variables except lag of government expenditure exerted significant impact on economic growth in Nigeria.

Aregbeyen and Kolawole (2015) examined the relationships among oil revenue, government spending, and economic growth in Nigeria. They employed Ordinary Least Square (OLS), cointegration, Vector Error Correction Model (VECM), and Granger causality. The findings from the analysis revealed that oil revenue Granger caused both the total government spending and growth, while there was no-causality between government spending and growth in the country. Dominic (2014) carried out a study on the impact of Foreign Direct Investment (FDI) and Oil export on Economic growth in Nigeria from 1970 through 2011. The Augmented Dickey Fuller (ADF) unit root test was adopted to determine the stationary properties of the data, while the order of integration of the data was tested using the Johansen Cointegration test. The result showed that 87 per cent of total changes in economic growth were explained by the explanatory variables.

Akinlo (2012) assessed the importance of oil in the development of the Nigerian economy in a multivariate VAR model over the period 1960-2009. Empirical evidence showed that oil could cause other non-oil sectors to grow. However, oil had adverse effect on the manufacturing sector. Findings revealed bi-directional causality between oil and manufacturing, oil and building and construction, manufacturing and building, and construction, manufacturing and trade and services, and agriculture and building and construction. It also confirmed unidirectional causality from manufacturing to agriculture, and trade and services to oil. However, the study found no causality between agriculture and oil, likewise between trade and services and building and construction.

Adedokun (2012) examined the effect of oil export revenue on economic growth in Nigeria between the period 1975 and 2009. Empirical analysis from the study suggested that oil export revenue had a positively significant effect on growth both in the short-term and long-term in the country. The study further revealed that the primary determinant of foreign exchange earnings in Nigeria was changes in the world crude oil prices. Oladipo and Fabayo (2012) investigated global recession and the oil sector, based on its effects on economic growth in Nigeria. Analysis from the study revealed a negatively significant relationship between GDP and oil produced (domestic consumption and export) in the country. The result also showed the existence of a decline in the oil sector due to global recession.

Onyemaechi (2012) examined the implications of the various petroleum policies on the Nigerian economy using descriptive method. The result revealed some noticeable improvements in the gross domestic product (GDP), foreign direct investment, and employment levels. Oladipo and Fabayo (2012)

investigated global recession and the oil sector, based on its effects on economic growth in Nigeria, using the Ordinary Least Square (OLS). Findings of the study revealed that there was a negative relationship between GDP and oil produced (domestic consumption and export), which is significant at 5% level of significance ($p<0.05$). The result also showed that there exists decline in the oil sector due to the global recession despite all measures deployed by Government to curb it effects.

Aminu and Anono (2012) investigated the impact of inflation on economic growth and development in Nigeria from 1970-2010 through the application of Augmented Dickey-Fuller technique in testing the unit root property of the series and Granger causality test of causation between GDP and inflation. The findings revealed that inflation possessed a positive impact on economic growth through encouraging productivity and output level and on evolution of total factor productivity. Similarly, it was also noted that GDP granger causes inflation and not inflation granger causing GDP.

Employing cointegration and Granger-causality test analysis, Omeke and Ugwuanyi (2010) tested the relationship between money, inflation and output. The findings revealed no existence of a cointegrating vector in the series used. Money supply was seen to Granger cause both output and inflation. The result suggested that monetary stability can contribute towards price stability in the Nigerian economy since the variation in price level is mainly caused by money supply and it also concluded that inflation in Nigeria is to a large extent, a monetary phenomenon. They found empirical support in context of the money-price-output hypothesis for Nigerian economy. Money supply appears to have a strong causal effect on the real output as well as prices.

Marbuah (2010) investigated the relationship between inflation and economic growth to ascertain whether a significant threshold effect existed in the case of Ghana over the period 1955-2009. The study found evidence of significant threshold effect of inflation on economic growth with and without structural breaks. Specifically, the evidence showed both a minimum and maximum inflation threshold levels of 6 per cent and per cent respectively. Moreover, the study found that adjusting for structural break in the model increased the effect of inflation on growth at a robust threshold level of 10 per cent by a factor of 1.8 or approximately 81 per cent. He concluded by recommending to continue pursuing the inflation targeting framework by keeping inflation targets below 10 percent for beyond 10 percent threshold, inflation can be detrimental to Ghana's growth prospects.

Williams and Adedeji (2004) examined price dynamics in the Dominican Republic by exploring the joint effects of distortions in money and traded-goods markets on inflation, holding other potential influences constant. The study captured the remarkable macroeconomic stability and growth for period 1991 to 2002. Using a parsimonious and empirically stable error-correction model, the paper found that the major determinants of inflation were changes in monetary aggregates, real output, foreign inflation, and the exchange rate. However, there was an incomplete pass-through of depreciation from the exchange rate to inflation. They established a long-run relationship in the money and traded-goods markets, observing that inflation was influenced only by disequilibrium in the money market.

Mallik and Chowdhury (2001) found two results: First, the relationship between inflation and economic growth is positive and statistically significant for Bangladesh, Pakistan, India and Sri Lanka. Second, the sensitivity of growth to changes in inflation rates was smaller than that of inflation to changes in growth rates. The policy implication of these results was the fact that, although moderate inflation promotes economic growth, faster economic growth absorbs into inflation by overheating the economy.

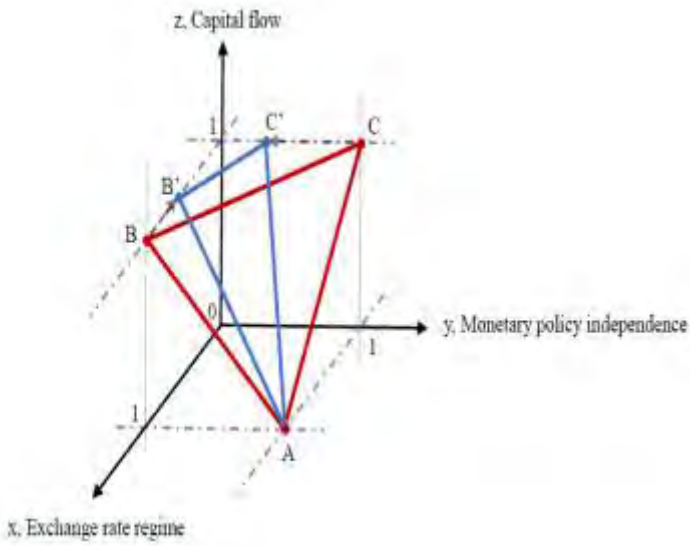
A survey of related literature revealed divergent viewpoints on the relationships that exist between oil export earning, exchange rate, interest rate, inflation and economic growth in Nigeria. While majority of the studies focused on the nexus between each variable in the monetary conditions and economic growth, very few elucidated the combined influence of inflation, exchange rate, interest rate, and oil export earning on economic growth. This, however, is not sufficient enough to explicate the complexity and multi-dimensional nature of economic growth in Nigeria. Hence, this study builds upon the identified knowledge gap to examine the long and short-run effects of oil revenue, interest rate, exchange rate and inflation on economic growth in Nigeria using the ARDL model framework.

3.0 Theoretical Framework: This study applied the scalene impossible trinity initiated by SUN Guofeng and LI Wenzhe (2017), which is an extension of the mundell-flemming models to examine nonlinearities in the monetary conditions. Impossible Trinity (also known as Unholy trinity, Inconsistent Trinity or Trilemma), is an important analytical framework of policy choice in a small open economy. The unholy trinity is conterminous to a policy choice conundrum which constitutes a persistently multifaceted and startling problem confronting monetary authorities the world over. The powerful theoretical insight for this preposition is premised on the mundell-flemming

models. Robert Mundell, the intellectual magnacarter of economics, and Marcus Fleming, a former IMF economist, provided locus classicus on the incompatibility of macro prices. The mundell-flemming model conjured that the central bank is constrained in achieving the key tripartite monetary objectives. At optimal performance level, it can jointly achieve only two of the three objectives of lowering interest rates, stable exchange rate and capital flows. Increased propensity of achieving one of the policy requires an opportunity cost of plummeting the degree of achieving one (or both) of the other policies. The classical "Impossible Trinity", emphasized equi importance of monetary conditions, and is an equilateral triangle. In reality, however, LDCs (Nigeria inclusive) continually depend on capital inflow especially oil revenue, debts and foreign aids which injected excessive liquidity, without improving the productive capacity and providing requisite impetus for supporting the real economy. Instead, LDCs have developed the appetite for ostentatious imported commodities due to wealth illusion. Consequently, capital flow became substantial and its direction susceptible to acute changes with concomitant economic shock and perturbation. This poses significant risks and uncertainties, which could rapidly alter macroeconomic conditions and even hamper a more robust and sustained trajectory for the economy. For example, Rey (2015) highlighted that a global financial cycle in capital flows, asset prices and credit growth, which is not aligned with a country's idiosyncratic macroeconomic conditions, can severely limit the independence and effectiveness of emerging markets' monetary policies. Recent evidence confirms that macroeconomic fundamentals do not provide full insulation, for example, to sudden spikes in risk aversion and large capital flows reversals, including episodes of "sudden stops" (Eichengreen and Gupta, 2016). This development increase the relative importance of capital flow to exchange rate regime and monetary policy independence in the monetary policy landscape, challenging earlier held belief on the equality of monetary conditions.

The underlining case should be "Scalene Impossible Trinity" which means that capital flow renders exchange rate completely unable to adjust money supply and demand both in domestic market and abroad. In this case, scalene triangle collapses into a line segment on the plane of monetary policy independence and capital flow.

Figure 1. **"Impossibility Trinity" (Scalene Triangle)**

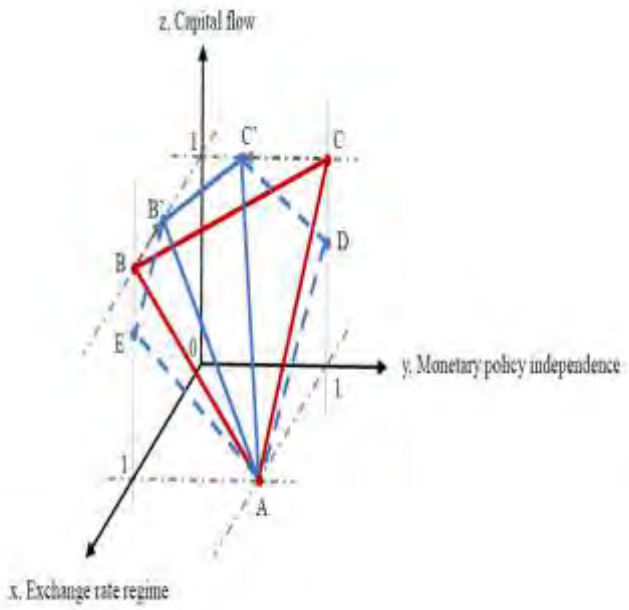


Sources: *SUN Guofeng and LI Wenzhe (2017)*

"Impossible Trinity" introduces Cartesian coordinate system for a three-dimensional space ,consisting of an ordered triplet of lines (the *axes*) that go through a common point (the *origin*), and are pair-wise perpendicular; an orientation for each axis; and a single unit of length for all three axes as shown in Figure 1. In the three-dimensional Cartesian coordinate system of Figure 2, axes x, y, z represents exchange rate regime, monetary policy independence, and capital flow, respectively. x=0 connotes freely floating exchange rate regime, while x=1 represents fixed exchange rate regime and y=0 implies a completely dependent monetary policy, in which case monetary policy decisions are made fully in accordance with international coordination, y=1 means independent monetary policy, in which case there is no international monetary policy coordination. International monetary policy coordination in this context doesn't specifically refer to active or passive coordination, and is only an objective illustration of monetary policy dependence. The coordination mainly takes the form of interest rate policy coordination. z=0 means full capital control, z=1 means free capital flow. Choices 1, 2, 3 correspond to vertices A, B, C. ΔABC is the traditional equilateral form of "Impossible Trinity". ΔAB'C' in Figure 1 is the scalene form of "Impossible Trinity". Compared with the equilateral form ΔABC, vertex A, the combination of full capital control, fixed exchange rate, and independent monetary policy, doesn't changed. This is because capital flow is more germane than the other two, if there is full capital control; the elevated importance of capital flow becomes ineffective. Vertex B, the combination of free capital flow, fixed exchange rate, dependent monetary policy, moves to B'. If capital flows freely, even if monetary policy becomes completely dependent, i.e. interest rate follows other central banks, fixed exchange rate couldn't be guaranteed.

This is premised on the fact that central bank ability to maintain fixed exchange rate is not unlimited, depending on foreign exchange reserve balance, and issuance ability of domestic currency. As well, vertex C, the combination of free capital flow, floating exchange rate, and independent monetary policy, moves to C". This is because if capital flows freely, floating exchange rate is unable to guarantee independent monetary policy. The movement of points B and C both shows the importance elevation of capital flow in "Impossible Trinity", which results in equilateral triangle ABC transforming into scalene triangle AB'C'. Note that BB' doesn't necessarily equal to CC'. "Dilemma" is the extreme case of axis x collapse, in which case points B' and C' in Figure 2 merge into point (0, 0, 1), and point A maps into point (0, 1, 0) on plane (x=0). Among the three of capital flow, exchange rate regime, and monetary policy independence, capital flow is more important. "Scalene Impossible Trinity" refers to the triangle whose three vertices are free capital flow (B" and C") and full capital control (A). If monetary authority chooses full capital control, then fixed exchange rate and independent monetary policy could be achieved at the same time. If it chooses free capital flow, it could only achieve relatively stable exchange rate and relatively independent monetary policy. Further analysis shows that after importance of capital flow is elevated, policy choice set of the monetary authority becomes the pentagon ADC"B"E, which is the intersection of plane AB"C" and cube (0≤x≤1,0≤y≤1,0≤z≤1), as shown in Figure 2. Monetary authority will make the optimal choice within this pentagon.

Figure 2 "Impossible Trinity" (Pentagon)



Sources: *SUN Guofeng and LI Wenzhe (2017)*

3.1 Research Methodology

The *ex-post facto* research design was adopted for the study. The study relied on quantitative data obtained from the World Development Indicators (WDI) and Central Bank of Nigeria Statistical Bulletins. The econometric methods used in this study are time series analysis using Ordinary Least Squares (OLS) method, Augmented Dickey Fuller (ADF) unit-root test, the Auto-Regressive Distributive Lag (ARDL) to cointegration approach developed by Pesaran and Shin (1999) and later extended by Pesaran, Shin & Smith(2001). The econometric views package (E-views version 7) was used to analyse data. The model for the study was adapted from the work of Abdul and Marwan (2013) who investigated the effect of interest rate, inflation rate, and GDP on real economic growth in Jordan. The modification that was done to the model of Abdul and Marwan was the inclusion of oil revenue growth rate, exchange rate and labour force participation rate of the productive working age. Following this modifications, the equation is specified functionally as follows:

$$GDPR = f\ (POP, INTR, EXCH, INF, OILR) \qquad [1]$$

The algebraic equation given below:

$$GDPR=\alpha_0+\alpha_1 POP_t+\alpha_2 INTR_t+\alpha_3 EXCH_t+\alpha_4 INF_t+\alpha_5 OILR_t+U_t$$

$$\alpha_1>0,\quad \alpha_2<0,\quad \alpha_3>0,\quad \alpha_4>0\quad \alpha_5>0$$

Where:

GDPR = Gross domestic product growth rate per annum
POP = Labour force participation rate of the productive working age
INTR = Interest rate
EXCH = Exchange rate
INF = Inflation rate
OILR = Oil revenue growth rate
α_0 = Constant of the model
$\alpha_1, \alpha_2, \alpha_3, \alpha_4$ and α_5 are all slopes of the estimates
U_t = Disturbance term
t = time (yearly trend)

Prior to estimation, the data was subjected to vigorous test to establish their adequacy as regards stationarity. The need to determine whether time series are stationary overtime underscores the importance of unit root test. For the Auto-Regressive Distributive Lag (ARDL) to cointegration framework or ARDL bound testing approach to be employed, each series involved in the estimation of the model must be integrated at I(0), I(1) or a combination of both (Pesaran& Shin, 1999; Pesaran, Shin & Smith, 2001). Basically, the ARDL or the bounds test approach involves two steps. The first step in the ARDL framework was to investigate the relationship among the included variables as follows:

$$\Delta GDPR = \delta_0 + \beta_1 GDPR_{t-1} + \beta_2 POP_{t-1} + \beta_3 INTR_{t-1} + \beta_4 EXCH_{t-1} + \beta_5 INF_{t-1} + \beta_6 OILR_{t-1} + \sum_{i=0}^{a} \sigma_1 \Delta GDPR_{t-1} + \sum_{i=0}^{b} \varphi_1 \Delta POP_{t-1} + \sum_{i=0}^{c} \tau_1 \Delta INTR_{t-1} + \sum_{i=0}^{d} \omega_1 \Delta EXCH_{t-1} + \sum_{i=0}^{e} \vartheta_1 \Delta INF_{t-1} + \sum_{i=0}^{f} \gamma_1 \Delta OILR_{t-1} \quad [2]$$

where, δ_0 is the drift component, Δ is first-difference operator while *a,b,c,d,e and f* are the optimal lag lengths for each incorporated series. Note that there is no reason that the lag-length terms are equivalent to each other. The second part of the equation with σ_1 φ_1 τ_1 ω_1 ϑ_1 and γ_1 represents the short-run dynamic multipliers of the model whereas the parameters represent the long-run multipliers. Note that the terms with summation signs are used to model the short-run dynamic structure. Appropriate lag length is selected based on the Akaike Information Criterion (AIC) before the selected model is estimated using the ordinary least squares (OLS) method. For annual data, Pesaran and Shin (1999) recommended choosing a maximum of 2 lags from which the lag length that minimizes the criteria is selected. The second stage involves the estimation of the following conditional ARDL long-run model:

$$\Delta GDPR = \delta_0 + \beta_1 GDPR_{t-1} + \beta_2 POP_{t-1} + \beta_3 INTR_{t-1} + \beta_4 EXCH_{t-1} + \beta_5 INF_{t-1} + \beta_6 OILR_{t-1} \quad [3]$$

All the variables in equation [3] are as previously defined. Estimation of equations [3] involves the selection of the optimal lag orders of the ARDL (*a, b, c, d, e and f*). Finally, short-run dynamic parameters of the model associated with the long-run estimates can be obtained by estimating the following error correction model given as:

$$\Delta GDPR = \delta_0 + \sum_{i=0}^{a} \sigma_1 \Delta GDPR_{t-1} + \sum_{i=0}^{b} \varphi_1 \Delta POP_{t-1} + \sum_{i=0}^{c} \tau_1 \Delta INTR_{t-1} + \sum_{i=0}^{d} \omega_1 \Delta EXCH_{t-1} + \sum_{i=0}^{e} \vartheta_1 \Delta INF_{t-1} + \sum_{i=0}^{f} \gamma_1 \Delta OILR_{t-1} \quad [4]$$

Where ECT in equation [4] is the error correction term (representing the residual of the co-integrating equation) and η represents its coefficient which measures the speed of adjustment. The error correction coefficient shows how quickly the variables converge to equilibrium (i.e., speed of adjustment back to long-run equilibrium after a short-run disturbance) and should be statistically significant and negatively signed.

4.0 Results

The results from the analysis are presented below

Table 1: Result of Unit Root Test

Series	ADF statistics	Critical values		Order of Integration
		1%	5%	
GDPR	-5.874	-3.585	-2.928	*I*(0)
POP	-3.172	-3.611	-2.939	*I*(1)
INTR	-6.801	-3.589	-2.929	*I*(1)
EXCH	-5.384	-3.589	-2.929	*I*(1)
INF	-3.788	-3.585	-2.928	*I*(0)
OILR	-5.626	-3.593	-2.931	*I*(1)

Source: Regression result from (E-view version 7)

To test for the stationary of the series, the unit root test using Augmented Dickey Fuller (ADF) was conducted. Results from Table 1 showed that the GDPR and INF were stationary or integrated at level i.e *I*(0) while POP, INTR, EXCH and OILR were stationary or integrated in their first differencing i.e *I*(1). This implies that the hypothesis of non-stationarity was rejected. The stationarity of the series at level and first differencing; justified that we can confidently apply the ARDL framework to our model

Table 3: Bounds Test Results for Cointegration Relationship

Critical Bounds Value of the F-statistic						
	1% level		*5% level*		*10% level*	
K=5	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
Bound limits	3.516	4.781	2.649	3.805	2.262	3.367
Calculated F-statistics = 5.039						

Critical Bounds value from Pesaran*et al.* (2001:300), Table CI, Case II: Unrestricted intercept and no trend while **K** is the number of regressors.

The ARDL bounds test for the presence of long-run relationships in equation 3 are reported in Table 3. The lag structure was selected based on the sequential modified likelihood ratio (LR) test statistic, Final prediction error (FPE), Akaike information criterion (AIC), Schwarz information criterion (SC) and Hannan-Quinn information criterion (HQ). The bounds *F*-test for cointegration test yields evidence of a long-run relationship between economic growth rate and the predictors. The computed *F*-statistic (F_c) = 5.039 is greater than the upper bound of the 1%, 5% and 10% critical values resulting in the rejection of the null hypothesis. This evidence rules out the possibility of estimated relationship being spurious.

Table 4: Estimated Long-run ARDL Model

Dependent Variable: D(GDPPERCAP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	117.704	100.650	1.169	0.249
GDPR(-1)	1.037*	0.139	7.421	0.000
POP(-1)	3.311	1.787	1.853	0.072
INTR(-1)	0.209	0.502	-0.418	0.679
EXCH(-1)	0.100*	0.031	3.184	0.003
INF(-1)	0.098	0.072	1.363	0.181
OILR(-1)	6.211*	2.686	2.313	0.026
R-squared	0.619	**Breusch-Godfrey Serial Correlation LM Test[a]**		
Adjusted R-squared	0.559	F-statistic = 0.095	Prob. F(1,30) = 0.759	
F-statistic	10.306	Obs*R-squared = 0.139	Prob. Chi -Square(1) = 0.709	
Prob(F-statistic)	0.000	Wald F-Statistic = 5.039		
Durbin-Watson stat	2.131	Prob(Wald F-statistic) = 0.001		

Note: *Coefficient is significant at 0.05 level (p<0.05)*

Source: Regression result (E-view version 7)

Table 4 displays the estimated long-run relationship economic growth, oil revenue and monetary conditions. The model was iterated at same lag lengths and the optimal lag of one was determined using the Final prediction error (FPE), Akaike information criterion (AIC), Schwarz information criterion (SC) and Hannan-Quinn information criterion (HQ). The long-run estimated model revealed that GDPR, EXCH and OILR had direct and significant impact on economic growth rate. The impact of labour force participation of productive working age (POP) and inflation rate (INF) was direct but insignificant while interest rate (INTR) had indirect and insignificant impact on the dependent variable.

The r-squared (R^2) of 0.619 showed that the overall goodness of fit of the model is good. The value indicates that the model explained about 61.9 per cent variations in the dependent variable, while the residue of 38.1% variation is attributed to error or other factors which are not captured in the model that have prominent impact on the dependent variable (economic growth). The F-statistic of 10.306 was jointly significant ($p<0.05$). Therefore, the overall parameter estimates for the model are jointly significant. The Durbin Watson (D.W) statistic of the model is 2.131. Since the value was approximately equal to 2. This explains that there is no presence of serial auto-correlation between or among the independent variables following the rule of thumb ($1.8 \geq DW \leq 2.2$).

The diagnostic test result indicated that the residual generated from the long-run estimates used as error correction term (ECT) in the short-run model estimates presented in Table 4 is normally distributed and not serially correlated. The Breusch-Godfrey Serial Correlation LM Test was used to verify the hypothesis that no serial correlation exist between the short run and long run period. The test validated the null hypothesis of no serial correlation; hence, its rejection requires low probability, that is, the probability value exceeds 0.05 ($p>0.05$). This indicates that the estimated long-run model is structurally stable and provides reliable estimates for policy simulation.

Table 5: Estimated Short-Run ARDL Model
Dependent Variable: D (GDPPERCAP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.098	1.136	-0.086	0.932
D(GDPR(-1))	0.101*	0.032	3.136	0.001
D(POP(-1))	3.694	7.912	0.467	0.643
D(INTR(-1))	-0.191	0.615	-0.309	0.758
D(EXCH(-1))	0.071	0.091	0.785	0.438
D(INF(-1))	0.100	0.074	1.354	0.184
D(OILR(-1))	-2.384	4.289	-0.556	0.582
ECT(-1)	-0.532	0.161	-3.299	0.001
R-squared	0.616			
Adjusted R-squared	0.542	Mean dependent var	-0.263	
F-statistic	8.256	S.D. dependent var	9.636	
Prob(F-statistic)	0.000	Durbin-Watson stat	2.181	

Note:*Coefficient is significant at 0.05 level (p<0.05)*

Source: Regression result (E-view version 7)

Result of the short run estimates is shown in Table 5. The error correction term (ECT) that explains the speed of adjustment from any distortion in the short-run to its long run equilibrium stood at -0.532. The term or coefficient is correctly signed and statistically significant at 0.05 level of significance (p<0.05). This shows that if there is disequilibrium, the system will restore itself to equilibrium with a speed of adjustment of approximately 53.2%. This implies that 53.2% of any disequilibrium is restored in the first year. The short-run estimated model revealed that only one-lagged value of GDPR had direct and significant impacts on the dependent variable while the impact of the other variables (POP, INTR, EXCH, INF and OILR) were insignificant impact on economic growth in the short-run.

The long-run estimate revealed that GDPR, EXCH and OILR had direct and significant impact on economic growth rate while the impact of labour force participation of productive working age (POP) and inflation rate (INFR) was direct but insignificant. This implies that increase in one year lagged value of GDP growth rate, exchange rate and oil revenue growth rate promotes GDP growth rate in the current year. The direct and insignificant impact of labour force participation of productive working age (POP) on GDP growth rate is worrisome because it is expected that labour as a major factor of production should be the major drivers of economic activities in the real sector of the economy. However, the result showed that the impact was direct but insignificant. This may be due to the wide spread of youth unemployment resulting in a large chunk of economic waste among the productive working age population. Consequently, policy makers and implementers need to realize that to promote economic growth and attain the vision 2020:20 objective of making Nigeria becoming one of the top 20 nation economies with a minimum GDP per capita of about US$4000, efforts towards creating jobs for the youth and increasing oil revenue growth is highly expedient.

5.0 Conclusion

It is concluded that a long-run relationship exist among oil revenue growth rate, exchange rate, interest rate, inflation rate and GDP growth rate. Furthermore, the results showed that there is a direct significant relationship between economic growth rate and all other rate based variables - interest rate, exchange rate, inflation rate and oil revenue growth rate, while labour force participation of productive working age (POP) had a direct and insignificant impact on GDP. However, in the event of a shock or perturbation, the system would restore itself to equilibrium at an adjustment speed of approximately 53.2 per cent.

5.1 Recommendations

Based on findings, the following recommendations were made for policy implementation:

1. Revenue generated from the oil sector should be divested into the real sectors of the economy such as agriculture and textiles that are known for large scale employment of labour. This would help to increase the production of previously imported goods, promote consumption of "made in Nigerian good" and help to maintain a stable exchange rate in the country.

2. The Federal Government should intensify efforts towards increasing labour participation of the working population by creating an enabling business ethos that promote startups in the real sectors of the economy. Furthermore, strategic measures must be adopted to reap the dividends of the youthful bulge that currently puts the country in a knife edge situation.

3. In pursuance of sustainable growth rate, the convergence of the monetary and fiscal policies is germane. This remains a precursor to guaranteeing shared prosperity and eliminating the sprout of poverty that ravages the country.

4. Policy Choice on macro prices should be subjected and amenable to empirical verifications before implementation. Empirical investigation/ simulations on permissible optimal threshold of macro prices with special emphasis on the peculiarity of the Nigerian economy needs to be undertaken. Nonetheless, to promote productivity in the real sector, the cost of borrowing should be reduced to encourage investment demand.

References

Abdul, R. A., and Marwan, A. J. (2013).Fundamentals of corporate finance.[Third Edition], New York, Irwin/McGraw Hill .CBN Statistical Bulletin, 2006. 17 Dec., Retrieved from: http://www.cenbank.org/out/publications/_statbulletin/rd/2008/stabull-2006.PDF.

Acha I.A. and Acha, C.K. (2010).Interest rate policy in Nigeria and its attendant distortion.ArnwldoManri(ed) *Saving and Development Quarterly Review*. 12(1), 19 – 30.

Acha I.A. and Acha C.K. (2011). Interest rates in Nigeria: An analytical perspective. *Research Journal of Finance and Accounting,* 2(3): 71-81.

Adebiyi, M.A. (2002). The role of real interest rates and savings in Nigeria.*First Bank of Nigeria Plc, Quarterly review*, March, 2002.

Adedokun, J. (2012). *Is Africa Democratising?* Lagos: Maithouse Press Limited.

Akinlo, A. E (2012). How important is oil in Nigeria's economic growth? *Journal of Sustainable Development,* 5(4).12-24.

Aminu, U. and A.Z. Anono (2012).An empirical Analysis of the relationship between unemployment and inflation in Nigeria from 1977-2009. *Business Journal, Economics and Review*,1(12), 42-61.

Anthony, I.I., Uzomba, P.C and Olatunji L.M (2009).An analysis of interest and exchange rates effect on the Nigerian Economy 1975 – 2008.*Asian Economic and Financial Review*. 2(6), 648-657.

Anyingana, D. (2010). Securitization and the bank lending channel, Working Paper, European Central Bank, Frankfurt.

Aregbeyen, O. and Kolawole, B.O. (2015).Oil revenue, public spending and economic growth relationships in Nigeria.*Journal of Sustainable Development*, 3(8), 113-123.

Budina, H. and Wijnbergen, C. D. (2008).*Managing oil revenue volatility in Nigeria:* The role of fiscal policy. 425-459.

CIA (2008): CIA World Factbook: Nigeria. www.cia.gov/library/publications/theworld- factbook/print/ni.html. Last accessed 5 November 2008.

CIA (2018) CIA World Fact Book Nigeria Economy - overview: Available at https://www.cia.gov/library/publications/resources/the-world-factbook/geos/ni.html retrieved on the 24th June,2018

Coechy, R. Y. (2011). Towards enhanced human capital development in developing countries for the 21st century. *International Journal of Current Research,* 2(3), 114-217.

Eichengreen, Barry, and Poonam Gupta (2016). Managing sudden stops. Policy Research Working Paper, No. 7639. Washington, D. C.: World Bank.

Erinoso, S. R. (2010). The mechanics of economic development.*Journal of Monetary Economics,* 83(3), 66-90.

Hirschman, A.O. (1958). *The strategy of economic development*. New Haven: Yale University Press.

Igbatayo, S. and Agbada, A.O. (2012).Inflation, Savings and Output in Nigeria: A Var Approach. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)* 3(5), 447-453.

Jhingan, M. L. (2003). *Macroeconomic Theory*.Dehi: Vrinda Publication (P) Ltd.

Jhingan M. L. (2004): Money, Banking, International Trade and Public Finance, New Delhi:
Vrinda Publications Ltd.

Mallik G., and Chowdhury A. (2001), Inflation and Economic Growth: Evidence from Four South Asian Countries, *Asia-Pacific Development Journal,* 8(1), 123-135.

Marbuah, G. (2010). The inflation-growth nexus: testing for optimal inflation for Ghana, *Journal of Monetary and Economic Integration*, 11(2), 71-72.

The Nigerian Economic Summit Group (2018). State of the Economy H-1 2018 publication of Nigerian Economic Summit www.nesgroup.org

Nweze P. N. and Edame C. E. (2016). An Empirical Investigation of Oil Revenue and Economic

Obamuyi, T.M. (2011). The Control of Monetary and Banking System.*Journal of Economic and International Finance*. 1(2), 011-065.

Ogbonna, G. N. and Ebimobowei, A. (2012).Impact of Tax Reforms and Economic Growth of Nigeria: A Time Series Analysis.*Current Research Journal of Social Sciences,* 4(1): 62-68.

Oladipo, S. O., and Fabayo, J. O. (2012).Global Recession, Oil Sector and Economic Growth in Nigeria.*Asian Transactions on Basic and Applied Sciences*, 1(6), 29-41.

Olufayo, M. B. and Fagite B. A. (2014).Exchange rate volatility and sectoral export of Nigeria: case of oil and non-oil sectors. *Journal of Economics and Sustainable Development*.5(10), 66- 75.

Omeke, P.C. and Ugwunyi, C.U. (2010) Money, price and output: A causality test for Nigeria. *American Journal of Scientific Research,* 8,78-87.

Onyemaechi, J. O (2012) Economic implications of petroleum policies in Nigeria: An Overview. *American International Journal of Contemporary*, 2, 60-71.

Orubu, C. O. (2009). *Inflation in Nigeria: Concept, Measurement and Control*. CBN Bullion), 19-30.

Pesaran, H. M., and Shin, Y. (1999). Autoregressive distributed lag modelling approach to cointegration analysis. In: S. Storm (ed.), *Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium*. Cambridge: Cambridge University Press.

Pesaran, M. H. Shin, Y. and Smith, R.J. (2001).Bounds Testing Approaches to the Analysis of Level Relationships.*Journal of Applied Economics.* 16, 289–326.

Rey, Hélene (2015). Dilemma not trilemma: The global financial cycle and the monetary policy independence. NBER Working Paper, No. 21162. Massachusetts: National Bureau for Economic Research. May.

ML Ross (2003): Nigeria's Oil Sector and the Poor. Paper prepared for the UK Department of International Development "Nigeria: Drivers of Change" program. May.

Samuelson, P. A. (1976). *Economics* (10th ed.). Japan, Mcgraw-Hill.

Soludo, C. C. (2008). *Achieving interest rate and exchange rate stability in Nigeria options and relevance*. Research Department, CBN, Abuja.

SUN Guofeng and LI Wenzhe (2017), Monetary Policy, Exchange Rate and Capital Flow—— From "Equilateral Triangle" to "Scalene Triangle" The People's Bank of China Working Paper Series No.2017/3 March 30, 2017

Trading Economics (2018). Nigerian naira 1960-2018 retrieved on the 7th july ,2018 at https://tradingeconomics.com/nigeria/currency

Uchendu, O. A. (1993). Interest rate policy, savings and investment in Nigeria.*CBN Economic and Financial Review,* 31(1), 34-35.

Williams, O. and Adedeji, O. S. (2004).Inflation dynamics in the Dominican Republic.IMF working paper, WP/04/29, *Western Hemisphere Department*: Washington DC. February.

Worldwide interest rates. (2018.). RetrievedApril19, 2018, from http://www.cbrates.com/

Financial Inclusion and People Living with Disabilities (PLWDs) in Nigeria: A Disaggregated Analysis

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Abstract

This study investigated the level of financial inclusion and people living with disabilities (PLWDS) in Nigeria. The disaggregated analysis was employed in investigating the level of financial inclusion of PLWDs across the geopolitical zones in Nigeria. The instrument used to collect data was titled: Financial Inclusion of People living with Disability Survey Inventory (FIPWIDSI). The construct validity of the instrument was ensured using the Principal Component Analysis (PCA).The internal consistency was verified using Cronbach's alpha technique. Descriptive and influential statistics, Mean and standard deviation, Analysis of Variance (ANOVA) and Sidak multiple mean comparison Post Hoc test were employed for data analysis. The result indicated that there was a significant difference on the level of financial inclusion of persons with disability in the geopolitical zones of Nigeria. The result also showed that the level of financial inclusion for persons living with disability on mobile banking, currency distinction, support services and bank media service access is high but low on other financial services in Nigeria. Hence, it was recommended among others that banks should endeavour to install ATMs with braille signage, large fonts and high colour contrast to enable visually impaired persons use the ATM without involving a third party.

Keywords: Financial Inclusion, People living with Disabilities (PLWDs) and Financial System

Introduction

"*A people can be judged by the way they treat animals, how they tend to graveyards and how they treat people with disabilities*" Adémólá-Olátéjú (2016),

Financial inclusion remains a catchphrase in the modern financial system with monetary authorities, financial institutions, governments, non-governmental organizations, international agencies and donors supporting the involvement of the vulnerable in the mainstream economy. Such involvement is greatly sought after from groups, traditionally marginalized, such as people with disabilities (PWDs) as well as the population of youth, in general (Turmusani, 2006). The need for the financial inclusion of people living with disabilities stems from the fact that disability is not just any human difference such as age, gender or ethnicity or any social disadvantage like poverty, gender discrimination, or minority marginalization. Disability is both a difference and a disadvantage that is *conceptually linked* to a person's economic well-being, and therefore financial needs. Financial inclusion for PLWDs is not only germane as a prerequisite to economic wellbeing, but also for the financial system in holism. Disability inclusion represents a wonderful opportunity to "*do well by*

doing good"– an achievable win-win situation for nations and their citizens and for inclusive financial service providers (Centre for financial inclusion, 2016). Taking the experiences of disabled people seriously may also have important implications for the financial system. Financial institutions can connect to the opportunities of creating cutting-edge products that take special cognizance of the peculiarity of this significant large, viable and attractive market segment, thereby gaining competitive advantage in the industry.

One billion people or 15% of the world's population, experience some form of disability, and disability prevalence is higher for developing countries (World Bank, 2017). Out of the estimated one billion people living with at least one disability, 80% are thought to reside in low and middle income countries (LMICs) (Marc, 2018). According to the report from the National Baseline Survey on Persons with Disabilities (PWDs) in Nigeria as cited in (Adémólá-Olátéjú, 2016), the national average of 3.2 percent is the prevalence of PWDs. What this means is, PWDs are a strong minority. It suggests that about 4.8 million Nigerians are living with one form of disability or the other. If we consider the sample size and the standard deviation, the number could be significantly higher and therefore cannot be ignored or excluded from development efforts.

People living with disabilities in Nigeria are increasingly marginalized from the conventional financial system despite being a signatory to varied ranges of international treaties including the World programme of action concerning Disabled people(1982),the standard rules on the equalization of opportunities for people with disabilities (1993) and the United Nations' Rights of Persons' Convention on the Rights of Persons with Disabilities 2007 which brought the right of people living with disabilities to the front burner in the global comity. Financial exclusion looms in many disabled people's lives and shapes their expectations and aspirations. Financial exclusion manifests in the lives of disabled people through many facets. The architectural design of bank building remains inaccessible to people living with disabilities. This problematique is further compounded by the incessant usage of metal detectors and mantrap or access control vestibule for security raison d'etre. Alternate financial service providers such as Automated Teller Machines (ATMs), online banking access and fintech requires the deployment of assistive technology for people living with disabilities which are nonexistent or grossly inadequate.

Equally worrisome, is the denial of PLWDs access to loan facilities. Banks deny disabled people access to loans premised on the prejudice that PLWDs are fraught with high loan default tendencies. The cultural affinity of discarding the inheritance rights of people living with disabilities compounds the woes of PLWDs as they lack requisite collateral security to access loans. PLWDs are treated as inferiors in the labour market. Routinely, they have been denied jobs for which they are highly qualified because they have been considered societal misfit. Though few disabled person are employed in white-collar jobs, entrepreneurship and becoming visible in fields hitherto considered a no go area. Disabled people are stereotyped, considered unemployable and regarded almost as beggars and destitute. Disabled people are totally engrossed in the struggle to survive, devising ingenious frameworks for stretching limited personal finance to the utmost due basically to bottlenecks in accessing financial services in conventional financial system.

The dichotomies in financial services accessibility have enormous economic implications. The World Bank estimated the **global GDP loss due to financial exclusion of PLWDs to be between $1.71 trillion to $2.23 trillion annually.** Between 12% and 20% of the populations of developing countries were thought to be non-productive due to disability (Banque, 2007). The economic disparities are largely the result of exclusion and stigmatization; of what Fraser (2007) calls "misrecognition".

The aforementioned underscores the need for a bee-hive of empirical investigation to highlight the financial inclusion experience of PLWDs and forge a radical transformation of the financial system for meaningful social existence. Quite surprisingly, country specific examination of the geographical characteristics and realities of PLWDs in accessing financial services remains in its infancy. CBN (2015) aptly posits that due to dearth of market data on the demographic composition and the level of financial inclusion of this vulnerable segment of the Nigerian society, financial inclusion initiatives for PLWDs have been largely undeveloped.

Available literature reviews are usually on aggregate analysis of financial inclusion and PLWDs. To the best of the researcher's knowledge none has empirically examined financial inclusion and PLWDs using a disaggregated analysis. In contrasts, to previous work, this paper disaggregates the level of financial inclusion into six components (in-branch banking, internet banking, mobile banking, automated teller machines, telephone banking services and the Nigerian currency notes) and empirically verifies the significant difference of financial inclusion for PLWDs across the six geopolitical zones. This would aid policy makers in developing appropriate programs, identify vulnerable geopolitical regions amenable to policy intervention, decide which evidence-based interventions to select (i.e. an empirical based solution), and expose important trends in behavior

and achievement where aggregate data are masking discrepancies. This identified gap in the dearth of available literature review is a motivating factor for conducting this research. The rest of this paper is structured as follows. Section 2 provides the review of conceptual issues and related empirical literature, while Section 3 deals with the study methodology. The findings of the study and discussion are presented in Section 4, while Section 5 provides the conclusion and proffered recommendations.

2.1 Conceptual issues

Financial inclusion may be defined as the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost (Rangarajan, 2008). Financial inclusion simply put, means bringing those who are currently not enjoying financial services such as savings, credit, payment, pensions, insurance, remittances amongst others into the financial system and by so doing, access and use such services for economic /other activities that better their lots. Financial inclusion is ensuring that everyone has access to appropriate financial services, enabling them to manage their money, plan for the future, cope with financial pressures and deal effectively with financial distress (Tower Hamlets, 2013). For MetLife Foundation (MLF), financial inclusion means that households and businesses have convenient access to a full suite of quality, affordable financial services, delivered by trustworthy providers who treat customers with respect. When used effectively, these services enhance financial well-being, enabling more people to manage life's risks, seize its opportunities and pursue their dreams. These services allow improved management of incomes and assets, ultimately contributing to greater self-sufficiency and financial security."

In hindsight, financial exclusion is a "condition of life" so constrained by limitations to access to financial services as to be beneath any reasonable definition of financial services accessibility. Financial inclusion transcends the provision of financial services to the excluded. It encompasses the integration of the vulnerable in the societies to the mainstream of financial services accessibility. Financial exclusion is a global 'wicked problem' (Demirguc-Kunt, Asli; Klapper, Leora; Singer, Dorothe; Van Oudheusden, Peter, 2015). This connotes that the problematique is multi-systemic, dynamic and multi-level. While financial exclusion may be mitigated by various means, they typically defy a single solution.

Understandably, a growing literature exists on the relevance of integrating the vulnerable to the mainstream economy through financial inclusion (Evans, 2016; Evans and Adeoye, 2016; Adeola and Evans, 2017; Evans and Lawanson, 2017, Fadun, 2014, See also Ibor, Offiong and Mendie, 2017). Financial inclusion of PWLDs is of particular interest to policy maker because of the way in which it juxtaposes two basic and powerful analogies of *injustice*: first, the treatment of some people as moral, social, or political inferiors on the basis of irrelevant characteristics; second, the creation, perpetuation, or simple failure to correct disparities between individuals in income, wealth, health, and other aspects of economic well-being on the basis of irrelevant discriminative factors.

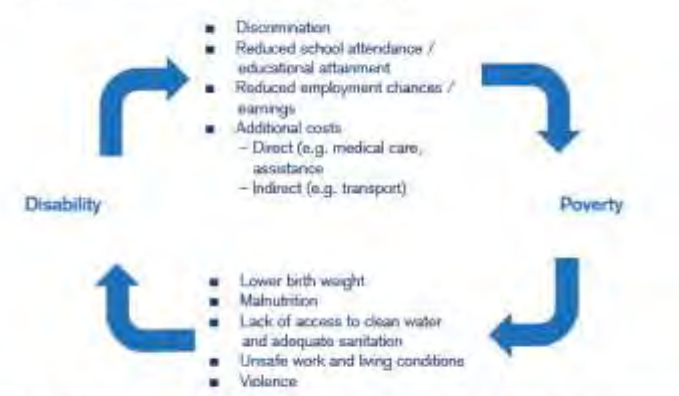
The disability rights movement has long complained that the perspectives of people with disabilities are too often ignored or discounted. The slogan that served as the title for James Charlton's 1998 book, *Nothing About Us Without Us* (Charlton, 1998; Stone, 1997) has often been invoked to demand the inclusion of people with disabilities in policy making. Financial inclusion remains an integral category in understanding the predicaments facing disabled people in issues of politics and political participation, education, employment, environment, health, religion, cultural beliefs and values. However, the position of disabled persons within the financial system in Nigeria is insecure. In the view of Ogunlade, Olaore, Anyaele and Counts-Spriggs (2015), persons with mobility difficulties, who are dependent upon wheelchairs, crutches and other means of mobility assistance, struggle to access banking halls to secure service. The lack of elevators/lifts and communication technologies systematically placed in all branches, further bar the mainstreaming of persons with disabilities who desires access to in-branch banking services.

Fig 1.

It is fascinating that financial exclusion still predominate the factors that constantly enshrine the vicious cycle of poverty in PLWDs. At the same time, living in poverty exposes people to a number of conditions that increase the chances for people to develop a disability, e.g. via the risk of malnutrition or infectious diseases, greater exposure to violence, lack of access to safe water and sanitation infrastructure (Emerson et al 2006, Peters et al. 2008).

Fig 2.

The bi-directional relationship between disability and poverty



Note: The listed potential mechanisms do not necessarily present an exhaustive list, and neither does the framework account for potential inter-relationships between the different channels. Source: Modified based on WHO/World Bank (2011)

Financial inclusion remains a policy tool for alleviating poverty and redistributing income, particularly for those people living with disabilities. Access to financial services enables PLWDs to expand consumption, develop resilience to disruptive shocks, manage risks and invest in durable goods, health and education.

2.2 Financial inclusion and People Living with Disabilities: A Philosophical perspective

Philosophy as a rational examination of ideas, investigates not only the bases of our personal lives but also our interactions with one another. In concord with the socialist philosophers like Aristotle, man is a social animal; he interacts not only with himself but most especially with others. In this interaction lies the birthplace of society.

It is the task of philosophy to investigate and delineate those ideas upon which society hinges on. Society is segmented into groups and classes and the smooth interaction between these groups bring about harmony in general. Philosophy aims to achieve this by postulating different theories that attempt to capture the whole of experience and reality. With the copious use of notions such as objectivity and rationality, philosophy presupposes how best experience is to be captured. Be it in metaphysics, ethics, epistemology,

Philosophy attempts to proffer a theory of everything that captures all subjects and objects, but how successful this has been is a matter of debate among scholars of minority groups studies like feminism and philosophy of disability. For them, the history and methods of philosophy, and by extension, the world, is littered with ableist assumptions which assume a standard for everybody, leaving no room for difference. Ableism could be inferred in such phrases like 'Beauty is the eye of the beholder", "the blind leading the blind", to list but a few. This lack of appreciation for variation, further fuels discrimination and oppression of minority groups. Every society has its philosophy, some underlying assumptions, so also every social institutions; it is in their philosophy, one can find their underlying ontology.

Ontology is the science or study of being and whatever exists in the universe. It is the backbone of not only philosophical doctrines but also of other doctrines in diverse disciplines such as Accounting, politics and religion. But there is another definition of ontology that we would accept as a working definition and this is the understanding of ontology as the philosophical idea or basis of what it means to be human. This definition is important, for it is a man's ontology, what he believes is real or not, that forms the heart of his worldview.

The consequences of such a definition for any conception of social justice, is that a theory of justice is often postulated to delineate whom a given society deems a member. Such a theory of justice would be concerned with questions such as, what should be the endgame of society. Is it the belief in equality, or the pursuit of some intrinsic value, like, like the Americans would say, the pursuit of happiness? Since we all are members of a given society, what should constitute a fair and balance social arrangement?

Most theories of society proceed from an ableist foundation or starting point. And this revolves round the idea that all men are equal (a notion of equality) and ii. Everyone must have something tangible to contribute. Society is seen as a gathering of equal and like minds, a sort of trade by barter, and anyone coming to the party empty handed is simply not welcomed. It is upon this selfish conception of society that almost all our social institutions are founded upon. If Hobbes is to be believed before the advent of society when man dwelt in a state of nature, life was short, nasty and brutish and to escape the ephemeral nature of such mundane living, where might is right, the weak and the needy came together to bestow upon the leviathan their rights and powers, they made him king over the commonwealth, he in turn would guarantee them their life and properties. In such a crude conception of society, weakness is something that is frowned upon.

Thus, the proper metric/measure of justice for social theories was either the protection of life and property, or the distribution of the basic structures that would underpin society. John Locke had one chief task, to defend the property rights of the individual, but it was in John Rawls, we find a conception most akin to the current social institutions we practice today.[1] For Rawls, it is the task of social justice to delineate the idea of primary goods, that any rational person, no matter the clime, or inclination, would choose, and such goods include liberty, rationality, mobility, equality of income, self-respect, dignity and job opportunities.

The main thrust and task for social justice, for Rawls, is the distribution of such primary goods. With his difference principle, Rawls attempted to give a fair fighting chance to the have-nots or the worst off, by offering that the state, in a form of affirmative action, provide for poor, the enabling atmosphere to compete favorably with their peers, by giving them a head start. But this supposed olive branch sprout short, for in his great and noble theory he forgot about one important minority group, those living with disability! Recent works by Amartya Sen[2] and Martha Nussbaum, the capabilities approach, attempts to make visible a minority group that has been invisible to society for so long.

2.2.1 The Capabilities Approach of Amartya Sen

According to the capability approach to disability, we must rethink disability not merely in terms of the individual and impairment, whereby we see impairment as a personal tragedy or as individual limitation, but also as the "opportunity lost" as specified by a set of policies that limits the individual living with disability, in expanding his/her choice. "This approach stresses the interplay between characteristics of the individual and the social groups that he/she belongs to, as well as the institutional factors that may influence or even hinder his/her choice. Outcomes are thus measured in terms of expanding of people's choices and freedom."[3]

There are two key ingredients in the capability theory of Sen; capability and functioning. For Sen, functioning is the existential state of the person as regards indices such as literacy, health mobility, and in the case at hand, we could add financial inclusion. Capacity refers to real freedoms or opportunities to achieve such functionings. The present financial situation in Nigeria, regarding those living with disabilities, presupposes that the system is unjust, for persons living with disabilities are stranded in an isle of disadvantage.

It is the goal and focus of any rational society, before we can utter that that society is just, is that every one of its members regardless of ability or lack of, is included in the varied activities of the larger group. It is our aim to rectify any perceived inequalities in the financial system by highlighting areas where those living with disabilities are short changed. Vehmas and Watson have argued that disadvantage could take three dimensions that may not be related to each other; internal resources, external resources and social structures.[4] The problem of financial exclusion falls herein, and is a form of discrimination cum stigmatization of this select group.

2.2.2 A History of Change

The definition of the terminology disability as an area of academic interest is quite a burgeoning intellectual inquiry which has undergone varied lexical construct in recent time. The usage of the term disabilities is increasingly considered derogatory. Scholars in the field of disability studies are attempting to change the narratives of disability. To appreciate what disability is, it is important to be aware of the different interpretations proposed by different models. How societies perceive disability has a very strong impact on the type of response that is provided on disability issues, and on the way people with disabilities are viewed. Usually, disability is seen from various perspectives, chief of which is the moral model and the medical model. In the moral model of disability, disability arises as result of sin and punishment from a higher being.[5] The medical model views disability as a defect or illness and advocates that society must do all in its power to curb/cure such.[6] The medical model views disability as a problem of the individual directly caused by a disease, an injury or other health conditions, and that requires prevention interventions or medical care in the form of treatment and rehabilitation (Johnstone, 1998). In the aforementioned models of disability, disability is seen as a defect, character flaw, weakness in character and people living with disability are seen as not having much to offer to society.[7] Disability is considered an individual

[1] John Rawls. 2009. A Theory of Justice. Harvard University Press, London
[2] Amartya Sen. 1999. Development as Freedom. New York. Knopf
[3] PARUL Bakhshi, Jean Francois tRAni. THE cApablLITY ApproaCH TO uNderstanding Disability: Increasing Comparability, Defining Efficient Programs. Retrieved October 2 2018, from www.ucl.ac.uk. P.5
[4] Simo Vehmas, Nick Watson. 2014. Moral Wrongs, Disadvantages and Disability: a Critique of CriticalDisability Studies. Disability and Society. 29.4. p.645
[5] Marno Reetief, Rantoa Letsosa, 2018. Models of Disability. A Brief Overview, Theological Studies 74.1
[6] Michael Oliver, 1996. Understanding Disability, from Theory to Practice. New York: MacMillan. 32
[7] Muireann Quigley, John Harris, 2010. To fail to Enhance is to disable, in Philosophical Reflections on Disability, Christopher Ralston, John Ho (eds) London; Springer. 123

problem to be addressed only from a medical or charitable viewpoint. The medical model seeks medical/rehabilitation systems alone and special services to 'repair the broken' or 'restore normal functioning'. The individual with impairment is seen as a problem to be solved and responsibility for disability lies with the person who must be 'fixed'. This view equates disability with impairment, and "within this paradigm social exclusion is seen essentially as the result of limitations imposed by 'disabilities (Bill, 2004).

This stigmatization and discrimination has led some scholars in disability studies to postulate a second model, which is known as the social model of disability. The "medical model" of disability gave rise to the rather opposing view that attributed disability entirely to the social environment ("the social model"), which, as opposed to medical interventions, saw the solution primarily in social change (Shakespeare 2006). Disability is not considered a characteristic of the person but as the result of interaction between the person and his/her environment. Reducing situations of disability therefore implies action on both personal and environmental factors. Disability is thus a result of how society is organized. According to this formulation, disability is about discrimination and social exclusion. This model implicitly recognizes that impairment is part of life and calls for different responses and priorities; while acknowledging and including the necessary medical interventions, the focus is placed on the removal of disabling barriers that prevent the full participation of persons with disabilities and make it impossible for them to take control of their own lives. According to this model, there is a firm dichotomy between an illness and disability. Disability for them is not synonymous with impairment, rather it is the social inequalities which arises from the imbalance in social institutions, based on the ableist ontology for normalcy, which bring about oppression, discrimination and stigmatization of the impairment.[8] Yes, one could suffer from frailties but it is prevailing social institutions that bring about stigmatization and oppression. It is society's discrimination based on any medical condition which brings about disability.

Most social institutions are guilty of this bias, persons living with disabilities are institutionally written off, bank applications and structures are not designed with them in mind, it is as if they do not exist, hence some scholars do refer to persons living with disability as the invisible people. It is not that society does not see them, society does, but society refuses to acknowledge or notice them. It proposes an interpretation that is radically different by asserting that persons with disabilities are disadvantaged not because of their individual characteristics but as a result of limitations imposed on them by environmental and external barriers. Thus, discrimination against the impairment has to be remedied not only in social and banking policies but also in the ontology of every member of society. Disability is therefore needs to be inscribed more broadly within multi-sector dynamics and needs to be addressed by all development sectors (education, financial, employment, health, social protection and others) with a cross-cutting approach. Disability is relevant to all development stakeholders acting at international, national and/or local levels.

One of the ways we can achieved this, is to ask ourselves, what should be the basis for the emancipation of persons living with disability? Is it pity, charity, human dignity, rational or human worth? We must also ask ourselves, what does it mean to be human? What ought to be our conception of humanity? For some scholars, it is frailty, since as they argue nobody is permanently abled; we all will be non-abled or disabled whether now or later. These questions are pertinent for a society is only judged as civilized based on the manner it treats its vulnerable and it's susceptible. To be civilized is to be sensitive to the plight of the minority groups within our subgroup, and persons living with disabilities are a perfect metaphor for such marginalization. We could go beyond the Eurocentric conception of disability to an afro-centered outlook, which clamour for the rights of every member regardless of infirmity or impairment. We ought to see the impaired, not as burdens that society should systematically ignore or phase out; rather we should perceive them as differently abled; as persons in possession of a different sort of abilities, gifted in diverse ways, disadvantaged people, people with special needs, Thisabilities, differently abled people and disabled people.. We have to shun the ableist assumptions and pretensions of society as pertaining to the definition of normalcy or ability. Decolonization of our mind, reconfiguration of our mindset, reorientation of the group mind as it was in Africa's ancient past, is the key to such progressive thinking.[9] In the traditional African society, persons living with disabilities were bona fide members of society, perceived with different abilities and as such, assigned to roles that made good use of their peculiarities. Having a minority body does not in any way reduce one's humanity, rather it attenuates it. Justice is only social and just, when every member of society, from the great to the least, persons with different skills and varied abilities are all catered for in

[8]Michael Schillmeier, 2010. Rethinking Disability; Bodies, Senses and Things, New York; Routledge. 2
[9] Paul Ajuwon, 2018. Disabilities and Disability Services in Nigeria: Past, Present and Future. In The Routledge History of Disability, Roy Hanes, Ivan Brown, Nancy Hansen (eds) New York: Routledge. 134

one holistic scheme. Plato in his conception of the ideal state, define justice as playing one's role and doing it well, in the light of this, for our society to be just, we have to acknowledge the major and minute differences between individual members and groups within such social framework. It is not enough to put in place a social welfare scheme but rather persons living with disability should be empowered to live the quality of life they so deem fit. Those living with impairment should be designated roles that they should play in the society. This should be the inclusive model any rational society ought to pursue. The social structures and fabric of society should be designed in such and such a way to accommodate even those with impairments. Financial institutions, Schools, religious places and other public building; public architecture should reflect our acceptance of the difference of the other. Beyond these, a new permeating ontology; one which see those living with impairments, not as societal liability but as equitable partners of progress in the quest for a just and sane society, should be encouraged. It is only when we accept the humanity of the impaired can our own humanity blossom. The summation of all we have said is as follows; we have to rethink the underlying ontology behind our seeming innocuous actions, why do we act the way we do, sometimes in slow motion of epistemic ignorance, towards those living with disability? Why do we exclude them in our social policies as though, they do not exist? Like we have hinted, this has a lot to do with our accepted notion of personhood. Such notion need not be consciously reasoned or thought out; it is learned, handed down to us by society. We are conditioned by how society already treats or ignores disability. If for example, one subscribes to some notion of materialism, that man is simply nothing but a product or bye production of matter, there are drastic consequences. The implication is that someone living with disability appears therefore, as somewhat not-human. But let us ask ourselves; are we a sum total, a mere aggregate of physical parts? Does the soul, spirit, consciousness, life principle, chi, call-it-whatever-you-want, have a huge role to play, in deciding our humanity? Or simply put in another form, do we derive our humanity from our body mass or unit of consciousness? Until, the pre-existing ontology changes, even though the social policies change, society's progress towards genuine civilization would be nothing more than paper over cracks, cosmetics over scars.

2.3 Financial inclusion and people living with Disabilities: The CBN narrative

The CBN is Repositioning the entire spectrum of the financial system for relevance in the 21st Century. Financial inclusion drive targeted at the vulnerable in the economy remains a key to consolidating and building the financial system to achieving this lofty height. This is germane, considering that exchange rate and price stability, interest rate for management, macroeconomic coordination, vigorous pursuit of sustainable development, improved payments system, financial sector diversification and regulatory reforms are intrinsically tied with financial inclusion. Financial inclusion ultimately create better environment for the Central Bank of Nigeria to pursue the aforementioned objectives. Against this backdrop, CBN has initiated a number of polices/guidelines and initiative with special consideration for the peculiarity of PWLDs as enunciated below:

* **Implementing the Nigerian Sustainable Banking Principles**

Principle 5 Financial Inclusion: The principle states unequivocally that a Bank should take a practical approach to financial inclusion that is appropriate for its Business Activities through

Improving access to Bank facilities and services:
A Bank should seek to provide opportunity for increased access to its products and services through platforms such as cash centres, e-branches, and mobile money and increasing efficiency to serve more clients. A Bank should consider making its physical locations and facilities accessible to physically challenged persons.

* **ATM GUILDLINES**
  - 2% of ATMs deployed by each acquirer shall have tactile graphic symbol for the use of visually impaired customers. Locations of such ATMs are to be visibly publicized on their corporate website at the minimum failure to comply attract a fine of N50, 000.00 per week.

* **Micro, Small and Medium Enterprises Development Fund (MSMEDF)**

As part of its developmental role and mandate of promoting a sound financial system, the Central Bank of Nigeria (CBN) launched the Micro, Small and Medium Enterprises Development Fund (MSMEDF) on August 15, 2013. This was in recognition of the significant contributions of the Micro, Small and Medium Enterprises (MSME) sub-sector to the economy. The Fund prescribes 50:50 ratio for on-lending to micro enterprises and SMEs respectively by Participating Financial Institutions (PFIs). It is intended that 2 percent of the wholesale component of the Fund should be committed to economically active

persons living with disabilities (PLWD) in order to address their peculiar financial exclusion challenges.

* **Currency Identification for the visually impaired**

A special symbol on the left hand side provides a distinctive feel for the blind to assist in recognizing the denominations as enunciated below:

- The N5 note bears the portrait of Alhaji Tafawa Balewa and also has a Diamond symbol for distinctive feel to assist the visually impaired.
- The N10 note bears the portrait of Alvan Ikoku and a square symbol for distinctive feel to assist the visually impaired.
- The N20 note bears the portrait of Late General Murtala Mohammed, circle symbol for distinctive feel to assist the visually impaired.
- The N50 note bears the portrait of the people of the three major ethnic groups in Nigeria, a light blue metallic stripe and a triangle symbol for distinctive feel to assist the visually impaired.
- The N100 note bears Chief Obafemi Awolowo portrait on the front with raised embossed line to assist visually impaired persons in recognizing the face value
- There are marks of various numbers on each banknote from the N200- N5000 for the visually impaired to detect and distinguish:

3.0 Research Methodology

The descriptive survey research design was used in the study. The population covers all the 4.8million people living with one form of disability or the other in the six geo-political zones of Nigeria namely: North-West, South-East, South-South, North-Central, North-East and the South-West. These six geopolitical zones encompass the 36 states and the Federal Capital Territory (FCT). Only three states per geopolitical zone were selected at random using the lottery method. This therefore gave a total of eighteen (18) states covered in the study (i.e. 3 states multiplied by 6 geopolitical zones to get 18 states). The population of 4.8million Persons living with Disabilities (PLWDs) as earlier stated was based on the National Baseline Survey on Persons with Disabilities (2017). To determine the sample size, the purposive sampling technique was employed to choose a total of 2000 people living with disability. The total percentage across the six zones totals 19.9%. Hence, a proportional percentage of the distribution of PLWD across the six geopolitical zones was used. This is shown in Table 1.

Table 1: Sample Distribution of People living with Disability (PLWD) across the six geopolitical zones of Nigeria

s/n	Geo political zones	Percentage of PLWD in Geo political zone	Proportional sample of PLWD drawn
1	**North-West Zone** (Jigawa, Kaduna & Kano State)	5.0 percent	502
2	**South-East Zone** (Abia, Anambra & Ebonyi State)	4.5 percent	453
3	**South-South Zone** (Bayelsa, Cross River & Akwa-Ibom) State	3.3 percent	332
4	**North-Central Zone** (Benue, Kogi & Kwara State)	2.6 percent	261
5	**North-East Zone** (Adamawa, Bauchi & Borno State)	2.4 percent	241
6	**South-West Zone** (Lagos, Oyo & Osun State)	2.1 percent	211
	Total	**19.9percent**	**2000PLWD**

Note: Names of the sampled stated are indicated in bracket below each of the geopolitical zones while the proportional sample is obtained by expressing the percentage of PLWD in each geopolitical zone in the nearest one hundred.

The instrument used to collect data was titled: Financial Inclusion of People with Disability Survey Inventory (FIPWIDSI). FIPWIDSI was developed by the researchers from the G3ICT Publication and Report (2015). The report stated that financial inclusion for persons with disabilities covers access to six (6) major areas namely: in-branch banking services, internet banking services, mobile banking services, telephone banking services, Automated Teller Machine (ATM) services and currency note/coin management. On each of the six financial inclusion indicators, 5-13 items were raised which gave a total of 48-items. The 48-items were rated on a 3–point response option of: Very True (3), True (2), and Not True (1).

In determining the construct validity of the instrument the Principal Component Analysis (PCA) was conducted on the original 48-items with orthogonal varimax rotation. PCA is used when the primary purpose is to identify and compute satisfaction scores for the factors underlying financial inclusion. Field (2009) explained that PCA works in a way that is similar to a multivariate analysis of variance test by looking at relationship between variables and calculating the variants of the matrix to determine eigenvalues, the elements that provide the loadings of a particular variable on a factor. Hence, the PCA was used to uncover the underlying structure of variables or indicators measuring the financial inclusion of PWLDs. The varimax orthogonal rotation

was selected because it is a good general approach that simplifies the interpretation of factors (Field, 2009).

The result of the PCA showed that Kaiser-Meyer-Olkin Measure (KMO) of sampling adequacy was 0.919 while the chi-square coefficient of the Bartlett's Test of Sphericity (108384.620) was statistically significant ($p<0.05$) (See Table 2). This shows that the dataset is large enough or adequate for component factoring. An initial analysis was run to obtain eigenvalues for each component in the data. After analysis, nine (9) components had eigenvalues over Kaiser's criterion of 1. The scree plot, however, supported the retention of the nine components that in combination explained 76.9% of the variance. Hence, all the nine components were retained. Four items were removed (items 28, 39, 42 and 16) in the model. Table 2 shows the factor loadings of the new nine factors and 44-item scale after rotation.

The items that clustered on Factor 1 (F1, items 5, 41, 29, 17, 8, 32, 45, 20, 44, 9, 21, 33 and 4) informed naming Factor 1 "Financial service access". Factor 2 (F2, items 23, 24, 22, 47, 46, 48, 18, 40 and 15) was renamed Mobile banking and Currency distinction; Factor 3 (F3, items, 7, 31, 19 and 43) was renamed Financial service communication; Factor 4 (F4, items 35, 37, 36, 38 and 34) was renamed "ATM Design and Operation"; Factor 5 (F5, items, 30, 6, 27 and 3) was renamed "Telephone and support services"; Factor 6 (F6 - items 11, 10, and 12) was renamed "Assistive Technology Access"; Factor 7 (F7, items 13 and 14) was renamed "Online Banking Access"; Factor 8 (F8, items 1 and 2) was renamed "in-branch banking access" while Factor 9 (F9, items 25 and 26) was renamed "Media service access".

Analysis of internal consistency reliability using Cronbach's alpha yield the following: Factor 1 - Financial service access ($\alpha = .970$); Factor 2 - Mobile banking and Currency distinction ($\alpha = .916$); Factor 3 - Financial service communication ($\alpha = .885$); Factor 4 - ATM Design and Operation ($\alpha = .887$); Factor 5 - Telephone and support services ($\alpha = .834$); Factor 6 - Assistive Technology Access ($\alpha = .823$); Factor 7 - Online Banking Access ($\alpha = .796$); Factor 8 - In-branch banking access ($\alpha = .582$); and Factor 9 - Media service access ($\alpha = .681$). The summary result of the Principal Component Analysis (PCA) is provided in Table 2.

Table 2: Summary result of the Principal Component Analysis

Items			Components									
	X	S.D	F1	F2	F3	F4	F5	F6	F7	F8	F9	Communalities
Item 5	1.44	.611	.907									.914
Item 41	1.37	.594	.887									.899
Item 29	1.42	.602	.886									.868
Item 17	1.35	.586	.863									.870
Item 8	1.82	.969	.850									.889
Item 32	1.78	.961	.826									.841
Item 45	1.68	.846	.821									.874
Item 20	1.67	.929	.820									.844
Item 44	1.78	.960	.818									.845
Item 9	1.79	.880	.814									.865
Item 21	1.67	.843	.814									.873
Item 33	1.77	.879	.805									.849

Item 4	2.03	.683	.521									.808
Item 23	2.15	.949		.824								.803
Item 24	2.06	.973		.806								.822
Item 22	2.10	.874		.796								.769
Item 47	2.21	.934		.723								.783
Item 46	2.07	.877		.660								.616
Item 48	2.03	.976		.633								.713
Item 18	2.11	.923		.561								.723
Item 40	1.82	.702		.514								.745
Item 15	1.78	.820		.503								.765
Item 7	2.03	.767			.822							.757
Item 31	2.00	.779			.791							.750
Item 19	1.99	.772			.750							.817
Item 43	1.95	.783			.718							.800
Item 35	2.03	.964				.824						.820
Item 37	1.99	.942				.807						.781
Item 36	1.96	.977				.764						.775
Item 38	1.85	.875				.745						.725
Item 34	1.99	.901				.705						.667
Item 30	2.13	.927					.678					.671
Item 6	2.16	.920					.649					.713
Item 27	1.83	.819					.623					.729
Item 3	1.94	.814					.600					.859
Item 11	1.91	.965						.807				.760
Item 10	1.91	.903						.785				.698
Item 12	1.93	.979						.692				.736
Item 14	1.72	.868							.801			.765
Item 13	1.91	.947							.760			.814

Item 1	1.80	.937								.789		.676
Item 2	1.85	.892								.722		.654
Item 25	2.29	.889									.561	.659
Item 26	2.10	.865									.526	.616
% of variance (Extraction)			37.778	10.772	7.013	5.005	4.860	3.626	3.011	2.549	2.313	
% of variance (Rotation)			23.033	13.570	8.003	7.987	6.830	5.888	4.485	3.783	3.349	
Cronbach (a)			**.970**	**.916**	**.885**	**.887**	**.834**	**.823**	**.796**	**.582**	**.681**	
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy = .919												
Bartlett's Test of Sphericity = 108384.620 **df =** 1128 **P =** .000												
% of variance = 76.928												

Source: Researchers' Analysis

The researchers administered and retrieved copies of the questionnaire to disabled persons through delegates sent to target states and representatives from the Joint National Association of Persons with Disability (JONAPWD) from each of the sampled state. Questionnaires were distributed thorough this body (JONAPWD) because of the following reasons. First, JONAPWD was used because the body has control of data on the number of persons living with disability in each state across Nigeria. Second, the body has access contact information of persons with disability and can therefore disseminate information to various categories of persons living with disability irrespective of their sex, religion, age, social class and deformity. Lastly, due to various forms of impairment such as vision, hearing and speech, the JONAPWD was considered because they have persons who could communicate proficiently in sign language and local dialect of PLWDs.

Ethical principles of respect for human dignity and justice highlighted in Folayan, Haire, Harrison, Odetoyingbo, Fatusi and Brown (2014) was implored in this study. According to them, informed consent is a fundamental requirement in research participation. It is obtained through a dialogue that respects the individuality of each prospective participant and allows ample opportunity for the prospective participant to ask questions. They added that informed consent must be voluntarily obtained and devoid of undue inducement and coercion. This is central in any research on human sexuality and sex-related behaviour because it protects the principle of 'respect for persons' (Folayan *et al*, 2014). Consequently, the researcher made informed written consent on the questionnaire to prospective participants about the expected risk such as possible negative emotions due to the sensitivity of questions, estimated time to complete the questionnaire, the right to decline or withdraw from participating in the study. Consent was obtained from each respondent. Therefore, anonymity and verbal consent from respondents was accepted. During questionnaire collation, only 1987 copies of the questionnaire were completely filled and found to be useful for the analysis. This gave a total of 99.4% use rate.

Data were analyzed using descriptive and influential statistics. Research questions were analyzed using mean ($\overline{X}$) and standard deviations (S.D). A mean score of 2.00 was used as the benchmark for determining level of financial inclusion for people living with disability. The bench mark mean score was obtained by adding up the three (3) point scales (Very True -3, True -2, Not True - 1) and dividing the sum (6) by the total number of scales (3) to give 2.00. Hence, any item/overall mean score of 2.00 or higher was adjudged a case for high financial accessibility or inclusion while any item/overall mean score that was less was taken otherwise. The hypotheses were tested with the analysis of variance (ANOVA) and Sidak multiple mean comparison Post Hoc test at 0.05 level of significance. The Statistical Package for Social Sciences (SPSS© version 23).

4.0 Analysis of Results

The results of the analysis are presented below:

Research Question 1: What is the level of financial inclusion for persons with disability on various financial services in Nigeria?

Table 3: Analysis on level of financial inclusion for persons with disability to access financial services

s/n	Items	n = 1987		
		$\bar{X}$	S.D	Remark
	Financial service access (α = .970)			
5	token numbers are made available to customers through visual and audio means	1.44	.611	LA
41	braille signage is available to access ATM components and keys on the keypad	1.37	.594	LA
29	authentication policies are available to accommodate the need for an interpreter or personal aid to help conduct the transaction	1.42	.602	LA
17	banking documentation are available in digital formats (e.g. HTML or RTF), alternative formats (e.g. audio, large size fonts, accessible e-text or DAISY formats) as well as printable in braille	1.35	.586	LA
8	there is at least one sign language interpreter employed for customers with hearing impairment	1.82	.969	LA
32	ATM keypad, touch screen and card insertion slots are at suitable heights and reach	1.78	.961	LA
45	there are raised-texture tactile features that make currency note easily distinguished from each other by merely feeling them	1.68	.846	LA
20	sufficient time is given to allow users with disabilities enter One Time Passwords (OTPs) or other authentication codes sent through SMS or email	1.67	.929	LA
44	notes of different denominations are easily distinguishable from each other by colour	1.78	.960	LA
9	usability is not compromised by accessibility and vice versa	1.79	.880	LA
21	all mobile applications and websites are tested for accessibility on different mobile platforms	1.67	.843	LA
33	the ATM is physically accessible for users including those on crutches and wheelchairs who may wish to carry out their transaction without a third party	1.77	.879	LA
4	braille lettering, large print and tactile signs are provided as signage within and outside this bank	2.03*	.683	HA
	Overall mean on Factor 1 ($\bar{X}$ = 1.66)			
	Mobile banking and Currency distinction (α = .916)			
23	error and other messages are provided through auditory and non-auditory means	2.15*	.949	HA
24	video conferencing services are allowed for customers to interact with customer service officials through text captioning	2.06*	.973	HA
22	short text messaging tools for real-time communications are provided for customers with hearing impairments	2.10*	.874	HA
47	the images on various denominations note are large enough for people with visual impairment or colour blindness	2.21*	.934	HA
46	the amount of different denominations are written in various national languages to avoid language barriers	2.07*	.877	HA
48	the lettering on each naira note is large enough for a person with any form of visual impairment to see	2.03*	.976	HA
18	error messages are provided in text and audio formats of my bank website	2.11*	.923	HA
40	audio output is available for all transactions and processes	1.82	.702	LA
15	audio instructions are provided to take one through the various steps that are involved in any transaction on your bank website	1.78	.820	LA

	Factor 2 ($\bar{X}$ = 2.04)			
	Financial service communication (α = .885)			
7	devices that allow a customer and staff communicate via text to facilitate communication are provided for customers with hearing impairments	2.03*	.767	HA
31	the height and reach of ATMs are positioned within 15 and 48inches such that it is appropriate for different customers, including those who use wheelchairs	2.00*	.779	HA
19	simple language and designs are used to enhance clarity of information on my bank website	1.99	.772	LA
43	notes of different denominations are easily distinguishable from each other by size	1.95	.783	LA
	Factor 3 ($\bar{X}$ = 1.99)			
	ATM Design and Operation (α = .887)			
35	ATMs are equipped with both voice guidance systems	2.03*	.964	HA
37	users of the ATM can turn off the screen display to enjoy some privacy	1.99	.942	LA
36	there is a headphone jack added to the ATM in a manner that the audio is heard only by the user	1.96	.977	LA
38	ATM displays has high colour contrast to ensure screen information are legible for different customers including those with impaired vision	1.85	.875	LA
34	the ATM area has signage in tactile signs	1.99	.901	LA
	Factor 4 ($\bar{X}$ = 1.95)			
	Telephone and support services (α = .834)			
30	short phone codes such as USSDs to enjoy quick banking services are regularly sent to customers in audio and video format	2.13*	.927	HA
6	documents are available in alternative formats such as Braille, plain or simple language, large print, and audio formats upon customer's request	2.16*	.920	HA
27	sufficient time is provided for customers with any form of disability to respond to automated queries such as entering an account number	1.83	.819	LA
3	there are lifts or elevators to take physically challenged customers upstairs for their bank transaction	1.94	.814	LA
	Factor 5 ($\bar{X}$ = 2.01)			
	Assistive Technology Access (α = .823)			
11	users can turn on and off the music or animation, to enable them use assistive devices such as screen readers without any problems	1.91	.965	LA
10	independent login processes are available through assistive technology such as screen readers and voice recognition software	1.91	.903	LA
12	there is real time access to customer service representatives through instant chat or video relay services to enable real time sign language interpretation	1.93	.979	LA
	Factor 6 $\bar{X}$ = 1.92)			
	Online Banking Access (α = .796)			
14	large text instructions are provided to take one through the various steps that are involved in making online transactions	1.72	.868	LA
13	video instructions are provided to take one through the various steps that are involved in withdrawing or making online payments	1.91	.947	LA
	Factor 7 ($\bar{X}$ = 1.82)			
	In-branch banking access (α = .582)			
1	all cash and teller counters within the banking halls are sufficiently low for easy customer access (including those on crutches or wheelchair)	1.80	.937	LA

2	there are automatic door openers to give access to those who may be on a wheel chair	1.85	.892	LA
	Factor 8 ($\bar{X}$ = 1.82)			
	Media service access (α= .681)			
25	remote deposits of checks are accessible through the banking apps to take and upload a photo of their check	2.29*	.889	HA
26	video relay services are available to facilitate telephone banking for consumers using sign language	2.10*	.865	HA
	Factor 9 ($\bar{X}$ = 1.82)			
	Overall mean = 1.94			

** Significant mean ($\bar{X} \geq 2.00$)* ***LA*** *- Low access* ***HA*** *- High access*

Factor 1 - Financial service access
Factor 2 - Mobile banking & Currency distinction
Factor 3 - Financial service communication
Factor 4 - ATM Design and Operation
Factor 5 - Telephone and support services
Factor 6 - Assistive Technology Access
Factor 7 - Online Banking Access,
Factor 8 - In-branch banking access,
Factor 9 - Media service access

Result in Table 3 showed that respondents are financially included on items 4, 23, 24, 22, 47, 46, 48, 18, 7, 31, 35, 30, 6, 25 and 26 and were not financially included on items 5, 41, 29, 17, 8, 32, 45, 20, 44, 9, 21, 33, 40, 15, 19, 43, 37, 36, 38, 34, 27, 3, 11, 10, 12, 14, 13, 1 and 2 respectively. Result showed that all the items bordering on Financial Service Access (Factor 1) had an overall mean score of 1.66. Items on Mobile Banking and Currency Distinction (Factor 2) had an overall mean score of 2.04. Items on Financial Service Communication (Factor 3) had an overall mean score of 1.99. Items on ATM Design and Operation (Factor 4) had an overall mean score of 1.95. Items on Telephone and Support Services (Factor 5) had an overall mean score of 2.01. Items on Assistive Technology Access (Factor 6) had an overall mean score of 1.92. Items on Online Banking Access (Factor 7) had an overall mean score of 1.82. Items on In-branch banking access (Factor 8) had an overall mean score of 1.82 while items on Media service access (Factor 9) had an overall mean score of 2.19 respectively. Since the overall mean scores of on mobile banking and currency distinction ($\bar{X}$ = 2.04), telephone and Support Services ($\bar{X}$ = 2.01) and bank media service access ($\bar{X}$ = 2.19) are greater than the benchmark mean of 2.00 (i.e. $\bar{X}$ = 2.04, 2.01 and 2.09 2.00). This indicates that the level of financial inclusion for persons with disability on mobile banking and currency distinction, telephone and support services and bank media service access is high but low on all other financial services (financial service access, financial service communication, ATM design and operation, assistive technology access, online banking access and in-branch banking access) in Nigeria. However, the overall mean score of 1.94 clearly shows that level of financial inclusion across the six zones in Nigeria was low ($\bar{X}$ = 1.94 < 2.00).

Hypothesis

The hypothesis formulated and tested in the study is given below:

Ho: The level of financial inclusion for persons with disability on various financial services does not significantly differ by geopolitical zone in Nigeria.

Table 4: Summary result of ANOVA and Sidak Post-Hoc test Analysis on differences in the level of financial inclusion for persons with disability by geopolitical zones

	Sum of Squares	df	Mean Square	F-cal.	F-value
Between Groups	5.397	5	1.079	4.659*	.000
Within Groups	458.940	1981	.232		
Total	464.337	1986			

** F-cal. is significant at 0.05 level of significance*
Dependent variable: *Level of financial inclusion*
Independent variable: *Geopolitical zones (states*

Results in Table 4 showed that the F-value of 4.659 is statistically significant ($p<0.05$). Therefore, the null hypothesis was rejected. This implies that there was a significant difference on the level of financial inclusion for persons with disability in the geopolitical zones of Nigeria. Determining the level of financial inclusion from one geopolitical zone to another is pertinent. Hence, a Post-Hoc test using Sidak was conducted on the omnibus test of variance (ANOVA) and this is shown in Table 5.

Table 5: Scheffe Post-Hoc Multiple comparison test of differences in Students

(I) State	(J) State	Mean Difference (I-J)	Std. Error	P-value
North West	South East	.082	.032	.237
	South South	.049	.037	.879
	North Central	.011	.040	1.000
	North East	**.122***	**.035**	**.035**
	South West	-.034	.035	.966
South East	North West	-.082	.032	.237
	South South	-.034	.038	.977
	North Central	-.072	.041	.695
	North East	.040	.036	.946
	South West	-.117	.036	.067
South South	North West	-.049	.037	.879
	South East	.034	.038	.977
	North Central	-.038	.045	.982
	North East	.073	.041	.664
	South West	-.083	.041	.527
North Central	North West	-.011	.040	1.000
	South East	.072	.041	.695
	South South	.038	.045	.982
	North East	.111	.044	.270
	South West	-.045	.044	.958
North East	**North West**	**-.122***	**.035**	**.035**
	South East	-.040	.036	.946
	South South	-.073	.041	.664
	North Central	-.111	.044	.270
	South West	**-.157***	**.040**	**.008**
South West	North West	.034	.035	.966
	South East	.117	.036	.067
	South South	.083	.041	.527
	North Central	.045	.044	.958
	North East	**.157***	**.040**	**.008**

Dependent Variable: *Level of financial inclusion*

The results in Table 5 showed that the mean difference on level of financial inclusion between North West and North Eastern Zone (-.122) and between South West and North Eastern Zone (.157) were all statistically significant ($p<0.05$). This indicated that there was a significant difference on the level of financial inclusion of persons with disability in the geopolitical zones of Nigeria. The means for group in homogenous subset are presented in Figure 1. In ascending order, the mean plot showed that the homogenous mean on level of financial inclusion for the size geopolitical zones are: 1.85 for North East, 1.89 for South East, 1.92 for South-South Zone, 1.96 for North Central Zone, 197 for North West Zone and 2.01 for South West Zone. This showed that the South Western zone of Nigeria has the highest level of financial inclusion for persons with disability while the least level of financial inclusion for persons with disability North Eastern zone of Nigeria. This is clearly shown in Figure 1.

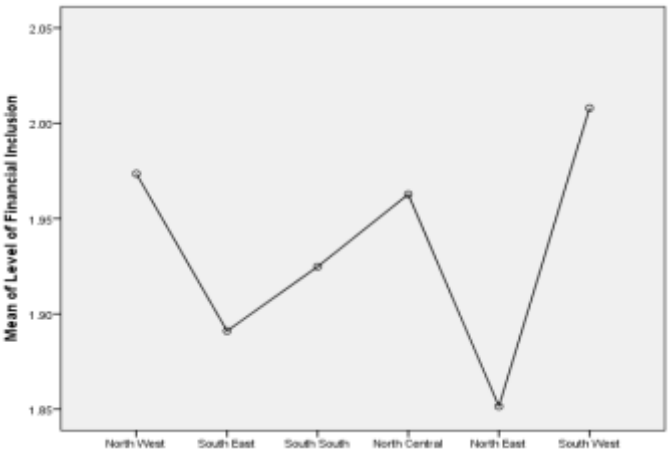


Figure 1: Mean plot on level of financial inclusion in Nigeria by geopolitical zone
Source: SPSS output

5.0 Conclusion/Recommendation

The level of financial inclusion for persons with disability on mobile banking and currency distinction, telephone and support services and bank media service access is high but low on other financial services - financial service access, financial service communication, ATM design and operation, assistive technology access, online banking access and in-branch banking access in Nigeria. Based on findings, it is concluded that the least level of financial inclusion for persons with disability exist in the North East while the most financially inclusive region for persons with disability is the South-Eastern Nigeria. This provides ample empirical evidence on the geopolitical distribution of financial inclusion level of PLWDs in Nigeria, and hence would be useful for prime target group of financial inclusion efforts for the vulnerable especially PLWDs in Nigeria via the aforementioned tripate- track approach to improving the participation of PLWDs in the entire spectrum of the financial system.

For level of financial inclusion to be enhanced, the following are recommended.

* Banks should endeavour to install ATMs with braille signage, large fonts and high colour contrast to enable visually impaired persons use the ATM without involving a third party. To enhance this, ATM keypad, touch screen and card insertion slots at ATM terminals should be built with suitable flooring for the reach of people on wheel chair, clutches and walking aids or guide canes.

* In-branch banking should be encouraged by installing automatic security door openers to give access to those who may be on a wheel chair. In most deposit money banks, security door which allows access of not more than one person with a non-metallic object is commonly used. This door completely disallows access of persons who may be on fabricated wheel chair, walking aids or any other metallic objects.

* Banking documentation should be readily available in alternative formats (e.g. audio, large size fonts, accessible e-text or DAISY formats) as well as printable in braille. The Central Bank of Nigeria (CBN) should also endeavour to make notes of different denominations easily distinguishable from each other by size, smell, colours and braille lettering.

* The Central Bank of Nigeria needs to develop suitable financial inclusion strategy with focal emphasis on the peculiarities of the challenges faced by PLWDs in the banking industry in Nigeria. This would ensure PLWDs are not only fully integrated into the financial services sector, but are given opportunity to enjoy the full benefits of banking

References

Adémólá-Olátéjú, B. (2016). "Jane Ihuoma Ottah: The Face of Deafness and Discrimination in Nigeria" published in Premium Times February 9, 2016.

Banque Mondiale (2007) ''*Social Analysis and Disability, A Guidance Note*,'' p.1.http://siteresources.worldbank.org/EXTSOCIALDEV/Resources/3177394117510231163 9/3615048-1175607868848/SocialAnalysis&Disability-Full.pdf

Bill Albert(2004) "*Briefing Note: the social model of disability, human rights and development*" *Disability Knowledge and Research*, September 2004.

CBN(2015) "Invitation To Tender For The Conduct Of Research Studies On Financial Inclusion" retrieved on the 10th July, 2018 https://www.cbn.gov.ng/out/2015/ccd/advert_researchstudies.pdf

Centre for financial inclusion (2016) " A case of financial inclusion for people living with disabilities" CBM livelihood technical guidelines

Charlton, J.,(1998) "*Nothing About Us Without Us": Disability, Oppression and Empowerment*, Berkeley: University of California Press, 1998.

Demirguc-Kunt, Asli; Klapper, Leora; Singer, Dorothe and Van Oudheusden, Peter(2015). "The Global Findex Database 2014: measuring financial inclusion around the world" Policy Research working paper; no. WPS 7255. Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/187761468179367706/The-Global-Findex-Database-2014-measuring-financial-inclusion-around-the-world

Emerson E et al (2006). Socio-economic position, household composition, health status and indicators of the well-being of mothers of children with and without intellectual disabilities. Journal of Intellectual Disability Research, 2006, 50:862- 873.

Evans O. and Lawanson O. (2017) "A Multi-Sectoral Study of Financial Inclusion and Economic Output in Nigeria" *"Ovidius" University Annals, Economic Sciences Series*, Volume XVII, Issue 1 /2017

Evans, O. (2016)" The Effectiveness of Monetary Policy in Africa: Modeling the Impact of Financial Inclusion" *Iranian Economic Review*, 20(3), 327-337.

Evans, O., and Adeoye, B. (2016)" The Determinants of Financial Inclusion in Africa: A Dynamic Panel Data Approach" *University of Mauritius Research Journal*, 22, 310-336.

Fadun, S. O. (2014)" Financial inclusion, tool for poverty alleviation and income redistribution in developing countrie" Evidences from Nigeria. *Academic Research International,* 5(3), 137-146.

Field, A. (2009)" *Discovering Statistics Using SPSS: Introducing Statistical Method* " (3rd ed.). Thousand Oaks, CA: Sage Publications.

Folayan, M.O. Haire, B. Harrison, A. Odetoyingbo, M. Fatusi, O. and Brown, B. (2014)"Ethical issues in adolescents' sexual and reproductive health research in Nigeria" Last accessed 15th February, 2017 from

Fraser, N., (2007) "Identity, Exclusion, and Critique: A Response to Four Critics," *European Journal of Political Theory*, 6(3): 305–338.

G3ict Publication and Report (2015)"*Inclusive financial services for seniors and persons with disabilities*" Global trends in accessibility requirements.

Ibor, B. I., Offiong, A. I. and Mendie, E. S. (2017)"Financial inclusion and performance of micro, small and medium scale enterprises in Nigeria"*International Journal of Research - Granthaalayah*, 5(3), 104-122. https://doi.org/10.5281/zenodo.439557.

Johnstone D (1998)" An Introduction to Disability Studies" (London, David Fulton).

Marc Suhrcke(2018)" Disability and development: An economic perspective" Research Institute 2018 Davos Edition Credit **Suisse**

Rangarajan C (2008), "Report of the Committee on Financial Inclusion", 2008

Peters DH et al. (2008) Poverty and access to health care in developing countries. Annals of the New York Academy of Sciences, 2008,1136:161-171.

Shakespeare T. (2006) The social model of disability. The disability studies reader. 15;2:197-204.

Stone, K. G., (1997), *Awakening to Disability: Nothing About Us Without Us*, Volcano, CA: Volcano Press.

Tower Hamlets (2013) Tower Hamlets Financial Inclusion Strategy liii 2013-2016 –

Turmusani, M (2006) Social Farming and Financial Inclusion of People With Disabilities: Good Practices Of Economic Empowerment From Africa. Status: draft for discussion Consultant on disability inclusive development, HANDICAP-DEV (www.handicapdev.ca)

World Bank (2018). Disability inclusion overview-world bank group last updated: Sep 20, 2017 retrieved at www.worldbank.org/en/topic/disability

APPENDIX

SAMPLE COPY OF ORIGINAL QUESTIONNAIRE

Financial Inclusion of People with Disability Survey Inventory (FIPWIDSI)

(Kindly read this before turning overleaf)

Attached is a questionnaire designed to collect data on level of access to some financial services provided by banks within your locality. Hence, the content overleaf is quite sensitive, personal and could possibly arouse your emotions. IF YOU CONSENT TO FILL THIS QUESTIONNAIRE, you would be contributing greatly towards the attainment of our research goals by providing honest and sincere responses to items in the questionnaire attached. The information needed is strictly for research purpose and it shall be exclusively confidential. Hence, YOU DO NOT NEED TO WRITE YOUR NAME ON ANY PART OF THE QUESTIONNAIRE. Just answer all questions by putting a tick against the option representing your personal details or opinion.

Thanks in anticipation of your co-operation.

NOTE: This questionnaire is for only people living with one form of disability or another in Nigeria.

People living with one form of disability or another encompass individuals with: ***Speech impairment, communication disorders, blindness, low vision or visually impairment, physical disabilities, autism, severe disabilities, multiple disabilities, deaf/blindness, reading disorder, cognitively or learning disability and hearing loss among others.***

SECTION A: Personal Information

State (Please specify): _____

Sex: Male ( ) Female ( )

Age: Below 25years ( ) 25-30years ( ) 31-35years ( )

36-40years ( ) Above 40years ( )

Educational qualification: Kindly indicate the highest academic qualification you have attained currently

No formal education ( ) Primary Education ( )

Secondary education ( ) Tertiary Education ( )

Post-graduate education ( ) Others ( )

Income: Below N20,000 ( ) N21,000 – N40,000 ( ) N41,000 – N60,000 ( )

N61,000 – N80,000 ( ) N81,000 – N100,000 ( ) Above N100,000 ( )

Section B: Financial Inclusion indicators

Instruction: Please use the tick () as appropriate the information as it applies to the bank you currently bank with or work with

s/n	Items	Very True	True	Not True
	In-branch banking			
	In my bank…			
1.	all cash and teller counters within the banking halls are sufficiently low for easy customer access (including those on crutches or wheelchair)			
2.	there are automatic door openers to give access to those who may be on a wheel chair			
3.	there are lifts or elevators to take physically challenged customers upstairs for their bank transaction			
4.	braille lettering, large print and tactile signs are provided as signage within and outside this bank			
5.	token numbers are made available to customers through visual and audio means			
6.	documents are available in alternative formats such as Braille, plain or simple language, large print, and audio formats upon customer's request			
7.	devices that allow a customer and staff communicate via text to facilitate communication are provided for customers with hearing impairments			
8.	there is at least one sign language interpreter employed for customers with hearing impairment			
	Internet banking offers			
	In the online banking app or website of my bank …			
9.	usability is not compromised by accessibility and vice versa			
10.	independent login processes are available through assistive technology such as screen readers and voice recognition software			
11.	users can turn on and off the music or animation, to enable them use assistive devices such as screen readers without any problems			
12.	there is real time access to customer service representatives through instant chat or video relay services to enable real time sign language interpretation			
13.	video instructions are provided to take one through the various steps that are involved in withdrawing or making online payments			
14.	large text instructions are provided to take one through the various steps that are involved in making online transactions			
15.	audio instructions are provided to take one through the various steps that are involved in any transaction on your bank website			
16.	a hotline is readily provided to assist customers in making use of internet banking services			
17.	banking documentation are available in digital formats (e.g HTML or RTF), alternative formats (e.g audio, large size fonts, accessible e-text or DAISY formats) as well as printable in braille			
18.	error messages are provided in text and audio formats of my bank website			
19.	simple language and designs are used to enhance clarity of information on my bank website			
20.	sufficient time is given to allow users with disabilities enter One Time Passwords (OTPs) or other authentication codes sent through SMS or email			
	Mobile banking offers			

	Considering the mobile banking services my bank…			
21.	all mobile applications and websites are tested for accessibility on different mobile platforms			
22.	short text messaging tools for real-time communications are provided for customers with hearing impairments			
23.	error and other messages are provided through auditory and non-auditory means			
24.	video conferencing services are allowed for customers to interact with customer service officials through text captioning			
25.	remote deposits of checks are accessible through the banking apps to take and upload a photo of their check			
	Telephone banking systems			
	The telephone banking services of my bank are such that…			
26.	video relay services are available to facilitate telephone banking for consumers using sign language			
27.	sufficient time is provided for customers with any form of disability to respond to automated queries such as entering an account number			
28.	telephone banking is combined with mobile banking services such as SMS to facilitate ease of access for the customers with disability			
29.	authentication policies are available to accommodate the need for an interpreter or personal aid to help conduct the transaction			
30.	short phone codes such as USSDs to enjoy quick banking services are regularly sent to customers in audio and video format			
	ATM design and operation			
	The design and operation of ATM service in my bank is such that...			
31.	the height and reach of ATMs are positioned within 15 and 48inches such that it is appropriate for different customers, including those who use wheelchairs			
32.	ATM keypad, touch screen and card insertion slots are at suitable heights and reach			
33.	the ATM is physically accessible for users including those on crutches and wheelchairs who may wish to carry out their transaction without a third party			
34.	the ATM area has signage in tactile signs			
35.	ATMs are equipped with both voice guidance systems			
36.	there is a headphone jack added to the ATM in a manner that the audio is heard only by the user			
37.	users of the ATM can turn off the screen display to enjoy some privacy			
38.	ATM displays has high colour contrast to ensure screen information are legible for different customers including those with impaired vision			
39.	voice recognition is available to ATM users who are unable to use the tactile or touch screen menu			
40.	audio output is available for all transactions and processes			
41.	braille signage is available to access ATM components and keys on the keypad			
42.	error messages are provided in both visual and audio formats with clear articulation of the type of error or content of feedback			
	Currency			
	The Nigerian naira is such that …			
43.	notes of different denominations are easily distinguishable from each other by size			
44.	notes of different denominations are easily distinguishable from each other by colour			
45.	there are raised-texture tactile features that make currency note easily			

	distinguished from each other by merely feeling them			
46.	the amount of different denominations are written in various national languages to avoid language barriers			
47.	the images on various denominations note are large enough for people with visual impairment or colour blindness			
48.	the lettering on each naira note is large enough for a person with any form of visual impairment to see			

APPENDIX

ANOVA

Level.of.Financial.Inclusion

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.397	5	1.079	4.659	.000
Within Groups	458.940	1981	.232		
Total	464.337	1986			

Multiple Comparisons

Dependent Variable: Level.of.Financial.Inclusion
Scheffe

(I) State	(J) State	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
North West	South East	.082	.032	.237	-.02	.19
	South South	.049	.037	.879	-.07	.17
	North Central	.011	.040	1.000	-.12	.14
	North East	.122*	.035	.035	.00	.24
	South West	-.034	.035	.966	-.15	.08
South East	North West	-.082	.032	.237	-.19	.02
	South South	-.034	.038	.977	-.16	.09
	North Central	-.072	.041	.695	-.21	.07
	North East	.040	.036	.946	-.08	.16
	South West	-.117	.036	.067	-.24	.00
South South	North West	-.049	.037	.879	-.17	.07
	South East	.034	.038	.977	-.09	.16
	North Central	-.038	.045	.982	-.19	.11
	North East	.073	.041	.664	-.06	.21
	South West	-.083	.041	.527	-.22	.05
North Central	North West	-.011	.040	1.000	-.14	.12
	South East	.072	.041	.695	-.07	.21
	South South	.038	.045	.982	-.11	.19
	North East	.111	.044	.270	-.04	.26
	South West	-.045	.044	.958	-.19	.10
North East	North West	-.122*	.035	.035	-.24	.00
	South East	-.040	.036	.946	-.16	.08
	South South	-.073	.041	.664	-.21	.06
	North Central	-.111	.044	.270	-.26	.04
	South West	-.157*	.040	.008	-.29	-.02
South West	North West	.034	.035	.966	-.08	.15
	South East	.117	.036	.067	.00	.24
	South South	.083	.041	.527	-.05	.22
	North Central	.045	.044	.958	-.10	.19
	North East	.157*	.040	.008	.02	.29

*. The mean difference is significant at the 0.05 level.

Level.of.Financial.Inclusion

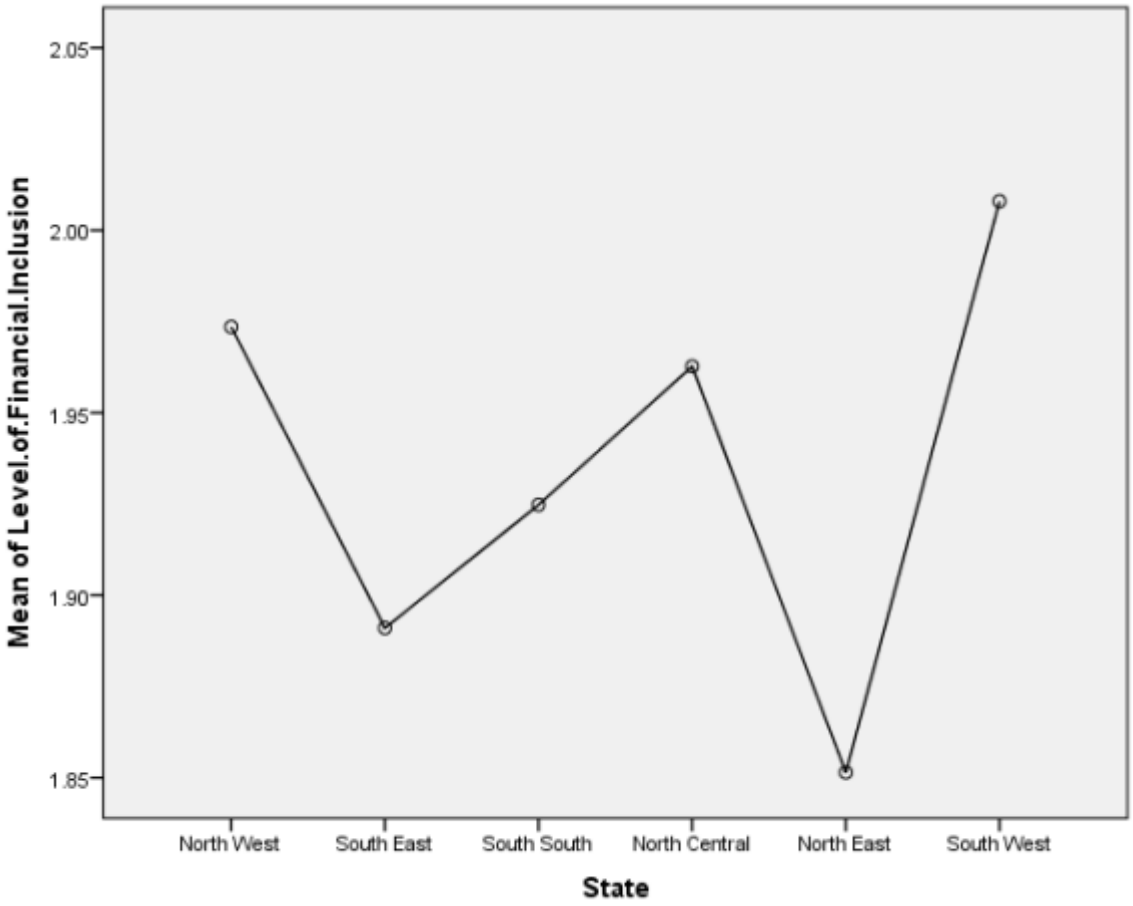
Scheffe

State	N	Subset for alpha = 0.05	
		1	2
North East	296	1.85	
South East	427	1.89	1.89
South South	263	1.92	1.92
North Central	201	1.96	1.96
North West	504	1.97	1.97
South West	296		2.01
Sig.		.084	.113

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 302.112.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.



FACILITIES FOR THE PHYSICALLY CHALLENGED

Provision for the physically challenged at the entrance of a bank

Physically challenged-friendly ATM

Access for physically challenged into buildings

Conveniences adapted for the physically challenged

Documents/forms made in braille for the visually impaired

GUIDELINES FOR THE ARTICLES

1. *Two (2) hardcopies and a softcopy of the original manuscript should be addressed to the:*

Editor
BULLION
Corporate Communications Department
Central Bank of Nigeria
33, Tafawa Balewa Way, Central Business District,
P.M.B.0187, Garki, Abuja

The softcopy of the papers should also be submitted via email as electronic document, preferably Microsoft word document to either of the following email addresses: saokogbue@cbn.gov.ng(samokogbue@yahoo.com); wdkareem@cbn.gov.ng(willi7ams@yahoo.com)

2. *Areas of emphasis should be on topics within the following broad themes:*

* *Economic Growth and Development*
* *Monetary Policy*
* *Development Finance*
* *Issues in the Financial system*
* *Public Policy Analysis*
* *Development Studies*
* *Economic Diversification studies*
* *Issues in Real Sector Development*
* *Regulatory and Supervisory Development*
* *Foreign exchange management*

Other areas of research interest for BULLION include developments in:

- *FSS 2020*
- *Payment systems*
- *Financial inclusion*
- *Currency management*
- *Internet banking*
- *Mobile money*

The essence of this guideline is to help focus on areas we want covered. Note, this is not exhaustive. Please feel free to address all other issues you consider pertinent to the mandate of the Central Bank of Nigeria.

3. *The article should not be more than twenty-five (25) pages and should be typed with 1.15 line spacing option, with a margin of 1.25 and 1.13 inches on the left and right sides, respectively. The manuscript must be accompanied with a letter of submission written in English. Submission of a paper is assumed to imply that its contents represent original and unpublished work and is not under consideration elsewhere for publication. Normally, the review process is expected to take not more than two months. There is neither a submission charge nor page fee. The complete names and address (postal and email) of the author or lead author in the case of co-authored papers should be clearly indicated.*

4. *Papers may be rejected, accepted or returned for specified revisions. A paper is expected to be published approximately six months from the date of acceptance.*

5. *All submitted manuscripts are referred to an Editorial Board comprising of an in-house editorial committee and external referees for peer-review of the paper. All comments by the referees will be sent to the author(s), including a decision of the Editorial Board to publish or not to publish the paper.*

6. *The purpose and scope of the article should be clearly stated in an abstract summarising the article's essential findings. The abstract should be typed on a separate page and should be* ***italicised*** *and* ***not more than 100 words in length****. In addition, the JEL classification code (s) as well as keywords should be clearly indicated on the abstract page.*

7. *The author's institutional affiliation and necessary background information on the article should appear at the foot of the first page. Footnote to the text should be listed at the end, followed by the list of references*

8. *The honorarium for authors of accepted papers in the Bullion is ₦50,000 per paper and for reviewers ₦15,000 per paper.*

9. *References for quotations or statements should be in parentheses in the text, not as notes. e.g. Mordi (2010:20) or Mu'azu (2014). Where more than two authors are involved, cite senior author and use et al., for example, Johnson et al. (1988).*

10. *Citations listed under the reference sections must begin on a new page. All entries must be typed double-spaced, listed alphabetically by last name of senior author and chronologically for two or more articles by the same author. The typed layout must conform to the Havard style, as follows:*

Mordi, C. N. O. (2010). "The Nigerian Financial Crisis: Lessons, Prospects and Way Forward", CBN Bullion. Vol. 31 No. 3, July – September, pp. 1-10.

Adenuga, A. O. and O. Evbuomwan (2011). "Understanding the Bretton Woods Institutions (BWIs) with Particular Reference to the International Monetary Fund (IMF)" CBN Bullion. Vol. 35 No. 4, October – December, pp. 10-15.

11. *All tabular materials should be separated from the text in a series of tables numbered consecutively in Arabic numerals preferably in Microsoft Excel. Each table should be typed double-spaced and identified by a short title at the top. Notes for table should be at the bottom of each table, before the source, and marked by lower case superscript letters. Appropriately placed tables should be indicated in the text.*

12. *Diagrams, graphs, charts, etc. must be separated from the text and clearly plotted on a white paper with all axes clearly positioned. They should be inserted appropriately in the text.*

13. *Where mathematical equations and formulae are used, they should be typed clearly, using MathType or Microsoft Equation Editor. The equations should be numbered consecutively in Arabic numerals.*

14. *All submissions should be accompanied with a clear soft copy passport size photographs of the author(s).*

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CENTRAL BANK OF NIGERIA