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DOES MONETARY POLICY TRANSPARENCY ENHANCE THE ACHIEVEMENT OF MONETARY POLICY TARGETS IN NIGERIA? A THEORETICAL ASSESSMENT

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Abstract

Transparency has become a prominent feature of monetary policy in economies of the world, but systematic evidence of transparency impact on the economy especially the developing economies (Nigeria inclusive) have been scanty. The paper theoretically assessed the influence of monetary policy transparency on the achievement of policy targets and outcomes in Nigeria. Content analysis was employed and inferential statistics used to describe the influence of monetary policy transparency on monetary targets and outcomes in Nigeria from 1986 to 2015. The use of theoretical approach was informed by the difficulty in finding a suitable proxy for transparency as a variable for quantitative analysis. The study revealed that transparency had a mixed outcome on policy targets during the period under the study. It was discovered that monetary outcomes have been mixed with target misses in most of the years. During the period, growth performance was weak (sluggish output growth rate) and high unemployment rate was recorded. Overall, Central Bank of Nigeria's experience with monetary targeting was characterized with the problem of target overshooting for the 2004 to 2007. Monetary outcomes were above targets, especially inflation rate in 1995 and monetary aggregates (money supply and bank credit) for most of the years between 2004 and 2012. However, there was a mixed performance in the key target policy as policy targets were substantially missed in 2011 but from 2012 to 2015, the monetary policy targets were substantially attained. The study recommended that for monetary policy to effectively enhance the achievement of its targets, the CBN must formulate sound policy decisions in light of its democratically-set objectives and the information available, engage in communication of the immediate policy decision to all users, must be accountable for its decisions and must foster credibility by being clear about its mandate and how it performs its tasks. However, the paper submitted that the achievement and/or the missing of the policy targets could also be accounted for by other macroeconomic factors other than monetary policy transparency in an economy.

Key words: *Monetary Policy, Central Bank Policy, Targets, Outcomes*

JEL Classification: *E50, E52, E58*

INTRODUCTION

Policy transparency has become an important concept in central banking and part of the policy debate globally. This is because central banks all over the world have discovered that there is need to provide

the general public and the markets with relevant information on their strategies, assessments and policy decisions as well as their procedures in an open, clear and timely manner. This is believed to enhance monetary policy effectiveness of central banks. Most economists consider greater transparency in monetary policy desirable since it enables the private sector to be more effective in decision-making (i.e. to improve welfare) and to make informed decisions (Kondic & Kruskovic, 2012). A transparent economic environment is expected to improve policy effectiveness and market efficiency (Goshit, 2014). Central banks around the world have greatly increased the monetary policy information they have provided the public. For example, many central banks have become more explicit about the longer-run objectives of monetary policy, such as long-run inflation objectives, and provided more detailed information about the monetary policy process (Gordon, 2008). The movement toward increased transparency arises largely from the view that increased transparency has important benefits, including more effective monetary policy. It has also been argued that the level and extent to which monetary policy objectives are achieved by the central bank is depended on the extent to which the central is independent in its decision making and the level of transparency of its decisions (Goshit, 2014). Transparency in monetary policy therefore is expected to enhance the achievement or attainment of the key macroeconomic objectives of the central banks of every economy (Goshit, 2014). Developing and developed economies alike have adopted transparency in monetary policy making process overtime and have benefited immensely from it. This has been evident in their control of inflation and has led to relative stability in their price levels. However, even though the Central Bank of Nigeria (CBN) has been making frantic efforts to embrace transparency in its monetary policy making process over the years, this seem not to have yielded the desired impact on the attainment of policy targets in

Nigeria. Evidence abound in Nigeria that rarely, monetary policy targets are achieved annually. This can be attested to by the wide deviation of the outcomes of inflation rate, exchange rate, output, interest rate and employment rate from their planned targets. This view point of wide deviation of policy outcomes from targets has, however, been largely ignored by researchers.

This study therefore seeks to theoretically assess the influence of the central bank monetary policy transparency on the attainment of policy targets and outcomes in Nigeria for the period 1986 to 2015. This period marked the period that the Structural Adjustment Programme (SAP) was adopted and indirect instruments of monetary policy were used and the financial landscape of the country was significantly influenced.

To achieve the objectives of this paper, the paper has been organized into six sections with the introduction as section one. The remainder of the paper is organized as follows: Section two deals with conceptual clarification, literature review and case for transparent monetary policy. Section three specifies the research design, methodology and sources of data. Section four is a theoretical analysis of monetary policy targets and outcomes in Nigeria. While section five discusses the challenges of monetary policy transparency in Nigeria, section six provides the conclusion and policy recommendation of the paper.

CONCEPTUAL CLARIFICATION AND EMPIRICAL LITERATURE

– Monetary Policy Transparency

Given the importance of transparency and the growing international interest in promoting it, it is lamentable (though perhaps not surprising) that there are currently no commonly agreed upon definition of the concept of transparency (Bauhr & Grimes, 2012). Transparency is a multifaceted concept that is often conflicted with

accountability or even corruption, impartiality, and rule of law. Transparency is sometimes more narrowly defined as the release of information which is relevant for evaluating institutions (Bauhr & Grimes, 2012). Vishwanath and Kaufmann (1999) defined transparency as the increased flow of timely and reliable economic, social and political information, which is accessible to all relevant stakeholders. This perspective emphasizes not only the availability of information, but also its reliability and accessibility to a range of potential agents. To Gordon (2008), transparency means that the central bank provides the general public and the markets with all relevant information on its strategy, assessment and policy decisions as well as its procedures in an open, clear, and timely manner. Most commonly, transparency implies the absence of asymmetrical information between financial markets and monetary policy makers.

According to Geraats (2002), transparency of monetary policy refers to the absence of information asymmetries between monetary policy makers and the private sector. Transparency in policy exists when the public is familiar with the way in which the information on the situation in the economy is transformed into action. The connection includes relevant information available to the central bank, economic models (if any) that the monetary policy makers use to explain the economy's functioning, and the way in which decisions are made (Kondic & Kruskovic, 2012). Friedman (2002) argued that transparency and credibility are code words for inflation targeting, suggesting that "a 'transparent' policy means one that the public understands to be 'credibly' committed to low inflation;" Therefore, transparency is adopted in this study to refer to the openness or the readiness, unobstructed access to, and availability of data and information from public as well as private sources that is accurate, timely, relevant and comprehensive. It also encompasses tolerance for public

debate, public scrutiny and public questioning of political, economic and social policy choices. It is the amount of information about the goals and conduct of monetary policy released to the public.

Monetary policy transparency has been classified into political, economic, procedural, policy transparency and operational transparency (Eijffinger and Geraats, 2004). Political transparency refers to the openness of policy objectives while economic transparency on the other hand refers to the availability of economic information necessary for the pursuit of monetary policy. This includes all economic data used by the central bank, models on which the forecasts are made or evaluations of effects of the central bank decisions. Furthermore, policy transparency means prompt (immediate) disclosure of decisions and explanations thereof, but also indications of likely future actions. Operational transparency concerns the implementation of the central bank decisions. It includes discussions of past forecast errors and (unanticipated) macroeconomic deviations that have affected the transmission mechanism of monetary policy (Kondic & Kruskovic, 2012). Table 1 shows the five dimensions of transparency, the focus and the associated indicators.

Table 1: Dimensions of Monetary policy Transparency and the indicators

S/N	Dimension of transparency	Focus	Indicators
1.	Political	Openness about policy objectives	1. Formal objectives of monetary policy, including an explicit prioritization in case of potentially conflicting goals, 2. Quantitative targets 3. Institutional arrangements, like Central Bank independence, Central Bank contracts and explicit override mechanism
2.	Economic	Economic Information	Economic data, Policy models Internal Forecast
3.	Procedural	The way monetary policy decisions are taken	1.Explicit monetary policy rule or strategy 2.Timely release of minutes 3.Timely release of voting records
4.	Policy	Promptness in the announcement of policy decision	Prompt announcement of policy decisions Policy explanation Policy inclination clear indication of likely future policy actions (clarity about policy direction)
5.	Operational	Effectiveness in the implementation of policy decisions	1.Control errors 2.transmission disturbances 3. policy evaluation

Source: Adopted from Egbuna (2011).

EMPIRICAL LITERATURE

A number of empirical studies have investigated monetary policy transparency with the bulk of the studies on developed economies but very scanty studies on developing economies of Africa (Nigeria inclusive). Some of the earlier studies in this area focused on the description of disclosure practices of central banks and making efforts at identifying the effects of changes in disclosure practices on certain financial and economic time series variables. Some of the empirical studies on monetary policy transparency included but not limited to

Svensson and Faust (1998), Filardo and Guinigundo (2008), Geraat (2009), Kondic and Kruskovic (2012), Kocheriakota (2012), Warsh (2014) Egbunna (2011) and Usman and Salihu (2016).

Svensson and Faust (1998) investigated "transparency and credibility: Monetary policy with unobservable goals" using "Barro-Gordon framework. Their result revealed that increased transparency makes the bank's reputation and credibility more sensitive to its action; This has a moderating influence on the bank's policy; They submitted that full transparency of the central bank's intentions is generally socially beneficial, but frequently not in the interest of the bank. Somewhat paradoxically, direct observability of idiosyncratic central bank goals removes the moderating incentive on the bank and leads to the worst equilibrium.

Filardo and Guinigundo (2008) examined transparency and communication in monetary policy in Asian Central Banks. The study adopted a survey research design. The result showed that transparency and communication have not only allowed financial markets and the public to better anticipate the direction of monetary policy, but have also made the task of explaining the stance of monetary policy and the rationale behind it, easier for monetary authorities.

Geraat (2009) investigated the trends in monetary policy transparency across 98 central banks from 1998 to 2006 using the survey method and provided an overview of central bank communication practices. His work revealed that increases in information disclosure have not been confined to inflation targeting but extend to other monetary policy frameworks, although there are significant differences. His result also showed that greater transparency has been followed by average inflation.

Kondic and Kruskovic (2012) did a work on "transparency analysis in the function of central bank objective using the survey method of analysis. It was discovered that an increase in transparency has been greatly influenced by the practice of publishing the inflation report, which is especially common in countries that accepted inflation targeting as their monetary strategy.

Kocheriakota (2012) examined theoretically the changes and challenges of monetary policy transparency in Federal Reserve Bank of Minneapolis. He discovered that changing financial environment requires more transparent Federal Reserve monetary policy. Such transparency would help to establish understandable rules and procedures, to eliminate unnecessary market uncertainties and, to minimize the costs of anti-inflation monetary policy. He submitted that a more transparent monetary policy has the advantages of clarifying policy objectives, improving the workings of financial markets, enhancing central bank credibility, reducing the chances of monetary policies manipulation for political purposes, fostering better monetary policymaking and complement congressional monetary policy oversight responsibilities.

Warsh (2014) made a review of transparency and bank of England's monetary policy; In his review, he submitted that transparency is not necessarily a virtue in itself, but is virtuous if used in pursuit of important policy objective.

In Nigeria, Egbuna (2011) investigated monetary policy transparency at the Central Bank of Nigeria (CBN) using the index of Central Bank transparency developed by Eijiffinger and Geraats (2006) and Malik and Din (2008). His result showed strong performance in political transparency linked to recent institutional changes such as prompt announcement and clarity about the operational targets of policy and, about the future directions of policy. However, overall performance is

weakened by performance in economic transparency linked to lack of timeliness in the dissemination of economic data relevant for monetary policy analysis and the non disclosure of the formal macroeconomic model(s) used for policy analysis. He therefore recommended timeliness in the dissemination of a comprehensive set of economic data relevant to effective monetary policy, and the publication of economic models deployed by the Central Bank.

Usman and Salisu (2016) also did a work on "monetary policy transparency: evidence from Central Bank of Nigeria CBN)"; They employed the Eijjfinger and Geraat transparency index to measure the degree of monetary policy transparency of Central Bank of Nigeria. Their result revealed that the CBN was found to be more transparent in some areas and deficient in others. Precisely, their result showed that the CBN had stronger performance in areas of political, procedural and policy dimensions and less transparent in economic and operational dimensions. However, considering the overall level of performance, they consider CBN as transparent. They submitted that that for greater transparency, the CBN should explicitly provide accurate information on monetary policy decisions in a timely and frequent manner. The findings of Usman and Salihu (2016) confirms and agree with the findings of Egbuna (2011) that revealed that the CBN had a strong performance in political transparency but had a weak performance in economic transparency link to lack of timeliness in the dissemination of economic data relevant for monetary policy analysis.

CASE FOR TRANSPARENT MONETARY POLICY

There has been diverse opinion on why central banks of both developing and developed economies adopt transparency in their operations. Establishing understandable monetary policy goals, informing the public about policy decisions in a timely fashion and explaining how other variables are employed in the policy process have a

number of advantages which work to improve monetary policy. Specifically, a more transparent policy approach would make a number of contributions to the central banks' monetary policy, to the economy, and to the financial markets.

First, it has been argued that transparency contribute to democracy. The availability of information can fuel the public debate, and help with the process of will formation (Buijze, 2013). In other words, it facilitates public decision making. It enables citizens to determine what the society wants to do. In addition, transparency is considered a necessary, albeit not sufficient, condition for participation which allows people to exert influence on different types of governmental activities, and for accountability which ultimately allows people to judge government actions and attach consequences to them. The principle of transparency is intended to secure a more significant role for citizens in the decision-making process and to ensure that the administration act with greater propriety, efficiency and responsibility vis-à-vis the citizens in a democratic system. It helps to strengthen the principles of democracy and respect for fundamental rights.

Besides, improved transparency helps to clarify the primary long-term policy objective. A more open, forthright policy process would create powerful incentives for monetary policymakers to carefully outline the primary objectives of monetary policy. This process, in turn, would create incentives to keep attention focused on such goals as well as to adopt procedures, indicators and instruments that would maximize the chances of achieving these objectives. Improved transparency also improves the workings and usefulness of financial markets. Empirical evidences shows that central bank provision of more complete and timely information does not increase the volatility of financial markets. Instead, financial markets work better when inflation objectives are clarified and more timely and detailed information is readily available. A

more open and transparent policy environment improves the workings of financial markets because unnecessary uncertainties and confusion are minimized and market volatility is reduced (Saxton, 1997). More information enables private sector expectations to adjust faster to changes in monetary policy changes, allowing private sector agents to learn faster and minimize disruption of policy change. With a consequent reduction in uncertainty premiums, interest will be lower, bolstering bond and equity markets. The result is improvement of the information content of these financial market prices, and their increased usefulness as conveyers of market sensitive information (Saxton, 1997).

Furthermore, Bauhr and Grimes (2012) posited that transparency increases trust and legitimacy in a nation. Transparency is often thought to increase the legitimacy of the CBN and other institutions as well as the trust that the citizens have in them. This in turn improves the efficiency of the institutions, as people are more inclined to accept their decisions, and enforcement costs will be lowered. Thus, we can say that transparency contributes to legitimacy and to increase faith in public institutions.

Saxton (1997) submitted that a more transparent and open monetary policy also enhances central bank credibility. As monetary policy goals and procedures become well known and understood, the public more quickly learns about changes in policy, and central banks become more committed to achieving their publicly stated goals. As they begin to achieve these goals with greater regularity, central banks achieve enhanced credibility (Saxton, 1997). This improved credibility, in turn, enables expectations to adjust faster to changes in monetary policy, fostering more flexibility in labour and other markets and lowering employment and output costs of disinflation. Goals such as price stability, therefore, can more easily be attained, managed and maintained.

Transparency is thought to contribute to quality of governance in several ways. This, according to Demetrtzis and Hughes (2002), high – quality governance requires that government fulfills it tasks in accordance with the norms of the rule of law and democracy and in an honest and impartial way. Transparency can contribute to the observance of rule of law and promote integrity among public officials. The mere fact that officials know they are being watched, and that the quality of their work can be checked, is thought to improve their performance. Transparency also enables the supervision of public officials, both by their superiors and the courts, and makes it possible to impose consequences on public officials that shirk their duties, or display other undesirable behaviours.

Haldane (1995) also argued that a more transparent monetary policy lessens the chances that policymakers will manipulate policy for political purposes. Open, transparent and well-known policy goals and procedures would allow private analysts and financial markets to constantly monitor the central banks' actions and readily detect any manipulation of monetary policy for political purposes. Markets would quickly react to such manipulation by immediately revising inflationary expectations, and such action would readily be obvious to everyone. Consequently, the opportunity for central bankers to surprise the markets with stimulative policy would severely constrained.

Furthermore, Eijffinger and Geraats (2002) have argued that transparency increases economic performance and market efficiency. As economic decision making is dependent on the availability of information, transparency facilitates good decisions. Access to government-held information is of particular importance, because for much of the information relevant to decision makers in political and economic markets, government is in fact the sole repository (and producer of such

information). In addition, a transparent government is more predictable, which allows economic actors to make better long- term decisions.

Monetary policy transparency would also work to improve monetary policy in the economy Saxton, 1997). More transparent monetary policy would also encourage and lead to more open debate and criticism, private sector analysts could more openly critique central bankers' actions, procedures and rationale; Such criticism, in turn, would oblige the monetary authority to defend its policy objectives, decisions and procedures. The Central will be forced to openly confront and reconcile inconsistencies in its policy; incentives would be created for the central bank to get its analysis right. This resulting competition of ideas and more open dialogue would inevitably lead to improved and more informed policymaking.

It has also been argued by several scholars and policy makers that the sole reason for monetary policy transparency is policy effectiveness. If policy effectiveness could be enhanced by secrecy, policymakers would have an obligation to be secretive. Secrecy and democratic accountability are not compatible. It is also argued that transparency helps the public to understand the CBN's monetary policy;

Egbuna (2011) posited that transparency improves the predictability of monetary policy actions and outcomes. He argued that that a better understanding of the monetary policy objectives, strategy and decision- making process, combined with information about economic disturbances helps the private sector better forecast the settings of the policy instrument and the effects on inflation and aggregate output. Besides, transparency tends to induce reputation building as it increases the sensitivity of private sector expectations to unanticipated policy actions and outcomes. This incentive effect follows

from the fact that transparency makes monetary policy actions outcomes a better signal of the Central Bank's intentions;

Generally speaking, transparency encompasses the information a central bank provides to the public about its policy objectives, its outlook for the economy and the actions needed to reach its objective given the outlook for the economy. Transparency is therefore termed as the amount of information about the goals and conduct of monetary policy released to the public.

METHODOLOGY AND SOURCES OF DATA

The fact that there is disagreement within the theoretical literature over what constitutes transparency implies that any empirical work must first contend with serious measurement issues. On this ground, qualitative method is deemed appropriate for this study. Content analysis is therefore employed and inferential statistics is largely used in this study to describe the influence of monetary policy transparency on monetary targets and outcomes in Nigeria from 1986 -2015. This is because of the difficulty in finding a suitable proxy for transparency as a variable for quantitative analysis. Data for the study were gathered from secondary sources. The secondary data were obtained from CBN publications, Journal articles, policy working papers and research studies.

ANALYSIS OF MONETARY POLICY TARGETS AND OUTCOMES IN NIGERIA

This section attempts a theoretical analysis of the influence of monetary policy transparency on the attainment of policy target in Nigeria. It tried to find out whether transparency actually enhances the attainment of monetary policy targets in Nigeria. Monetary policy targets are specific values of macroeconomic variables, including inflation rate, interest rates, monetary aggregates, exchange rates, domestic output and

employment level that a monetary authority pursues in the course of conducting monetary policy. The presumption, based on extensive economic theory, is that attaining monetary policy target subsequently results in achieving one or more of macroeconomic goals. Therefore, the influence of monetary policy transparency on the Nigerian economy could be gauged on the attainment of monetary policy targets within the period of this study. However, it should be pointed out clearly that monetary policy transparency could not be wholly responsible for the attainment or achievement of these target variables, but it can indicate whether or not these targets were achieved or substantially missed during this period.

It is argued that although other factors can affect/influence the achievement of monetary policy targets, it is believed that the extent to which CBN disseminates policy decisions and information to all stakeholders in the economy can influence the attainment of monetary policy targets in the economy.

Consistent with the broad objectives of monetary policy, a number of monetary targets and instruments were adopted during the short-term monetary policy framework (1986-2001). Open Market Operation (OMO), conducted wholly using the Nigerian Treasury Bills (NTBs), continued to be the primary instrument of monetary policy. This was complemented by the cash reserve requirement (CRR) and the liquidity ratio (LR). During the period between 1999 - 2001, most of the monetary and financial targets were substantially missed. As shown on table1, the actual growth rates in broad measure of money supply (M_2) and aggregate bank credit for the years, 1999 – 2001, were higher than the targets by wide margins. Although, inflation performed better in two of the three years, aggregate output was sluggish during the period.

Table 1: Key Policy Variables (% except otherwise stated)

	1999		2000		2001	
	Target	Outcome	Target	Outcome	Target	Outcome
M2	10.0	31.4	14.6	48.1	12.2	27.0
M1	4.1	19.9	9.8	62.2	4.3	28.1
Agg. Credit to Economy	18.3	35.5	27.8	(23.1)	15.8	74.8
Net Credit to Govt.	10.2	57.1	37.8	(162.3)	2.6	(94.6)
Net Credit to Private Sector	19.9	27.3	21.9	30.9	22.8	43.5
Inflation	9.0	6.6	9.0	6.9	7.0	16.5
Real GDP	3.0	2.7	3.0	3.8	5.0	4.6

Source: CBN

The period 2004 -2007 in table 2 showed that the outcomes of monetary policy in Nigeria have been influenced by the general macroeconomic environment particularly, the stance of fiscal policy. Over the years, there has been the problem of fiscal dominance which always ran counter to monetary policy especially before 1999. As a result, monetary outcomes have been mixed with target misses in most of the years.

Table 2: Key policy targets and outcomes (Per cent)

	2004		**2005**		**2006**		**2007/1**	
	Target	**Outcome**	**Target**	**outcome**	**Target**	**Outcome**	**Target**	**outcome**
Growth in Base Money	12.8	5.2	6.5	10.2	7.5	20.5	-	6.3
Growth in broad Money(M_2)	16.0	14.0	15.0	16.2	27.0	30.6	19	30.7
Growth in Narrow Money (M_1)	13.4	8.6	11.4	15.9	n.a	20.3	9.43	31.9
Growth in Aggregate bank credit	22.5	12.0	22.5	21.9	-72.3	-5.0	-29.9	165.6
Growth in bank credit to the private sector	22.0	26.6	22.0	29.3	30.0	28.2	30	96.5
Inflation rate	10.0	10.0	10.0	11.6	9.0	8.5	9.0	6.5
Growth in real GDP	5.0	6.5	55.0	66.2	7.0	5.6	10	5.6

Source: CBN Bullion, 33(1), 8.

The new monetary policy framework, anchored on the medium term perspective (between 2006 and 2007) appeared plausible, but however, produced mixed outcomes. Monetary outcomes were above targets for most of the years (see Table 3). This could be traced to the impact of fiscal dominance and the technological innovations that have taken place in the financial system and which has affected the hitherto relatively stable relationship between money and domestic output. Relative to the past, the conduct of monetary policy during the period could be said to be fairly effective. Table 3 showed inflation and growth outcomes were closest to their targets during the period 2006-2007 compared to previous periods.

Table 3: Key variables (% except other wise stated)

Year	M1		M2		Agg. Credit to the Economy		Inflation		Real GDP Growth	
	Target	Outcome	Target	Outcome	Target	Outcome	Target	Outcome	Target	Outcome
2004	10.8	8.6	15.0	12.3	24.5	12.0	10.0	10.0	5.0	6.1
2005	11.4	29.7	15.0	34.6	22.5	14.5	10.0	11.9	6.0	6.2
2006	12.5	16.7	15.0	21.2	23.4	15.6	9.0	8.5	6.0	4.0
2007	10.4	21.2	16.2	24.3	24.5	13.7	9.0	6.4	7.0	5.6
2008	11.3	23.4	15.0	30.6	22.3	15.5	9.0	11.6	5.0	3.1
2009	12.5	27.4	15.0	22.5	24.1	14.2	10.0	13.0	5.0	3.0
2010	10.4	21.2	16.0	24.1	24.4	13.7	10.0	13.3	6.0	3.4
2011	11.8	22.3	15.0	24.8	25.5	18.2	9.0	12.1	5.0	3.0
2012	11.5	23.6	15.3	23.8	24.6	15.3	9.7	12.8	5.3	3.1
2013	11.2	22.3	15.4	24.2	24.8	15.7	9.6	12.7	5.4	3.2
2014	11.5	22.7	15.2	24.2	25.0	16.4	9.4	12.5	12.1	3.1
2015	11.4	22.8	15.3	24.1	24.8	15.8	9.7	12.7	7.7	3.1

Source: CBN Bullion and Statistical Bulletin, 2007, 2009, 2011and 2016

Inflation and exchange rates were relatively stable during the period 2004-2015 and the bank's favoured measure of inflation, the year–on-year headline inflation remained single digit in the post bank consolidation. Likewise, the exchange rate of the naira became fairly stable. The relationship between money, output and prices became more distorted, especially in the second half of 2009, despite the expansionary stance of monetary policy. The macroeconomic environment in 2009

presented significant challenges for the attainment of price stability, given the emerging problem of excess liquidity in the banking system.

The inflation rate which peaked at 72.8% in 1995, which was the major problem in the economy during the first half of 1990s, decelerated rapidly from 72.8% in 1995 to 6.6% and 6.9% in 1999 and 2000 respectively. However, the declining trend in the inflation rate was reversed in 2001 when the rate shot up to 18%, owing to excessive government spending of the excess earnings from crude oil exports. The action taken by CBN in 2001 and early 2002 to contain demand pressure led to steady deceleration of the inflation rate to an estimated 13.0 and 11.6% in 2002 and 2003 respectively. In spite of the reforms in the articulation and execution of monetary policy during this period, most of the monetary and financial targets were substantially missed. This is evident from table 4. The actual growth rates in broad measure of money supply (M2) and aggregate bank credit for 1999-2011 were higher than the targets by wide margins. Although, inflation performed better in five of the fourteen years, aggregate output was sluggish during the period. (Uchendu, 2009).

Table 4: Key variables (% except otherwise stated)

Year	M1		M2		Agg.Credit to the Economy		Inflation		Real GDP Growth	
	Target	Outcome	Target	Outcome	Target	Outcome	Target	Outcome	Target	Outcome
1999	4.1	19.9	10.0	31.4	18.3	35.5	9.0	6.6	3.0	2.7
2000	9.8	62.2	14.6	48.1	27.8	(23.1)	9.0	6.9	3.0	3.8
2001	12.2	27.0	12.2	27.0	15.8	74.8	7.0	16.5	5.0	4.6
2002	12.4	15.9	15.3	21.5	57.9	56.6	9.3	12.9	5.0	3.5
2003	13.8	29.5	15.0	24.1	25.7	58.4	9.0	23.8	5.0	10.2
2004	10.8	8.6	15.0	12.3	24.5	12.0	10.0	10.0	5.0	6.1
2005	11.4	29.7	15.0	34.6	22.5	14.5	10.0	11.9	6.0	6.2
2006	12.5	16.7	15.0	21.2	23.4	15.6	9.0	8.5	6.0	4.0
2007	10.4	21.2	16.2	24.3	24.5	13.7	9.0	6.4	7.0	5.6
2008	11.3	23.4	15.0	30.6	22.3	15.5	9.0	11.6	5.0	3.1
2009	12.5	27.4	15.0	22.5	24.1	14.2	10.0	13.0	5.0	3.0
2010	10.4	21.2	16.0	24.1	24.4	13.7	10.0	13.3	6.0	3.4
2011	11.8	22.3	15.0	24.8	25.5	18.2	9.0	12.1	5.0	3.0
2012	11.6	23.6	15.3	23.8	24.7	15.4	6.3	12.8	5.3	3.1
2013	11.3	22.4	15.4	24.2	24.9	15.8	8.4	12.7	5.4	3.2
2014	11.7	22.8	15.2	24.3	25.0	16.5	7.9	12.5	5.2	3.1
2015	11.5	22.9	15,3	24.1	24.9	15.9	17.3	12.7	5.3	3.1

Source: CBN Bullion and Statistical Bulletin, 2007, 2009, 2011 and 2016

Overall, the real GDP growth rate only marginally increased from 3.8% in 2000 to 3.9 % in 2001. In general, the growth performance remained weak due largely to the poor state of economic infrastructure resulting from past neglect, which required more time to correct. The overall growth was, therefore, sluggish with negative consequences for poverty alleviation (Adeoye, 2007).

The data trend showed how government lowered liquidity (or money supply) in the economy. This policy stance was vigorously pursued from 1999 to reduce the high rate of inflation experienced in the previous years. Table 5 showed the outcomes of macroeconomic management, in terms of macroeconomic and monetary performance and how GDP output growth fell below the target of 4%.

Table 5: Macroeconomic Performance Indicators (1996 -2015)

Year	GDP Growth (%)	Index of Agric Production (% Cr)	Index of Industrial Production (% Cr)	Manufacturing Capacity Utilization	Inflation Rate (CPI Cr)	BOP Deficits (Nbn)	Unemployment Rate (%)
1996	3.4	3.7	2.5	32.5	29.3	-53.2	3.4
1997	3.8	4.7	2.0	37.2	8.5	11.0	3.2
1998	2.4	3.5	-4.7	32.4	10.0	-75.2	3.2
1999	2.7	3.7	-1.4	34.6	8.0	-304.4	3.0
2000	3.8	3.3	3.4	34.6	6.9	78.3	18.1
2001	3.9	3.9	3.8	42.7	18.9	96.0	13.7
2002	4.63	4.3	2.6	54.9	12.9	50.9	12.2
2003	9.57	7.0	5.6	56.5	14.0	100.7	14.8
2004	6.58	6.3	11.9	55.7	15.0	261.5	13.4
2005	6.51	7.1	9.6	54.8	17.0	444.5	11.9
2006	5.63	7.4	9.3	53.3	8.2	421.6	14.6
2007	5.6	7.4	9.6	53.4	5.3	439.7	10.9
2008	8.8	7.6	9.6	53.8	11.6	497.6	12.8
2009	2.7	8.0	10.0	58.9	13.0	325.3	19.7
2010	4.4	8.0	10.2	54.9	13.3	303.0	21.1
2011	5.3	7.9	10.1	55.9	12.1	375.3	23.9
2012	4.1	8.0	10.1	56.7	12.8	334.5	19.3
2013	4.6	8.0	10.1	55.8	12.7	337.6	21.4
2014	4.7	8.0	10.1	56.1	12.5	349.1	21.5
2015	4.5	8.0	10.1	56.2	12.7	340.4	20.7

Source: a. Monetary Policy Circular No.34

b. CBN Annual Report and Statement of Accounts, various Issues.

c. Central Bank of Nigeria Statistical Bulletin, December, 2010

n.a: Not Available

Similarly, unemployment rates fell below the targeted rate between 1997 and 1999. Output growth fell between 1998 and 2000, averaging 2.6% as against the 3.6% experienced between 1996 and 1997. The inflation rate fell to 8% in 1999 and down to 6.9% in the year 2000, achieving the single digit figure targeted (see Table 5).

In 1999, the major objectives of monetary policy, as stated in the CBN monetary policy Circular No33 were; stimulation of output and employment growth; sustenance of price and exchange rate stability and strengthening of external sector viability (CBN, 1999). Consequently, monetary targets were set for the growth of monetary aggregates, for instance, monetary targets were set for the growth of aggregate bank credit, the growth of money supply (M1 and M2), the growth of domestic credit to the economy, the growth of bank credit to the private sector, the reduction of the inflation rate, and the growth of GDP (Adam and Folawawo, 2004). However, the objectives of stimulating output and employment growth, price stability were not attained (Adam and Folawawo, 2004); Overall, CBN's experience with monetary targeting was characterized with the problem of target overshooting as shown on table 6. Nnanna (2002) posited that the fiscal dominance then, in the economy was largely responsible for the non – achievement of targets.

Table 6: Monetary Variables, Target and Performance (1993 – 2015)

Year	Money Supply (M1)		Money Supply (M2)		Aggregate Credit (Net)		Credit to the Govt. (Net)		Private Sector Credit	
	Target	Performance	Target	Performance	Target	Performance	Target	Performance	Target	Performance
1993	20.0	59.7	18.0	49.8	17.5	91.4	14.5	121.6	20.0	51.6
1994	21.4	45.9	14.8	39.1	9.4	52.6	0.0	63.0	32.0	31.7
1995	9.4	16.3	10.1	19.4	11.3	7.4	5.6	-9.5	21.7	48.8
1996	14.5	26.3	16.8	25.7	12.0	-23.4	0.0	-55.6	29.5	23.9
1997	13.1	18.2	15.0	16.9	24.8	-2.8	0.0	-53.5	45.4	23.9
1998	10.2	20.5	15.6	23.3	24.5	46.8	0.0	144.9	33.9	27.4
1999	4.1	18.0	10.0	31.0	18.3	30.1	10.2	32.0	19.9	29.2
2000	9.8	62.2	14.6	48.1	27.8	-23.1	37.8	-162.3	21.9	30.9
2001	4.3	26.1	12.2	28.0	15.8	87.8	2.6	153.2	22.8	40.7
2002	12.4	15.9	15.3	21.7	57.9	56.6	96.6	(6,316.31)	34.9	11.8
2003	13.8	29.5	15.0	24.1	25.7	58.4	(150.3)	26.8	32.3	24.1
2004	10.8	8.6	15.0	12.3	24.5	12.0	29.9	(17.9)	30.0	26.6
2005	11.4	29.7	15.0	34.6	22.5	14.5	14.5	(37.0)	25.2	30.8
2006	12.2	20.2	10.2	26.0	26.7	42.0	27.0	40.2	19.2	27.2
2007	13.5	25.7	14.2	20.2	15.8	39.9	18.2	38.4	20.1	31.8
2008	10.4	19.9	12.2	17.8	20.8	40.2	19.7	34.2	22.4	41.2
2009	11.2	21.4	15.4	15.2	25.2	34.6	22.1	38.9	30.6	39.2
2010	10.1	23.2	15.0	20.5	24.0	35.2	24.4	30.8	31.2	38.1
2011	10.2	23.2	15.0	25.6	22.0	28.0	26.0	31.6	33.1	39.6
2012	10.5	22.6	15.1	20.4	23.7	32.6	24.2	37.8	31.6	39.0
2013	10.3	23.0	15.0	22.2	23.2	31.9	24.7	33.4	22.0	38.9
2014	10.3	22.9	15.0	22.7	23.0	30.8	25.0	34.3	28.2	39.2
2015	10.4	22.8	15.0	21.8	23.3	31.8	24.6	35.2	27.3	39.0

Source: 1) CBN Economic & Financial Review, 40 (3). 2002. Pp.11.(2). CBN Bullion 2011

Growth in the major monetary aggregate as subdued and significantly below the indicative benchmark for fiscal 2013 and the rate attained at the end of the corresponding period of 2012, reflecting essentially the tight monetary policy stance of the bank. At the end of December 2012, broad money supply, (M_2) grew by 1.2 per cent to N15, 668.95 billion. At that level, M_2 was below the indicative growth benchmark of 15.2 per cent for fiscal 2013 and the 16.4 per cent attained at the end of December 2012. The development reflected the respective decline in net foreign assets and other net assets of the banking system, which moderated the increase in net domestic credit.

Table 7: Key Policy Targets and outcomes, 2009 – 2013 (Per cent)

	2009		2010		2011		2012 1/		2013 2/	
	Target	Outcome	Target	outcome	Target	outcome	Target	outcome	Target	outcome
Growth in base money	3.58	6.76	35.98	11.60	12.67	50.80	8.23	33.10	35.24	50.06
Growth in broad money (M_2)	20.80	17.07	29.25	6.91	13.75	15.40	24.64	16.40	15.20	1.20
Growth in narrow money (M_1)	32.23	3.30	22.36	11.00	15.75	21.49	34.71	9.60	17.44	-5.50
Growth in Agg. Bank credit	86.97	58.80	51.43	8.10	27.69	54.80	52.17	-3.50	23.58	18.45
Growth in bank credit to the sector	44.90	26.80	31.54	-3.81	29.09	44.30	47.50	6.80	17.52	8.96
Inflation rate	10.00	13.90	11.20	11.80	10.10	10.30	11.20	12.00	9.87	8.00
Growth in real GDP	5.00	5.98*	6.10	7.87*	7.20	5.31	7.33	4.21	6.44	5.49

Source: CBN Annual Economic Report, (2013)

Narrow money (M_1) fell by 5.5 per cent at end-December 2013, in contrast to the growth of 9.6 per cent at the end of the preceding year. Aggregate bank credit to the domestic economy grew by 18.5 per cent, in contrast to the decline of 3.5 per cent at the end of December 2012. The development reflected an increase 40.1 per cent in net claims on the Federal Government and 8.96 per cent growth in claims on the private sector. Base money grew by 50.1 per cent at the end of the review period, compared with the indicative growth benchmark of 35.24 per cent for the period and the 33.1 per cent attained at the end of 2012.

Monetary policy was tight in most past of 2015, in response to the challenging global and domestic economic environment. In the domestic front, the challenges included dwindling foreign exchange reserves, arising from low crude oil price in the international market, low fiscal buffers and excess liquidity in the banking system. Growth in the major monetary aggregate was lower than the indicative benchmark for fiscal 2015while broad money supply, M2, grew by 5.9 per cent.

Table 8: Key Policy Targets and ou tcomes, 2011-2015 (Per cent)

	2011		2012		2013		2014		2015	
	Target	Outcome	Target	Outcome	Target	Outcome	Target	Outcome	Target	Outcome
Growth in Base money	12.67	50.80	8.23	33.06	35.24	37.41	9.30	17.18	16.78	2.00
Growth in Broad money (M2)	13.75	15.43	24.64	13.72	15.20	1.32	15.02	7.29	15.24	5.90
Growth in Narrow Money (M1)	15.75	21.54	34.71	4.34	17.44	-5.23	16.23	-10.89	9.91	24.14
Growth in Aggregate Bank Credit	27.69	54.76	52.17	1.98	23.58	14.47	28.40	10.97	29.30	12.13
Growth in Bank Credit to the Private Sectors	29.09	44.28	47.50	7.77	17.52	6.86	23.07	12.08	26.06	3.29
Inflation Rate	10.10	10.30	11.20	12.30	9.87	8.00	8.00	8.00	8.00	9.60

Source: CBN Annual Report, 2015

In 2015, excess liquidity in the banking system persisted, buoyed by the huge maturing CBN bills and disbursement of statutory revenue and Value Added Tax (VAT) to the states and local governments. Thus, the thrust of policy, as in the preceding years, was aimed at curbing the level of banking system liquidity to achieve the bank's mandate of price stability and monetary stability, conducive to sustainable economic growth. However, there was a mixed performance in the key target policy as policy targets were substantially missed in 2011 but in 2012, 2013, 2014 and 2015 the monetary policy targets were substantially attained (see Table 8).

CHALLENGES OF MONETARY POLICY TRANSPARENCY IN NIGERIA

While there has been a pronounced increase in the transparency of monetary policy by the CBN over the last decade, considerable challenges remain. Arising from the discussion of the preceding section of this paper, this section discusses the challenges of CBN monetary policy transparency.

The type and nature of information to release: One of the biggest challenges of monetary policy transparency facing the CBN is determining what information to release about the policy process and decisions. One possible, though thoroughly uninformative, answer is all

relevant information. But, what exactly is the relevant information and for whom is it relevant? It therefore becomes difficult to determine what relevant information to release and for whom.

Inadequate data: The increase in transparency has greatly been influenced by the practice of publishing the inflation report, which is essentially common in countries that accepted inflation targeting as their monetary strategy. It has become prominent feature of monetar y policy in recent times, but systematic evidence of transparency trends has been elusive due to a dearth of data.

Lack of consensus on what constitute transparency in monetary policy: There is a lack of consensus on whether central bank transparency is beneficial, in part because of a lack of consensus on what constitutes transparency and in part because of the difficulties in modeling the concept of transparency. This lack of consensus among economists and policy makers on the concept of monetary policy transparency has posed a serious challenge in accepting whether it is beneficial to CBN or not.

Danger in verbal communication of monetary policy decisions to stakeholders: Some central banks (Central Bank of Nigeria inclusive) sometimes do not release minutes of monetary policy meetings but hold press conferences after the monetary policy meeting. This could in principle be an adequate and even more timely substitute for minutes. Moreover, the question and answer session could identify transparency gaps. However, the value of press conferences is limited when the central banker's response are reticent; In addition, the ability to appropriately field questions about delicate monetary policy issues requires considerable communication skills. So, it is preferable to remedy transparency gaps through controlled releases rather than risking slips of the tongue.

The understanding ability of the public: Other recent efforts underscore the difficulties involved in precisely calibrating the amounts

and types of information that should be disclosed about the various aspects of the policy process. Part of the difficulty arises from the different audiences with different abilities and levels of interest. Thus, besides the costs of collecting, collating, editing and disseminating information, central banks have to expend resources to assess and continuously track the informational needs of the multiple audiences (e.g. financial markets and the general public), especially as those needs evolve over time. Moreover, give n the potency of their actions, central banks need to be wary of being seen to favour one group over another. This naturally influences disclosure rules and rules on access to senior officials.

CONCLUSION AND RECOMMENDATIONS

The Central Bank of Nigeria is one of the central banks in Africa that has adopted monetary policy transparency process in the management of the economy. This has led to some improvements in the financial market and private sector understanding of how the central bank set policy as a function of the nation's economy; Imbibing of monetary policy transparency process by the CBN has also produced some mixed results in terms of the achievement of monetary policy targets and outcomes in Nigeria. This is as a result of some challenges faced by the CBN in the adoption of monetary policy transparency process in the management of the economy. However, other macroeconomic factors other than monetary policy transparency could also be accountable for the achievement and missing of policy targets in Nigeria.

Therefore, for monetary policy transparency to enhance the achievement of policy targets in Nigeria, the following recommendations are made:

Effective Communication: Effective communication is essential to the successful implementation of monetary policy. The goal is to transmit effectively so that the signal from communications takes

precedence over the noise. Once a policy judgment is reached, it should be communicated effectively. The effective communication of the immediate policy decision is important; so also is communication about the prospective contours of the economy and policy stance. A well-communicated policy is one which helps economic agents – households, businesses, financial markets – to understand the likely reaction function of policymakers to incoming information

Accountability: That is, the bank must be accountable for its decisions. If the Bank systematically errs in its assessment of inflation risks, for example, the public has a right to know. This accountability brings added rigour and discipline to the Bank's deliberations; Central bank authority and credibility can only be evaluated if it is accountable for its actions, at least to the people whose lives are affected. Transparency should be designed to facilitate the ability of the wider public to hold the central bank to account. This is not merely a political imperative, but an economic one. Accountability can also reinforce the rigour and discipline of policymakers' thinking, and thereby make for better policy judgments.

Credibility: The CBN fosters credibility by being clear about its mandate and how it performs its tasks. Regular communication about a CBN's assessment of economic situation is particularly useful; It is also helpful for CBN to be opened and realistic about what monetary policy can do and, even more importantly, what it cannot do.

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IMPACT OF GOVERNMENT TAX INCENTIVES ON ENTREPRENEURSHIP PERFORMANCE (GROWTH) IN NIGERIA

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Abstract

The concern of all nations of the world, developed or developing is to stimulate the growth of entrepreneurship for the critical role the sector plays in employment creation and poverty reduction in the society. As a result of this, successive governments in Nigeria over the years have had to encourage the growth of private businesses through numerous tax incentives as a way of addressing the issue of rising rate of unemployment and its socio-economic effects in the country. It is in view of this that the study examined the types and nature of these incentives and to specifically establish whether the incentives have stimulated growth of private businesses in Nigeria using expansionary rate (increase in size/number of branches) of an enterprise as surrogate for growth. The methodology adopted in the study is an exploratory one that made use of relevant literatures and empirical research on related subject matter. The study found that though the incentives such as tax rebate and relief are well intended, they have not enhanced the growth of entrepreneurship for desired job creation and poverty reduction in the society due to myriads of challenges amongst which are infrastructural deficit and insecurity. The study recommends that in addition to the incentives, and for a meaningful impact, government should create enabling business environment for entrepreneurs by improving the poor state of infrastructure and security that have hindered growth (performance) of entrepreneurship in Nigerian economy.

Keywords: *Tax Incentives–Entrepreneurship Growth– Employment Creation.*

INTRODUCTION

Entrepreneurship growth is central in the agenda of many nations of the world for the critical role it plays in social and economic development. It is believed globally that entrepreneurship contributes significantly to the Gross Domestic Product (GDP) of many developing

and developed countries. The social and economic advantages of entrepreneurship cannot be overstated as it is a major source of employment, economic growth and innovation in an economy. Its contribution to the development of an economy also includes greater utilization of local raw materials, rural development, mobilization of local savings, linkages with bigger industries, provision of regional balance by spreading investment more even, provision of opportunity for training young managers and semi-skilled workers (Dokubo, 2012).

Entrepreneurship form the bedrock of an economy as the sector usually employs more of the working population than the public sector in many developing nations of Africa (Momoh, 2017). In Nigeria for example, the public sector accounts for only a small percentage of the economically active working population. This implies therefore that the remaining greater percentage of employment is through entrepreneurship. It is for this reason that successive Nigerian governments have always tried to promote entrepreneurship growth through numerous social, economic and fiscal, policies such as taxation. Taxation is an important fiscal instrument of government for planning of savings and investment as well as a tool for harmonizing the two (i.e. saving and investment) for growth through resource allocation in the society. The importance of resource allocation dimension of tax policy therefore is its role in promoting savings and investment for a healthy economy conducive for employment generation and wealth creation (Nanami, 2013). The quest of any nation especially the developing ones being a desirable and suitable rates of economic growth evidenced by the level of entrepreneurship growth, stability of employment and poverty reduction in the society.

Realizing the crucial role of entrepreneurship in economic growth of any nation in terms of job creation and poverty reduction in the society therefore government has had to grant incentives to various

categories of business enterprises as captioned in various Tax laws of Nigeria in order to stimulate growth of businesses in the economy as the growth of the sector will help maximize individual and collective economic and social success on local, national and global scale in terms of employment, self-reliance and poverty reduction in the society.

The pivotal role of entrepreneurship in many economies of the world interms of employment generation and poverty reduction cannot be overemphasized. To support the growth of the sector therefore, successive governments in Nigeria have been encouraging the performance (growth) of the sector through various tax incentives. However, in spite of the encouragement (incentives) there is no empirical evidence to suggest that the performance (growth) of entrepreneurship improved. This therefore suggests that there are additional albeit country-specific reasons or factors militating against the growth of entrepreneurship in Nigeria which government measures of tax incentives alone has not been able to address. Hence, this study is an exploratory review of the performance (growth) of entrepreneurship in Nigeria and the factors militating against it.

CONCEPTUAL CLARIFICATION

The following concepts are germane to the study and are therefore clarified as follows:

– **Tax Incentive:** is a relief given to entrepreneurs operating in Nigerian economy for them to pleasantly make meaningful contribution to the development of the society (Clussen & Djankays, 2012). Tax Incentive is a relief given to operators in the private sector of the economy to enable them act in a particular and pleasant manner beneficial to the government and the society at large (Clussen & Djankays, 2012). It is a propellant for growth

and expansion of business enterprises paving way for employment opportunities in the society.

– **Entrepreneurship Growth:** Growth generally connotes increase (Beaver and Prince, 2004). Entrepreneurship growth in an economy refers to increase in sales, profit, improvement in production processes/technology, increase in goodwill, and improved relationship of an enterprise with its environment (Shane &Venkataraman, 2000). It means increase in enterprise's total assets, capital base, returns on its investment, large share of the total market, more branch network and employment of more hands (Drucker, 1985). Faloyin (2015) opined that entrepreneurship growth encompasses increase in size, productive capacity, ability of a business to produce and deliver goods and services compared from one period of time to another. The ultimate multiplier effect of entrepreneurship growth in any economy is employment creation, poverty and crime reduction in a society.

TAX INCENTIVES FOR ENTREPRENEURSHIP GROWTH IN NIGERIA

Tax based incentives for businesses in Nigeria are covered under different laws and different forms such as reliefs, credits, exemption, allowances, break/days, drawbacks and are appropriately categorized. In the compendium of investment incentives of Nigeria 2017 compiled by Nigeria Investment Promotion Commission (NIPC) and Federal Inland Revenue Service (FIRS). The incentives available to entrepreneurs operating in Nigerian economy are classified as follows:

1. **General Tax Based Incentives (GTBI)** sub-divided into (i) Tax Based Incentives: personal income tax (ii) Tax based incentives companies income tax and (iii) Tax based incentives Value Added Tax (VAT).

Major highlights of incentives under each covered by laws are as follows:

Under Personal Income Tax, the Personal Income Tax Act (PITA) CAP P8 Laws of the Federation of Nigeria (LFN), 2004 Section 19(7) contains exemption of interest on any loan granted by banks to a person engaged in (a) agricultural trade or business and (b) fabrication of any local plant and machine similar provision are available for companies available in the same business.

Under the Companies Income Tax Act (CITA) Section 11(2) of companies Income Tax ACT CAP C21 LFN 2004 as amended 2007, the law provides for exemption from tax, interest on any loan granted by a bank to a company engaged in (a) agricultural trade or business (b) fabrication of any local plant and machinery and (c) provision of working capital for any cottage industry. Sections 23(1), 34 and 39(d) of the Act also provides for exemption of profits of companies engaged in certain activity such as sports, allowance for companies investing in rural areas and accelerated capital allowance and tax-free dividend for companies engaged in Gas utilization respectively.

Under the Tax Based Incentives: Value Added Tax, Sections 2 and 3 first schedule of Value Added Tax (VAT) Act CAP VI LFN 2004 provides for list of goods and services of company exempted from VAT at 5percent. List of such goods and services include all medical and pharmaceutical products and all exported services.

2. **Sector Specific Incentives (SSI)**. Generous SSI are available for companies engaged in (i) agricultural/agro-allied business, (ii)

solid minerals (iii) Manufacturing, (iv) Tourism/Hospitality and (v) Oil and Gas business.

For companies into agriculture/agro-allied business, paragraph 24 Table 1 of CITA provides (a) 95percent capital allowance to be enjoyed by any company that incurs a quantifying expenditure pursuant to second schedule of the Act. (a) Companies engaged in wholly agricultural activity are entitled to unrestricted capital allowance pursuant to paragraph 24 (7) of the Act. Such companies are to carry forward unutilized capital allowances indefinitely. Further, under the Agricultural Credits Quarantee Scheme (ACQS) funds, a loan guaranteed of up to 75 percent meant to provide guarantee on the payment of interest and principal in respect of loans granted to any bank for agricultural purposes with the aim of increasing the level of bank credit to the agricultural sector. Section 31(3) of the Act further allows companies engaged in agricultural trade or business to carry forward their losses indefinitely.

For companies engaged in solid minerals, Section 36 of CITA provides that a new company going into mining of solid minerals shall be exempted from tax for the first three (3) years of its operation. Second schedule of the Act further provides a 95 percent accelerated capital allowance on qualified capital expenditure on mining in the first use of assets.

For manufacturing, SSI is available for companies engaging in cassava production and processing under the ACQS funds of government. The incentive is a 60 percent repayment of

interest paid for the purpose of cassava production and processing.

Enterprises in Tourism/Hospital business are to enjoy 25percent exemption from tax of their income in convertible currencies. Such income must be generated from tourism and be put in reserve fund to be utilized within five(5) years for building and expansion of new hotels, conference and new facilities for the purpose of tourism development as provided under Section 37 of CITA.

Oil and Gas companies are entitled to graduated royalties as follows (a) on shore production (20%) (b) Production in territorial waters and continental shelf areas up 100 meters water depth (18.5%) (c) Production in territorial waters of continental shelf areas beyond 100 meters (16.67%) (d) For production sharing contract for deep offshore operation, the royalty rates, are: Up to 200 metres water depth (16.67%), 800 - 1,000 metres water depth (4%), 201 - 500 metres water depth (12%), above - 1,000 metres water depth (0%), 501 - 800 metres water depth (8%). Petroleum Act Section 5 of Deep Offshore and Inland Basin Production Sharing Contracts Act CAP. D3 LFN 2004 as amended provides royalty rates payable in respect of deep offshore contracts.

3. **Tariff Based Incentives (TBI):** Incentives under TBI are available to entities engaged in the following business (i) **Agricultural**: agriculture, agro-allied and agro-processing- 0% import duty on agriculture equipment and machines (ii) **Agriculture**: Agriculture commodities - 10% import duty rate and 20% levy on busked brown rice (iii) **Transportation**: aviation – 0% import duty on commercial aircraft. (iv) **Power**: Electricity Generation, Distribution

and Transmission – 0% import duty on equipment and machinery in the power sector, (v) **solid minerals**: mineral mining – 0% import duty on equipment and machinery in the mineral mining sector, (vi) **manufacturing**: sugar processing – 5% import duty rate and 5% levy on raw sugar import for local processing, (vii) **Manufacturing**: Iron and Steel – 0% import duty rate on importation of billets, also 0% import duty rate importation of hot rolled steel sheets/coils, (viii) **Manufacturing**: Automotive Design and Development – 35% import duty rate and 0% levy on concessionary Fully Built Unit (FBU) import by Assembly Plant (APs).

4. **Export incentives**: Export (Incentives and Miscellaneous Provisions) Act, No. 65 of 1992, Cap. E19, LFN provides for a post-shipment incentive designed to improve the competitiveness of Nigerian products and commodities and expand the country's volume and value of non-oil exports.

5. **Export Processing Zone Incentives (EPZI)**: For enterprises approved by Nigerian Export Processing Zones Authority (NEPZA) under NEPZA Act Cap N107 Laws of Federation of Nigeria (LFN) 2004 and operating within an approved zone, the following incentives apply: (a) 100% foreign ownership of investment; (b) Free transferability of capital, profits and dividends by foreign investors; (c) Rent-free land at construction stage, thereafter rent shall be payable; (d) All industrial undertakings including foreign companies and individuals operating in an Export Processing Zone are allowed full tax holiday from Federal, States and Local Governments; (e) Duty-free, tax free on import of raw materials for goods destined for re-export; (f) Waiver on all import and export licenses; and (g) Waiver on all expatriate quotas for companies operating in the zones.

Nigeria is a member of many international organizations having multilateral and bilateral agreement with nations on double taxation, investment promotion and protection, Trade liberation and tax relief. For example, among Economic Community of West African States (ECOWAS) for which Nigeria is a member, a Treaty of multilateral agreement was executed under ECOWAS Trade Liberation Scheme (ETLS). The scheme is meant to provide for (a) abolition of custom duties levied on imports and exports of goods produced and moving among member states to facilitate free movement of goods and services across member states. This is to facilitate investment promotion, economic growth and employment opportunity in the sub-region.

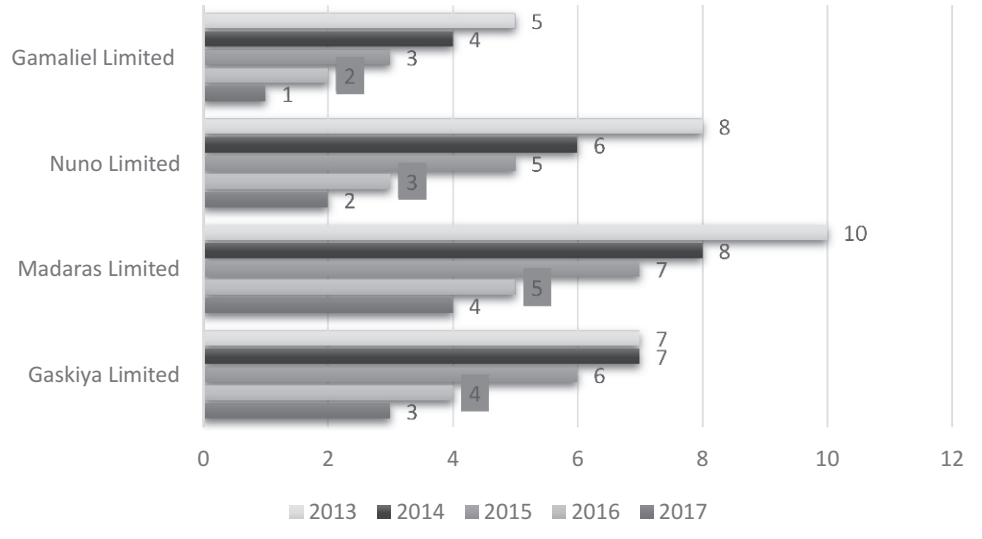
Danlami (2016) observed that the incentives though laudable for growth of businesses, their potency have been a subject of debate over the years as many businesses in the country have been experiencing a downward trend in the expansionary rate (growth) in their branch network. In Kaduna for instance, Ochadu (2017) discovered that manufacturing firms have been closing down businesses since 2013 due to unfavourable socioeconomic situations prevailing in the country as businesses such as Gaskiya enterprises (foam manufacturing outfit), Madaras Limited (Bakery Production Enterprise), Nuno Limited (Diary Production Enterprises) and Gamaliel Limited (Local Machine and Tool fabrication Enterprises) have been closing down branches due to harsh economic condition that no longer make the ventures attractive. The table below depicts the ugly situation.

Table 1: Gaskiya, Madaras, Nuno and Gamaliel Limited branch network 2013-2017

		2013	2014	2015	2016	2017
1.	Gaskiya Limited	7	7	6	4	3
2.	Madaras Limited	10	8	7	5	4
3.	Nuno Limited	8	6	5	3	2
4.	Gamaliel Limited	5	4	3	2	1

Source: Ochadu (2017).

Figure 1: Gaskiya, Madaras, Nuno and Gamaliel Limited branch Network 2013-2017



The declining expansionary (size) growth rate implies that these enterprises have not been making enough profit to fund expansion due to harsh operating environment. This unfortunate situation is likely to be a total reflection of what is happening throughout the country where the socioeconomic environment is the same as alluded in the separate

studies of Mike (2011), John (2011), Oladejo and Adesunkanmi (2014), Diyoke (2015),Omaye (2015), Mohammed (2016), Kaigama (2016) and Essien (2016).

EMPIRICAL REVIEW

Essien (2016) conducted a study on the Nigerian Business Environment and Growth constraints of Entrepreneurship. The aim of the study was to examine growth constraints of Micro and Small Scale Manufacturing Industries (MSMI) in Akwa Ibom State. The study adopted a descriptive survey design. A sample of 234 operators of manufacturing micro and small scale businesses were selected through stratified random sampling. Of the 234 copies of the questionnaire administered, 225 useable copies were retrieved. Frequencies and sample percentage as well as factor analysis were used to analyze data. The analysis was facilitated with the use of the Statistical Package for Social Sciences (SPSS Version 20. 0) Results showed that the dimensionality of the MSMI's constraints can be explained by 7 factors. These include problem of infrastructure particularly - power (factor 1), strict rules on credit (factor 2), high interest rates on loans (factor 3), multiple taxation (factor 4), absence of tax holiday (factor 5), trade liberalization (factor 6) and poor patronage of made in Nigeria goods (factor 7). It was found that problem of infrastructure (power) was the major constraint that affected the growth of micro and small scale manufacturing business in Akwa Ibom state. The study recommended improvement of power by government as the major issue that constraints growth of enterprises in addition to any other assistance.

Diyoke (2015) conducted a study on Entrepreneurship Development in Nigeria: Issue, problem and prospects. The aim of the study was to investigate the problem confronting the growth of private businesses operating in Nigerian economy. Descriptive survey research method was used in the study whereby data were collected from both

primary and secondary sources. Primary sources were analyzed using percentages and mean scores, while the secondary data were analyzed using Chi-square. The result indicated that apart from the known problems of inadequate capital and lack of competent and skilled management, there are other challenges that hinder entrepreneurial activities in the economy. The Nigerian business environment is facing a lot of problems such as epileptic power supply, violent clashes of militant groups, kidnapping, looting, arson, and so on. The study concludes with a recommendation that the poor security situation in the economy should be improved.

In a study carried out by Oladejo and Adesunkanmi (2014) on violent conflict and entrepreneurship performance in Nigeria, the study investigated the impact of violent conflict on entrepreneurship performance in Nigeria. Using primary source, the data obtained were analyzed using pair t-test. It was found that violent conflict impacts negatively on the performance of business. The study recommended improved security for growth of businesses in Nigeria.

Mohammed (2016) studied the implications of inadequate energy supply on small business units in Bauchi metropolis. The objective of the study was to analyze the implications of inadequate infrastructures on the operation of small business in Bauchi metropolis. Using a descriptive survey method through questionnaire distribution to small business operators. Responses obtained were rated on a five (5) point likert scale. It was found that inadequate infrastructural facilities mainly poor power supply from public source affects their operations. The study recommended improved power as a major factor that can trigger growth of businesses in Nigeria.

In a study conducted by Kaigama (2016) on the problems threatening the state of entrepreneurship development in Nigeria. The

research focuses on SMEs within Kano metropolis. The aim was to determine the factors militating against growth and expansion of SMEs. Using a survey descriptive design to elicit responses through questionnaire, it was found out that insecurity and inadequate infrastructure constitute the major problems faced by businesses. The study recommended among others that government should improve infrastructure and security to woo investment especially in the Northern part of Nigeria where insecurity is still a big issue.

Omaye (2015) carried out a study on critical success factors for entrepreneurship growth and development in Nigeria, the study was aimed at x-raying policy programmes of government to encourage SMEs in Nigeria. Using descriptive research to obtain responses from a sample of ten (10) out of fifteen (15) bakery owners in Yola metropolis. Data were obtained as to what government should do to encourage entrepreneurship growth in Nigeria. Using a simple summary statistics of percentage, it was found that adequate security, and provision of infrastructures top the needs of entrepreneurs to stimulate growth of businesses in the economy.

Mike (2011) conducted a study on entrepreneurship opportunities and challenges in Nigeria. The study examined entrepreneurship opportunities and the challenges in Nigerian economy. The analytical tool used for the study was a descriptive method which centered on looking at different theories on entrepreneurship and drawing inferences from them. The study identified three main ingredients that can facilitate entrepreneurship opportunities in Nigeria namely creating a vision, leveraging your strength and enabling environment. The study concludes that entrepreneurship is essential for rapid and sustained growth in any economy but that there is urgent need to change the mindset of an average Nigerian towards embracing self-

employment and in doing so, government should do a lot more on infrastructure and security to make private enterprises rewarding.

John (2011) conducted a study on factors constraining the growth and survival of SMEs in Nigeria: Implications for poverty alleviation. The purpose of the study was to investigate the factors that can hinder growth and survival of small businesses in Nigeria. A survey method was used to gather data from 211 small business owners and managers located in selected cities in Nigeria namely Kano, Enugu and Ibadan. The data obtained were analyzed using simple inferential statistics of simple percentages. The result of the study revealed that the most common constraints hindering small business growth and survival in Nigeria are lack of financial support, poor infrastructure and low demand for Nigerian product and services. It was recommended that government should design targeted policies and programmes that will promote SMEs for poverty alleviation in Nigeria.

THEORETICAL PARADIGM

The study is anchored on equilibrium destruction theory of entrepreneurship cited in Alvaro, Domingo and Salvador (2005). The theory assumes that it is only entrepreneurs (private business owners) that can move an economy out of equilibrium. As an innovator and agent of economic change from static and retardation to dynamic state, targeted policies of government such as tax incentives are usually put in place to encourage their growth thus, reducing all the negative effects of business declination in an economy.

METHODOLOGY

The study is a conceptual research that made use of various literatures on the subject matter. Literatures with respect to issues surrounding entrepreneurship growth were reviewed. This was targeted

at realities of the current situation in Nigerian economy and the performance (growth) of entrepreneurship in the country.

FINDINGS AND DISCUSSION

Taking clue from developed nations such as China, Japan, USA, UK and Russia that have been addressing the issue of unemployment through entrepreneurship growth, Nigeria government over the years has been granting various tax incentives to spur growth of businesses. Unfortunately, these incentives have not been yielding the much desired result for job creation in the society. Retarding/declining growth of business limits a number of employment opportunities that would have been available for the unemployed especially the youths. The direct effect/consequence of retarding growth of business on Nigerian economy therefore is the ever rising rate of unemployment in the society (National Bureau of Statistics).

The rising rate of unemployment in the country is frightening. From 10.0 percent in 2013 to 14.1 percent by the end of 2017 for which an appreciable growth of entrepreneurship in the country would have reduced. The rising social consequence/effects of unemployment is worrisome as many of unemployed Nigerian youths including graduates have taken to all forms of crimes of arson, armed robbery, kidnapping, insurgency, female prostitution and risky/illegal migration across Nigerian borders for "greener" pastures with government spending millions of Naira on daily basis to curb this menace. This is certainly a drain on the national resources that would have been available for developmental purpose. The negative economic effects of the rising trend include waste of human resources, low productivity, and inability of the nation to deliver goods and services for internal and external consumption (export), inflation and fall in national output with negative effect on Gross National Product (GNP) of the nation (CBN Report, Various Issues).

Nigeria is a monoculture economy that has been surviving solely on oil for her export. The inability of the country to diversify the economy have measures of negative consequences of which the most severe one is the low exchange rate of the naira against the major currencies of the world – US dollars and the UK's Pound Sterling (Momoh, 2017). This has further deepened the economic crisis of the nation as the country mostly depends on imported goods and services (Ochadu, 2017). The ultimate socioeconomic effect of declining growth in the economy is the ever rising unemployment level that has worsen poverty in a society as many Nigerians are still poor, living below the threshold of $1.9 a day (Nigeria Economy Profile, 2018). These are people who cannot afford the basic necessities of life of a decent accommodation (shelter), food and clothing. This is an unpleasant situation of which provision of enabling environment for growth of private businesses would have ameliorated.

CONCLUSION AND RECOMMENDATIONS

Nigeria nation has long recognized that entrepreneurship as the major source of employment, wealth creation and poverty alleviation in the society. It is with this understanding that various tax incentives have been granted to entrepreneurs to stimulate/accelerate growth of private businesses in the Nigerian economy. Unfortunate however, these laudable incentives have not triggered growth of entrepreneurship in the economy due to various challenges particularly that of infrastructural deficit and insecurity that have characterized Nigerian business environment.

For the desired growth of businesses in Nigeria as intended by numerous government incentives, the issue of the poor state of infrastructure and security should be improved without which any attempt to encourage and woo entrepreneurs – foreign and local into investing in the country would be a mirage.

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COMPARATIVE ANALYSIS OF THE IMPACT OF CREDIT AND GOVERNMENT EXPENDITURE ON AGRICULTURAL OUTPUT IN NIGERIA

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Abstract

This study carried out a comparative analysis of the impact of Commercial Banks' Loans and Government Expenditure on Agricultural Output in Nigeria from 1981-2016. Agricultural contribution to Gross Domestic Product (AGDP) is the dependent variable while Commercial Banks' Loans/Credit to the Agricultural Sector (CBLA), Federal Government Recurrent Expenditure on Agriculture (FGRE) and Agricultural Credit Guarantee Scheme Fund (ACGSF) are the independent variables. The study developed four models which were used to x-ray the impact among the variables using the two-stage least squares method and the first model which captures the four variables gave a better result. To avoid a spurious result, unit root, Co-integration and Granger Causality tests were conducted to test for stationarity, long-run relationships and causal relationships respectively between variables. The Co-integration test revealed the existence of long-run relationship between the variables. The Two-stage least squares results showed that the p-value of CBLA is 0.2885 which is greater than the 0.05 level of significance states that commercial banks' loans to the agricultural sector have no significant impact on agricultural output in Nigeria within the period of study, the p-value of ACGSF is 0.0002 and since the p-value is less than the 0.05 level of significance means that within the study period, Agricultural Credit Guarantee Scheme Loans have significant impact on agricultural output in Nigeria while the p-value of FGRE 0.0767 which is greater than 0.05 implies that within the period of study, Federal Government Recurrent Expenditure on agricultural output had no significant impact on agricultural output in Nigeria. The insignificant impacts of the other two variables (CBLA and FGRE) on Agricultural output are attributed to mal-administration and misapplication of funds, as well as embezzlement and other factors. However, the three variables cooperatively have a significant impact on Agricultural Output. The conclusion of the study is that combined efforts by the government, commercial banks, implementation of programmes and schemes are necessary for the optimum development of the agricultural sector in Nigeria. As a result of the positive and significant effect of the Agricultural Credit Guarantee Scheme on the Agricultural Sector, this study recommends that the scheme should be sustained and enhanced. A strong and diligent monitoring team made up of honest,

experienced and learned individuals should be set up. Funds should also be made easily available by simplifying operational procedures and conditions to reduce the cost and the bureaucracy involved in accessing the loans.

KEY WORDS: *Agricultural output, Commercial Banks' Loans, Government Expenditure, Nigeria*

JEL CLASSIFICATION: *Q10,Q21, NO4*

INTRODUCTION

Agriculture was the main stay of Nigeria's economy, accounting for 80% of the country's Gross Domestic Product (GDP) and this was before the discovery of oil in Oloibiri in 1956. There was a downturn in agriculture's contributions due to its neglect for the new found oil which to an extent, increased the economic prosperity of the country but has now become a bane of Nigeria's economic growth/ The wealth earned by the country from petroleum, resulted in the abandoning of the agricultural sector (Nweze & Edame, 2016).

Nigeria was famous for her agrarian economy through which, cash crops like; palm produce (oil and Kernel), cocoa, rubber, timber, groundnut e.t.c were exported, thus making Nigeria a major exporter in that respect. The revenue generated from these exports and agricultural activities helped enormously to develop the infrastructural resource of the economy like provision of educational and health structures, roads, water and so on/ In the 1960's, 70% of the labour force originated from the agricultural sector and the 45.1 million out of 56million Nigerians were provided with the basic food requirements (1963 Nigerian Population Census). The current population of **Nigeria**is**192,734,880** as at November 2017, based on the latest United Nations estimates (UNDESA, 2017) and at this geometric rate of population growth, agricultural productivity needs to increase so as to enable the nation to cater for the growing population otherwise, there will be acute hunger and starvation which will have dare consequences on the economy.

Apart from the Niger Delta areas like Oloibiri, Emago-Kugbo, Otuabagi and Otuogidi that have now suffered from oil spillages that has made agricultural activities almost impossible, Nigeria is endowed with rich soil, the temperature is warm and favours agricultural production, the annual rainfall is very well distributed and there are no extreme natural disasters posing any threat to lands, crops and other sources of agricultural production.

The one challenge that has become a threat to the farmers has to do with the funding of the required equipments and facilities that is needed to boost agricultural productions. Finance to the Agricultural sector both from the private and public sources is essential for its need ed impact on the growth and development of the economy. Government expenditure on agriculture and agricultural credit enhances agricultural output and promotes standard of living by breaking the vicious cycle of poverty of small scale farmers. Modernization of agriculture through the use of improved technologies requires some considerable amount of capital investment (Ekwere & Edem, 2014).

In Nigeria, the agricultural sector is dominated by the poor farmers in the rural areas who are small farm holders. To advance to commercial farming and increase production, small farm holders have to look for alternative source of financing. This is because they do find it difficult to access agricultural loans from financial institutions. Financial institutions on the other hand, find it risky to lend to small farm holders because most of them lack collateral and such loans involves large transaction costs on these financial institutions. Seasonal price fluctuations of agricultural farm produce often take a larger proportion of the profit of farming especially at the start of harvest season and so this makes it difficult for farmers to make use of their farm produce as collateral because the revenue to be generated is unsure and this makes payback difficult.

Oboh and Kuswaha (2009) stated that majority of the loan beneficiaries had poor socio-demographic background such as low level of education, low annual income, high family size and small farm size and the loans they received was far lower than they applied for. Awotodunbo (2008) also emphasized that agricultural businesses are still not adequately funded.

Insufficient funding of the agricultural sector has been a major hindrance to the growth and development of the agricultural sector in Nigeria. Empirical evidence shows that government recurrent expenditure on agriculture continues to increase over the years but the agricultural sector performance i.e. output has been inadequate. Also, due to the poor socio-demographic background of the rural populace where majority of these agricultural activities take place, loans are not given due to lack of collateral or little is given to them.

Provision of food for the growing population, foreign exchange generation and employment generation are the roles the agricultural sector is expected to perform while the government is in turn expected to fund these agricultural activities through its annual allocation or through the central bank's directives to the commercial banks to provide loans to the agricultural sector. It was in furtherance of this that the Agricultural credit guarantee scheme fund (ACGSF) was established to help farmers who have little or no collateral to get loans from commercial banks by the CBN.

The objectives of this study include the following:

i. To analyze the impact of commercial banks' loan on agricultural output in Nigeria

ii. To examine the impact of federal government recurrent agricultural expenditure on agricultural output in Nigeria and

iii. To investigate the economic benefits of Agricultural Credit Guarantee Scheme funds (ACGSF) on agricultural output in Nigeria between 1981-2016.

It is against this background that this research conducted a Comparative Analysis of the impact of Credit and Government Expenditure on Agricultural Output in Nigeria. To achieve the objectives, the paper is divided into five sections. Section one dealt with the introduction, Section two the literature review, section three the methodology and analysis of results, section four dealt with the comparative analysis of the models and lastly the section five was conclusion and policy recommendations.

LITERATURE REVIEW

– Concept of Commercial Bank Loans

Commercial banks are financial institutions that accept various types of deposits from the public especially from its customers, including keeping/maintaining savings account deposits, current account deposits and fixed deposits. They (commercial banks) provide loans and advances of various forms including overdraft facility, credit etc. to her customers - both individual as well as corporate organisations.

In a study carried out by John and Terhemba (2016), Commercial Banks' credit was described as a process of making funds available to another sector of the economy based on some agreed terms in respect of repayment with interest. A loan may be simple, fixed payment, coupon bond and discount bond. These loans are also offered to the agricultural sectors which are used for agricultural activities.

Ogboru (2010) opined that, the roles of profitability and liquidity are fulfilled by the commercial banks by lending with interest but being liquid enough to pay depositors cash on demand. Access to these credit

facilities is very difficult for farmers due to the inability of formal financial institutions to make funds available to reach the farmers because of the nature of collateral security required by these formal institutions for loan disbursement (Ibitoye, Omojola, Omojeso and Shaibu, 2015).

From the concepts of commercial bank loans stated, that of John and Terhemba (2016) is adopted in this paper as it best suits the study.

– **Concept of Government Expenditure**

Government expenditure can be defined as expenses incurred in the public sector and these expenses are incurred at the Federal, State and Local levels. Ogboru (2010) went on to assert that, Government expenditure includes all government purchases of goods and services and transfers (including provision of services i.e. security and defence). The two broad types of government expenditures are the recurrent and capital expenditures. Recurrent expenditures are payments for consumptions that are incurred yearly which are non-refundable. They include wages and salaries, purchases of goods and services, and current grants and subsidies especially to the productive sectors like the agricultural sector. Capital expenditures are primarily expenditures on the creation of fixed assets and the acquisition of land, buildings and other assets which are expected to improve the long-term productive capacity of the economy. The CBN (2011), classified federal government expenditure in Nigeria into expenditures in government functions such as administration, social and community services, economic services and transfers. Expenditures on economic services include those on agriculture, construction, transport and communication and other economic services.

Udoka, Mbat and Duke (2016) opined that the government apart from the expenditures on agriculture should ensure that the financial sector carry out policies that will guarantee available credit to this

preferred sector. This credit should be directed at all farmers irrespective of their sizes. From the concepts of government expenditure highlighted that of CBN (2011) is adopted in this paper as it best suits the study.

– **Concept of Agricultural Credit**

Agricultural credit can be defined as the mobilization of resources at all levels in order to increase production and productivity in agriculture and to enhance the productive capacity. Credit is the back bone for any business and more so for agriculture which requires funds for production and commercialization. Chandela and Swarupb (2015) added that credit is a sub-component of the total investment made in agriculture. The investment comes from a basket of sources ranging from non-monetized investments such as the farmer's labor, saved seeds, use of local resources for pest control and fertilizers; and monetized investment that includes both the savings of the agriculturist and borrowings. Borrowings could in fact be from multiple sources in the formal and informal space.

Credit to Agriculture in an emerging world could have positive effects on the growth of Gross Domestic Products, which translates to the entire economy's wellbeing/ Agricultural credit/finance brings about growth and it solves the problems militating against the agricultural sector's productivity/ It plays the role of an effective engine for growth for most agriculture-based countries (ADB, 2000)

Agricultural credit according to Adebayo and Adeola (2008) is any of the several credit vehicle used to finance agricultural transaction, including loans, notes, bills of exchange and bankers acceptances. These types of financing are adapted to the specific financial needs of farmers, which are determined by planting, harvesting and marketing cycles. Short term credit and intermediate term credit are used for obtaining

farm inputs, such as fertilizer, improved seeds, breeding livestock and farm machinery, while long term credit is used for real -estate financing.

The farmers require credit for production purposes; Credit is required for the payment of wages, procurement of inputs, like fertilizers, herbicides and improved seeds; Credit is needed for marketing of produce like transportation, storage, processing and other marketing related functions (Oladele & Ward, 2016). Abedullah, Mahmood, and Kouser (2009) stressed out the fact that agriculture as a sector depends more on credit than any other sector of the economy because of the seasonal variations in the farmer's returns and a changing trend from subsistence to commercial farming. Storage equipments and technology that are used to preserve agricultural food crops are also necessary materials that require a lot of capital that can be greatly alleviated in the rural areas most especially by agricultural credit. From the concepts of agricultural credit reviewed, this paper adopts the concept of Adebayo and Adeola (2008) which best suits the study.

THEORETICAL FRAMEWORK

– Growth Stage Theories and Agricultural Development Policy

According to Venon W. Ruttan in the 1 960's, the Rostow's growth model can be used to describe the stages of growth that also occur in the Agricultural sector. The three stages of growth include the static, traditional and dynamic and for these growth stages to occur, programmes and policies are required. The theory emphasized mechanization, biological innovations and use of labour as imperatives for this transition from one stage to another. He went on to stress the prime place of public investments in education, research and extension, institutional improvements in tenure, credit and market reforms as key to building the agricultural sector as opposed to mostly capital intensive

public infrastructural investments in communication, building of roads and dams.

– **Classical Theory of Agricultural Growth and Development**

Classical theorists led by Arthur Levis' in 1950s in Ruttan (2000) as cited in Ayeomoni and Aladejana (2016), viewed economic development as a growth process of relocating factors of production, especially labour from an agricultural sector characterized by low productivity and the use of traditional technology to a modern industrial sector with higher productivity. The continuation of agriculture to development was passive and such that agriculture acted more as a source of food and labour than a source of growth. Although passive, agricultural development was seen as necessary for successful economic transformation for two reasons:

i. To ensure the supply of food and prevent rising food prices and real wages from undermining industrial development and

ii. To utilize land as an additional "free" source of growth that would not compete with resources for industrial growth. The contribution of agriculture to aggregate economic growth could be modeled via its effects on total factor productivity or as an intermediate input in the industrial production sector.

– **Lewis Theory of Agricultural Development (Dual Sector Model)**

Initially the dual-sector model as given by W. A. Lewis was enumerated in his article entitled "Economic Development with Unlimited Supplies of Labor" written in 1954, the model itself was named in Lewis's honor. First published in *The Manchester School* in May 1954, the article and the subsequent model were instrumental in laying the foundation for the field of developmental economics. The model assumes that a developing economy has a surplus of unproductive labor in the

agricultural sector. The subsistence sector in this model was defined by him as "that part of the economy which is not using reproducible capital". It can also be adjusted as the indigenous traditional sector or the "self-employed sector". The per-head output is comparatively lower in this sector and this is because it is not fructified with capital. The "Dual Sector Model" is a theory of development in which surplus labor from traditional agricultural sector is transferred to the modern industrial sector whose growth over time absorbs the surplus labor, promotes industrialization and stimulates sustained development. In the model, the subsistence agricultural sector is typically characterized by low wages, an abundance of labour, and low productivity through a labour-intensive production process.

– **Structuralist Hypothesis**

This hypothesis is also known as the Ger-Schenkon hypothesis as cited in Imoisi, Sogules and Itoro (2012), is derived from historical interpretations of the role of Banks in capital formation process of early European industrialization. The banking system was first linked explicitly to development in a functional sense by the modern economist, Schumpeter. The role of the banking system is paramount to the development of an economy. The Agricultural sector can benefit from the functioning of these banks through the credit and loans offered by the banks and farmers who borrow are given specified time periods to pay back with interest.

– **Keynesian Theory of Government Expenditure**

The role of government expenditure was viewed by Keynes as essential for the increase in demand through the multiplier effect. For fiscal policy, increases in government spending are expansionary, while decreases are contractionary. According to Keynesian economics, increased government spending, raises aggregate demand and increases

consumption, which leads to increased production and faster recovery from recessions. The government can therefore, channel these resources on productive sectors of the economy like the agricultural and manufacturing sectors. The Nigerian government can adopt this method suggested by Keynes by increasing the budgetary allocation accrued to the Agricultural sector or make use of other channels through which funds can be channeled to the Agricultural sector like Agricultural schemes and programmesand when these resources are channeled effectively, there will be an increase in production in the Agricultural sector.

The Structuralist Hypothesis and Keynesian theory of Government Expenditure have been adopted for this study.

EMPIRICAL REVIEW

Chisasa and Makina (2013) empirically examined the impact of bank credit on agricultural output in South Africa using the Cobb-Douglas production function. Time series data of agricultural output, bank credit, capital accumulation, labour and rainfall from 1970 – 2009 was used. With agricultural output as the dependent variable, an OLS estimate of the Cobb-Douglas production function was determined. They observed that bank credit has a positive and significant impact on agricultural output in South Africa. With other factors of production kept constant, a 1% increase in credit results in 0.6% increase in agricultural output.

Thakur (2016) empirically examined the logical relationship between Agriculture Production and Government Expenditure in Nepal. The empirical research applied Cochrane-Orcutt auto-regressive model from panel data for the period 1983/84 to 2013/14. In this regard, the empirical evidence confirms that the expenditure in agriculture sector is the cause of economic growth in Nepal.

Obasi (2015) evaluated the performance of agricultural lending schemes in Nigeria for the period 2009 - 2012. The study was carried out in Benue, Kwara, Kaduna, Abia, Anambra, Rivers, and Ogun states respectively. The method of proportionate random sampling technique was used in selecting 185 borrowers who are registered wi th their state Agricultural Development Programmes (ADP's)/ The sampling frame comprised all the registered ADP farmers in the surveyed states who took bank loans. Data collected were analyzed using frequencies, percentages, means, and multiple linear regression analysis. Results of the analysis showed that during the period 2009 - 2012, a total of 27,987 farmers applied for bank loan in Nigeria totaling ₦13,704,965,000.00, while 21,490 farmers were granted loan facility during the same period which totaled ₦7,188,575,000.00 leaving a credit supply gap of ₦6,516,390,000.00. The total amount of loan repaid by borrowers during the same period was ₦3, 523,018,005.00 which gave a repayment rate of 49% and a default rate of 51%. The loans granted to borrowers inc reased national output by 20.33%, and impacted positively on the income of borrowers.

From the reviewed empirical literature, scholars essentially analyzed the relationship between individual variables. This study bridged the gaps identified in the previous studies mentioned above in analyzing the comparative impacts of Commercial Banks' Loan, Federal Government Recurrent Expenditure and Agricultural Credit Guarantee Scheme Fund (ACGSF) on Agricultural Output. This was done empirically by employing the Two-stage Least Squares Method with four model specifications that measured both the individual and corporate impacts of the three variables on Agricultural Output. Thus, the difference between this paper and those of existing authors lie in both its incorporation of all four variables in the model as well as analyzed the individual variables to verify the individual variables' contribution to

Agricultural Output and then pooling the four variables together to ascertain their over-all impact in terms of contribution to Agricultural Output in Nigeria. The choice of variables, model specifications and the span of time covered also made this study distinct from the other studies.

METHODOLOGY

– Model Specification

The comparative study of Commercial/Banks' Loans and Government Expenditure on Agricultural Output in Nigeria was done using Agricultural contribution to Gross Domestic Product (AGDP) as the dependent variable while Commercial Banks' Loans/Credit to the Agricultural Sector (CBLA), Federal Government Rec urrent Expenditure on Agriculture (FGRE) and Agricultural Credit Guarantee Scheme Fund (ACGSF) are the independent variables. Four models were developed to examine the impact among the variables and the model to be estimated can be functionally stated as:

$AGDP_t = \beta_0 + \beta_1 CBLA_t + \beta_2 FGRE_t + \beta_3 ACGSF_t$ ..... (1)

$AGDP_t = \beta_0 + \beta_1 CBLA_t + \beta_2 FGRE_t$ ..... (2)

$AGDP_t = \beta_0 + \beta_1 FGRE_t + \beta_2 ACGSF_t$ ..... (3)

$AGDP_t = \beta_0 + \beta_1 CBLA_t + \beta_2 ACGSF_t$ ..... (4)

Where,

$AGDP_t$ = Agricultural contribution to gross domestic product (dependent variable)

$CBLA_t$ = Commercial Banks' Loans/Credit to the Agricultural Sector in period t.

$FGRE_t$ = Federal Government Recurrent Expenditure on Agriculture in period t.

$ACGSF_t$ = Agricultural Credit Guarantee Scheme Fund to the Agricultural Sector in period t.

t = The time period chosen for the study from 1981-2016.

β_0 = Constant or Intercept

β_1, β_2, and β_3 = Coefficients of the independent variables

The *a priori* expectation of Commercial Banks' Credit (Loans) to the Agricultural Sector (CBLA), Federal Government Recurrent Expenditure on Agriculture (FGRE) and Agricultural Credit Guarantee Scheme Fund (ACGSF) on Agricultural output are expected to be positive. This is because when commercial banks give out loans to the farmers, and the government spends more on agriculture, productivity in the agricultural sector is expected to increase and also when the ACGSF guarantee loans, it reduces the risks of commercial banks in agricultural sector lending therefore making credit available to farmers.

This therefore implies that AGDP (Agricultural Contribution to Gross Domestic Product) is an increasing function of Commercial Banks' Loans to the Agricultural Sector, Federal Government Recurrent Expenditure on Agriculture and Agricultural Credit Guarantee Scheme Fund.

ANALYSIS, RESULTS/FINDINGS AND DISCUSSION

As shown in appendix A, The Variance Inflation Factor (VIF) for the predictors was used to test if there is a strong linear relationship among the independent variables. The result showed that there is no multicollinearity among the independent variables because the uncentered VIF is greater than the centered VIF. In appendix B, the p-value is greater than 0.05 so we accept H_0 and reject H_1 that there is no serial correlation in the model. In appendix C, the p value is greater than

0.05 so we accept H_0 and reject H_1which states that there is no heteroscedasticity in the model.

– **Analyzing the first model**

$AGDP_t = \beta_0 + \beta_1 CBLA_t + \beta_2 FGRE_t + \beta_3 ACGSF_t$

Where;

AGDP = Agricultural contribution to gross domestic product

CBLA = Commercial Banks' Loans/Credit to the Agricultural Sector

FGRE = Federal Government Recurrent Expenditure

ACGSF = Agricultural Credit Guarantee Scheme Fund

Table 1: Two -stage Least squares results

Dependent Variable: AGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
	30.83301	16.83780	1.831178	0.0767
FGRE				
CBLA	0.611782	0.566471	1.079989	0.2885
ACGSF	0.000904	9.39E-05	9.624942	0.0000
C	3557.043	266.8464	13.32993	0.0000

R-squared	0.935053	Mean dependent var	6886.370
Adjusted R-squared	0.928768	S.D. dependent var	4523.136
S.E. of regression	1207.193	Sum squared resid	45176739
F-statistic	148.7716	Durbin-Watson stat	1.180319
Prob(F-statistic)	0.000000	Second-Stage SSR	45176739
J-statistic	4.84E-44	Instrument rank	4

Source: Authors' computation using E-Views 9

From the result in Table 1, the independent variables; CBLA, FGRE and ACGSF were positively related to the dependent variable – AGDP. This implies that a 1% change in the independent variables, will lead to an increase in the dependent variable. That is, when there is an increase

in CBLA, FGRE and ACGSF, there will also be an increase in AGDP. The higher the CBLA, FGRE and ACGSF, the higher the AGDP. For instance, from the table 1 above, a 1% change in FGRE, will lead to a 30.83 increase in AGDP. On an aver age, for instance, Nigerians consume rice on a regular basis and in the year 2017, the Federal Government of Nigeria has focused on the production of rice, prioritizing the fight against the smuggling of agricultural commodities including rice. Agricultural promotion policies helped to improve the volume of production capacity of farmers as well as improved the quality of production and prevent Nigeria from being a dumping site for imported rice. There are 21 integrated rice mills in Nigeria currently producing 1.22 million metric tonnes yearly across rice-processing states like Kano, Enugu, Nasarawa, Kogi, Kebbi and many others. Even though the consumption rate is now 7.9 million tonnes, rice production has increased from 5.5 million tonnes in 2015 to 5.8 million tonnes in 2017 and is still increasing. This has in turn also added to the GDP of Nigeria and reduced the importation of rice.

The coefficient of multiple determination (R^2) was used to support the findings of the paper. It tests the strength of relationship between the variables and as shown in Table 1; R^2= 0.94which indicates a strong significant relationship exist between Agricultural output and Agricultural loans or credit to the Agricultural sector. This represents an increase in the value of Agricultural output that is attributable to increased loans and credit from Banks, the Federal government and Schemes or programmes.

In Table 1, the Durbin-Watson statistic is equal to 1.18 which is close to 1.5 and means the absence of autocorrelation in the overall model. This means that there are no correlations between error terms from one period to another.

– **Analyzing the second model**

$AGDP_t = \beta_0 + \beta_1 CBLA_t + \beta 2\ FGRE_t$

Table 2; Two -Stage Least Squares results

Dependent Variable: AGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FGRE	149.0406	26.12835	5.704172	0.0000
CBLA	3.778940	0.972382	3.886270	0.0005
C	4196.975	537.7739	7.804348	0.0000
R-squared	0.732069	Mean dependent var		7156.396
Adjusted R-squared	0.715830	S.D. dependent var		4743.326
S.E. of regression	2528.552	Sum squared resid		2.11E+08
F-statistic	45.08293	Durbin-Watson stat		1.092586
Prob(F-statistic)	0.000000	Second-Stage SSR		2.11E+08
J-statistic	0.000000	Instrument rank		3

Source: Authors' computation using E-Views 9

Where:

AGDP = Agricultural contribution to gross domestic product

CBLA = Commercial Banks' Loans/Credit to the Agricultural Sector

FGRE = Federal Government Recurrent Expenditure

This model tested the level of growth of the Agricultural Sector if CBLA and FGRE are the only variables responsible for its growth. In this model, the dependent variable is the AGDP and the independent

variables are the CBLA and FGRE which are statistically significant at 5% level of significance as shown in Table 2. This means that the level of growth experienced by the Agricultural Sector can be attributed to the volume of loans given by the Commercial Banks and the amount of funds allocated to the sector by the Federal Government. The independent variables are also positively related to the dependent variable and this means that the higher the CBLA (3.779) and FGRE (149.04), the higher the AGDP.

The Coefficient of multiple determination (R^2) was 0.73 which indicates that a positive relationship exist between the variables implying that FGRE and CBLA have impacted positively on AGDP but is lower than the R^2 of 0.93 in the first model. Also, the Durbin-watson statistic of 1.09 is lower than the 1.5. This implies the presence of serial correlation in the model and also that this second model does not explain effectively the overall development of the Agricultural Sector in Nigeria.

– **Analyzing the third model;**

$AGDP_t = \beta_0 + \beta_1 FGRE_t + \beta 2\ ACGSF_t$

Table 3; Two -Stage Least Squares results

Dependent Variable: AGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FGRE	34.24363	19.35666	1.769088	0.0861
ACGSF	0.000994	8.89E-05	11.17162	0.0000
C	3731.399	300.5842	12.41383	0.0000
R-squared	0.918328	Mean dependent var		7156.396
Adjusted R-squared	0.913378	S.D. dependent var		4743.326
S.E. of regression	1396.040	Sum squared resid		64314648
F-statistic	185.5264	Durbin-Watson stat		0.961019
Prob (F-statistic)	0.000000	Second-Stage SSR		64314648
J-statistic	0.000000	Instrument rank		3

Source: Authors' computation using E-Views 9

The third model has AGDP as the dependent variable while FGRE and ACGSF are the independent variables. This model tested the level of growth of the Agricultural Sector where FGRE and ACGSF are the only variables responsible for its growth. This model has an R^2 of 0.92 and positive coefficients of FGRE (34.2) and ACGSF (0.00099) which shows a positive relationship between AGDP and the independent variables; FGRE and ACGSF. This mean s an increase in ACGSF and FGRE will lead to an increase in AGDP though, the FGRE showed no significant impact on agricultural development because the P-Statistic of 0.086 is greater than 0.05. The low Durbin-Watson of 0.961 indicates that autocorrelation exist in the model. This makes the first model (which incorporates all the variables) more accurate for the explanation of the growth that occurs in the Agricultural Sector.

– **Analyzing the fourth model**

$AGDP_t = \beta_0 + \beta_1 CBLA_t + \beta 2\ ACGSF_t$

Table 4; Two -Stage Least Squares results

Dependent Variable: AGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CBLA	0.402636	0.679003	0.592982	0.5572
ACGSF	0.001078	8.38E-05	12.86345	0.0000
C	3897.599	301.9319	12.90887	0.0000
R-squared	0.911525	Mean dependent var		7156.396
Adjusted R-squared	0.906162	S.D. dependent var		4743.326
S.E. of regression	1453.020	Sum squared resid		69671777
F-statistic	169.9924	Durbin-Watson stat		0.857843
Prob(F-statistic)	0.000000	Second-Stage SSR		69671777
J-statistic	2.23E-44	Instrument rank		3

Source: Authors' computation using E-Views 9

This model further tested the level of growth of the Agricultural Sector to verify if CBLA and ACGSF are the only variables responsible for its growth. CBLA with a coefficient of 0.4026 is positively related to AGDP but not significant at 5% level. ACGSF with a coefficient of 0.001078 is positively related to the dependent variable and is significant at 5% level of significance. This means that the funds from the Agricultural Credit Guarantee Scheme yielded a positive and significant impact on the development of the Agricultural sector of Nigeria. R^2 =0.91 is significant but the Durbin-Watson statistic of 0.85 is low and is lower than 1.5. This makes the first model still more preferable for the analysis of the Agricultural Sector of Nigeria.

For the first model that yielded the best results, the following are the test for hypothesis 1, 2 and 3.

TEST OF HYPOTHESIS ONE

H_0. Commercial banks' loans to the agricultural sector have no significant impact on agricultural output in Nigeria.

H_1: Commercial banks' loans to agricultural sector have significant impact on agricultural output in Nigeria.

The decision rule states that if the p-value is less than 0.05, the null hypothesis will be rejected while the alternate hypothesis will be accepted and if the p-value is greater than the 0.05 level of significance, the null hypothesis will be accepted and the alternate hypothesis rejected. From Table 1, the p-value of CBLA is 0.2885 which is greater than the 0.05 level of significance so we accept the null hypothesis that states that commercial bank's loans to the agricultural sector have no significant impact on agricultural output in Nigeria within the period of study. This means that the amount of loans given by Commercial Banks to the Agricultural Sector though on the increase, has not been sufficient to yield the needed impact for agricultural development in Nigeria and so

the transmission mechanism of these loans needs to be checked to ensure the targeted farmers gain access to these loans.

HYPOTHESIS TWO

H_0: Agricultural Credit Guarantee Scheme loans (ACGS) have no significant effect on agricultural output in Nigeria

H_1: Agricultural Credit Guarantee Scheme loans (ACGS) have significant effect on agricultural output in Nigeria

From Table 1, the p-value of ACGSF is 0.0002 and since the p-value is less than the 0.05 level of significance, the null hypothesis is rejected and the alternate accepted. This means that within the study period, Agricultural Credit Guarantee Scheme Loans have significant effect on agricultural output in Nigeria and has yielded its required level of impact for agricultural development in Nigeria. The amount allocated for the Agricultural Credit Guarantee Scheme Fund (ACGSF) in the year 2006 for instance was ₦4billion but only ₦361 million was given out as loans to individual farmers, corporate societies, informal groups and corporate bodies leaving the rest of the funds, unaccounted. Individual farmers collected 89.7% of the ₦361.4 million that was given out as loans and this generated a significant effect on agricultural output in Nigeria and has yielded its required level of impact for agricultural development in Nigeria.

HYPOTHESIS THREE

H_0: Federal government recurrent expenditure (FGRE) on agriculture has no significant effect on agricultural output in Nigeria.

H_1: Federal government recurrent expenditure (FGRE) on agriculture has significant effect on agricultural output in Nigeria.

Federal Government Expenditure to the Agricultural Sector is not only essential but the need for these expenditures to be consistent and timely

cannot be overemphasized. Leadership change every four years with different focuses and plans for the Agricultural Sector has inhibited the growth of the sector. The p-value of FGRE from Table 1 is 0.0767 which is greater than 0.05 so we accept the null hypothesis and reject the alternate hypothesis. This implies that within the period of study, Federal Government Recurrent Expenditure on agricultural output has no significant effect on agricultural output in Nigeria. This means that the funds allocated to the Agricultural Sector by government have not been enough to generate the level of growth required for its development.

This can be further appreciated when for instance, in January 2018, the Federal Government disbursed ₦11,121,030.260 billion to 1500 beneficiaries of the YouWiN programme who started and expanded their businesses across a variety of sectors including Agricultural production and processing, manufacturing, information and communication technology (ICT) and livestock farming. Though, the disbursement helped 1500 beneficiaries but it was insignificant considering the fact that 61,000 people applied for the scheme (Vanguard, January 16th 2018).

A COMPARATIVE ANALYSIS OF THE FOUR MODELS

The first model which incorporated all four variables measured the impact of the independent variables; Commercial Banks' Loans/Credit to the Agricultural Sector (CBLA), Federal Government Recurrent Expenditure on Agriculture (FGRE) and Agricultural Credit Guarantee Scheme Fund (ACGSF) on the dependent variable; Agricultural contribution to Gross Domestic Product (AGDP). The independent variables were all positively related to the dependent variable and had the highest R^2 value of 93% and also the Breusch-Godfrey Serial Correlation LM test showed the absence of serial correlation in this model as the p-value of 0.89 was greater than 0.05.

The second model measured the impact of two independent variables- Commercial Banks' Loans/Credit to the Agricultural Sector (CBLA) and Federal Government Recurrent Expenditure on Agriculture (FGRE) on the dependent variable; Agricultural contribution to Gross Domestic Product (AGDP). The independent variables were positively related but had an R^2=73% which is lower than the first model and also had a Durbin-Watson statistic of 1.092 which indicated the presence of serial correlation in the model.

The third model measured the impact of two independent variables; Federal Government Recurrent Expenditure on Agriculture (FGRE) and Agricultural Credit Guarantee Scheme Fund (ACGSF) on the dependent variable - Agricultural contribution to Gross Domestic Product (AGDP). The independent variables were positively related to the dependent variables and had an $R^2$of 91% which is lower than the first model and also had a Durbin-Watson statistic of 0.96 which indicated the presence of serial correlation in the model.

Finally, the fourth model measured the impact of two independent variables- Commercial Banks' Loans/Credit to the Agricultural Sector (CBLA) and Agricultural Credit Guarantee Scheme Fund (ACGSF) on the dependent variable; Agricultural contribution to Gross Domestic Product (AGDP). The independent variables were positively related to the dependent variables and had an $R^2$of 91% which is lower than the first model and also had a Durbin-Watson statistic of 0.86 which indicated the presence of serial correlation in the model.

From the four models analyzed and discussed above, the best result realized from the first model, which incorporated the three variables (FGRE, AGCSF and CBLA) on Agricultural contribution to gross domestic product (AGDP). The three variables should therefore be sustained as opposed to insinuations from certain quarters (the public as

well as some government organs) that one or two of these sources of loanable funds/credit to farmers should be abrogated as they all constitute a duplication of functions.

CONCLUSION AND POLICY RECOMMENDATIONS

Nigeria was celebrated for her robust agrarian economy by which, cash crops like; palm produce (oil and Kernel), cocoa, rubber, timber, groundnut e.t.c were exported, thus making Nigeria a major exporter in that respect. The revenue generated from these exports and agricultural activities helped enormously to develop the infrastructural resources of the economy like provision of educational and health structures, roads, water and so on/ In the 1960's, 70% of the labour force originated from the agricultural sector and the 140 million people were provided with the basic food requirements. This is no longer the case because the population of Nigeria has since been on an increase and the Agricultural Sector has been unable to cater for the food and raw material requirements of the population without resorting to importation of even items that can be produced in the country. The regression results demonstrated that Government Expenditure and Commercial Banks' Loans to the Agricultural Sector both have positive but insignificant impact on Agricultural contribution to the Gross Domestic Product of Nigeria. The positive impact agrees with *apriori* expectation but the insignificant effect can be linked to the challenges that Nigeria faces both morally and financially in that, even when funds are provided by the government or loans issued, leaders embezzle these funds on the one hand and on the other hand, farmers refuse to use these loans for the purpose it was given. This deterred the efforts of the commercial banks and the government and affected the growth of the agricultural sector in Nigeria.

The Agricultural Credit Guarantee Scheme Fund had a positive and significant effect on the Agricultural Sector of Nigeria despite the challenge of embezzlement. This served as evidence to the Nigerian Government that a Scheme can achieve the estimated effect if things are done properly and people are made to be accountable for their actions

Based on the findings of this study, the following are the recommendations;

1. As a result of the positive but insignificant effect of the Federal Government Recurrent Expenditure on Agriculture, government should embark on achievable and realistic objectives in order to channel resources in a concerted manner so as to engage in more farming activities for example, see to the cultivation of tubers and grains, rearing of animals, exporting of raw materials and finished products, training of farmers, making available required technologies for industries and so on. This can be achieved by the ministry of Agriculture embarking on evaluation and monitoring of beneficiary farmers to ensure their compliance to set objectives.

2. As a result of the positive and significant effect of the Agricultural Credit Guarantee Scheme on the Agricultural Sector, the sch eme should be sustained and enhanced. A strong and diligent monitoring team made up of honest, experienced and learned individuals should be established. Funds should also be made easily available by simplifying operational procedures and conditions to reduce the cost and the bureaucracy involved in accessing the loans.

3. Commercial Banks' Loans to the Agricultural sector gave a positive but insignificant result so the commercial banks should be supported by the Central Bank and the Government by being

stakeholders or contributors to loans or aid these commercial banks issue out credit from time to time.

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APPENDIX

A. Multicollinearity Test Results

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	75414.47	11.51254	NA
CBLA	0.052383	2.371842	2.006403
FGRE	49.42822	4.286578	2.588198
ACGSF	5.53E-09	21.49961	13.75972
REALAGDP(-1)	0.005075	52.13681	15.39726

Source. Author's computation using E-Views 9

B. Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.114239	Prob. F(2,28)	0.8925
Obs*R-squared	0.283286	Prob. Chi-Square(2)	0.8679

Source. Author's computation using E-Views 9

C. Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.056256	Prob. F(4,30)	0.9938
Obs*R-squared	0.260573	Prob. Chi-Square(4)	0.9922
Scaled explained SS	2.448410	Prob. Chi-Square(4)	0.6539

Source: Authors' computation using E-Views 9

IMPACT OF FOREIGN DIRECT INVESTMENT ON THE MANUFACTURING SECTOR IN NIGERIA

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Abstract

The study analysed the impact of Foreign Direct Investment (FDI) on the Manufacturing Sector in Nigeria since literature is yet to come to an agreement on the impact of FDI on elements of economic development. Even though significant work has been carried out on the role of FDI in economic development in Nigeria, much empirical research has not been done specifically on how FDI affects the manufacturing sector. The methodology and research approach identified Manufacturing Value Added (MVA) as the dependent variable; while FDI, GDP and Domestic Investment are the independent variables. The paper employed Ordinary Least Square to determine the nature of relationship among the variables. The result of unit root test using the Augmented Dickey Fuller (ADF) shows that the variables were found to be non-stationary at level but stationary at difference orders of integration, while Johansen's Cointegration Test revealed that the variables are cointegrated, implying that they have longrun relationship. The analysis revealed that a percentage increase in FDI will lead to 0.37 percentage decrease in MVA, while a percentage increase in GDP on average will lead to 0.93 percentage increase in MVA showing that FDI has a significant negative impact on manufacturing output in Nigeria, while GDP has direct and significant impact on the Nigerian manufacturing sector. Finally, a percentage increase in Domestic Investment will lead to 0.17 percentage decrease in MVA, Domestic investment has negative and insignificant impact on manufacturing sector in Nigeria. The paper recommends that government should ensure channelling FDI into priority areas and maintain proper evaluation and monitoring of FDI to prevent observed abuse and unwholesome practices and create enabling environment through massive provision of infrastructural amenities that will enhance productive capacity of manufacturing sector in Nigeria.

Key Words: *FDI, Manufacturing Sector, Manufacturing Value Added, Nigeria*

INTRODUCTION

As the world economy continues to experience increased globalisation, Foreign Direct Investment (FDI) becomes increasingly prominent as a form of international economic transaction. In broad terms, FDI refers to the cross-border investment by a resident entity in one economy with the objective of obtaining a lasting interest in an enterprise resident in another economy (OECD, 2008). Over the years, it has been argued that Foreign Direct Investment remains a veritable means of attracting capital and technical know-how to improve manufacturing capability in developing countries.

FDI is a key element in international economic integration as it creates direct, stable and long-lasting links between economies (Ezenwakwelu, 2015). It encourages the transfer of technology and know-how between countries and allows the host economy to promote its products more widely in international markets. Given the expected role of FDI in enhancing socioeconomic transformation, countries, especially developing countries, are generally interested in attracting it.

However, there are counter -arguments that seek to situate the FDI phenomenon within the context of the global socio-political-economic order. This school of thought argues that since most FDIs originate from the developed economies, the recipient developing countries are exposed to the possible risk of exploitation, capital flight, adopting unsuitable and obsolete technology and unwholesome trade practices (Lautiera & Moreau, 2012; Manyuchi, 2017).

Most developing countries are therefore taking steps to improve their scores on the principal factors influencing the location of choices of foreign direct investors. Nigeria appears not to be an exception in this endeavour as there seems to be substantial evidence that suggests the presence of FDIs in the Nigerian economy and some other developing

African countries (Akinlo, 2004; Awolusi, 2012; Egwaikhide, 2012 & Markusen & Venables, 2005).

The interest of this paper in studying the impact of FDI on the manufacturing sector in Nigeria stems from the need to ascertain the level of its importance as a means of moving Nigeria forward towards global competitiveness and enhanced economic development.

It is generally accepted that manufacturing productivity in Nigeria is low due to several factors. The study seeks to analyse how much FDI inflows were actually attracted to Nigeria during the study period and their impact on the Nigerian manufacturing sector. Research activities on the relationship between FDI and the manufacturing sector in Nigeria appear to be rather low. While some of the available studies concentrated on FDI as a growth inducing phenomenon, a few others dwelt on its impact on total factor productivity, resource allocation, impact on indigenous productivity and distorting local consumption patterns.

Manufacturing productivity in a developing country like Nigeria is an under researched topic. This may be due in part to the lack of comprehensive comparable data suitable for analysis. Thus, the linkage between foreign direct investments (FDI) and manufacturing productivity in Nigeria is still unclear. It is on these bases that this research sets out to examine the impact of FDI on the manufacturing sector of the Nigerian economy. This paper intends to focus specifically on the impact of FDI on the manufacturing sector in Nigeria for the period 1981 to 2015. This 35-year period is considered adequate to reach credible conclusions in our study.

Following this introductory section, the study proceeds with section two where attention will focus on the literature review under the following three segments; conceptual review, theoretical and empirical

review. Section three considered research methodology designed for this study. In section four, data were presented, analysed and res ults was discussed while the concluding section five contains the conclusion and recommendations.

LITERATURE REVIEW

CONCEPTUAL REVIEW

– Foreign Direct Investment

In terms of conceptual review of Foreign Direct Investment (FDI), Ogunkola and Jerome (2006, cited in Ozughalu & Ogwumike (2013) have observed that there are a number of conceptualisations in the literature concerning FDI. Foreign direct investment usually takes place when another business organisation in one country obtains all or much of the share capital of a business organisation in another country, often through merger and acquisition. In corporate governance, it may be said that ownership of at least 10% of the ordinary shares or voting stock is a major criterion for the existence of direct investment relationship; ownership of less than 10% of the ordinary shares or voting stock is regarded as portfolio investment (Ayanwale, 2007, cited in Ozughalu and Ogwumike, 2013).

FDI refers to investment by multinational companies, with headquarters in developed countries in other countries (Thirlwall, 1994, cited in Okaro, 2016). This investment involves not only a transfer of funds (including the reinvestment of profits), but also a complete package of physical capital, production techniques, managerial and marketing expertise, products advertising and business practices for the maximisation of global profits. It is believed that there are positive benefits associated with FDI and this has led many countries that were restricting FDI in the 1960s, 1970s and 1980s to be more open towards FDI in the 1990s and beyond (Safarian, 2009, cited in Okaro, 2016). FDI

refers to investment made to acquire lasting management interest (usually at least 10% of the voting stock) and acquiring at least 10% of equity share in an enterprise operating in a country other than the home country of the investor (Anowor, Ukweni, Ibiam & Ezekwem, 2013).

In terms of types of FDI, Okafor (2012) & Anyanwu, Aiyedogbon & Ohwofasa (2015) opine that generally, there are two categories of foreign direct investments; namely official (public) and private foreign direct investments. Official foreign direct investments are undertaken at the bilateral and multilateral levels. The former refers to investment arrangements between two countries by means of direct government to government transfers, while the latter relates to investments originating from such international organisations such as the IMF and the World Bank to government and private enterprises.

Okaro (2016) regarded FDI as investment in enterprises to attain permanent management interest (usually 10% of voting stock or ordinary shares) in an enterprise in another country other than that of the investor residency; such investment may take the form of either "green field" investment (also called "mortar and brick" investment) or merger and acquisition which entails the acquisition of existing interest rather than new investment.

– Manufacturing Sector

The manufacturing sector of an economy is usually categorised under Industry. Industry can be said to be "a particular way of organizing production and assumes there is a constant process of technical and social change which continually increases society's capacity to produce a wide range of goods" (Hewitt et al/1992a.6, cited in !dejumo, 20 13).

The manufacturing sector is key in the process of industrialisation because of its multi-dimensional benefits to the development process. Some scholars refer to industrialisation in terms of an increase in the

share of the Gross Domestic Product contributed by the manufacturing sector (Chandra, 1992, cited in Adejumo 2013). The United Nations Industrial Development Organisation (UNIDO) developed a Competitive Industrial Development Index. In doing this, UNIDO defined the components of the index in terms of the attributes of a nation's manufacturing sector (UNIDO, 2009). Hence, the industrial development report identified Manufacturing Value Added (MVA) as one of the measurements of industrial performance.

THEORETICAL REVIEW

Most of the early literatures on FDI were based on classical assumptions as summarised by Orji, Anthony-Orji, Nchege and Okafor (2015). Classical theory assumption is based on perfect competitive markets, perfect knowledge and certainty. Classical trade theory and classical theory of foreign investment emphasises that cost of production is preeminent to international competitiveness. Low cost factors or natural resources are one of the more important factors.

Modern growth theory rests on the view that economic growth is the result of capital accumulation which leads to investment (Okaro, 2016). Given the overriding importance of an enabling environment for investment to thrive, it is important to examine necessary conditions that facilitate FDI inflow. These are classified into econ omic, political, social and legal factors. The economic factors include infrastructural facilities, favourable fiscal, monetary, trade and exchange rate policies. The degree of openness of the domestic economy, tariff policy, and credit provision by a country's banking system, indigenization policy, the economy's growth potentials, market size and macroeconomic stability.

The path of both foreign direct investment and private capital inflows is explained by two types of theory namely; push and pull factors

theories (Oyejide, 2005, cited in Anyanwu, et al. 2015). The push factor theorise that the surge of foreign direct investment is contingent on the increasing tax burden of multinational corporations in their home countries and due in part to domestic developments such as sound policies and strong economic performance for private portfolio investments. On the other hand, the pull factor theory traces the cause of capital flows to domestic factors such as autonomous increase in the domestic money demand, increasing integration of domestic capital markets with the global capital markets, improvement in external credit relations, etc.

Most theoretical work on FDI by different authors appear to have been integrated by Dunning (1988, 1993; cited in Okoli and Agu, 2015) in his ground-breaking Eclectic Theory commonly referred to as the OLI Paradigm. This theory tries to explain and analyse the process of spillovers from multinationals to host country firms through industrial organisations. Accordingly, this has become the standard theoretical framework for studies on foreign subsidiaries of multinational corporations. This approach was adopted as the Theoretical Framework for this study.

Dunning's Eclectic Paradigm has been for long an effective framework for empirical investigation of determinants of foreign direct investment, though with some inherent weaknesses (Adejumo, 2013). The theory tries to explain FDI and the returns on it by bringing together a set of three factors. These are: the ownership advantages of firms 'O', that is the monopolistic advantage- locational advantage factors 'L' "which concentrates on where to produce" and by the internalization factor 'I' that addresses the question of why firms engage in FDI rather than license foreign firms to use their proprietary assets (Dunning, 1993, cited in Okoli and Agu, 2015); hence it is often called an OLI theory.

Adejumo (2013) recognised that each of these sub paradigms lays the foundation for spillovers in the host economy.

This means that it must be more efficient for the foreign investor to make use of the firm-specific technology within the multinational concern through a subsidiary, rather than licensing a foreign entity. This is because the desire to internalize certain firm specific advantages pre-supposes the presence of spillover possibilities. It follows that the technology embedded in a foreign subsidiary cannot be completely protected from trickling down to domestic firms. Hence, it is this competitive advantage of the foreign firm that produces the expected spillover benefits to local firms in terms of knowledge spillovers, technological spillovers, etc. Thus, the Eclectic Paradigm of FDI will serve as the Theoretical framework for this study.

EMPIRICAL REVIEW

A fairly large body of empirical literature that seeks to explain the impact of Foreign Direct Investment (FDI) on the Manufacturing Industry in Nigeria exists. These studies aim at establishing the desirability or otherwise of this international commercial or trade relationship. The outcomes of these studies are quite varied. While some believe that FDI contributes significantly to the development of manufacturing capability in Nigeria, others hold contrary opinions. Some of these studies are examined in some detail below.

Opaluwa, Ameh, Alabi and Abdul (2012), using Vector Auto Regression, Co-integration and Error Correction Techniques, studied the effect of Foreign Direct Investment (FDI) on the Nigerian manufacturing sector between 1975 and 2008. They discovered that FDI has negative effect on manufacturing productivity and this is statistically significant. They recommended that Government should create an enabling

environment for foreign investment and should also provide infrastructure to lower cost of doing business.

In the same vein, Adejumo (2013), in his Foreign Direct Investments and Manufacturing Sector Performance in Nigeria (1970-2009), used Auto Regressive Lag Distribution (ARLD) technique to examine the relationship between FDI and the value added to the manufacturing industry in Nigeria from 1970 to 2009. He used key variables like FDI and manufacturing Value-added, to discover that FDI Spillover has negative effects on manufacturing sub-sector in Nigeria in the long run. He further contended that FDIs acted as sales subsidiaries, rather than producing entities in Nigeria. He recommended that government efforts should be geared towards making FDI complement the production efforts of local capacity in terms of skills, technical know-how and wages. The study did not consider key variables like GDP which also affect the acticvities of manufacturing sector in Nigeria.

Eneji, Onyinye, Kennedy and Rong (2012) carried out a study of trade and investment between China and Nigeria with a focus on the textile industry. Using a Vector Reg ressive Model with Market Equilibrium identity, the researchers found out that Nigeria is a net loser in trading relationship with China. They recommended that technological transfer and diffusion should be an important component of our national Science Technology policy.

Anowor, et al. (2013) used Ordinary Least Squares (OLS) method and Time Series Analysis from 1970 to 2011 to explore whether any relationship exists between FDI and manufacturing output in Nigeria. Their study found out that FDI is statistically significant in explaining variations in manufacturing output. To actualise maximum benefit from FDIs, government should provide support for technological capabilities

of indigenous firms. Government should, in addition, institute favourable conditions for knowledge exchange.

In a research on Manufacturing Output and Foreign Direct Investment in Nigeria using an Econometric analysis of Ordinary Least Squares estimation technique carried out by Orji, et al. (2015), they utilised key variables including Manufacturing Output, FDI data, private sector credit, domestic savings, exchange rate. As a result, they discovered that FDI impacted negatively on the manufacturing sector and recommended that Government should channel increased FDIs into critical sectors that support necessary inputs and raw materials for local production. During the same period, Okoli and Agu (2015) used Econometric model of multiple regression analysis to assess the impact of Foreign Direct Investment Flow on manufacturing sector pe rformance in Nigeria, utilising key variables like Manufacturing Value Added (MVA), FDI flows, labour supply, etc. to test the relationship between dependent and independent variables. They arrived at the position that insufficient FDI impacts negatively on the operations of manufacturing firms. A major weakness of this study was that it did not account for macroeconomic factors and infrastructure deficiency. Their recommendations were that attracting FDIs should not be done in isolation. There should be improvement in domestic investment and human capital skills.

For the fifteen-year period between 2000 and 2015, Okaro (2016) carried out a study of Foreign Direct investment (FDI) Inflows into the Real Sector of the Nigerian Economy. Using Correlation and Re gression Analyses aided by SPSS, he discovered that GDP was positively correlated with FDI for the period, but did not increase manufacturing output at a higher rate. He recommended that government should improve infrastructure and also liberalise foreign sector by removing barriers. Kanu, Nwaimo, Onyechere and Obasi (2017) explored how Foreign Direct Investments impacted Industrial Productivity in Nigeria using Vector

Author Regression Analysis. The outcome was that industrial productivity was not FDI-drive. They recommended that government should enact investor-friendly policies to attract FDIs to the manufacturing sector.

In the same vein, Mounde (2017) used Augmented Dickey-Fuller Test and Johansen Test to explore the Causal relationship between FDI and Manufacturing Output in Nigeria. The study found out that Causality runs from FDI to industrial production, both in the short and long run. He recommended that Government should adopt aggressive reforms to boost FDI.

Danmola, Olateju & Aminu (2017) carried out a study of the Impact of Foreign Direct Investment on the Nigerian Manufacturing Sector using Time Series Analysis. The study found out that FDI exerts a positive influence on manufacturing output and the impact is significant. He recommended that trade liberalisation should be implemented with caution so as not to make the economy more import-dependent.

In summary, based on the reviewed empirical studies of the impact of FDI on the manufacturing sector in Nigeria, there is as yet, no consensus on the findings. There is thus need for further research in the area. Hence, the rationale for this study.

METHODOLOGY

– Research Approach

The main data utilised in this study is secondary data which have been accumulated over time. The data are maintained and monitored by the financial regulatory agencies of the Federal Government of Nigeria. These data are reasonably accurate and reliable bearing in mind the sources. To analyse the inflow of FDI and the determinant variables, secondary data from statistical bulletins of CBN were preferred because

that was the simplest and cheapest way of gathering the needed information. It is expected that the data devoid of distortions that may be experienced in attempting to collect primary data directly. Also, intensive library research and the internet is used to gather additional information.

Inferential statistics is employed to summarise and describe the data for better understanding of the phenomena. Statistical/econometric technique is used for analysis of the multiple regression equation using Ordinary Linear Regression Estimates (OLS).

– **Model Specification**

Based on the foregoing, our model specification is adapted from the approaches of Adejumo (2013), Offiong and Atsu (2014), and Okoli and Agu (2015), expressed as (Equation 1);

MVA = f (FDI, RGDP, DI) .....(1)

where:

MVA = Manufacturing sector value added output

FDI = Foreign Direct Investment Flows

RGDP = Real Gross Domestic Product.

DI = Domestic investment.

The paper assumed an approximately linear correlation between the dependent variable and independent variables.

A simple linear least square is specified given the variables under consideration thus:

$MV! = \beta_0 + \beta_1 \log FDI + \beta_2 RGDP + \beta_3 \log DI + \mu t$ ..... (2)

where μ = the stochastic error term.

From equation (2), Foreign Domestic Investment is modelled as an independent variable to account for the turning point of FDI intensity that is necessary and sufficient for manufacturing firms to function in Nigeria in the long run. This is due to the fact that empirical research in Nigeria supports the fact that excessive Foreign Direct Investment may in fact cripple the performance of manufacturing firms as well as their output level. In the same vein, when Foreign Direct Investment (FDI) flows is insufficient to affect the operations of manufacturing firms in Nigeria, it may as well hamper its output and performance level; thereby making the economy over dependent on foreign sectors. Therefore, there is need to estimate equation (2) and this will require the transformation of variables like foreign direct investment, real gross domestic product and domestic investment to their log forms. The reason for this measure is to linearise the variables as well as get them all integrated of same order since we are going to adopt the Johansen test of co-integration in this work.

DATA PRESENTATION, DATA ANALYSIS AND DISCUSSION OF RESULTS

DATA PRESENTATION

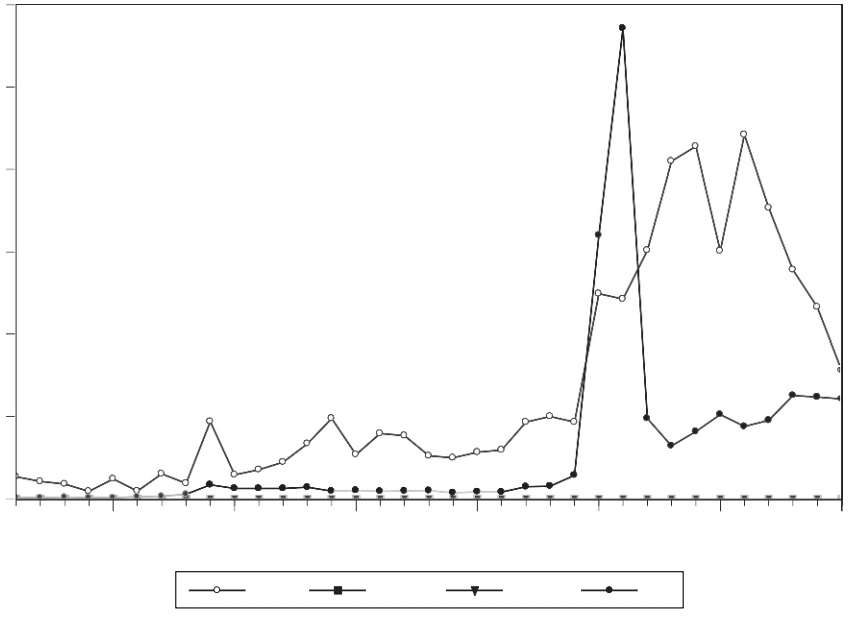
As explained in methodology, the data sourced for this study is secondary in nature. They were collected from official sources such as the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), the International Monetary Fund (IMF) and the World Bank. The scope of the data is from 1981 to 2015 as can be seen from **Appendix I**.

The data in **Appendix I** contains Manufacturing Values Added (MVA) as proxy for manufacturing output and performance, the Gross Domestic Product that shows trends in national economic performance, Foreign Direct Investment that reveals the Net Inflows of FDI over the stated period and Overseas Development Assistance (ODA) as proxy for

net Domestic Investment in Nigeria. The results presented in this Section are based on the tests stated in the previous Section. All results analysed in this section were obtained from e-views 8.0 software statistical package.

The trend analysis among the variables is revealed below in **Figure 1** below.

Figure 1 Relationship Between the Variables



Source: Authors' Computation, July 2018.

The above **Figure 1** shows relationships among the variables. As FDI increases and was relatively stable over time, manufacturing output increases. Similarly, as GDP increases and fluctuates, manufacturing output increases as well .The increases in Domestic investment has just little changes in manufacturing output.

Table 1: Unit Root Stationarity Result

Time Series	ADF Statistics	Critical Value	Stationary Status
MVA	-6.123490	-3.646342 (1%)	I(1)
		-2.954021 (5%)	
		-2.615817 (10%)	
GDP	-6.903570	-3.653730 (1%)	I(2)
		-2.957110 (5%)	
		-2.617434 (10%)	
FDI	-6.578018	-4.262735 (1%)	I(1)
		-4.262735 (5%)	
		-3.209642 (10%)	
DI	-6.018060	-4.273277 (1%)	I(1)
		-3.557759 (5%)	
		-3.212361 (10%)	

Source: Authors' Computation, 2018

The critical values for rejection of hypothesis of unit root were from MacKinnon (1991) as reported in e-views.

The four variables (GDP, FDI, MVA and DI) underwent unit root test using the Augmented Dickey-Fuller (ADF) test. All variables were found to be non-stationary at level but stationary at different orders of integration. GDP was stationary after second difference i.e. integrated of order two, I(2); while the remaining were stationary after first difference i.e. integrated of order one, I(1).

From **Table 1**, GDP was stationary after second difference. The absolute ADF calculated value of GDP (-6.123490) is greater than the absolute ADF critical values at the 1 per cent, 5 per cent, and 10 per cent level of significance after second difference.

On the other hand, MVA, FDI and DI became stationary after first difference with the inclusion of trend in the equation. The absolute ADF calculated value of MVA, FDI and DI (-6.123490, -6.578018 and -6.018060) are greater than the ADF critical values at the 1 per cent, 5 per cent, and 10 per cent levels of significance. This implies that the data can be used for regression analysis.

Table 2: Johansen's Cointegration Result

Eigen Value	Likelihood Ratio	5 per cent Critical Value	P - value
0.697225	73.50181	47.85613	0.0000
0.491882	34.07452	29.79707	0.0151
0.237020	11.73217	15.49471	0.1702
0.081484	2.804881	3.841466	0.0940

Source: Authors' Computation, 2018.

From **Table 2**, the first two equations show the cointegrated equations with their likelihood ratios (73.50181 and 34.07452) greater than the 5 per cent critical values (47.85613 and 29.79707).

On the basis of this result, the variables are cointegrated. The implication of cointegrated variables is that the variables considered have longrun relationship i.e. they all move in the same direction in the longrun. The decision of cointegration implies that the result, which will be obtained from the general regression, is not spurious and is fit for use in analysis.

Table 3 General Regression Result

Dependent Variable: Log(MVA)

Independent Variables	Coefficient	Standard Error	t-Statistic	P-value
Constant Intercept	3.563765	1.587792	2.244478	0.0321
Log(FDI)	-0.373293	0.153699	-2.428728	0.0211
Log(GDP)	0.929382	0.318307	2.919770	0.0065
Log(DI)	-0.174020	0.102507	-1.697636	0.0996
R^2= 0.398232		**F-Statistic=** 6.838287	Prob(F-statistic) =	0.01142
Adjusted R^2=0.339996		**D-WStatistic=** 0.669320		

Source: Authors' Computation, 2018.

DATA ANALYSIS

The result shows that a percentage increase in FDI on the average will result in a 0.373293 decrease in MVA holding other independent variables constant.

A percentage increase in GDP on the average will cause a 0.929382 increase in MVA holding other variables constant. A percentage increase in DI on the average will cause a 0.174020 decrease in MVA holding other variables constant. The coefficient of determination (R^2) of 0.398232 means that 40% of the total change in MVA in Nigeria was accounted for by the explanatory variables of the models. The R^2 shows that model has poor fit at 40%, indicating that there is need for more explanatory variables to be included in the model. The T-statistics is used to measure the individual significance of the parameters

Table 4.4: Statistical Significance of the Parameters

Variables	T_{cal}	T_{tab}	P-value	Status
FDI	-2.428728	2.12	0.0211	Significant
GDP	2.919770	2.12	0.0065	Significant
DI	-1.697636	2.12	0.0996	Insignificant

Source: Authors' Computation, July 2018.

From t-distribution table, applying the two-tailed test at 5 per cent level of significance and 31 degree of freedom (n-k= 35-4 = 31), the critical (tabulated) t value is 2.021

Hence T cal > T tab (significant) but T cal < T tab (T cal > T tab). This implies that FDI and GDP are statistical significant while DI is statistical insignificant.

Hence T cal > T tab (significant)

TEST OF HYPOTHESIS

The F- statistics is used to test overall significant of the parameters, the test is conducted at 5 per cent level of significance and 31 degree of freedom (V_1= K-1 = 4-1 = 3, V_2 = n-k= 35-4 = 31), the critical (tabulated) t value is 2.021

F tab = 2. 92

F cal = 6.838287

Hence F cal > F tab

This implies that FDI had significant impact on the manufacturing output over the period investigated.

DISCUSSION OF RESULTS

From the estimation, the results showed that foreign direct investment has negative significant impact on manufacturing output in Nigeria; this means increases in FDI will not yield positive result or impact on manufacturing output in Nigeria. In related development, domestic investment through foreign aid has negative impact on manufacturing but insignificant. The study was in line with Opaluwa, Ameh, Alabi and Abdul (2012) who discovered that FDI has negative effect on manufacturing productivity and this is statistically significant. Moreover, Adejumo (2013) and Orji, et al. (2015), found out that FDI impacted negatively on the manufacturing sector. In contrary to this study was the work of Kanu, et al. (2017) and Danmola, et al. (2017) that revealed positive impact of Foreign Direct Investment on the Nigerian Manufacturing Sector.

However, increases in the performance of the economy (GDP) will have direct and significant impact in manufacturing sector in Nigeria. This implies that as growth and development is achieved or attained in an economy; there is going to be positive significant impact on manufacturing sector in Nigeria. The state of any economy plays a crucial role in performance of manufacturing sector. The result was in agreement with Okaro (2016) who discovered that GDP was positively correlated with FDI in Nigeria.

CONCLUSION AND RECOMMENDATIONS

CONCLUSION

This study examined the impact of Foreign Direct Investment on the Manufacturing Sector in Nigeria. In doing this, the paper appreciated the need to bridge the identified financing resource gap needed to enhance productive capacity in Nigeria. This is because the literature is yet to reach an agreement on the role of FDI on economic development,

and by extension manufacturing growth in Nigeria. The study discovered that in as much as significant work has been carried out on the role of FDI in economic development of Nigeria, much empirical research has not been done specifically on the its role in the manufacturing sector. This is crucial because the manufacturing sector represents the growth engine in developing nations and Nigeria must not be an exception.

The study concluded that that foreign direct investment has negative significant impact on manufacturing output in Nigeria and net domestic investment through foreign aid has negative impact on manufacturing output but insignificant. However, increases in the performance of the economy (GDP) will have direct and significant impact in manufacturing sector in Nigeria.

RECOMMENDATIONS

The study has shown that while FDI is important in the development of the manufacturing sector in Nigeria, it was discovered that it did not enhance manufacturing output in the study period. In fact, FDI led to decline in Manufacturing Value Added (MVA) in Nigeria. To improve the situation, a number of policy areas needs to be properly managed and addressed. The study considers the following to be very critical.

i. That government should ensure channelling FDI into priority areas and maintain proper evaluation and monitoring of FDI to prevent observed abuse and unwholesome practices.

ii. Government should institute a body to be known as the National Agency for the Monitoring and Evaluation of Foreign Investment in Nigeria (NAMEFIN). This should be staffed by competent professionals whose main aim will be to identify and manage database and performance of FDI initiatives and net foreign aid received in Nigeria and advise government appropriately.

iii. Since GDP has positive and significant impact on manufacturing output in Nigeria, government should as a matter of urgency create enabling environment for investors through massive infrastructural developmental projects that will enhance productive capacity of manufacturing sector in Nigeria.

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APPENDIX I

Table of Variables used in the Analysis

Year	Man. Value Added	GDP N billions @constant	FDI Net Inflows	Net ODA (Foreign Aid Received)
1981	9.87	15,258.00	$542,327,300	$39,250,000
1982	10.29	14,985.08	$430,611,300	$34,950,000
1983	10.44	13,849.73	$364,434,600	$46,750,000
1984	8.13	13,779.26	$189,164,800	$32,390,000
1985	9.46	14,953.91	$485,581,300	$31,710,000
1986	9.53	15,237.99	$193,214,900	$58,120,000
1987	7.1	15,263.93	$610,552,100	$67,620,000
1988	7.92	16,215.37	$378,667,100	$118,080,000
1989	5.75	17,294.68	$1,884,250,000	$344,000,000
1990	5.5	19,305.63	$587,882,900	$255,080,000
1991	6.2	19,199.06	$712,373,400	$258,320,000
1992	5.07	19,620.19	$896,641,300	$258,820,000
1993	5.7	19,927.99	$1,345,369,000	$288,420,000
1994	6.99	19,979.12	$1,959,220,000	$189,660,000
1995	5.45	20,353.20	$1,079,272,000	$210,960,000
1996	4.92	21,177.92	$1,593,459,000	$188,750,000
1997	5.14	21,789.10	$1,539,446,000	$199,840,000
1998	5.22	22,332.87	$1,051,326,000	$203,340,000
1999	4.73	22,449.41	$1,004,917,000	$151,990,000
2000	3.67	23,688.28	$1,140,138,000	$173,800,000
2001	4.21	25,267.54	$1,190,632,000	$167,820,000
2002	3.43	28,957.71	$1,874,042,000	$299,550,000
2003	3.39	31,709.45	$2,005,390,000	$309,850,000
2004	3.06	35,020.55	$1,874,033,000	$578,770,000
2005	2.83	37,474.95	$4,982,534,000	$6,401,790,000
2006	2.58	39,995.50	$4,854,417,000	$11,431,960,000
2007	2.52	42,922.41	$6,034,971,000	$1,958,600,000
2008	2.41	46,012.52	$8,196,606,000	$1,293,720,000
2009	2.47	49,856.10	$8,554,841,000	$1,639,000,000
2010	6.55	54,612.26	$6,026,232,000	$2,052,360,000
2011	7.19	57,511.04	$8,841,114,000	$1,767,690,000
2012	7.79	59,929.89	$7,069,934,000	$1,914,240,000
2013	9.03	63,218.72	$5,562,874,000	$2,515,760,000
2014	9.75	67,152.79	$4,655,849,000	$2,479,020,000
2015	9.53	69,023.93	$3,128,592,000	$2,431,600,000

Sources: National Bureau of Statistics, Central Bank of Nigeria publications (Various Years), International Monetary Fund Balance of Payments database.

ASSESSING EXCHANGE RATE VOLATILITY AND ECONOMIC GROWTH IN NIGERIA: A VECTOR ERROR CORRECTION MODEL APPROACH

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Abstract

The research assessed the impact of exchange rate volatility on economic growth in Nigeria from 1986 to 2016. Secondary data were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin and British Petroleum statistical review of world Energy. The study adopted Vector Error Correction Model (VECM) technique of analysis, and employed the absolute percentage *change of the exchange rate approach to measure exchange rate volatility. The long run relationship among the variables were determined using the Johansen Co-integration technique while the Vector Correction Mechanism was used to examine the speed of adjustment of the variables from the short run dynamics to the long run. The study found out that a negative significant relationship exists between exchange rate volatility and economic growth in Nigeria within the period under study. The va lue of R^2 stood at 0.779445; this implies that about 78 percent variation in GDP was explained by the independent variables. The study concluded that excessive exchange rate volatility is detrimental to the economic growth of Nigeria. The study therefore recommends that policy makers should come up with stern foreign exchange control policies in other to stabilize the highly volatile exchange rate.*

Keywords: *Exchange rate volatility, Economic growth and VECM.*

JEL classification: *F31, F43, C87*

INTRODUCTION

The stability of Exchange rate is one of the major goals of macroeconomics and of any economy. The behaviour of the exchange rate to a very large extent, determines the behaviour of several other macroeconomic variables in an economy. The effe ct of exchange rate

volatility on inflation, foreign trade and by implication on economic growth remains a key challenge and a major preoccupation of economists, academics and policymakers, as large degree of gyrations or swings in currency exchange rate has severe consequences on macroeconomic stability (Ayoka, 2018). Oaikhenan and Aigheyisi (2015) observed that Excessive exchange rate volatility impacts negatively on economic growth through its effect on import-export gap, investment, investors' confidence, local productivity, consumption as well as international flows of trade and capital. Swings in exchange rate volatility generate uncertainty in the economy, and increase business and investment risks, with far-reaching negative spill-over effects in most developing and emerging economies.

A very strong exchange rate is a reflection of a strong and viable economy, on the other hand a very weak exchange rate is a reflection of a vulnerable and weak economy. Friedman (1953) argues in this line that the instability of the exchange rate can be linked to instability in the underlying economic structure. He opines that a flexible exchange rate does not necessarily need to be an unstable exchange rate, but where it is unstable; it is primarily because there is instability in the underlying economic conditions.

Controversy exists amongst scholars; arising from the fact that exchange rate volatility in developing countries is thought to be a major reason why their economies continues to witness high rate of instability and subsequent low level of economic development. In support of this, Lawal, Atunde, Ahmed, and Abiola (2016) argued that a correct or appropriate exchange rate has been one of the most important factors for economic growth in the economies of most developed countries, whereas regular fluctuations or inappropriate exchange rate has been a major obstacle to economic growth of many African countries of which Nigeria is inclusive. Most developing and emerging economies with the free

float/flexible exchange rate system would have to grapple with the problem of exchange rate volatility, leading to "a fear of floating" (Calvo & Reinhart, 2002; Deveneux & lane, 2001).

Iziliein and Okoh (2015) posits that the exchange rate in Nigeria witnessed some period of relative calm since the implementation of the structural adjustment programme (SAP) in 1986. However, its continued depreciation scored an indelible mark in the level of real sector activities in the country. The naira which traded at ₦ 0.935= $1.00(United States) in 1985 depreciated to ₦ 2.413=$1.00 and further to ₦ 7.901 against the US dollar in 1990. The average exchange rate of the naira to the US dollar at the official Autonomous Foreign Exchange Market (AFEM)/Dutch Auction System (DAS) for the year 2010 stood at 148.31, 2011 witnessed a further depreciation to 151.82, and 155.45, 155.25, 156.48, for years 2012, 2013 and 2015 respectively. The exchange rate was relatively stable until February 18, 2015. At the Retail Dutch Auction System (RDAS) segment, the average exchange rate was ₦ 169.68/US$, up to mid-February 2015, while rates at the interbank and Bureau De Change segments, relative to January 2015, depreciated by 6.5 and 7.9% to ₦ 194.48/US$ and ₦ 213.03/US$ respectively (CBN, 2015). The 2017 economic recession sets in during the first quarter of 2016 when the GDP recorded -3.36 growth and -2.06 during the second quarter. However, the Gross Domestic product shrank 0.5 percent year-on-year in the first quarter of 2017, following an upwardly revised 1.7 contraction in the previous period (Ayoka, 2017). The exchange rate volatility seems to have triggered more fluctuation in a recessed economy like Nigeria. The exchange rate of the Naira has assumed a worrisome significant height as a result of its continuous depreciation in the foreign exchange market.

The exchange rate of the naira has been fluctuating since the introduction of the Structural Adjustment Programme (SAP) in 1986. The Nigerian experience since SAP has mostly been characterized by

increasing demand which outstripped supply, thus further exacerbating the continuous depreciation and volatility of the naira. Arguing in this line Nwosu (2016), observed that most import dependent economies like Nigeria face exchange rate volatility because the economy's technological base is weak, industrial activities tended to be organized to depend largely on imported inputs. The various monetary policy reforms and exchange rate adjustments failed to restore stability in exchange rate while maintaining a low and stable inflation rate.

Therefore, the thesis of this paper is the alleged impact of exchange rate volatility on economic growth in Nigeria. This paper therefore seeks to empirically investigate the impact of exchange rate volatility on economic growth in Nigeria for the period 1986-2016. To this end, the rest of the paper is structured into six sections. Section one is the introduction, Section two is concerned with conceptual, theoretical and empirical issues. Section three is the methodology and model specification of the study. Section four deals with the Data Analysis and Results. While section five is the discussion of findings, section six provides the conclusion and policy recommendations.

CONCEPTUAL, THEORETICAL AND EMPIRICAL LITERATURE REVIEW

CONCEPTUAL REVIEW

Exchange rate plays a critical role in an economy because changes in exchange rate may have dire consequences on tradables and non-tradables goods and services in the economy. Exchange rate plays a key role in international economic transactions. The importance of exchange rate derives from the fact that it connects the price system of two different countries, making it possible for international traders to make direct comparison of prices of traded goods (Anyanwu & Oaikhenan, 1995).

Apollos, Adeleke and Olusegun (2015) defined exchange rate as the price of one unit of currency in terms of another currency. In most economies, the exchange rate is expressed using the foreign currency as the base currency. West (1985) views exchange rate as the external value of a currency expressed in terms of another currency or as a weighted average of the currencies to its main trading partners. The exchange rate is the price of one currency in terms of another currency, that is, the current market price for which one national currency can be exchanged for another. It is normally expressed as the number of units of a domestic currency that will purchase one unit of a foreign currency or the number of units of a foreign currency that will purchase one unit of a domestic currency (CBN, 2016). In the view of Anyanwu and Oaikhenan (1995), exchange rate refers to the price of one currency (the domestic currency) in terms of another (the foreign currency). Ochejele (2007) shares these views by noting that a foreign exchange rate is simply the price of one currency in terms of another. Jhingan (2012) argued that the exchange rate is the price of one unit of the foreign currency in terms of the domestic currency.

Exchange rate volatility is a measure of the degree or frequency by which the price of the foreign exchange changes over time. The larger the magnitude of the price change, or the more speedily it changes over a period, the more volatile the exchange rate is (CBN, 2016). Izilien and Okoh (2015) posited that exchange rate volatility refers to the swings or fluctuations in the exchange rate over a period of time or the deviations from a benchmark or equilibrium exchange rate. The later which also reflects the misalignment of the exchange rate could occur where there is multiplicity of markets parallel with the official market. Empirically, volatility is measured in terms of the "coefficient of variation" which is the standard deviation divided by the mean series. Mordi (2006) observed that Volatility over any time interval tends to be higher when

supply, demand or both are liable to large random shocks and when the elasticity of both supply and demand is low.

On the other hand, the concept of economic growth is viewed differently by different authors. This is as a result of the prevail ing conditions existing during the time of these scholars. However, a good number of these scholars accept economic growth as a general increase in national income and output of a country over a period over time. Jhingan (2007) stated that economic growth is related to a quantitative sustained increase in the country's per capita output or income accompanied by expansion in its labour force, consumption, capital and volume of trade. An economy can grow but it may not develop because poverty, unemployment an d inequalities may continue to persist due to the absence of technological and structural changes.

THEORETICAL FRAMEWORK

There have been several theories in the economic literature that examine exchange rate and economic growth. Prominent amongst these theories includes; the balance of payments theory, the purchasing power parity, and the monetary model. While the theories of Economic growth include the Endogenous growth model and Neo-classical growth model etc.

The balance of payments theory which is also designated as "Demand-Supply Theory" argues that the exchange rate of the currency of a country depends primarily upon its balance of payments position. Consequently, when there is a favourable balance of payments, the exchange rate appreciates and hence this will bring about an increase in economic growth of that particular economy; on the other hand, unfavourable balance of payments reduces the exchange rate and will lead to a fall in the rate of economic growth. Jhingan (2012) argues in this line that when the balance of payments is unfavourable, it means that the

demand for foreign currency is more than its supply. This causes the external value of the domestic currency to fall in relation to the foreign currency. Consequently, the exchange rate falls. On the other hand, in case the balance of payments is favourable, the demand for foreign currency is less than its supply at a given exchange rate.

The Purchasing Power Parity (PPP) theory was developed by Gustav Cassel in 1920 to determine the exchange rate between countries on inconvertible paper currencies. The theory states that equilibrium exchange rate between two inconvertible paper currencies is determined by the equality of their purchasing power. In other words, the rate of exchange between two countries is determined by their relative price levels. According to the theory, the exchange rate between two countries is determined at a point which expresses the equality between the respective purchasing powers of the two currencies. This is the purchasing power parity which is a moving par as under the gold standard (Jhingan 2012).

The monetary model approach for the determination of exchange rate evolved with the introduction of the floating exchange rate regime in the early 1970's following the collapse of the Bretton Woods exchange rate system. After the collapse of the Bretton-Woods fixed exchange rate regime, financial economist's faced the challenge of their inability to determine and forecast the variation in exchange rate. This theory postulates that exchange rates are determined in the process of equilibrating or balancing the stock or total demand and supply of money in each nation. According to the monetary approach, the nominal demand for money is stable in the long run and positively related to the level of nominal national income but inversely related to interest rate. According to Ochejele (2007) the monetary model for foreign exchange determination focuses on the central role of changes in the demand for and supply of money between two countries. An increase in the money

supply will tend to cause the exchange rate to depreciate as this will induce higher rise in domestic interest prices. In the same vein, an increase in domestic interest rates reduces the demand for money, raises prices and consequently resulting in exchange rate depreciation.

The endogenous growth theory is a new theory which explains the long-run growth rate of an economy on the basis of endogenous factors as against exogenous factors of the neoclassical growth theory. Hence the endogenous growth theory as the name implies means economic growth that results from within a system or a nation.

EMPIRICAL REVIEW

Empirical literature on the impact of exchange rate volatility on economic growth is divergent. This difference in views arises from two major factors or sources. They include; the size of the economy under study and the propositions about exchange rate regime. Schnabl (2007) in a study on Exchange Rate Volatility and Growth in Small Open Economies for the European Monetary Union (EMU) Periphery, for the period 1994 to 2005 used both Generalised Least Squares (GLS) and Generalised Method of Moment (GMM) panel estimations in a study of 41 countries. The results obtained provided evidence in favour of a robust negative relationship between exchange rate volatility and economic growth.

Azid, Jamil, and Kousar (2005) investigated the impact of Exchange rate volatility on Growth and Economic performance: a case study of Pakistan, 1973–2003. The study employed the GARCH method to test for volatility and conditional estimate of the variable of interest, exchange rate uncertainty. The results obtained from the study were positive but was insignificant, and do not support the position that excessive volatility or shifting of exchange rate regimes has pronounced effects for manufacturing production.

Alagidede and Muazu (2016) investigated the causes of real exchange rate volatility and its effect on economic growth in Ghana relying on annual data spanning 1980 to 2013. The study employed the Generalized Method Movement (GMM) and the GARCH method. Results from their findings indicate that real exchange rate volatility negatively and significantly affects growth; Similarly, Musyoki, Pokhariyal and Pundo (2012) in their study on the impact of real exchange rate volatility on economic growth: Kenyan evidence, employed the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) and computation of the unconditional standard deviation of the changes to measure volatility and Generalized Method Moments (GMM).The study found that Real Exchange Rate was very volatile for the entire period under study. The Real Exchange Rate Volatility reflected a negative impact on economic growth of Kenya.

Nwosu (2014) examined the impact of Exchange Rate Volatility on Economic growth in Nigeria, 1987-2014. The study built on absolute percentage change measure for exchange rate volatility measurement while the OLS technique was employed. Exchange rate volatility had a negative and significant impact on the economic growth of Nigeria.

Ayoka (2018) carried out a study on an empirical analysis of the impact of Exchange rate volatility on Economic growth in Nigeria, covering the period between 1986 and 2016. The study employed the Vector Error Correction Model (VECM), while exchange rate volatility was generated using the Generalized Autoregressive Conditional Heteroscedasticity (GARCH). Exchange rate volatility was found to have a negative impact on economic growth of Nigeria during the period under review. In a study conducted by Ugochukwu (2015) Exchange Rate Volatility and Economic Growth in Nigeria (1980 to 2012). The study employed the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) technique to generate exchange rate volatility, the relationship

between exchange rate volatility and economic growth was negative. However, Izilein and Okoh (2015) examined the impact of exchange rate volatility on economic growth in Nigeria covering a scope of 1980 to 2013. The study employed the Generalized Autoregressive Conditio nal Heteroscedasticity (GARCH) method. Contrary to the findings of Ayoka (2018), their result showed that there is a positive relationship between exchange rate volatility and economic growth (RGDP). Oyovwi (2012) in his study on exchange rate volatility and economic growth in Nigeria found that in the short run, economic growth is positively responsive to exchange rate volatility while in the long run a negative relationship exists between the two variables.

This study observes that the Nigerian experience over the years and in recent times, has shown inconsistency between economic and financial policies and the prevailing exchange rate regime were major factors causing the high rate of volatility in exchange rate. The Nigerian government in 2016 placed emphasis on financial deepening, exchange rate control and management. The difficulty faced by the Nigerian government to control financial deepening variables such as broad money supply, low level of credit to private investors, inflation rate, external reserve, the Treasury Single Account (TSA), different exchange rates for different transactions etc is not the same with the past administrations. The post global financial crises with Nigeria deep in recession impacted adversely to her economy, therefore thi s study intends to fill the gap by studying the extent and magnitude of changes in the financial deepening variables and exchange rate volatility on economic growth from 1986-2016 to see if there has been changes with the previous studies conducted when the economy was not in a deep recession.

METHODOLOGY OF THE STUDY AND MODEL SPECIFICATION

Drawing from the works of Nwosu (2014) and Oyovwi (2012), the paper adopted the absolute percentage change of the exchange rate method to generate exchange rate volatility and VECM to empirically investigate the relationship between Exchange rate volatility and economic growth of Nigeria respectively. Given the fact that time series analysis is characterized by trends and results in spurious regression, the study employed the unit root and co-integration tests to ascertain the non-existence of trending elements. The stationarity of the variables was tested using the Augmented Dickey Fuller (ADF) and Philip Perron (PP) tests. The exchange rate volatility was generated using the absolute percentage change of the exchange rate, while the Vector Error Correction Model (VECM) was employed as technique of analysis. The reasons for the choice of the VECM method stems from the fact that the result of the preliminary test of the series revealed that the variables were stationary at their first difference and the also revealed evidence of cointegration.

MODEL SPECIFICATION

For this study, Gross Domestic Product (GDP) was used as proxy for economic growth and also served as the dependent variable and exchange rate volatility, Oil price, interest rate, money supply and external reserve were the independent variables.

Specifically, the model is specified in the functional form as follows:

$$GDP = f(EXRV, OILP, INTR, MS, EXTR) \quad - - - - \quad (1)$$

This can be explicitly written in an econometric form as:

$$GDP_t = \beta_0 \quad \beta_1 EXRV_t + \beta_2 OILP_t - \beta_3 INTR_t \quad \beta_4 MS_t + \beta_5 EXTR_t + \quad _t \quad - \quad (2)$$

Where:

GDP= Gross Domestic Product

EXRV=Exchange Rate Volatility (estimated from Exchange rate and shown on Appendix A)

OILP= Oil Price

INTR= Interest Rate

MS =Money Supply

EXTR= External Reserve

$_{=}$ Error term

β_0 = Intercept of the model (constant term).

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$= Coefficients of the explanatory variables.

The apriori expectation is$\beta_1 <> 0$, $\beta_2 > 0$, $\beta_3 < 0$, $\beta_4 >< 0$, $\beta_5 > 0$.

Gross Domestic Product, Oil price, Money supply and External reserve were log-transformed while Exchange rate Volatility and interest rate were used in its natural form in other to bring all variables the same base and unit.

The apriori expectation for the coefficient of the exchange rate volatility is expected to be negative or positive depending on the prevailing condition in the economy i.e. $\beta_1 <> 0$. The prevailing condition in the economy could be one of a relatively stable or highly volatile exchange rate. This has a direct impact on the aggregate demand and by implication on the GDP.

The coefficient of the oil price is expected to be positive, that is the slope of the coefficient $\beta_2 > 0$.

The coefficient of Interest Rate is expected to be negative, that is the slope of the coefficient $\beta_3 < 0$.

The coefficient of Money supply is expected to be positive or negative depending on the prevailing condition in the economy. That is the slope of the coefficient $\beta_4>0$ or < 0.

The apriori expectation for External reserve is expected to be positive. The slope of the coefficient $B_5>0$. This implies that an increase in external reserve ceteris paribus will lead to an increase in economic growth.

RESULTS AND DATA ANALYSIS

UNIT ROOT RESULT

The unit root test is carried out before the co integration method of analyses can be carried out; this is because it is necessary to test for the presence of a unit root in a variable. This is to know whether the variables are stationary or non-stationary. Augmented Dickey Fuller (ADF) and Phillip Perron (PP) unit root test were conducted and the results are presented on Table 4.1. Table 4.1 show that all the series are non-stationary at levels, but were stationary at first difference at 5 % level of significance.

Table 1: **Result of Unit Root of Variables**

Variables	ADF order of integration	0.05 ADF critical values	ADF test Statistics	PP order of integration	0.05 PP critical values	PP test Statistics
LOGGDP	I(1)		-5.039346	I(1)	-2.967767	-5.028087
		-2.967767				
EXRV	I(1)	-2.967767	-8.802993	I(1)	-2.967767	-19.38217
LOGOILP	I(1)	-2.967767	-4.881900	I(1)	-2.967767	-4.881900
INTR	I(1)	-2.967767	-7.170872	I(1)	-2.967767	-7.312555
LOGMS	I(1)	-2.967767		I(1)	-2.967767	
			-3.850132			-3.906921
LOGEXTR	I(1)	-2.967767	-4.825640	I(1)	-2.967767	-8.003495

Source: Author's Computation using E-views 10 Version, 2018.

LAG SELECTION CRITERIA

The selection criteria result shows that the whole criteria selected lag 1. The likelihood ratio, the Final prediction error, the Akaike information, the Schwarts and Hannan criteria selected lag 1 as shown by asterisk at 5% significance level from Table 4.2

TABLE 2: Lag Selection Criteria Result

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-324.6948	NA	323.5776	22.80654	23.08943	22.89513
1	-179.3758	220.4840*	0.182380*	15.26729*	17.24752*	15.88748*
2	-145.0381	37.88985	0.291082	15.38194	19.05949	16.53370

Source: !uthor's Computation using E -views 10 Version, 2018.

COINTEGRATION TEST RESULT

Using the Johansen cointegration test, Table 4.3 shows the estimation of the Johansen co-integration among the variables.

Table 3: Johansen Cointegration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.823170	122.5440	95.75366	0.0002
At most 1 *	0.617296	70.56693	69.81889	0.0435
At most 2	0.442073	41.75215	47.85613	0.1658
At most 3	0.352831	24.24633	29.79707	0.1902
At most 4	0.240767	11.19190	15.49471	0.2000
At most 5	0.093004	2.928509	3.841466	0.0870

Trace test indicates 2 cointegratingeqn(s) at the 0.05 level

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

None *	0.823170	51.97703	40.07757	0.0015
At most 1	0.617296	28.81479	33.87687	0.1784
At most 2	0.442073	17.50582	27.58434	0.5367
At most 3	0.352831	13.05443	21.13162	0.4472
At most 4	0.240767	8.263388	14.26460	0.3526
At most 5	0.093004	2.928509	3.841466	0.0870

Max-eigenvalue test indicates 1 cointegratingeqn(s) at the 0.05 level

Source: Author's Computation from the co-integration results using E-views 10, 2018.

The results revealed therefore, that there exists a long run equilibrium relationship between GDP and the explanatory variables (trace test indicates two (2) cointegrating equations at the 5% level while the maximum Eigen value test indicate 1 cointegrating equation). However, according to Gujarati (2003), if such situation arises, the Trace Statistic supersedes the Maximum Engel. Since the time series are found to be cointegrated, a Vector Error Correction Model (VECM) is recommended to estimate the impact of exchange rate volatility on economic growth.

NORMALITY TEST

The normality test is used to determine whether sample data has been drawn from a normally distributed population (within some tolerance). The Jarque-Bera test for normality is an asymptotic or large-sample test. Testing at 5 percent level of significance, the Jarque-Bera probability value of 0.967925 is greater than 0.05 as captured on Figure 1. This implies that the residuals are normally distributed, this result is desirable.

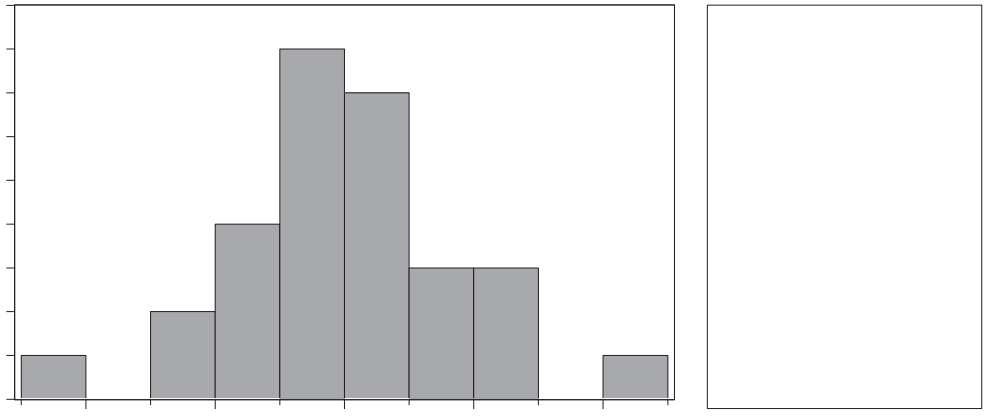

Figure 1: Normality Test Result

Source: Author's Computation using E-views 10 Version, 2018.

MULTICOLLINEARITY TEST RESULT

Multi-collinearity is used to detect the presence of linear relationships (or near linear relationships) among explanatory variables. Multi-collinearity refers to a situation where two or more explanatory variables are highly linearly related and this can lead to misleading result (Gujarati, 2004).Table 4.4 below presents the multi-collinearity test result.

Table 4: **Variance Inflation Factors**

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C(1)	0.006051	2.213927	2.213927
C(2)	0.024874	5.781998	2.364566
C(3)	9.21E-08	1.918117	1.914917
C(4)	0.008446	1.619069	1.573508
C(5)	1.85E-05	1.298472	1.285644
C(6)	0.044576	8.036876	2.394607
C(7)	0.002467	2.195426	2.127184
C(8)	0.003439	9.260255	NA

Source: Author's Computation Using E-views 10 version

Table 4.4 shows the result of the multicollinearity and it indicated that there is no multicollinearity among the independent variables since the uncentered VIF is greater than the centered VIF. The level of co llinearity existing between variables is severe.

DIAGNOSTIC TEST

The diagnostic tests are a series of test carried out after the estimation of the model, these include; Heteroscedasticity and stability test.

Heteroscedasticity Test

To identify heteroscedasticity or homoscedasticity, the data was tested using ARCH test. The Heteroscedasticity test result is presented in Table 4.5 below.

Table 5: Heteroscedasticity Test

Heteroskedasticity Test: ARCH			
F-statistic	0.115106	Prob. F(1,26)	0.7371
Obs*R-squared	0.123414	Prob. Chi-Square(1)	0.7254

Source: !uthor's Computation Using E -views 10 version

From Table 4.5, the result above shows the p-value of 0.7254 which is greater than 5% level of significance. We therefore accept H_0 and reject H_1. There is no Heteroscedasticity in the model.

STABILITY TEST RESULT

In testing the stability of the estimated model of the long run viz-a-viz shortrun relationship between exchange rate volatility and economic growth, the study employed the Cumulative Sum of Recursive Residuals (CUSUM and CUSUM of squares) graphs. The decision rule is that, all the coefficients of the error correction are stable and the null hypothesis cannot be rejected provided that the plots stay within 5% range of the significance level (i.e. within the two straight lines), if otherwise we reject the null hypothesis. The residual in the model stay within the two lines from 1986 to 2016 as captured on Figure 4.2. These imply that the coefficients of error correction model are free from autoregressive conditional heteroscedasticity and serial correlation.

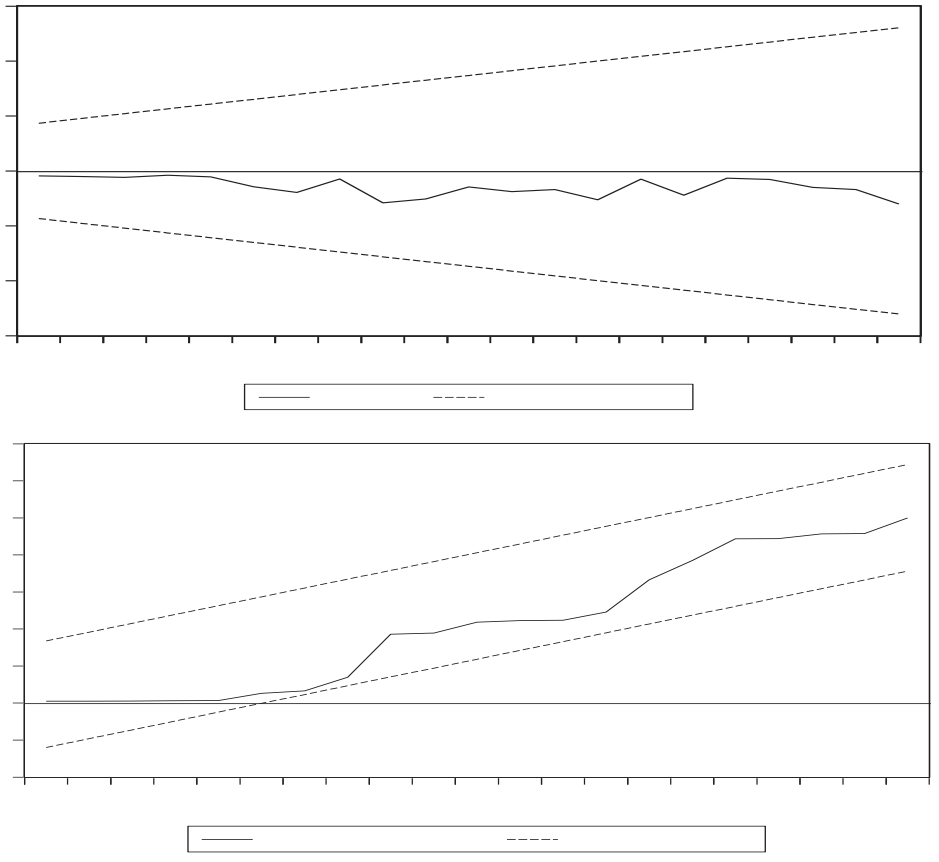

Figure 2: Cusum Stability Test

EXCHANGE RATE VOLATILITY

In measuring exchange rate volatility the absolute percentage change of the exchange rate by Thursby and Thursby(1985) will be adopted as captured below

The absolute percentage change method is computed thus:
Vt= Et-Et-1X 100
Et-1

Where Vt is exchange rate volatility, Et is the spot exchange rate in current year and Et-1 is the spot exchange rate in the previous year.

VECTOR ERROR CORRECTION ESTIMATES

Results from the unit root test showed that the variables became stationary after first differences and integrated. Thus, their dynamic relationships can be specified by Vector Error Correction Model (VECM) in order to capture both the short-run and long-run relationships.

Table 6: Vector Error Correction Estimates (Short run and Long run Coefficients)

VECM Short-Run Coefficients and Error Correction Mechanism

VARIABLE	COEFFICIENT	STANDARD ERROR	T-RATIO	PROBABILITY
C	0.325304	0.058640	5.547476	0.0000
D(LOGGDP(-1))	0.392230	0.157714	2.486966	0.0214
D(LOGEXRV(-1))	-0.000103	0.000303	-0.341016	0.7365
D(LOGOILP(-1))	-0.217910	0.091899	-2.371180	0.0274
D(LOGINTR(-1))	-0.020939	0.004303	-4.866364	0.0001
D(LOGMS(-1))	-0.828267	0.211131	-3.922991	0.0008
D(LOGEXTR(-1))	0.016614	0.049667	0.334500	0.7413
ECM(-1)	-0.546300	0.077786	-7.023109	0.0000

VECM Long run Coefficients

LOGEXRV(-1)	-0.002667	(0.00093)	[-2.85866]
LOGOILP(-1)	0.053307	(0.16585)	[0.32141]
LOGINTR(-1)	-0.022802	(0.01205)	[-1.89215]
LOGMS(-1)	-0.840525	(0.04551)	[-18.4701]
LOGEXTR(-1)	-0.098500	(0.13050)	[-0.75478]
C	-2.018477		

Diagnostics Statistics

R-squared	0.779445	Mean dependent var	0.216012
Adjusted R-squared	0.705926	S.D. dependent var	0.191361
S.E. of regression	0.103772	Akaike info criterion	-1.464284
Sum squared resid	0.226143	Schwarz criterion	-1.087099
Log likelihood	29.23211	Hannan-Quinn criter.	-1.346154
F-statistic	10.60204	Durbin-Watson stat	2.482581
Prob(F-statistic)	0.000011		

Source: Author's Computation using E-view 10 Version, 2018.

Beginning with the long run co integration equation, we are interested in the Error correction model amongst other coefficients, which shows the speed of adjustment. The decision rule is that it must be negative and statistically significant for it to retain its economic interpretation. From Table 4.6 the values obtained from the VECM long-run equation satisfy both conditions. The coefficient of the ECM (-1) value of -0.546300 implies that about 55% departure from long-run equilibrium is corrected each period, the co-integrating vector or long run equation indicating that in the long run, Gross Domestic Product is significantly co-integrated with Exchange rate volatility, Oil price, Interest rate, Money supply and External reserve. A negative relationship in the short run exist between economic growth and all other variables with the exception external reserve.

Our results showed that the parameter of the Error-correction model is correctly signed and statistically significant because the P value of (0.0000) is less than 5%. This goes to confirm that GDP in the Nigerian economy has an automatic adjustment mechanism and that the economy responds to deviations from equilibrium in due time. Since the T-Statistics* for exchange rate volatility and money supply > T-Statistics$_{0.05}$= 2.060, therefore exchange rate volatility and money supply are statistically significant, implying that these variables significantly influence the dependent variable.

The intercept or constant term of the equation at -2.018477 depicts the value of GDP in the long-run when it is not affected by any of the independent variables, by implication; economic growth (GDP) will be at -2.018477 when all the explanatory variables are equal to zero or constant. The joint goodness of fit for all the variables is high of about 0.779445, it is about 78%. This indicates that 78% variation in GDP is explained by independent variables while the remaining 22% is caused

by unexplained factors captured by the error term. The adjusted R-squared is 0.705926, which indicates that about 71 percent of the systematic variations in Gross Domestic Product at any given time is explained by the variations in the explanatory variables and 29% accounted for by the error term. The F-statistics value of 10.60204 against the probability (F-statistics) value of 0.000011 is significant at the 5 percent level of significance ($F^*=10.60204 > F_{0.05}=2.59$); hence the model has a very high overall significance level. Thus the model is not only significant but also it is highly reliable for making inference and policy decisions. The Durbin Watson value of 2.4825 shows the absence of serial correlation amongst the variables.

DISCUSSION OF FINDINGS

From the VECM results, looking critically at the value of the coefficients and their corresponding signs. The main variable of interest in this study is the exchange rate volatility and Gross Domestic Product (GDP). The result indicated that 1 percent increase in exchange rate volatility will cause GDP to decrease by 0.003 %. The negative impact of exchange rate volatility on GDP of the Nigerian economy corroborates the works of Levine and Carkovic (2001 in Oyovwi, 2012). However, from the results a plausible explanation for the negative relationship between Exchange rate volatility and Economic growth in the Nigerian economy stems from the ravaged exchange rate of the naira, which going by the last previous years witnessed a high rate of depreciation, which hampered the growth of the economy and was a major factor for the recession in the country which set in during the first quarter of 2016 when the GDP recorded -3.36 growth and -2.06 during the second quarter.

Oil price exhibited a Positive significant relationship with economic growth which is in conformity with the apriori expectation. A

unit increase in oil price would lead to a 0.05% increase in GDP; this is consistent with the expectation for an oil producing country like Nigeria. Similar findings were reported by Jin (2008) for the Russian economy, which is a net oil exporter. The implication of this for the Nigerian mono - economy, which is heavily depended on proceeds from crude oil, is that changes in crude oil prices whether positive or negative pos es major changes and distortions to major macroeconomic variables and the growth and development of her economy.

Money supply exhibits a negative relationship with the GDP, a unit decrease in money supply, leads to increase in GDP by 0.84%, this is truism of the Nigerian economy because when the rate of money supply exceed the quantity of goods and services produced in the economy, a negative effect is likely to be exerted on GDP.

Interest rate had a negative relationship with GDP and is consistent with apriori expectation, this implies that decreasing the rate of interest rate through monetary policy may stimulate the economy because of increased economic activities, conversely slow economic activities may be due to a tight monetary policy via a relatively high interest rate regime which can lead to a fall in consumer spending and investment, this will further lead to a fall in aggregate demand and subsequently a lower economic growth or even recession. Hence, a unit decrease in interest rate will lead to an increase in GDP by 0.023%. A major reason for this in the Nigerian economy is the double digit interest rate, which increases the cost of business transaction. This finding is consistent with the works of Kareem, Afolabi, Raheem and Bashir (2013).

External reserve from this study has a negative relationship with economic growth; this is inconsistent with the apriori expectation. A unit increase in the external reserve will lead to a fall in economic growth by 0.099 %. Rodrick (2009) argued that reasonable spreads between the

yield on reserve assets and the cost of foreign borrowing led to an income loss of nearly one percent of GDP in developing countries that have rapidly increased foreign exchange reserves.

A plausible reason for the negative relationship can be attributed to the fact that Nigeria's external reserve has not been channeled to support investment, growth and self-liquidating ventures, the practice has been to stockpile external reserve in order to improve the foreign exchange and not to invest them in the provision of infrastructures and social amenities, also this negative impact of external reserve can be attributed to the continued depletion in Nigeria's external reserve, corruption, indiscipline and embezzlement of the external reserve.

The general F-statistics is highly significant based on the results. Exchange Rate volatility has significant negative impact on economic growth in Nigeria.

CONCLUSION AND POLICY RECOMMENDATIONS

The empirical results confirmed the existence of long and short run negative relationship between exchange rate volatility and economic growth between 1986-2016. This implies promoting policies that will enhance exchange rate stability will promote economic growth in Nigeria. It can therefore be concluded that economic growth in Nigeria depends largely on a stable exchange rate amongst other factors.

On contribution to extant knowledge, the study revealed that irregularities in the financial deepening variables and monetary policies have dampening effect on exchange rate and this impact negatively to economic growth. Hence strengthening financial deepening variables and monetary policies are capable of enhancing growth.

Sequel to the findings of this study, the study recommends as follows:

i) That the Monetary authorities such as the Central Bank of Nigeria should come up with stern foreign exchange and monetary control policies in other to stabilize the highly volatile exchange rate. A stabilized exchange rate policy will help in creating a balance between the money sector and the real sector thereby having a positive multiplier effect on economic growth of Nigeria.

ii) Importation of goods and products that can be locally produced should be checked and minimized; hence Government should establish such industries that can produce these products. This will help reduce the demand for foreign exchange thereby improving exchange rate stability.

iii) Concerted efforts on the part of the monetary authorities should be made to reduce the double high interest rate and financial deepening variables such as money supply, private sector credit, intermediation ratio should be closely monitored and managed thereby reducing the volatility in exchange rate and inducing economic growth. The implication of oil price shocks on the economy is germane, since oil remains the major foreign exchange earner for the country, and as the world moves in search for greener energy, there is the need for the diversification of the economy to increase supply of foreign exchange from other commodities and stabilize the exchange rate.

It is suggested that future empirical studies should capture other variables such as import, export, trade openness and foreign direct investment. This is because these variables constitute factors capable of explaining exchange rate volatility in Nigeria and they affect economic growth.

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APPENDIX A

Data for Analysis

YEAR	GDP (BL₦)	EXRV	EXCR($/₦)	OILP ($)	INTR (%)	MS (BL₦)	EXTR(M$)
1986	134.6	126.0685	2.0206	14.46	12	13.6	1576.84
1987	193.13	98.8514	4.0179	18.39	19.2	15.2	5212.85
1988	263.29	12.9188	4.5367	15	17.6	22.2	6022.23
1989	382.26	62.92689	7.3916	18.3	24.6	26.3	3662.76
1990	472.65	8.743082	8.0378	23.85	27.7	39.2	3357.75
1991	545.67	23.28599	9.9095	20.11	20.8	50.1	4051.68
1992	875.34	74.5642	17.2984	19.61	31.2	76	2782.65
1993	1089.68	27.4743	22.0511	17.41	36.09	118.8	4902.03
1994	1399.7	0.748	21.8661	17.41	21	169.4	7944.09
1995	2907.36	0	21.8661	17.26	20.79	201.4	2695.42
1996	4032.3	0	21.8661	21.62	20.86	227.5	2157.98
1997	4189.25	0	21.8661	19.33	23.32	268.6	6124.35
1998	3989.45	0	21.8661	12.62	21.34	318.6	7814.73
1999	4679.21	323.5261	92.6934	17.93	27.19	393.1	5309.1
2000	6713.57	10.15376	102.1052	28.4	21.55	637.7	7590.77
2001	6895.2	9.63527	111.9433	24.24	21.34	816. 7	10277.49
2002	7795.76	8.063761	120.9702	25.05	30.19	946.3	8592.01
2003	9913.52	6.9326	129.3565	28.65	22.88	1225.6	7641.83
2004	11411.07	3.203446	133.5004	38.1	20.82	1330.7	12062.76
2005	14610.88	-1.0137	132.147	55.6	19.49	1725.4	24320.77
2006	18564.59	-2.645	128.6516	67.07	18.7	2280.6	37456.09
2007	20657.32	-2.1908	125.8331	74.49	18.36	3116.3	45394.32
2008	24296.33	-5.5774	118.5669	101.42	18.7	4857.3	58472.89
2009	24794.24	25.5664	148.8802	63.35	22.62	5017.1	44702.36
2010	54612.26	0.9523	150.298	81.05	22.51	5571.3	10964.66
2011	62980.4	2.371	153.8616	113.65	22.42	6771.6	32580.28
2012	71713.94	2.3643	157.4994	113.66	23.79	7420.9	38092.16
2013	80092.56	-0.1195	157.3112	111.36	24.69	7032.8	45612.94
2014	89043.62	0.7891	158.5526	100.85	25.75	7242.9	37220.33
2015	94144.96	21.9023	193.2792	52.95	26.71	7311.7	29805.48
2016	101489.5	31.1522	253.49	44.02	21.34	9864.4	26034.09

Source: Central Bank of Nigeria Statistical Bulletin (2016); BP Statistical Review on Energy (2016).

AN AUTOREGRESSIVE DISTRIBUTED LAGGED (ARDL) APPROACH TO TRADE OPENNESS ON ECONOMIC GROWTH IN NIGERIA

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Abstract

This research empirically examined the long-run and short-run impacts of trade openness on economic growth in Nigeria, by applying the Autoregressive Distributed Lagged (ARDL) Approach. Data were collected from the Central Bank of Nigeria from 1990 to 2016. The result of the ARDL estimate revealed that Trade openness has both in the short-run and Long-run had a significant negative impact on economic growth of Nigeria. It can be seen that trade openness (liberalization) both negatively impact on economic growth in the long-run and short-run by 23.3% and 8.4% respectively. Therefore, it is concluded Nigeria trade has not been harnessed enough to the extent of achieving economic growth. This study, therefore, recommends that the government should maintain efficient trade openness so as to curtail illegal activities like smuggling. By doing this, there will be control which will lead to high trade openness that will translate into economic growth. Hence, Nigeria's trade flows will increase the participation of foreigners in the economy by allowing the inflow of foreign capital and expertise, thereby impacting on her economic growth.

Keywords: *Economic growth, Nigeria, Trade Openness*

JEL classification: *F13, F14*

INTRODUCTION

International trade is a powerful enabler of economic development. Empirical literature supports this with strong evidence that increased participation in international trade can spur economic growth, which itself is a necessary condition for broader development outcomes to be realized. By connecting global markets to developing-country producers and consumers, trade both through exports and

imports provides a critical channel for the flow of finance, technology and services needed to further improve productive capacity in agriculture, industry, and services. These are needed in turn for the structural transformation of an economy. Trade is synonymous to 'international trade' or 'foreign trade' or 'global trade'. It encompasses the inflow (import) and outflow (export) of goods and services in a country. A country's imports and exports represent a significant share of her gross domestic product (GDP); thus, international trade is correlated to economic growth. In an open economy, development of foreign trade greatly impacts GDP growth (Li, Chen & San, 2010).

The recent economic changes in Nigeria have resulted in a variety of experiences. For instance, Nigeria, since the early 1990s, has experienced its lost decades, which can be characterized by slow growth. Moreover, today, Nigeria has lost its place as !frica's largest economy and faces many challenges such as contracted Real GDP to 1.5%, a reflection of the two and a half year decline in export earnings, and fall in government revenues which impacted consumer spending and investments. Perhaps the most evident impact of the sharp decline in the oil price was in the currency market, with the NGN/USD depreciating 35.4% in the official market and 47.3% in the parallel market during as at the year 2015 and running through to 2018. Asides the depreciation in the currency, the illiquidity in the foreign exchange market impacted the business and investment environment, with Foreign Direct Investment (FDI) declining to an 11-year low, and a collapse in investment as a share of GDP to 12.6% - the lowest level in the past two decades (Price water house Coopers (PwC), 2017).

These changes (dynamics) of Nigeria macroeconomic variables imply that economic growth rate in the economy is far from being achieved. For instance, the sharp decline recorded in revenue accruable to the Federal Government from the petroleum sector, as the country's

earnings from crude oil export dropped to N5.271 trillion for the nine-month period, January to September 2015. The NBS (2016), in its Foreign Trade Statistics for the Third Quarter of 2015, had noted that the value of Nigeria's crude oil export for the nine month period declined to 45.39 percent or N4.381 trillion when compared to crude oil export of N9.652 trillion recorded in the same period in 2014. It also declined to 55.67 percent or N6.62 trillion when compared to total crude oil earnings of N11.891 trillion recorded in 2014 (Eboh, 2016).These declines are attributed to the decline in the Oil GDP contribution. Nigerian's economy suffered its slowest growth over the years in 2015 (Capital Bancorp, 2016). According to the report from NBS (2016), the average daily production of crude oil in the Q3 2015 was 2.17mbpd, an increase from 2.15mbpd recorded in the corresponding quarter of 2014 and 2.00mbpd recorded in Q2 2015 (Capital Bancorp, 2016).

PwC (2017), asserted that Nigeria is projected to be the third largest populated country in the world by 2050 with 399 million people and could emerge as the 14th largest economy in the world by 2050, with GDP in Market Exchange Rate (MER) terms at US$ 3.3 trillion. To deliver economic growth with per capita gains, Nigeria will need to aggressively boost domestic and foreign investments over the next decade. This is why Nigeria's economy must be dynamic and at the same time stable in international trade activities.

Significant growth rates are often associated with countries embracing the ongoing globalisation and increasing openness to the international exchange of goods and services as well as ideas and technologies. Many researchers believe that participation in the international economy was the primary source of growth in many East Asian countries that have experienced fast economic development during the past 50 years (World Bank 1993). And there is hardly any doubt that international trade facilitates technological development. Trade

openness can affect international flows of capital which may raise the speed at which physical capital and human capital are accumulated locally (at least temporarily). Consequently, trade openness can speed up productivity growth through faster technological progress. This study seeks to examine the long-run and short-run impacts of trade openness on economic growth in Nigeria, by applying the Autoregressive Distributed Lagged (ARDL) Approach. This study is divided into five sections: Introduction, which explains the motivation and background of the study. Section two, which is the literature review explain the concepts, theories, empirical reviews and the trade openness on economic growth in Nigeria. Section three which is the methodology contains the sources of data and method of data analysis. Sections four and five are the result and discussion of findings and the conclusion and recommendations respectively.

LITERATURE REVIEW

– The Concept of Trade Openness

The concepts of trade liberalization and openness are closely related but not identical. Trade liberalization includes policy measures to increase trade openness while trade openness is usually considered as an increase in the size of a country`s traded sectors in relation to total output. For the purpose of this study, the interest is on trade openness. Several earlier studies such as Erfin (1999) on trade openness have shown that there is an impact on economic growth in several countries and the results have in many cases been a positive indirect impact on total factor productivity growth. Studies for the positive indirect relationship between trade and openness are related to the work of Erfani (1999) and Edwards (1992) as well as Krueger (1997). However, the studies only showed an indirect impact of trade openness on growth via total factor productivity growth. International Trade has been shown to make it possible to overcome the reduced dimension of the internal

market and revenue comma on the other hand, by increasing the extension of the market, the labour division improved and the productivity increased. International Trade would, therefore, constitute a dynamic force capable of intensifying the ability and skills of workers, of encouraging technical innovations and the accumulation of capital, making it possible to overcome technical indivisibilities and generally speaking, of giving participating countries the possibility of enjoying Economic Growth.

Barro and Sala-I–Martin (1995) demonstrated an interesting evidence for absolute convergence through trade openness between similar regions within countries. It showed that poor countries or regions tend to grow faster than rich ones if they are sufficiently open. Among the ones that are sufficiently open and have similar overall policy environments, poorer ones tended to grow faster than average. Openness can be measured by the share of trade (import plus export) in total output, measured by the Gross Domestic Product (GDP). This is a broad concept of openness; in the narrow context, the ratio of imports or exports to GDP can represent the degree of openness of an economy. New ways of measuring trade openness and growth are still ongoing. For example between an earlier study and a new is that the former did not include data for institutional factors that recently has shown importance on trade flows. North (1990) argued that the unobserved barriers to trade are often related to incomplete or asymmetric information and uncertainty in exchange. The commonly used measure is exports and imports as a percentage of GDP for openness as stated by Frankel and Romer (1999) and Irwin and Tervio (2001). The main advantage of it is the availability of data for a long period and for many countries but the weakness can be that it is an outcome-based measure and as such is the result of several factors so that it does not become clear what such measures exactly capture. This will introduce the issue of endogeneity that requires specific estimation techniques such as instrumental

variables techniques as in Frankel and Romer (1999). Lee (2004) argued that all measures of openness are generally closely linked to the growth rate and in this case, it is likely that all measures of openness are jointly endogenous with economic growth which may cause bias in the estimation results from simultaneous or reverse causation. This study adopted the openness measure of the share of trade (import plus export) in total output, measured by the Gross Domestic Product (GDP).

– **The Concept of Economic Growth**

Economic growth is the increase of per capita gross domestic product (GDP) or other measure of aggregate income. It is often measured as the rate of change in real GDP. Economic growth refers only to the quantity of goods and services produced. Economic growth can be either positive or negative. Negative growth is referred to the shrinking economy. It is associated with economic recession and depression. Economic growth is primarily concerned with the long run. The long run path of economic growth is one of the central questions of economics. An increase in GDP of a country is generally taken as an increase in the standard of living of its inhabitants, over a period of time. The definition by IMF (2013) stated that economic growth is the increase in the inflation-adjusted market value of the goods and services produced by an economy over time. It is conventionally measured as the percent rate of increase in real gross domestic product, or real GDP, usually in per capita terms (IMF, 2013).

An increase in growth caused by more efficient use of inputs (such as labour, physical capital, energy or materials) is referred to as intensive growth. GDP growth caused only by increases in the amount of inputs available for use (increased population, new territory) is called extensive growth. Growth is usually calculated in *real* terms – i.e., inflation-adjusted terms – to eliminate the distorting effect of inflation on the price of goods

produced. Measurement of economic growth uses national income accounting (Bjork, 1999).

Traditionally, economists have measured development in terms of increasing *per capita* income, or gross domestic product. But if the distribution of income is skewed and the poor part of the population is getting poorer even while average income increases, many people – including many economists – would hesitate to call this development. The UN Development Program (1994) defines development as processes that increase people's opportunity of choice. Ecologists, for their part, would tend to regard processes that threaten environmental robustness as negative even if they benefit people. Other scholars stated that education and health in the society are important factors in meeting basic needs. Education creates knowledge, skills, and capabilities allowing greater individual choice and freedom and, as such, is an important part of development. Institutional arrangements and governance have important ramifications for individual freedom and choice and are, according to some, essential parameters by which the level of development should be judged. This study adopts the human development index (HDI) as a standard measure for economic growth. The HDI combines life expectancy, adult literacy, and school enrollment ratios with per capita GDP in a weighted average to get an index between 0 and 1. The results clearly show that growth is a multidimensional process, and that higher GDP does not necessarily mean higher overall welfare.

THEORETICAL REVIEW

– Mercantilist Trade Theory

This theory identifies the fact that a country can only be rich and be powerful if it ensures that its export is more than its import. Some of the propagandist of this theory is Jean Baptiste Colbert and Thomas

Hobbes. It was understood then, that, the most important way in which a country could be rich was by acquiring precious metals such as gold. This was achieved by ensuring that the volume of export was better than the volume of import.

– **Comparative Advantage Theory**

This theory advocated by David Ricardo attempt to answer the question of a situation where a country has absolute advantage in production of two or more goods, will trade still be profitable with other countries? Ricardo demonstrates that external trade arises not from differences in absolute advantage but from difference in comparative advantage. In a model of two countries, two commodities and one factor of production, he maintains that a country should export the commodity it has comparative advantage in relation to the comparative cost of producing the commodity. In other word, a country should export the commodity which its comparative cost of production is lower and import that commodity which its comparative cost is higher in pre-trade evaluation with other country. The Ricardian theory is unrealistic because it is based on labour theory of values which states that the price or the values of a commodity is equal to or can be inferred by the quality of labour time going into its production process, despite the disadvantages of the theory of comparative advantage, the theory is found applicable in the study of economics.

– **Hecksher – Ohlin Trade Theory**

The theory explains two issues in the theory of comparative advantage. First, the factors that determine comparative advantage of countries and second, the effects of trade on factor income in the trading countries. On the assumption of equal or similar technology and tastes, Hecksher – Ohlin theory focuses on the differences in relative factors endowments and factors prices between nations as the most

determinants of trade. The model identified difference in pre-trade product prices between nations as the basis for trade. The theory assumed two countries, two commodities and two factors. There is perfect competition in both factor and product market. It assumed that factor inputs; labour and capital in the two countries are homogeneous. Production function also exhibits constant return to scale. Production possibility curve is concave to the origin. The model suggests that the less develop countries that are labour abundant should specialize in the production of primary product especially agricultural product because the labour requirement of agricultural is high except in the mechanized form of farming. On the other hand, the less developed countries should import capital-intensive product mostly the manufactured goods from developed countries that are capital intensive. Hecksher Ohlin theory concludes that trade increase total world output, all countries gain from trade, trade enables countries to secure capital and consumption of goods from other parts of the world. Thus, trade stimulates economic growth (Nageri, Ajayi, Olodo, & Abina, 2013).

This study adopted the Mercantilist theory because, the theory stated that a country can only be rich and powerful if it ensures that its export is more than its import, the most important way in which a country could be rich is ensuring that the volume of export was better than the volume of import. This can be done by introducing innovative technology, which will increase the volume of export and decrease the volume of imports. This can be possible with an open economy. An open economy (trade openness) can potentially enhance the growth prospects of a country by influencing any of these three sources of growth. Trade openness also leads to better allocation of resources. When an economy opens up, forces of comparative advantage forces the economy to specialize in the sector for which it has better factor endowments. As a result, the productivity of that sector increases. The exports from that

sector also increase which consequently boosts growth. Lastly, trade openness encourages technology transfer from developed to developing economies which could lead to an increase in factor productivity that would facilitate growth (Morgan & Katsikeas, 1997).

EMPIRICAL REVIEW

Adelowokan and Maku (2013) examined the effect of trade and financial investment openness on economic growth in Nigeria between 1960 and 2011. Estimates from the reported dynamic regression model indicated that trade openness and foreign investment exert a positive and negative effect on economic growth respectively. Also, the partial adjustment term, fiscal deficit, inflation and lending rate were found growth increasing. It was evidenced that long-run relationship exists among trade openness, foreign investment, and economic growth in Nigeria.

Dudley and Karski (2001) investigated whether the degree of openness affects economic growth using panel regression during a period of 20 years from 1969 – 1989 for ten developing countries. Their results showed that in three of the ten countries, the degree of openness has a positive effect, on another three it has a negative effect and has no effect on the remaining four.

Kingsley (2004) investigated the impact of openness on Nigeria's long-run growth using the cointegration approach. They tested for the number of a cointegrating relationship between LRGDP and LOPEN. They concluded that there is no significant relationship between openness and economic growth and that unbridled openness could have deleterious implications for the growth of local industries, the real sector (goods and services sector) and government revenue.

Chimaobi (2010) investigated the causal relationship among financial development, trade openness and economic growth in Nigeria and discovered that trade openness and financial developments have a causal impact on economic growth in Nigeria. Conversely, growth has a causal impact on trade and financial development, implying support for growth-led trade but no support for trade-led growth.

Studies outside Nigeria include Yanikkaya (2003) and Georgios (2003). For the case of Yanikkaya (2003), he tested the relationship between trade openness and economic growth of over 100 developed and developing countries using panel data from 1970 to 1997. The results show that openness to international trade does not have a simple and straightforward relationship with economic growth. Moreover, the results further show that trade barriers were positively and, in most specifications, significantly associated with economic growth, particularly for developing countries and they were not consistent with the findings of theoretical economic growth.

Georgios (2003) investigated the effect of trade openness and growth using two-panel data set: one of 56 countries covering the period 1951 – 1998, and another of 105 countries over 1960 – 1997. The results show that the effect of trade openness on economic growth is positive, permanent, statistically significant, and economically sizable. Thus, he added that developing countries benefit more from increased openness than developed ones because technology is transferred from developed to developing economies. Gilbert (2004) investigated trade openness policy, quality of institutions and economic growth in countries employing panel data in the endogenous growth model. His results show that trade policy is associated with the natural openness constitute significant parameter to gain high economic growth rate. In other words, the global openness depending on the natural endowments and economic policies are good to reach high growth rate. He found that

openness has no significant impact on economic growth is as a result of low institutional quality (that is corruption). Thus, openness and good governance are required for improved economic growth.

This paper essentially contributes to existing studies in three ways: First, the paper included new time series from 1990 to 2016, which were excluded in the earlier studies on the Nigerian economy. Second, rather than using the common Gross Domestic Product as measure for economic growth, this paper used the Human Development Index (HDI) which has variety of computations which makes it robust. Third, the ARDL method was used. This was done to determine the long run and short-run relationships between trade openness and economic growth. Therefore, this paper not only extended the existing literature but also improved the quality of the evidence.

METHODOLOGY

– Data Description and Sources

This study used secondary data (time series data). An empirical investigation was carried out on the basis of the sample covering the period 1990 to 2016 on yearly basis. Human development index (HDI) was used as an indicator of economic growth while trade openness is measured as the share of trade (import plus export) in total output, divided by Gross Domestic Product (GDP). Trade openness variable was collected from Central Bank of Nigeria, Statistical Bulletin (2017) and while HDI was from World Bank.

METHODS OF ANALYSIS AND MODEL SPECIFICATION

This study adopted the Autoregressive Distributed Lagged Model (ARDL). The following are the assumptions of ARDL

1. It is expected that all of the series are I(0), and hence stationary. In this case, we can simply model the data in their levels, using OLS estimation, for example.

2. It is expected that all of the series are integrated of the same order (*e.g.*, I(1)), but they are *not* cointegrated. In this case, it can just (appropriately) difference each series, and estimate a standard regression model using OLS.

3. It is expected that all of the series are integrated of the same order, and they *are cointegrated*. In this case, it can estimate two types of models: (i) An OLS regression model using the *levels* of the data. This will provide the long-run equilibrating relationship between the variables. (ii) An error-correction model (ECM), estimated by OLS. This model will represent the short-run dynamics of the relationship between the variables (Pesaran& Shin, 1999; Pesaran, Shin, & Smith, 2001). The justification for the application of autoregressive distributed lagged model (ARDL) in this study because some of the variables are integrated of order I(0) and I(1) (Pesaran& Shin, 1999; Pesaran, Shin, & Smith, 2001).

The basic form of an ARDL regression model is:

$$Y_t = \beta_0 + \beta_1 Y_{t-1} + \ldots + \beta_k Y_{t-p} + \alpha_0 X_t + \alpha_1 X_{t-1} + \alpha_2 X_{t-2} + \ldots + \alpha_q X_{t-q} + \varepsilon_t \ldots \quad (1)$$

where ε_t is a random "disturbance" term.

Which becomes;

$$\Delta y_t = \beta_0 + \Sigma \beta_i \Delta y_{t-i} + \Sigma \gamma_j \Delta x_{1t-j} + \Sigma \delta_k \Delta x_{2t-k} + \varphi z_{t-1} + e_t \ldots \quad (2)$$

$$\Delta \mathbf{HDI}_t = \beta_0 + \Sigma \beta_i \Delta \mathbf{HDI}_{t-i} + \Sigma \gamma_j \Delta \mathbf{TO}_{t-j} + \theta_0 \mathbf{HDI}_{t-1} + \theta_1 \mathbf{TO}_{t-1} + \varphi z_{t-1} + e_t \ldots \quad (3)$$

Where:

$\Delta \mathbf{HDI}_t$ = Differenced Human Development Index in time t

$\Delta \mathbf{HDI}_{t-I}$ **=** Differenced Human Development Index in time t-i

Δ**TO** $_{t-j}$= differenced trade openness in time t-j

HDI$_{t-1}$= One year lagged humank development index

TO $_{t-1}$= one year lagged Trade openness

e_t= error term

ESTIMATION AND RESULTS

Figure 1 in Appendix B shows the result of the normality test. The result indicated that the p-value of the Jarque-Bera is 0.909207. It is higher than the significant level of 0.05, implying that the error term of the dependent variable is normal.

The descriptive statistic in Appendix C revealed that the mean values of HDI and Trade Openness are 0.436 and 0.442 respectively. Also, the result indicated that they have standard deviation values of 0.060 and 0.159, this indicated that the results are clustered without outliers. The mean of HDI shows that Nigeria belongs to countries with low human development category. While for trade openness of 0.442 shows that there is low influence of domestic trade activities which influences low economic growth.

Table 1: KPSS Unit Root Test

Variables	Stationarity at Level	Stationarity at first difference	Level of significance
HDI	$I(1)$ 0.759	$I(1)$ 0.319	0.463
Trade openness	$I(0)$ 0.426	$I(1)$ 0.615	0.463

Source: Eviews 9.0.

Table 1 shows the result of the unit root test which was derived from the KPSS method. The KPSS method was applied in this study

other than the Augmented Dickey Fuller and Phillip-Perron because the unit root test gave a better output. The result shows that trade openness was stationary at a level which has an order of I(0). While HDI was stationary at first difference which has an order of I(1). By this result, it has the mixture of I(1) and I(0). This means that the Bounds test of co-integration has an advantage over Johansen cointegration method.

CO-INTEGRATION TEST (BOUND TEST)

Bounds test was applied because Johansen co-integration is at a disadvantage to determine the long-run relationship between sustainable growth and trade openness. This is because the bounds test allows a mixture of I(1) and I(0) variables as regressors, that is, the order of integration of appropriate variables may not necessarily be the same. The following hypothesis is formulated to determine the long-run relationship between the variable

H_0 1 2 3 0 (no long-run relationship)

Against the alternative hypothesis

H_0 1 2 3 0 (a long-run relationship exists)

DECISION RULE

If the computed *F*-statistic is smaller than the lower bound value, then the null hypothesis is not rejected and it concludes that there is no long-run relationship. Conversely, if the computed *F*-statistic is greater than the upper bound value, then there is a long-run level relationship. On the other hand, if the computed *F*-statistic falls between the lower and upper bound values, then the results are inconclusive.

Table 2: Bounds Test for Cointegration

Test Statistic	Value	k
F-statistic	8.887478	1
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	4.04	4.78
5%	4.94	5.73
2.5%	5.77	6.68
1%	6.84	7.84

Table 2 shows the results of the bounds co-integration test demonstrated that the null hypothesis against its alternative is easily rejected at the 1% significance level. The computed *F*-statistic of 8.887 is greater than all the lower and upper critical bound values at 10%, 5%, 2.5% and 1% respectively, thus indicating the existence of a steady -state long-run relationship between HDI and Openness of the economy.

Table 3: ARDL Cointegrating and Long Run Form

Cointegrating Form (Short run coefficient)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TO)	-0.084249	0.017944	-4.694986	0.0002
D(TO(-1))	0.016360	0.020791	0.786892	0.4416
D(TO(-2))	-0.034499	0.019194	-1.797363	0.0891
CointEq(-1)	-0.400789	0.099155	-4.042044	0.0008
Cointeq = HDI - (-0.2332*TO + 0.5650)				
	Long Run	Coefficients		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TO	-0.233162	0.067162	-3.471630	0.0027
C	0.564994	0.030850	18.314381	0.0000

Table 3 shows the result of the error correction, short-run, and long-run impacts. The value of the ECM approximately gave 40.0%, thatis the disequilibrium is corrected and brought back to equilibrium at a speed of 40.0% in the following year.

– **Short-run effect**

The result in Table 3 shows that in the short-run trade openness significantly and negatively impact on HDI. This implies that a one percent increase in trade openness will bring about an 8.4% decrease in HDI, indicating that trade openness in the short-run has not really brought about a positive economic growth.

– **Long-run effect**

Consequently, the long-run trade openness significantly and negatively impacts on HDI. This implies that a one percent increase in trade openness will bring about a 23.3% decrease in HDI, indicating that trade openness in the long-run has not really impacted positively on economic growth.

DISCUSSION OF FINDINGS

The result of both the Long-run and short-run impacts of trade openness on economic growthis not consistent with the study conducted byGeorgios (2003). The result from his findings shows that the effect of trade openness on economic growth is positive. Similarly, the result form this study does not also agree with Gilbert (2004) stated that openness has no significant impact on economic growth is as a result of low institutional quality. The contradictions in result may be attributed to differences in geographical locations, difference in the economies of the countries for which operate on and the level of trade openness. Nigeria may be an extremely opened economy compared to the other countries

for the studies were carried out. This factors may have contributed to the findings of these studies.

CONCLUSION

The result of the ARDL estimate revealed that Trade openness has both in the short-run and Long-run have a significant negative impact on the economic growth of Nigeria. They affect economic growth by 8.4% and 23.3% respectively. Therefore, it is concluded trade openness has not been harnessed enough to the extent of achieving economic growth.

RECOMMENDATIONS

This study, therefore, recommends that Nigeria should have minimal openness of the economy both in the long run and short-run. The government should maintain efficient trade openness so as to curtaillillegal activities like smuggling. By doing this, there will be control which will lead to high trade openness that will translate into economic growth. Hence, Nigeria's trade flows will increase the participation of foreigners in the economy by allowing the inflow of foreign capital and expertise, thereby impacting on her economic growth.

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APPENDICES

APPENDIX A

UNIT ROOT TEST

Null Hypothesis: TO is stationary
Exogenous: Constant
Bandwidth: 6 (Used-specified) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.426205
Asymptotic critical values*:	1% level	0.739000
	5% level	0.463000
	10% level	0.347000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: D(TO) is stationary
Exogenous: Constant
Bandwidth: 31 (Used-specified) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.615385
Asymptotic critical values*:	1% level	0.739000
	5% level	0.463000
	10% level	0.347000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: HDI is stationary
Exogenous: Constant
Bandwidth: 2 (Used-specified) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.759113
Asymptotic critical values*:	1% level	0.739000
	5% level	0.463000

	10% level	0.347000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: D(HDI) is stationary
Exogenous: Constant
Bandwidth: 2 (Used-specified) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.319668
Asymptotic critical values*:	1% level	0.739000
	5% level	0.463000
	10% level	0.347000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Appendix B

Normality Test.

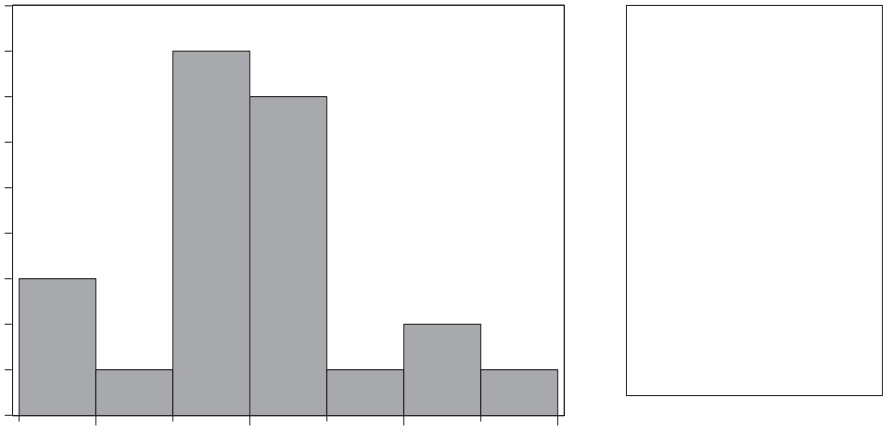

Figure 1: Histogram Normality

APPENDIX C

DESCRIPTIVE STATISTICS

	HDI	TO
Mean	0.436741	0.442148
Median	0.449000	0.447000
Maximum	0.527000	0.968000
Minimum	0.246000	0.138000
Std. Dev.	0.060485	0.159310
Sum	11.79200	11.93800
Observations	27	27

EFFECTS OF BEHAVIOURAL FACTORS ON INVESTMENT DECISION - MAKING IN PROPERTY MARKET IN PLATEAU STATE, NIGERIA

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Abstract

A large number of investors are investing in property market without sound decision making leading to stagnation of investment. Thus, this study was aimed at establishing the behavioral factors influencing investment decision-making in property market in Plateau State, Nigeria. The main objective of this study was to establish the effects of behavioural factors on investment decision-making in property market in Plateau State, Nigeria. The specific objectives were to determine the influence of anchoring, overconfidence, narrow framing, representativeness and disposition effect on investment decision making in property market in Plateau State, Nigeria. The study population comprised of property agents and owners in Plateau State, Nigeria. Multi-stage sampling procedure was used. The sample size comprised of 312 respondents and primary data was used. Data analysis involved the use of descriptive and inferential statistics. A multivariate regression model was used to predict the probability of different possibility outcomes of dependent variables, helping to predict the probability of an investor to invest in property market. The results confirmed that there was a significant positive linear relationship between anchoring, overconfidence, narrow framing, disposition effect, representativeness and investors' investment decision making in property market in Plateau State, Nigeria. The study concluded that most investors displayed many behavioral factors that influenced their investment decision-making processes. The study recommends that investors should make constant attempts to increase their awareness on behavioral finance by educating themselves on the field. Studying about the behavioral factors, and reflecting on their decisions are likely to help achieve better self-understanding of the extent and manner to which they get influenced by emotions while making financial decisions under uncertainty.

Keywords: *Anchoring, overconfidence, narrow framing, representativeness, disposition effect.*

INTRODUCTION

The effects of behavioral factors influencing investors decision making in Nigeria is on a general note, a grey area of study as researchers carried out have been behavioural finance in Nigeria and these tend to

give attention to investors' behaviour in the stock exchange rather than investor behaviour in the property market. Various scholars have attempted to establish the determinants of investors' decision making in Nigeria. Plateau State is known among the thirty-six states in Nigeria to be endowed with cool and temperate climate. This has attracted both serving and retired top government officials and businessmen from all parts of the country to invest in the property market in the state as most of them prefer to reside in the state after their retirement. The state has often been classified as a miniature Nigeria with virtually all the tribes in the country residing there.

Apart from its favourable climate and tourist attractions, the state is also known to be blessed with natural resources such as tin, columbite, and lead among others. These resources have attracted investors from within and beyond which has resulted in the increase in property development by investors (Nwude, 2012). However, most of the investors tend to exhibit certain behavioural factors as overconfidence, representativeness bias and herding in making their investment decisions in the property sector in Nigeria (Obamuyi, 2013).

Plateau State is one of the cherished states for investors in Nigeria and hosts a population of about three million people It was adjudged the "home of peace" or as the safest state to live in Nigeria at some point in time. (Dung-Gwom, 2008). This has resulted in the sales value of tenement, flat, duplex, semi-detached house and four bedroom bungalows have increased gradually from 2001 until 2009 when a sharp rise was observed, which continued till 2012 (Aliyu, 2012).

From developments in Plateau state today, the scenario is that, the sales and rental values of landed properties is increasing and is maintaining a steady upward movements and prices of housing as well has been on increase in the state (Aliyu, 2012). The basic question arising

from this development is: What are the behavioural factors that have influenced the investors to invest in the Plateau State property market in Nigeria?

People invest in the property market for different reasons. Some of the investors invest in the property market for commercial purpose, some for resale, and some for investment purpose and many other reasons. But when they invest in the property market, they do not know that certain factors affect their investment decision (Statman, Fisher & Anginer, 2008). Many people make investment emotionally, feeling fantasy; mood and sentiments have been observed to affect investment decision. There are some psychological factors that affect the investors in investment decision (Shanmugsundaram & Balakrishnan, 2011). Investors are affected by how investment problems are presented to them. They often make different choices pertaining similar scenarios depending on how the problem has been framed (Jorden & Miller, 2008). Decision makers also tend to make judgments based on an initial assessment as anchor, but fail to make sufficient adjustments later on. It is the tendency to rely on one trait or piece of information when making decisions.

The paper is divided into five sections: the first part looked at the introduction providing background information to the subject matter, stating the objective and problem of the research. The second section considered the literature review by looking at the theoretical and empirical literature and also identifying the research gap. In the third section, the research methodology employed in the research is discussed while the data analysis was presented in the fourth section. The fifth section concludes the research and provided some recommendations to future scholars and investors in the property market.

LITERATURE REVIEW
CONCEPTUAL REVIEW

Anchoring bias is the tendency to rely too heavily, or anchor on a past reference or one piece of information when making a decision. Anchoring refers to individual's tendency to base their estimates and decisions on familiar positions, known as 'anchors', with an adjustment relative to the starting point, known as reference points. This fixation is called anchoring (Mangot, 2008). A reference point is the property price that investors compare to the current property price. The brain's choice of a reference point is important because it determines whether the investor feels the pleasure of obtaining a profit or the pain when experiencing loss (Benartzi & Thaler, 1995).

In its most basic form, overconfidence can be summarized as unwarranted faith in one's intuitive reasoning, judgments, and cognitive abilities (Pompian, 2006). Psychologists have determined that overconfidence causes people to overestimate their knowledge, underestimate risks, and exaggerate their ability to control events. The concept of overconfidence derives from a large body of cognitive psychological experiments and surveys in which subjects overestimate both their own predictive abilities and the precision of the information they have been given. People are poorly calibrated in estimating probabilities; events they think are certain to happen are often far less than 100 percent certain to occur. In short, people think they are smarter and have better information than they actually do (Pompian, 2006).

According to Kahneman (2003), narrow framing occurs when decisions are made intuitively rather than through systematic reasoning. He distinguished two modes of thinking and making decisions. The first relies on effortful reasoning and systematic processing of information. By its very nature, this mode of thinking is analytic, controlled by the decision maker, relatively slow and less affected by the context. People

that use this mode of thinking are less likely to frame decisions narrowly. The framing effect occurs due to a trade-off between the cognitive effort required to calculate expected values of an alternative (if processing is costly, people are less likely to choose the stimulus) and the affective value of the alternative (if the outcome produces a feeling of displeasure, people are less likely to choose the stimulus).

Rahul (2012) define representativeness as an assessment of the degree of correspondence between a sample and a population, an instance and a category, an act and an actor or, more generally, between an outcome and a model. Representativeness is concerned with determining conditional probabilities. Representativeness is said to be usually employed, by property investors while making judgments under uncertainty (O'Hagan *et al,* 2006).

Shefrin and Statman (1985) devise this shorthand term, disposition effect, to conceptualize the idea that investors tend to sell winners too early and to hold losers too long. According to Henderson (2012) disposition effect is the tendency of an investor to sell winners too early and hold losers too long. Shefrin and Statman (1985) in their model provide that the disposition effect should be weaker at the end of the year because investors can control themselves then. Rationally, the investor recognizes that realizing losses can be advantageous for tax purposes. Irrationally, he disposes the tax considerations because he is driven by the positive thoughts associated with realizing gains. Investors find discarding loss-making properties easier when the deadline for the end of the tax year approaches.

On Investors' Decisions Making, there are several investment decisions related to property trading, such as: buying, selling, choice of property, length of time to hold property, and size of property to trade. However, in this part, two important property trading decisions: selling and buying are focused because they have connection to the other decisions, and high impact on the investment decisions.According to Shefrin and Statman (2005), investors decrease the selling decisions of assets that get a loss in comparison to the initial purchasing price, a trend called the "disposition effect". Odean (2005) confirms the same conclusion that individual investors tend to sell properties which their values, in comparison to their original buying price, increase rather than sell the decreasing ones.

THEORETICAL REVIEW

The proponents of heuristic theory were Amos Tversky and Daniel Kahneman (1979). The central idea of the "heuristics and biases" was that judgment under uncertainty often rests on a limited number of simplifying heuristics rather than extensive algorithmic processing. Kahneman and Tversky (1979) described three general-purpose heuristics; availability, representativeness, anchoring and adjustment that underlie many intuitive judgments under uncertainty. When people overestimate the reliability of their knowledge and skills, it is the manifestation of overconfidence (Hvide, 2002). This theory laid the foundation of three variables; Anchoring, overconfidence and representativeness as influencing factors on investment decision making.

Daniel Kahneman and Amos Tversky are the proponents of Prospect Theory. They came up with this theory in 1992 as a description of investment among individuals. Kahneman and Amos Tversky argued that people make decisions based on the potential value of losses and gains rather than the final outcome. In addition people evaluate these

losses and gains rather than the final outcome and that people evaluate these losses and gains using certain heuristics. According to Filbeck, Hatfield and Horvath (2005) prospect theory focuses on subjective decision-making influenced by the investors' value system. Prospect theory describes some states of mind affecting an individual's decision-making processes including disposition effect (Waweru et al., 2008). Prospect Theory will form the theoretical foundation of disposition effect and its influencing level on the investment decision making of investors at the property market in Plateau State, Nigeria.

The proponent of the theory of planned behaviour (TPB) was Icek Ajzen (2002). This theory was intended as an improvement on the earlier predictive power of the Theory of Reasoned Action in 1980. The theory of reasoned action considers behavioural intention as the immediate motivator for individuals to perform the behaviour. Beh avioural intention, in turn, is a function of two determining factors, namely attitude toward the behaviour (AT) and subjective norm (SN) that relate to conducting the behaviour (Ajzen & Fishbein 1980). Attitude toward the behaviour is defined as one's general feelings indicating their favourableness or unfavourableness to the behaviour. Subjective norm is defined as one's perception regarding whether significantly others think the behaviour should be performed or not (Ajzen & Fishbein 1980). The theory of planned behaviour laid the foundation of explaining the dependent variable decision making, explaining the indecision of either to buy or sell in investors' investment decision making.

Raafat, Chater and Frith (2009) are the proponents of herd behaviour theory. The theory describes how individuals in a group can act collectively without centralized direction. Herding effect in financial market is identified as tendency of investors' behaviours to follow the others' actions. Practitioners usually consider carefully the existence of herding, due to the fact that investors rely on collective information more

than private information which can result into the price deviation of the securities from fundamental value; therefore, many good chances for investment at the present can be impacted. This theory laid the foundation of the influence of herding and overconfidence in the study.

The proponents of Fuzzy Trace Theory (FTT) were Kuhberger and Tanner. The theory states that people simultaneously encode mental representations (traces) of information that vary in precision. Essential elements of a decision consist of knowledge, gist of information, retrieval (how knowledge and values are accessed when needed), and processing (how what is perceived is put together with what is retrieved to make a decision) (Kuhberger & Tanner, 2010). The fuzzy -trace theory proposes that the framing effect is the result of superficial and simplified processing of information (Reyna & Brainerd, 1991). This theory holds that individuals initially peruse the available alternatives to determine if they can make a good decision and expend minimal cognitive effort. Although this is an appealing explanation of the framing effect, this model ignores effective processes that should play an important role in determining what constitutes a good decision (Kuhberger & Tanner, 2010).

EMPIRICAL LITERATURE REVIEW

Andersen (2010) findings on existing trading algorithm concluded that anchoring had a role to play in weekly price fixing. Similarly, Monti and Legrenzi (2009) found that property prices of today are often determined merely by those of the past. Also Kim and Nofsinger (2008) findings suggested that agents are heavily influenced by anchoring and adjusting. Participants formed a preliminary view, which operated as a strong anchor. Fagerström (2008) study on overconfidence and over optimism findings showed that analysts of the S & P 500 were exaggerated by the problems of over confidence and the over optimistic

biases. In addition, Ngoc (2013) found that investors are overconfident in their own abilities, and investors and analysts are particularly overconfident in areas where they have some knowledge. Chaudhary (2013) findings on subject perceptions of overconfidence and predictive validity in financial cues revealed that investors are generally overconfident regarding their ability and knowledge and they also tend to underestimate the imprecision of their beliefs or forecasts, and they tend to overestimate their ability.

According to Kahneman (2003) narrow framing occurs when decisions are made intuitively rather than through systematic reasoning. Laing (2010) findings also confirmed the existence of the framing effect and a sunk cost effect. Rabin and Weizsacker (2008) results showed both in an experimental setting and using a large representative survey, that a majority of people choose dominated strategies when prospects were presented in isolation.

Yosra and Boujelbene (2013) on the determinants of institutional investors' behaviours showed the extent to which there is a group of investors who are subject to the bias of representativeness. Similarly Wen and Jianfeng (2011) findings showed that while making investments, individual investors tend to attribute good characteristics of a company directly to good characteristics of its property. Antony (2009) findings showed that investor's psychology plays a great role in determining investment decision and market prices.

Crane and Hartzell (2007) showed that there was strong statistical evidence consistent with the existence of the disposition effect as investors tend to sell winners and hold losers. Similarly Kyle, Ou -Yang and Xiong (2006) findings showed that the analysis did not take the investor's initial buying decision into account. Moreover, Genesove and Mayer (2001) findings were that there was evidence in support of the

disposition effect (on the loss aversion side of the function). While Frazzini (2006) and Coval and Shumway (2005) revealed that disposition effect can help explain the decisions of mutual fund managers and proprietary traders, respectively, and that such decisions manifest themselves in asset prices and returns.

RESEARCH METHODOLOGY

The study used descriptive survey research design to assess and establish the influence of behavioural factors on investment decision-making in property market in Plateau State, Nigeria. The target population of this study comprised of a list of 1650 property agents and investors. Multi-stage sampling procedure was used in the selection of representative sample. Purposive sampling was used to select the capital city of the state and some selected towns among the seventeen Local Government headquarters.

The sample size was 312, and was selected using the simple random sampling. The study collected primary data. A semi-structured questionnaire was used to collect the primary data. The semi-structured questionnaire was designed to contain both closed and open-ended questions and a five-point Likert scale. The researchers then administered the questionnaire with the help of a research assistant. Data analysis involved the use of descriptive and inferential statistics in order to help the researcher to establish the relationship between behavioural factors and investment. The linear regression model was utilized to further give inferences to the data obtained using the Statistical Package for Social Sciences (SPSS). The multivariate model used to test the relationship between the independent variables and dependent variable was as shown below.

$ID = \beta o + \beta_1(ANCH) + \beta_2(OVER) + \beta_3(NARF) + \beta_4(REP) + \beta_5(DISP) + \varepsilon$

Where:

ID = Represents the Investment Decision

β_0 = Model Intercept

β_1 ..... β_5 = Represents the beta coefficients

ANCH = Anchoring

OVER = Overconfidence

NARF = Narrow framing

REP = Representativeness

DISP = Disposition Effect

ε = Represents the error term of the model

ANALYSIS, FINDINGS AND DISCUSSIONS

– Descriptive Results

This section provides descriptive results on how respondents responded to the statements in the questionnaire. The section contains descriptive results on the respondents' opinion on dependent and all independent variables.

– Anchoring

The first objective of the study was to determine the role of anchoring on investment decision making in property market in Plateau State, Nigeria. The descriptive findings are presented in Table 4. 1.

Table 1 Anchoring Bias

Statement	Never	Rarely	Some-times	Often	Always	Mean	Std Dev
Property investors set the value of the property based on the recent selling price	3.6%	4.0%	9.8%	43.5%	39.1%	4.11	0.98
Property investors use property purchase price as a reference point in trading	2.5%	3.3%	6.5%	42.0%	45.7%	4.25	0.91
Property investors set the value of the property based on the recent buying price	4.3%	4.7%	6.9%	44.6%	39.5%	4.10	1.02
Investors use a reference point to compare to the current property price	4.0%	3.6%	5.8%	42.8%	43.8%	4.19	0.98
Investors attach their thoughts to a logically irrelevant reference point	2.5%	3.3%	9.8%	44.6%	39.9%	4.16	0.91
The highest price the investor has perceived also becomes a reference point	2.5%	4.0%	7.6%	39.9%	46.0%	4.23	0.94
Investors wait for the property price to reach a reference point before trading	5.8%	4.0%	8.3%	43.5%	38.4%	4.05	1.07
Trained negotiators and real estate brokers are anchored in the negotiation process	3.6%	4.3%	10.1%	39.1%	42.8%	4.13	1.01
Property prices of today are determined by those of the past	4.3%	3.3%	5.4%	46.4%	40.6%	4.16	0.98
Investors tend to become more optimistic when the market rises	5.1%	2.9%	6.2%	41.3%	44.6%	4.17	1.03
Investors tend to become more pessimistic when the market falls	4.3%	5.4%	5.4%	44.9%	39.9%	4.11	1.03

Source: Computed from data

The study sought to find out from the respondents whether the property investors in Plateau State set the value of the property based on the recent selling price, the statement had a mean response of 4.11 and a standard deviation of 0.98. This was an indication that majority of the respondents agreed that property investors often and always set the value of the property based on the recent selling price. The study further sought to determine whether property investors used property purcha se price as a reference point in trading, the statement also had a mean of 4.25 implying that majority of the respondents agreed with the statement. On whether, property investors set the value of the property based on the recent buying price, the results revealed that majority of the respondents agreed as shown by the mean of 4.10 and standard deviation of 1.02.

The study further sought to establish whether property investors used a reference point to compare to the current property price, the results showed that the statement had a mean response of 4.19 and standard deviation of 0.98 which also implied that majority of the respondents indicated always and often. The study asked the respondents whether property investors in Plateau State attached their thoughts to a logically irrelevant reference point; the statement also had a mean of 4.16 which implied that majority of the respondents indicated that investors often and always attached their thoughts to a logically irrelevant reference point. Similarly, th e results indicated that majority of the respondents indicated that the highest price the investor had perceived was used as a reference point.

The study also sought to establish whether investors wait for the property price to reach a reference point before trading, whether trained negotiators and real estate brokers were anchored in the negotiation process, whether property prices of today are d etermined by those of the past, investors tend to become more optimistic when the market rises,

and finally whether investors tend to become more pessimistic when the market falls.

The results revealed that all the above statements had a mean of above 4 which implied that property investors in Plateau State wait for the property price to reach a reference point before trading, trained negotiators and real estate brokers were anchored in the negotiation process, property prices of today were determined by those of the past, property investors become more optimistic when the market rises and finally investors tend to become more pessimistic when the market falls. These findings implied that property investors in Plateau State used anchoring in investment decision making.

– **Overconfidence**

The second objective of the study was to determine the role of overconfidence on investment decision making in property market in Plateau State, Nigeria. The descriptive findings are presented in table 2.

Table 2: Overconfidence Bias

	Never	Rarely	Some-times	Often	Always	Mean	Std Dev
Property investors use predictive skills to time the market and make future decisions	2.9%	3.3 %	10.5 %	39.5 %	43.8 %	4.18	0.95
Property investors have high expectations on returns beyond market expectations	3.6%	5.1 %	7.6 %	41.3 %	42.4 %	4.14	1.01
Investors overestimate their knowledge and underestimate risks	3.6%	4.3 %	7.2 %	35.9 %	48.9 %	4.22	1.01
Investors exaggerate their ability to control events	4.3%	5.4 %	4.7 %	41.7 %	43.8 %	4.15	1.04
Investors overestimate their own predictive abilities	3.3%	5.1 %	7.6 %	40.9 %	43.1 %	4.16	0.99

Investors tend to be biased on the precision of information they have been given	3.6%	3.3 %	8.7 %	42.0 %	42.4 %	4.16	0.97
Investors understand their own abilities and the limits of their knowledge on property market	4.7%	3.3 %	6.9 %	37.7 %	47.5 %	4.20	1.03
Investors are overconfident to think they are better than they actually are	4.3%	4.3 %	8.3 %	38.0 %	44.9 %	4.15	1.04
Investors who are overconfident about their level of knowledge tend to think they know more than they actually do	3.6%	4.3 %	6.2 %	41.3 %	44.6 %	4.19	0.99
Investors are overconfident of their own ability when it comes to picking properties	4.3%	3.6 %	7.6 %	41.7 %	42.8 %	4.15	1.01
Investors overestimate their predictive skills and believe that they can time the market	4.7%	3.6 %	6.9 %	42.0 %	42.8 %	4.14	1.02
Investors are fond of making excessive trading due to overconfidence	4.0%	4.7 %	5.4 %	38.8 %	47.1 %	4.20	1.02

Source: Computed from data

The study sought to find out whether property investors use predictive skills to time the market and make future decisions, the results showed that the statement had a mean of 4.19 which implied that majority of the respondents agreed, the study also asked respondents whether property investors had high expectations on returns beyond market expectations, similarly the statement had a mean response of 4.14 and standard deviation of 1.01. The result also showed that majority of the respondents agreed that property investors had high expectations on returns beyond market expectations. The respondents were further asked whether investors overestimate their knowledge and

underestimate risks, the statement had a mean response of 4.22 which implied that majority of the investors agreed.

The study also sought to find out whether property investors in Plateau State exaggerate their ability to control events; the statement also had a mean response of above 4 which indicated that the respondents agreed with the statements. On whether investors tend to be biased on the precision of information they have been given, the findings revealed that the respondents indicated quite often and always. The study also sought to find out whether property investors understood their own abilities and the limits of their knowledge on property market, the statement had a mean of 4.20 and standard deviation of 1.03 which also implied that majority of the respondents were in agreement with the statements.

This study was further interested in knowing whether the property investors are overconfident to think that they are better than they actually are. The statement had a mean of 4.15 and standard deviation of 1.04 which implied that majority of the respondents agreed with the statement. On whether, property investors who are overconfident about their level of knowledge tend to think they know more than they actually do, the results indicated that the respondents agreed since the statement had a mean response of 4.19 and a standard deviation of 0.99. The study finally sought to establish whether property investors were overconfident of their own ability when it comes to picking properties, whether property investors overestimated their predictive skills and believe that they can time the market and whether property investors were fond of making excessive trading due to overconfidence. All the above statements had a mean response of above 4 which implied that majority of the respondents agreed with the statement. The findings of this study implied that property investors in

Plateau State, Nigeria had overconfidence bias during investment decision making.

– **Narrow Framing**

This study also sought to explain the effect of narrow framing on investment decision making in property market in Plateau State, Nigeria. The descriptive findings are presented in Table 4. 3.

Table 3: Narrow Framing Bias

	Never	Rarely	Some times	Often	Always	Mean	Std Dev
Investors usually make positive decisions on property investment	3.6%	3.3%	6.9%	44.9%	41.3%	4.17	0.96
Investors usually make negative decisions on property investment	4.3%	3.6%	6.5%	43.5%	42.0%	4.15	1.00
Mostly, investors usually combine positive and negative decisions on property investment	2.5%	6.5%	9.1%	38.0%	43.8%	4.14	1.00
Property investors evaluate risks while buying property	3.6%	3.6%	6.5%	44.6%	41.7%	4.17	0.96
Property investors evaluate risks while selling property	5.8%	4.3%	8.3%	39.5%	42.0%	4.08	1.09
Investors always evaluate risks in isolation, separately from other risks they are already facing	2.2%	4.3%	8.3%	43.5%	41.7%	4.18	0.92
Investors derive utility from gains and losses in the value of individual properties	4.0%	4.0%	7.2%	42.0%	42.8%	4.16	1.00

Source: Computed from data

The study sought to find out whether property investors usually make positive decisions on property investment, the findings revealed that the statement had a mean of 4.17 and standard deviation of 0.96

which showed that majority of the respondents agreed with the statement. The study was further interested in whether investors usually make negative decisions on property investment; similarly the statement had a mean of 4.15 showing agreement with the statement. On whether investors usually combined positive and negative decisions on property investment, the study established that majority of the respondents indicated always and often. The study further find out that majority of the respondents indicated that property investors in Plateau State, Nigeria often and always evaluated risks while buying and selling property, evaluated risks in isolation, separately from other risks they are already facing and finally, investors derived utility from gains and losses in the value of individual properties. The findings also implied that property investors in Plateau State, Nigeria had narrow framing during investment decision making.

The study further sought to find out the causes of narrow framing among property investors. All the statements in this section had a mean of above 4 which implied that the respondents indicated that property investors in Plateau State, Nigeria often and always made positive decisions on choice of property, avoided risky decision making in property investment, some investors were more risk-averse than others and investors base their investment decisions on the selective decisions of buying or selling property. Similarly, the respondents agreed that fear of loss and level of tolerance were elements that impacted the narrow framing of individual investors, that property investors had tendency to follow the less risky alternative in making investment decisions and finally that confident property investors rely on calculated risks for the investment decisions.

REPRESENTATIVENESS

The fourth objective of the study was to establish the influence of representativeness on investment decision making in property market in Plateau State, Nigeria. The descriptive findings are presented in table 4.

Table 4: Representativeness

	Never	Rarely	Some times	Often	Always	Mean	Std Dev
Property investors use past performance in future decision making	3.6%	4.3%	8.0%	41.7%	42.4%	4.15	0.99
Property investors use trend analysis to make investment decisions	1.8%	3.6%	6.9%	42.0%	45.7%	4.26	0.88
Investors over-rely on stereotypes in property market	2.9%	5.1%	8.3%	39.1%	44.6%	4.17	0.98
Investors' recent success tend to continue into the future inhibiting decision making	3.3%	1.4%	6.9%	49.3%	39.1%	4.20	0.88
Investors tend to attribute good characteristics of a company directly to good characteristics of its property	4.3%	2.2%	6.5%	40.9%	46.0%	4.22	0.98
Investors assess situations based on superficial characteristics rather than underlying probabilities	4.3%	5.1%	9.1%	36.6%	44.9%	4.13	1.06
Investors view properties of a "good company" will be a good investment	2.2%	5.1%	7.6%	44.6%	40.6%	4.16	0.93
Investors consider recent past returns to be representative of what they can expect in the future	5.4%	4.3%	6.2%	40.6%	43.5%	4.12	1.07
Investors buy properties that have recently increased in value	2.5%	2.5%	8.7%	39.5%	46.7%	4.25	0.91
Investors tend to buy properties that have recently enjoyed some positive abnormal returns	5.4%	2.9%	5.4%	44.9%	41.3%	4.14	1.03
Investors are consistent with the thinking that the past price trend is representative of the future price trend	2.5%	2.2%	8.3%	46.4%	40.6%	4.20	0.88
Investors assume that there exists a significant and positive association between investors' expected returns and past market returns	4.0%	4.7%	9.1%	47.1%	35.1%	4.05	1.00
Investors seek to buy 'hot' properties and to avoid those which have performed poorly in the recent past	2.9%	4.7%	7.2%	45.7%	39.5%	4.14	0.95
Investors form judgments based on patterns that are simply random in a data and not representative of the facts	3.6%	4.0%	9.1%	40.6%	42.8%	4.15	0.99

Source: Computed from data

The study sought to find out whether property investors used past performance in future decision making. The findings showed that the statement had a mean response of 4.15 which indicated majority agreed that investors often and always used past performance in future decision making. The study was also interested in whether property investors used trend analysis to make investment decisions, the findings showed that majority agreed that investors often and always used trend analysis to make investment decisions. The study further sought to find out whether investors over-rely on stereotypes in property market, investors' recent success tend to continue into the future inhibiting decision making and whether investors tend to attribute good characteristics of a company directly to good characteristics of its property. All the statement had a mean of above 4 which implied that property investors in Plateau State, Nigeria often and always over-relied on stereotypes in property market, investors' recent success tend to continue into the future inhibiting decision making and attributed good characteristics of a company directly to good characteristics of its property.

The study findings revealed that property investors in Plateau State, Nigeria often and always assessed situations based on underlying probabilities, viewed the properties of a "good company" will be a good investment, considered recent past returns to be representative of what they can expect in the future, bought properties that have recently increased in value, and had tendency to buy properties that have recently enjoyed some positive abnormal returns. All the statements above had a mean response of above 4 and standard deviation of above 1.

The study further sought to find out whether property investors in Plateau State of Nigeria were consistent with the thinking that the past price trend is representative of the future price trend. The findings showed that the statement had a mean 4.20 and a standard deviation 0.88 which implied that majority of the respondents agreed that property investors were consistent with the thinking that the past price trend is representative of the future price trend. Similarly the findings showed

that majority of the respondents agreed that property investors assumed that there existed a significant and positive association between investors' expected returns and past market returns as shown by the mean response of 4.05. The statements "investors seek to buy 'hot' properties and to avoid those which have performed poorly in the recent past" and "Investors form judgments based on patterns that are simply random in a data and not representative of the facts" had mean responses of 4.14 and 4.15 respectively which showed that majority of the respondents agreed with the statements.

DISPOSITION EFFECT

The study also sought to find out the influence of disposition effect on investment decision making in property market in Plateau State, Nigeria. The descriptive findings are presented in table 5.

Table 5: Disposition Effect

	Never	Rarely	Some times	Often	Always	Mean	Std Dev
Investors tend to sell winning properties too early	5.4%	4.3%	5.8%	41.7%	42.8%	4.12	1.07
Investors tend to hold losing properties too long	5.1%	4.7%	7.2%	42.8%	40.2%	4.08	1.06
Investors find it easier to discard loss-making properties when the deadline for the end of the tax year approaches	1.4%	1.1%	7.6%	40.6%	49.3%	4.35	0.79
Investors with nominal losses tend to have higher asking prices for their properties	2.9%	4.0%	6.2%	41.7%	45.3%	4.22	0.94
Property investors avoid selling property that has decreased in value	4.3%	3.6%	5.8%	42.4%	43.8%	4.18	1.00
Property investors sell property that has fast increased in value	2.9%	4.7%	5.8%	42.8%	43.8%	4.20	0.95
Property investors are risk-averse when faced with a sure gain	4.3%	2.2%	6.9%	43.1%	43.5%	4.19	0.97
Property investors are risk-takers when faced with a sure loss	2.2%	4.0%	7.2%	39.9%	46.7%	4.25	0.91

Source: Computed from data

The study was interested in whether property investors had a tendency to sell winning properties too early. The findings revealed that the statement had a mean response of 4.12 which implied that majority of the respondents agreed. The study further sought to find out whether investors tend to hold losing properties too long, the result also showed that majority of the respondents agreed. On whether investors find it easier to discard loss-making properties when the deadline for the end of the tax year approaches, the mean response of 4.35 also showed that majority of the respondents agreed.

The respondents were further supposed to reveal whether property investors with nominal losses tend to have higher asking prices for their properties, the findings showed that majority agreed as shown by the mean response of 4.22. Similarly, the mean response of 4.18 indicated that respondents agreed that property investors avoid selling property that has decreased in value and that property investors sell property that has fast increased in value. Finally the results showed that respondents agreed that property investors are risk-averse when faced with a sure gain and that property investors are risk-takers when faced with a sure loss as shown by the mean response of above 4 and slight variation in standard deviation.

MULTIVARIATE REGRESSION ANALYSIS

In order to establish the statistical significance of the hypothesized relationships, multiple linear regression was conducted at 95 percent confidence level (α=0.05). The results are presented below.

Table 6: Model Results for Multivariate Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.835[a]	.698	.692	.34343

a. Predictors: (Constant), Disposition Effect, Overconfidence, Narrow Framing, Anchoring Bias, Representativeness.

Source: Computed

A multivariate regression model was conducted to test the joint relationship of all the independent variables and the dependent variable. The results showed that jointly anchoring, overconfidence, narrow framing, representativeness and disposition effect had a significant association with investment decision making (R=0.835). The results further revealed that anchoring, overconfidence, narrow framing, representativeness and disposition effect accounted for 69.8% of the variation in investors' investment decision making in property market in Plateau State, Nigeria.

Table 7: Multivariate Regression Analysis Results

	B	Std. Error	Beta	t	Sig.
(Constant)	0.398	0.198		2.007	0.046
Narrow Framing	0.291	0.030	0.357	9.754	0.000
Anchoring	0.343	0.048	0.365	7.163	0.000
Representativeness	0.311	0.052	0.360	5.957	0.000
Overconfidence	0.156	0.044	0.170	3.581	0.000
Disposition Effect	0.015	0.052	0.017	0.284	0.777

a. **Dependent Variable**: Investment Decision
Source: Computed from data

In the multivariate regression model, anchoring, overconfidence, narrow framing and representativeness were found to have a positive but significant influence on investors' investment decision making in property market in Plateau State, Nigeria because the p-value was less than 0.05. Disposition effect was found, in this model, to have an insignificant influence on investors' investment decision making in property market in Plateau State, Nigeria.

The multivariate equation $ID= \beta_{0+} \beta_1(ANCH)_+ \beta_2(OVER)_+ \beta_3(NARF)_+ \beta_4(REP)_+ \beta_5(DISP)+\varepsilon$ hence became **Investment Decision Making =** 0.398 **+** 0.343 **(***Anchoring* **) +** 0.156 **(***Overconfidence***) +** 0.291 **(***Narrow Framing***) +** 0.311 **(***Representativeness***)** +ε

The results in the optimal model imply that a unit increase in anchoring would result in an increase of 0.343 units in Investment Decision Making while a unit increase in overconfidence would result to an increase of 0.156 units in Investment Decision Making. The results further indicated that an increase of one unit in narrow framing would cause an increase of 0.291 units in Investment Decision Making. Similarly, a unit increase in representativeness would cause an increase of 0.311 units in investment decision making and finally a unit increase in disposition effect would cause an increase of 0.015 units in investment decision making. However, the influence of disposition effect on investment decision making was found to be insignificant, therefore the variable was excluded in the validated model.

CONCLUSION

Investors display many behavioral factors that influence their investment decision-making processes. The study established that anchoring, overconfidence, representativeness, narrow framing and disposition effect had significant influence on investment decision making. The study therefore concluded that investors should establish

the type of anchor that is likely to influence their investment decision making. The study also established that overconfidence had significant influence on investment decision making. That investors need to identify whether they are influenced by overconfidence so as to develop the strategies to overcome these sorts of biases or factors. The study further established that narrow framing effect had a significant influence on investment decision making. The study concluded that due to the influence of narrow framing effect, investors may make different choices according to the same information but under different statement frames. The study concluded that representativeness is one of the most common factors affecting investment decision making because people's judgments are based on stereotypes. Therefore investors across various divides must be careful when making decisions to avoid making bad decisions as results of representativeness. Based on the findings, this study concluded that disposition effect does not alter rationality in investment decision making. That although investors cannot avoid all the behavioral factors, they can reduce their effects which requires understanding one's behavioral factors, resisting the tendency to engage in such behaviours, and developing and following objective investment strategies and trading rules.

RECOMMENDATIONS

The study recommends that property investors should adjust their predictions enough to reflect new information, and they should not be conservative to the initial reference point. Investors should avoid overestimating the influence of new information. Furthermore, investors need to identify the behavioral factors and develop the strategies to overcome these behaviors and people require proper allocations strategies and identify the risk and return in investment decision. The study recommends that investment consultants should conduct trainings for investors to help them identify the biases and hence develop

strategies against excessive trading as a result of bias which lead to poor investment decision.

Even after satisfactory awareness is achieved, it is highly recommended that investors need to maintain a chart of the behavioral factors they are likely to be vulnerable to. This should be reviewed periodically in order to recollect and refresh their memories, thus giving themselves a better chance to make improved financial decisions in the property market. Most essentially, what remains unanswered is whether greater awareness of investors about behavioral biases is likely to increase the market efficiency.

The study also recommends that property investors should avoid evaluating frequency or probability of events according to the times such events comes to their minds. This is because when too much weight is put on the easy-recalled information, rational behavior will be limited and rational investment decision making could be deviated. That awareness about disposition effect and its application in the course of making investment decision would increase the rationality of investment decisions thus making way for higher market efficiency. The study therefore concluded that investors in property market need to seek advice and opinion from consultants before making decisions in order to overcome these behavioural factors.

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IMPACT OF MICRO, SMALL AND MEDIUM ENTERPRISES (MSMEs) ON ECONOMIC GROWTH IN NIGERIA: 1999-2017

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Abstract

This paper examined the impact of micro, small and medium enterprises on economic growth in Nigeria. The objective of this paper is to investigate the rela tionship between micro, small and medium enterprises contribution (MSMEC) and Nigeria's economic growth. To achieve this objective, time series data on the Gross Domestic Product (GDP) and SMEC were collected from the Central Bank of Nigeria (CBN) and the National Bureau of Statistics (NBS) for the period 1999-2017. The study employed Ordinary Least Square (OLS) tool in analyzing data and the findings revealed that there is positive and significant relationship between micro, Small and Medium Enterprises (MSMEC) and economic growth in Nigeria. The study's conclusion is that MSMEC improved economic growth in Nigeria within the period under study. It recommends amongst others that, to ensure sustainable economic growth and development, Nigerian government should also intensify efforts at reducing the barriers militating against the ease of doing business to enable smaller firms compete with bigger businesses in the country.

Keywords: *Economic Growth, GDP, MSMEC*

INTRODUCTION

Micro, small and medium Enterprises (MSMEs) have been recognized as a major source of job creation in the world. Although the role of MSMEs is different at different stages of economic development in the world, their role is particularly important for developing countries. Beck (*et al.* 2005) found a strong association between micro enterprise and GDP per capita of a country; The word 'micro enterprise' has many interpretations as they have applications. It has been used inter-

changeably by researchers, policy makers, and business advisors. They are seen as informal sector, small business, small firms, small-scale industries (SSI), small scale enterprise (SSE), small and medium enterprise (SME), medium and small scale industry (MSSI), micro, small and medium enterprise (MSME) and micro enterprise (ME) etc. Variants of expressions are used among and within different countries. For example, "small business" is generally used in the USA, "small firm" is generally used in the UK and European countries, while in South Asia, the term "small and cottage industries" is used more often; In the Caribbean countries, the term "vendor", "hucksters", "haggler" and "trader" is used to describe the persons who carry out trades in small business. However, in Nigeria, it is often called micro, small and medium enterprises (ILO 2001). Whatever name is used, this sector is a potential instrument for employment generation and poverty reduction, even though they are treated as "missing middle", as such, remained neglected for ages in the less developed countries.

The importance of micro enterprises to nations cannot be overemphasized . Micro Enterprises have been identified as the source of development for the developed nations, especially the newly industrialized countries like, Thailand, China, Taiwan, Indonesia, Malaysia, South Korea, Singapore, among others. They make up the major percentage of businesses in the globe and play extraordinary roles in delivery of goods and services, generating employment, enhancing standard of living, and significantly contribute to the Gross Domestic Products (GDPs) of several countries (Organization for Economic Cooperation and Development (OECD,2000). Ofoegbu, Akanbi and Joseph (2013) affirmed that Micro Enterprises are the solution to economic development of several developing countries, Nigeria inclusive.

MEs are regarded as the seed of big businesses, the energy that propels national economic engine and assiduous creator of jobs (Abor &

Quartey, 2010). They serve as a source of economic growth and development (Ojeka, 2011; Lawal, 2014; Basil; 2005; Aruwa, 2006; Mensah, 2004; Ariyo, 2005; Ashamu, 2014). MEs comprise 97% of the entire economy (Oke & Aluko, 2015), and aid as a base for creating innovation, employment, competition and economic vitality which in the long run results into poverty alleviation and national growth (Ojeka, 2011).

The importance of MEs has propelled several nations including Nigeria, to initiate several policies to aid the development of MSMEs. Some of these efforts as identified by scholars such as: Terungwa (2012); Aladekomo (2003); Lawal, (2014); Ayeni-Agbaje and Osho (2015) among others include: the establishment of financial institutions and initiation of several funding programmes to aid the development of MEs in Nigeria, and initiation of specialized banks and other credit agencies/schemes to make funding available to the sub-sector. These specialized banks and institutions include among others: The Nigerian Industrial Development Bank (NIDB) which was established in 1964, to make available, medium and long term funds, to medium and large–scale enterprises, Nigeria Bank for Commerce and Industry (NBCID) established in 1973, to make financial services and other allied services available to indigenous enterprises especially SMEs, and the Small and Medium Industries Equity Investment Scheme (SMIEIS) which was established in 2001, to make financial and technical services available to SMEs. SMIEIS made it a prerequisite for all banks to set aside ten percent of their Profit after Tax (PAT) for equi ty investment and promotion of MSMEs.

In Nigeria, MEs is sub-sector of the industrial sector which play crucial roles in industrial development (Ahmed, 2006). Following the adoption of Economic reform programme in Nigeria in 1981, there have been several decisions to switch from capital intensive and large scale industrial projects which was based on the philosophy of import

substitution to Micro Enterprises which have better prospects for developing domestic economy, thereby generating the required goods and services that will propel the economy of Nigeria towards development. It is based on this premise that Ojo (2009), argued that one of the responses to the challenges of development in developing countries particularly, in Nigeria, is the encouragement of entrepreneurial development scheme. Despite the abundant natural resources, the country still finds it difficult to develop since independence.

Though quality and adequate infrastructural provision has remained a nightmare, the real sector among others has witnessed downward performance while unemployment rate is on the increase. Most of the poor and unemployed Nigerians in order to better their lots have resorted to the establishment of their own businesses. Consequently, Entrepreneurship is fast becoming a household name in Nigeria. This is as a result of the fact that the so called white collar jobs that people clamor for are no longer available. Even, the Banks and companies known to be the largest employer of labour are on the down-turn following the consolidation crisis, Treasury Single Account (TSA), Recession and fraudulent practices in the banking sector. A number of companies of course have folded up as a result of erratic power supply, insecurity, persistent increase in interest and exchange rates which has led to high cost of production and undermines profit making potentials of companies operating in Nigeria. As a result of banking sector sharp practices and continuous folding up of companies, a lot of Nigerians are thrown into the unemployment market which worsens the economic situation of the country. Hence, the need for MSMEs became a reality as a means of ensuring self-independence, employment creation, import substitution, effective and efficient utilization of local raw materials and contribution to the economic growth of Nigeria

In many societies, small and medium scale enterprises are the engines of growth. Specifically, in countries such as Malaysia, Thailand, China, and India, MSMEs have been responsible for more than 70 percent of exports and this is why these countries, according to Duro (2013) have been growing in leaps and bounds. In Nigeria, MSMEs are beset with a myriad of challenges which are in no small measure affecting their growth. The most pronounced, however, is acces s to funds and effective infrastructure to operate, especially electricity. As observed by Sacerdoti (2005), even banks with retained liquidity levels in excess of what is required by law have shown reluctance in extending loans to MSMEs, especially on long term basis as they are considered highly vulnerable with high credit risk. Small and medium scale Enterprises do not have the muscle to compete with the multinationals in terms of marketing because of what it takes in real terms to market a product. In addition, the amount one needs to produce in order to engage in profitable marketing to break even is not there for the local manufacturers.

MSMEs by their very nature are supposed to be the bedrock of the nation's economy but the operating environment ha s been very harsh for them to thrive. Currently, most of them can scarcely fund their operations, and the issue of mass or large scale production is ruled out. Some manufacturers have gone under due to unhealthy operating environment occasioned by poor infrastructure, high cost of production, multiple levies and multiplicity of regulatory agencies. In terms of capacity building, very few of MSME scan afford to attract and retain the right caliber of staff that will take charge of sensitive and high-tech positions in their companies.

In view of the problems confronting MSMEs in Nigeria alongside the efforts the government has put in to ensure their growth for them to perform effectively the roles expected of them, this study is aimed at investigating the impact of MSMEs on Nigeria's economic growth; This

study is therefore intended to examine the impact of micro, small and medium enterprises on economic growth in Nigeria from 1999 – 2017. The main objective of the study was to examine the impact of MSMEs contribution on economic growth in Nigeria. In line with the above objective, the study tested hypothesis of no significant relationship between SMEC and gross domestic product in Nigeria between 1999 – 2017.

LITERATURE REVIEW

CONCEPTUAL CLARIFICATION

– Micro Enterprises (MEs)

There is no universal definition of MEs, but there are some agreements regarding their general characteristics. These are: very small scale of operation, low level of technology, low access to finance and managerial capacity. According to Christen (1989), a micro enterprise represents the smallest economic unit which functions independently, manages its own investment capital, and involves a manufacturing, commerce or service activity.

In Nigeria, the Third National Development Plan (1975–1980) defined a small business as a manufacturing or service organization whose employee is not more than ten (10). Glos, (1976) referred to it as "a whole sale whose annual sales do not exceed 5 million naira; Cottage Businesses are however, very important in the nation's economy; In his own contribution to the definition of the subject matter, Birch (1970) argued that small firms are particularly important in job creation. He reported that over the 1970s, firms with fewer than 100 employees generated eight out of every ten new jobs in America. This evidence was however rejected by a wide array of evidence in the study conducted by Divine (1990) which revealed that large firms were dominant source of net job creation in the manufacturing sector.

Furthermore, Micro Enterprises (MEs) as defined by the National Council of Industries (2009) refer to business enterprises whose total costs excluding land is not more than two million naira (₦2,000,000) only. Although there exists no consensus among policy makers and scholars concerning the point at which a business firm is deemed to be micro, small or medium. Indeed, there is no universally or even nationally acceptable standard definition except that the scale of business needs to be defined for a specific purpose. The problem of MSMEs identification is more acute in the developing countries because apart from the fact that micro, small and medium scale business are difficult to count and measure individually. But practice in the field of bicycle repair, baking, blacksmithing, brick making, carpentry, carving, computer services, dry cleaning, electronics, furniture making, knitting, motor repairs, photography, pottery, retailing, shoe making, tailoring, transport and welding, vegetable gardening, animal husbandry, hatchery, and fish cultivation. It is obviously difficult to quantify accurately the impact of such a diversity of enterprises, especially as they are often best described in qualitative, ideological or even emotive terms, but evidence suggests that this sector plays a prime role in the economy. Contribution of this sector to the national economy can be assessed in terms of a range of inter-related economic, social and political issues. The economic contribution of MSMEs includes employment creation, wealth creation, increased output, mobilization of local resources and adaptation of indigenous technologies.

The social benefits include a reduction of poverty, balanced development, provision of goods and services appropriate to local needs, a seed bed for new initiatives, redistribution of both income and opportunity in the community in general and a greater degree of personal involvement and commitment. The political benefits result from the redistribution of wealth, opportunity and therefore power within the community (Hailey 1991).

Providing meaningful, productive, financially remunerative and creative employment opportunities for the people is the primary concern

of government. For the last three decades Nigeria government become increasingly aware of the role of MEs and entrepreneurship development in accelerating the overall socio-economic development by formulating suitable policies and programmes. Government has started working in this direction, but the expected results are yet to be achieved.

An enterprise is classified as a small enterprise if it employs 50 employees or less. A very small enterprise is any that employs 20 employees or less and a micro enterprise is classified as such if it employs 5 employees or less (Onwuka etal, 2015).

Table 1: Definition of Small Businesses in Nigeria

Size of Enterprise	No. of Employees	Annual Turnover	Gross Assets
Medium	Fewer than 100- 200, depending on industry	Under #4m to #50m, depending on industry	Under 2m to 18m, depending on industry
Small	Fewer than 50	Less than #2m to #25m, depending on industry	Less than #2m to #4.5m, depending on industry
Very Small	Fewer than 10 to 20 depending on industry	Less than #200.000 to #500, 000, depending on industry	Less than #150, 000 to #500,000, depending on industry
Micro	Fewer than 5	Less than #150, 000	Less than #150, 000

Source: SMEDAN 2015

THEORETICAL FRAMEWORK

Two modern Growth theories abound, offering plausible explanations of growth. The first stresses the supply of productive ideas and holds that the industrial revolution will have to wait until a nation comes up with enough innovation to lift her into the era of modern growth. It contends that the growth of living standards depends on the growth of science and technology (Gujarati, 2014). The Second dwells on

issues of incentive scheme and holds that growth can only begin only when there is handwork, business enterprise are free from heavy taxation and social stigma (religion and culture) and other interferences by government. Today, the fi rst prong of the growth theory is adjudged to be well developed; it is the second part that now challenges the growth economist to explain not just growth, but its link with political, religious and social institutions that shapes lives (Granger, 1969) .

Similarly, this act of lea rning-by-doing is prevalent amongst the people of Abia. In Aba, Abia state this learning-by-doing is a better means of knowledge acquisition than formal education obtainable from higher institutions. It is a special endowment that can be used to transform the economic power of the state towards achieving the desired industrialization. This ability to replicate or fabricate nearly every equipment part is a master key to the door of developing the necessary skills for the local manufacturing of capital goods and equipments, necessary to kick start industrialization process (Anyanwu, 2004). For the purpose of this study, we adopt the Gujarati, 2014 modern theory of growth. The justification for this adoption is that the study tries to establish the link between economic growth and growth of output of MSMEs in Nigeria from 1999 -2017.

EMPIRICAL LITERATURE

Lawal (2011) surveyed small and medium scale enterprises at local government level in Kaduna State and assessed the strategic role of participating MSMES in economic growth. Data for this study was generated from both primary and secondary sources through the use of self-administered questionnaires and structured interview. Content analysis of records particularly financial record of some participating MSMEs were undertaken to obtain the secondary data. The findings of this study revealed that considerable percentage of Nigerian working

population (that is 20–49 years) is increasingly seeking for self-employment. This age group constitutes responsible men who have attended higher institutions. The survey of these entrepreneurs also indicate that technology, proper planning and finance are key to the survival of micro, small and medium scale enterprises, where in the contemporary business environment technology is a vital factor that must be reckoned with (Ekanem, 2006). Lack of technology results from the absence of research and inability to adopt modern techniques; thereby resulting into low productivity.

Hence, there is no gain saying the fact that technology is one of the challenges in the growth of micro, small and medium enterprises. The significance of finance in micro, small and medium enterprises development is well established and generally accepted, successive government over the years have implemented various financing arrangements at the micro level to assist micro, small and medium entrepreneurs. Nigeria is blessed with vast natural, human and material resources, which implies that she has great potential for the emergence of a vibrant industrial sector, particularly through micro, small and medium enterprises. The role of micro, small and medium enterprises in the technological and industrial development of any nation justifies the need for greater attention to this sector. The foundation of growth in developed countries of the world is usually attributed to the contribution of the micro, small and medium enterprises (Sanusi, 2003).

Inang and Ukpong (2012) attempted to highlight the importance of entrepreneurship and public policy for poverty reduction in Nigeria. By using survey and interview to solicit for data from micro, small and medium enterprises across Kano State, the study adopted simple percentage as a tool of analysis. The study reported that entrepreneurship can reduce poverty if the necessary infrastructures are put in place. The study therefore recommended that the government while designing a policy

toward entrepreneurship attempt should be made to identify and encourage high impact entrepreneurs that will genuinely contribute in creating real jobs.

Since development of an economy determine how much the economy is far from poverty, Ogbo and Nwachukwu (2012) therefore attempted to develop and analyze the contributions of entrepreneurship in the economic development through MSMEs development in Nigeria. By sampling a total of 100 MSMES through a simple random sampling, the data were analyzed using frequency distributions, means, standard deviations, chi-square statistics and analyses of variance. The study concluded MSMES have performed below expectation in Nigeria due to a combination of problems which ranges from attitude and habits of MSMEs themselves through environmental related factors, instability of governments and frequent government policy changes etc. The study therefore concluded that promoters of MSMEs should thus ensure the availability or possession of managerial capacity before pursuing financial resources for the development of the respective enterprise.

Agbionu and Egbunike (2013) found that entrepreneurship has the potential of reducing poverty but have not live d up to its aspiration. They concluded that the strategy for filling this gap is the introduction of Entrepreneurship Education in the Nigerian Education System. This type of education is aimed at equipping graduates with entrepreneurial values, attitudes and mental capacity for creative thinking and innovative behavior that can provoke their venture spirit to generate new ideas and ways of doing things

In a similar study in Kogi State, Makinde (2013) focused on how Unemployment problem in Nigeria can be tackled through entrepreneurial development. The study was motivated by the fact that unemployment problem is triggered by corrupt practices in Nigeria and thus require the

collective effort of all. The study made use of primary data sourced from 220 respondents in Kogi State through administering of questionnaire. Their responses were tested using appropriate statistical tools like the simple percentage and the Chi-square research techniques; the study revealed that the unemployment problem in Nigeria can be solved through entrepreneurial development and that government effort in this regard is not sufficient given the magnitude of the unemployed in Nigeria. Therefore, the study recommended that solving the unemployment problem should not be left in the hands of the government alone rather the public private partnership approach should be employed so as to allow the involvement of private individuals in helping to establish entrepreneurial develo pment centres as well.

Adeyemi and Lanrewaju (2014) assessed the impact of Micro, Small and medium business entrepreneurship on poverty reduction in Ibadan metropolis, South Western Nigeria. The study population was drawn from a register of relevant trade associations and published government documents, which yielded a total of 383 enterprises. The study used simple percentage and logit regression as a tool of analysis. The empirical results indicated that the odds of individuals in micro and small business entrepreneurship in Ibadan metropolis earn more than US$1.25 per day increased by 39 %. The study found that the impact could have been more pronounced but for some socio-economic, infrastructural and management challenges. Study recommended strengthening of youth entrepreneurship, increased publicity of government Business Development and Support Services, liberalization of access to and usage of business premises, reduction in cost of production, improvement of infrastructural facilities among others.

METHODOLOGY

The study adopted the OLS Regression Analysis Method to analyse the data collected for the purpose of the study. Data used in the study

were collected from various editions of the CBN statistical bulletin of 2015, National Bureau of Statistics 2017, and FIRS publications (2016) relating to GDP and output growth of SMEs collection for the period of the study. Data collected for the study was analyzed using a simple Linear Regression Analysis of the Ordinary Least Squares Method. In its general form, the model is specified as:

$$y = a + b_1SMEC + b_2CPS + \mu \quad \text{(i)}$$

Where:
y is the dependent variable,
CPS and SMEC are the independent variables
a is the constant term,
b_1 and b_2 are the coefficients of the independent variables and
μ is the error term.

$$\text{Economic Growth} = f(SMEC, CPS) \quad \text{(ii)}$$

Where economic growth is measured by Gross Domestic Product (GDP), micro small and medium enterprises is measured by SMEC

$$GDP = f(SMEC, CPS) \quad \text{(iii)}$$

Where: GDP is gross domestic product, SMEC is small and micro enterprises contribution to GDP and CPS is credit to private sector

Thus,

$$GDP = a + b1SMEC + b2CPS + \mu \quad \text{(iv)}$$

The study expects to find that: $b_1 - b2 > 0$

DATA ANALYSIS, INTERPRETATION AND FINDING

Table 2: OLS Regression Results

Variables	Coefficients	Std Error	T - Statistics	Prob. Values
C	3.714306	0.2432387	15.27029	0.0000
CPS	0.744128	0.058653	12.68695	0.0000
SMEC	0.046897	0.056617	0.828316	0.0414
	R–Squared: 0.955753		**Adjusted R – Squared**: 0.952592	
	F–Statistics: 302.4033		**Prob(F – Statistics)**: 0.0000	
			D – W Stat: 0.712171	

Source: E- View output computed by Researcher 2018

DISCUSSION OF RESULTS

From the estimated regression model in Table 2, we observed that the stated a priori expectation was fully satisfied, that is the coefficient of the explanatory variables CPS and SMEC were observed to be positive and significant indicating that a unit change on their values, on the average increased GDP by 0.744128 and 0.046897 units respectively. This shows that there is positive relationship between CPS and economic growth in Nigeria for the period of time considered in this study. The result was in line with the findings of Kanitar (1994), Okpara (2011), Miltra and Abubakar (2011), Misango and Ongiti (2013) and Kodithuwakku and Rosa (2002), but contradict the result of Osotmehen (2012). On the other hand, the result also revealed that there is positive and significant relationship between SMEC and economic growth in Nigeria within the period of the study. This finding is in agreement with that of Adeyemi and Lanrewaju (2014) and Lawal (2011)

The coefficient of determination R^2 is 0.955753, meaning that 96% of the variability in GDP (dependent variable was influenced by the independent variables. Hence, 4% variability in GDP was explained by other factors outside CPS and SMEC, which implies that the model is fit.

The adjusted coefficient of determination (adj.R^2) also shows that after taken into account the loss in the degree of freedom, the estimated model has a good fit (that is, adjusted R^2 = 0.95). The *F*. statistic of 302.4033 shows the overall significance of the regression model. *F*. significant level of 0.0000 is less than 0.05, which suggests that Null hypothesis is not true. Therefore, CPS and SMEC have significant and positive impact on gross domestic product and thus, it is an instrument to measure economic growth in Nigeria. The value of Durbin-Watson statistics of 0.712171 reveals that there may be the presence of autocorrelation in the model, therefore the forecasting power of the estimated model may not be too reliable.

CONCLUSION AND RECOMMENDATION

The study examined the impact of MSMEs on economic growth of Nigeria for the period of 1999-2017 and results revealed that there is positive and significant relationship between CPS and SMEC and economic growth in Nigeria. It is therefore, the conclusion of the study that output from SMEC improved economic growth in Nigeria within the period under study.

Based on the findings and implication reported, the study recommends the following policy measures to help government achieve the desired GDP growth in Nigeria. Government should intensify efforts at reducing the barriers militating against the ease of doing business to enable smaller firms compete with bigger businesses in the Country.

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Dependent Variable: LNGDP

Method: Least Squares

Date: 11/27/18 Time: 13:38

Sample: 1999 2017

Included observations: 19

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.714306	0.243237	15.27029	0.0000
LNCPS	0.744128	0.058653	12.68695	0.0000
LNSMEC	0.046897	0.056617	0.828316	0.0414
R-squared	0.955753	Mean dependent var		8.883561
Adjusted R-squared	0.952592	S.D. dependent var		1.993556
S.E. of regression	0.434064	Akaike info criterion		1.260515
Sum squared resid	5.275518	Schwarz criterion		1.399288
Log likelihood	-16.53799	Hannan-Quinn criter.		1.305752
F-statistic	302.4033	Durbin-Watson stat		0.712171
Prob(F-statistic)	0.000000			

ENVIRONMENTAL DEGRADATION AND AGRICULTURAL PRODUCTIVITY IN NIGERIA: AN ARDL/BOUNDS TESTING APPROACH

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Abstract

This study examined the effect of environmental degradation on agricultural productivity in Nigeria from 1990 - 2016. Data were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin, the Department of Petroleum Resources (DPR) and the World Bank's World Development Indicators (WDI). The study employed the ex post facto quantitative research design. The Autoregressive Distributed Lag (ARDL) / Bounds Test were applied to test for the existence of a long-run relationship among the variables. The overall model showed that 99 per cent of the total variations in the endogenous variable were explained by the exogenous variable in the model at 5 percent level of significance. The coefficient of the error correction mechanism (ECM) was correctly signed, indicating a speed of 36 per cent convergence to long run equilibrium annually once the model was shocked. The results of the analysis showed that Carbon dioxide (CO_2) emission and Gas flaring had no significant effect on agricultural productivity in Nigeria while Oil spillage and Population Growth Rate had significant impact on agricultural productivity in Nigeria in the long run. This study therefore recommended that proactive measures should be put in place to channel Nigeria's rapidly growing population rate to the agricultural sector as well as checkmating excessive population growth rate which increases the pressure on the environment, while sustainable environmental practices should be upheld in the agricultural sector of the economy.

Keywords: *Environmental Degradation, Agriculture, Productivity*.

JEL classification: *Q15, Q53, Q56*

INTRODUCTION

The agricultural sector is one sector of the economy that is particularly dependent on the condition of the environment. The cultivation of food crops is dependent on the state of farm land in the same way that the production of fishes is dependent on the quality of

Rivers and other water bodies. In Nigeria, agriculture is the main stay of economy in the rural sector. Agriculture provide livelihood for about 90% of the rural population in Nigeria (IFAD 2010). The environment provides rural farmers with the resources for their farming activities, such as marine or sea water, soil, forest, green vegetation and biodiversity. Rural societies are generally rich in environmental resource necessary for various local level income generation. A typical feature of rural economy in Nigeria include all forms of agricultural production such as farming (planting, animal husbandry keeping, cattle rearing), hunting, fishing, herbal medicine, craft and cottage industry (Nwokoro & Chima, 2017). These economic activities heavily depend on the environment for their sustenance.

The degradation in the environmental system, particularly the rapid decline of natural resources caused by factors such as deforestation, mining, oil exploration, may have adverse effects on the productivity of the agricultural sector. The decline in fisheries and other agricultural activities like farming and lumber businesses that dominated the average traditional Nigerian economy has been attributed to environmental degradation (Oshwofasa, Anuta, & Aiyedo gbon, 2012). Gas flaring and oil spillage have been reported to impair the yield and nutrient value of crops cultivated in the Niger Delta. Gas flairs contribute to heat waves and acid rain; these inevitably contaminate underground water sources (Edino, Nsofor, & Bombom, 2010). Also, the degraded mine lands such as that of the Jos Plateau have been rendered unfit for agricultural production by mining activities (Eziashi, 1998). Many Nigerian communities that were hitherto independent as a result of the high yields from agriculture are now unable to promote and maintain their needs because their environment has been severely devastation (Snapps, 2011).

The paper therefore aims at investigating how the devastation and degradation of the environment has impacted on and affected agricultural productivity in Nigeria. To achieve this purpose, this paper is structured into six sections. Section one is the introduction, section two is the literature review where relevant concepts were review, section three is the methodology, data sources and model specification, section four presented the empirical results and analysis, section five is the discussion of findings while section six is the conclusion and policy recommendation.

CONCEPTUAL LITERATURE

Environmental degradation according Umeugochukwu, Ezeaku, and Nnaji, (2012), is the temporary or permanent lowering of the productive capacity of the soil. Land degradation is also described as the loss of utility or potential utility of land or the decline in soil quality caused through misuse by humans. Umeugochukwu, Chude and Ezeaku, (2012) described land degradation as the diminution of soils current or potential capacity to produce food, feed and fiber as a result of one or more degradation processes. In the opinion of Ogboru and Anga (2015), environmental degradation is the deterioration of the environment through human activities resulting in the depletion of resources, contamination of air, water, and soil, the destruction of the ecosystems and the extinction of flora and fauna (wildlife). Land, air and water are compromised when people exhaust and waste resources or release harmful chemicals.

Environmental degradation includes issues such as land degradation, deforestation, desertification, loss of biodiversity, land, water and air pollution, gas flaring, oil spillage, climate change, sea level rise and ozone depletion as a consequence of human activities. One key element of environmental degradation is environmental pollution. This

refers to those potentially hazardous residual flows, arising from human behavior, that enter environmental systems (Piontkivska, 2000). The natural environment has some capacity to resist pollution created by humans, but as soon as the pollution load exceeds this capacity (carrying capacity) the environmental quality starts deteriorating.

Agricultural productivity as a concept entails both the quantitative and qualitative increase in farm yields in order to meet the specific objectives of the provision of adequate food, fibers and industrial raw materials, employment and foreign exchange generation (Titilola, 2014).While the former is concerned with the increased output from farming activities, the latter include the enhanced nutritional value of farm produce. The Agricultural productivity derives its existence from the sustainable use of land and other natural resources in the environment in such a way that harvest or output can be maximized. Profitable crop and livestock production can thrive only if the elements of sunshine, water and soil nutrients, as well as plant nutrients contained in chemical fertilizers are present in the right proportion and quality. Also, increased agricultural and industrial output thrives best where a conducive man-made socioeconomic environment exists.

THEORETICAL REVIEW

The environment and resources were studied only marginally by the Neoclassical Economists. However, series of concepts and methods (e.g. marginal analysis) were developed, which are used nowadays for economic analysis in the Environmental Economics. Neo classicists like Barnett and Morse (1963) focused on the exhaustibility of resources. Pigou (1920) saw environmental pollution as externalities and observed that societal welfare was incomplete for not accounting for pollution which although occur external to the market transaction, nevertheless still affect human welfare. Pigou had hit upon the modern notion of economic externalities, changes in welfare due to unintended side effects – often of an environmental nature – that are not directly captured in the

market transaction itself. Externalities provided a powerful way of incorporating environmental damage into economic assessment. Thus, the Neo-classicists focused on negative externalities (economic "bads") arising from productive economic activities. Environmental degradation as a result of the release of pollutants from both human and industrial activities in this connection calls for appropriate regulations in terms of laws and the imposition of taxes.

The theory of production looks at how the factors of production are organized to bring about productivity. Thus, productivity entails the rate of output produced per unit of input used in the production process. It is the increase in output that can be attributed to the corresponding increase in input used. The Total Factor Productivity (TFP) is used to evaluate the performance of agricultural system over time which has proven valuable for policy measures geared towards fostering agricultural development. The residual TFP growth was ascribed to factors such as the rate of change of technological progress, the influence of scale economies, productive efficiency and the effect of the lack of adjustment of quasi-fixed inputs to their long term equilibrium levels (Melfou, Theocharopoulous & Papanagiotou, 2007). The assessment of economic performance by means of the TFP measures; however, do not include any external effects economic activity might have on the environment. Externalities like pollution are side effects of economic activity that are not being compensated for as observed by the Neo classical Economists.

EMPIRICAL REVIEW

Omoregie (1998) observed that crude oil stress caused by oil spillage leads to impairment of some physiological parameters of fishes and its capacity to perform and adapt due to petroleum pollution which reduces the chances of survival and can have a devastating effect which can be as severe as extinction. Eneje and Ebikeme, (2011) investigated the effect of crude oil pollution on soil physiochemical properties and

germination percent of *Amarantus Hybridus* in Bayelsa state, Nigeria. The results obtained from the study suggested that crude oil pollution creates adverse condition on the soil, which renders such soils unsuitable for crops to germinate. Odjugo (2011) analyzed the impact of natural gas flaring on microclimate and yield of Melon (Citrullus Lanatus) in the Niger Delta Region of Nigeria and found that the yield of melon (*Citrullus Lanatus)* reduced by 85.7%, 82.1%, 75% and 32.2% at 500 m, 1 km, 2 km and 5 km respectively from the flare site and concluded that Melon production is not economically viable within 5 km radius of the flare site. Atuma and Ojeh (2013) further used multiple regression and paired t-test analyses to comparatively investigate the effect of gas flaring on soil and cassava productivity in Ebedei, Ukwuani Local Government Area, Delta State, Nigeria. The study revealed that the yield of cassava increases with a corresponding increase in distances from flare site. Thus, there is significant variation in soil nutrients as distance increases from gas flare sites. In addition, Ozabor and Obisesan (2015) examined the impacts of gas flaring on temperature, agriculture and the people of Ebedei in Delta State Nigeria and found that gas flaring affects yam 94.6%, cassava 90%, Okra 98.75%, plantain 50.4% , potatoes 5% in the study area.

Ibrahim, Iheanacho and Bila, (2015) analyzed the econometric causes and impact of deforestation on agriculture in Nigeria using the block recursive and ordinary least square regressions analytical techniques with times series data spanning 1975 - 2013 and revealed that fuelwood consumption, forest product for export, round wood consumption and area of food crop production were found to be the direct causes of deforestation. Among the indirect causes, Gross Domestic Product and population were found to be significant factors affecting fuel wood consumption at 5% and 1% levels respectively. Mulatu, Eshete and Gatiso, (2016) used a recursive dynamic Computable General Equilibrium (CGE) model to investigate CO2 emissions' impact on

agricultural performance and household welfare in Ethiopia from 2010 - 2030 and found that CO2 emissions negatively affect agricultural productivity and household welfare.

Godson-ibeji and Chikaire (2016) analyzed the consequences of environmental pollution on agricultural productivity in developing countries with Nigeria as a case study and found that environmental pollution reduces the level of soil nutrients and fertility by 82% which affected crop growth and yields and also harmed fishing by 82.2%.

From the foregoing reviewed studies, the Researchers used a single component of environmental degradation such as oil spillage, gas flaring, CO2 emission and deforestation in analyzing their effects on agricultural productivity. The analyses in the study reviewed are narrow in scope. But studies on the collective impacts of the components of environmental degradation on agricultural productivity in Nigeria as a whole are still very scanty. Thus, the focus of this study is to broaden the effects of the identified components of environmental degradation as they affect agricultural productivity in Nigeria by using a different methodology from the papers reviewed to capture these effects.

METHODOLOGY, SOURCES OF DATA AND MODEL SPECIFICATION

This study adopts the ex post facto research design to investigate how a change in the components of environmental degradation affects agricultural productivity in Nigeria.

SOURCES OF DATA

The data were obtained from the Central Bank of Nigeria (CBN) statistical bulletin, the Annual Oil and Gas Report of the Department of Petroleum Resources (DPR) and the World Bank's World Development Indicator (WDI). Data collected were from 1990 - 2016.

MODEL SPECIFICATION

The dependent variable for this study is the contribution of the agricultural sector to the Gross Domestic Product (AGDP) while the independent variables are Oil spillage (OSP), Gas flaring (GFl), Carbon dioxide emission (CEM) and Population Growth rate (PGR). PGR was included to capture the effects of increased population pressure on agricultural land.

In functional form, this can be written as:

$$AGDP = f(OSL, GFL, CEM, PGR) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

The model in equation (1) above implies that AGDP is a function of OSL, GFL, CEM and PGR.

In econometric form, the function can be written as:

$$AGDP_t = \beta_0 + \beta_1 OSL_t + \beta_2 GFL_t + \beta_3 CEM_t + \beta_4 PGR_t + \mu_t \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

Where

AGDP = Contribution of agricultural sector to GDP (A measure of agricultural productivity)

OSL = Oil spillage

GFL = Gas flaring

CEM = CO_2 emission

PGR = Population growth rate

β_0 = The intercept coefficient

$\beta_1 - \beta_{4\mu}$ = The parameters of the respective explanatory variables

μ = The error term

t = denotes time lag

On a priori expectation

$\beta_1 < 0$, $\beta_1 < 0$, $\beta_1 < 0$ and $\beta_1 < 0$. This implies that all the independent variables are expected to have a negative relationship with the dependent variable.

– **Co-integration Test**

After the confirmation of the stationarity properties of the variables using the Kwaitkowski-Philips-Schmidt-Shin (KPSS) test the study proceeds to determine the existence of a long-run relationship among these variables. To achieve this, this work conducted robustness check of the co-integration estimation, using The Autoregressive Distributed Lag (ARDL) / Bounds Testing methodology of Pesaran and Shin (1999) and Pesaran *et al*. (2001). Thus, the basic form of an ARDL regression model is give as:

$$y_t = \beta_0 + \beta_1 y_{t-1} + \ldots\ldots + \beta_k y_{t-p} + \alpha_0 x_t + \alpha_1 x_{t-1} + \alpha_2 x_{t-2} + \ldots\ldots\ldots + \alpha_q x_{t-q} + \varepsilon_t, \quad (3),$$

which for this study can be written as:

$$AGDP_t = \beta_0 + \beta_1 GFL_{t1} + \beta_2 OSL_{t2} + \beta_3 CEM_{t3} + \beta_4 PGR_{t4} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots \quad (4)$$

– **Error Correction Model**

The error correction estimates is carried to determine the speed of adjustment. This entails the estimation of the equation with the incorporation of the estimated error correction term. Thus, the co-efficient of the error term obtained will suggests the speed of adjustment to long-run equilibrium for any divergence in the short-run among the parameters. In all, the greater the co-efficient of the parameter, the higher the speed of adjustment of the model from the short-run to the long-run state will be. Our error correction model is formulated as:

$$\Delta AGDP_t = \beta_0 + \beta_1 \Delta GFL_{t1} + \beta_2 \Delta OSL_{t2} + \beta_3 \Delta CEM_{t3} + \beta_4 \Delta PGR_{t4} + \delta ECM_{t-1} + \mu_t \ldots\ldots \quad (6)$$

Where

Δ = the first difference operator

δ = measure the speed of adjustment to obtain the long-run equilibrium

ECM = the error correction term.

EMPIRICAL RESULTS AND ANALYSIS

PRE-ESTIMATION TEST

– Unit Root Test

The stationarity properties of the variables included in the models were tested using the Kwaitkowski-Philips-Schmidt-Shin (KPSS) unit root test.

Table 1: KPSS Unit Root Test Results

Variables	At Levels	Order Of Integration	At 1st Difference	Order Of Integration	Critical Value(0.05)	Remarks
AGDP	0.2085	I (1)	0.1221	I (1)	0.146	Stationary at 1st difference
OSL	0.1288	I (0)	0.0744	I (1)	0.146	Stationary at levels
GFL	0.1434	I (0)	0.1348	I (1)	0.146	Stationary at levels
PGR	0.1831	I (1)	0.0788	I (1)	0.146	Stationary at 1st difference
CEM	0.146	I (0)	0.0585	I (1)	0.146	Stationary at levels

Source: Authors Computation using Eviews 9

The stationarity test carried out for the concerned variables revealed that some of the variables were stationary at levels I(0) while some were stationary first difference I(1). These tests examine the null hypothesis that the considered variable has a unit root against the alternative hypothesis that the variable is stationary. The test results revealed that all the variables are stationary at levels except AGDP and PGR which were stationary at first difference. This means that the

mixture of both I(0) and I(1) variables gives a good justification for using the bounds test approach, or ARDL model, which was proposed by Pesaran *et al*. (2001). Thus, the null hypothesis of unit root is rejected in all cases based on the unit root test regression results. The results of the test are presented in Table 1.

– **Bound Test for Co-Integration**

The Autoregressive Distributed Lag (ARDL)/Bounds test to determine the existence of a long-run relationship among these variables was conducted with the hypothesis:

$H_o = \beta_1 = \beta_2 = \beta_3 = 0$ (No long-run relationship)

Against the alternative hypothesis

$H_1 > \beta_1 > \beta_2 > \beta_3 > 0$ (long-run relationship exists)

Table 2: ARDL/ Bounds test Result

Test Statistic	Value	k
F-statistic	10.63437	4
Critical Value Bounds		
Significance	**I0 Bound**	**I1 Bound**
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Authors Computation using Eviews 9

From the decision rule, if the computed *F*-statistic is smaller than the lower bound value, then the null hypothesis is not rejected and it can be concluded that there is no long-run relationship between the components of environmental degradation and agricultural productivity. Conversely, if the computed *F*-statistic is greater than both the upper and lower bound value, then the components of environmental degradation and agricultural productivity share a long-run level relationship. On the

other hand, if the computed *F*-statistic falls between the lower and upper bound values, then the results are inconclusive.

Table 2 shows the results of the bounds co-integration test. It demonstrated that the null hypothesis of no long run relationship as against its alternative is easily rejected at the 5% significance level. The computed *F*-statistic of 10.63437 is greater than all the lower and upper critical bound values at 10%, 5%, 2.5% and 1% respectively, thus indicating the existence of a long-run relationship between the components of environmental degradation and agricultural productivity in Nigeria.

Table 3: ARDL Cointegrating and Long Run Form

Cointegrating Form				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(CEM)	3538.2228	1125.63220	3.143321	0.0163
D(CEM(-1))	-2135.268245	1143.350168	-1.867554	0.1041
D(CEM(-2))	2024.255360	920.312415	2.199531	0.0638
D(GFL)	29.375317	12.951015	2.268187	0.0576
D(GFL(-1))	24.139220	15.358698	1.571697	0.1600
D(OSL)	1.638295	0.897650	1.825092	0.1107
D(OSL(-1))	-1.818588	1.267086	-1.435252	0.1943
D(OSL(-2))	-5.542796	1.585701	-3.495486	0.0101
D(PGR)	14312.21098	3419.139850	4.185910	0.0041
D(PGR(-1))	25684.77051	19185.185190	1.338781	0.2225
D(PGR(-2))	-14618.27928	11848.325280	-1.233784	0.2571
CointEq(-1)	-0.355088	0.112773	-3.148697	0.0162
Cointeq = AGDP - (6184.5015*CEM + 49.4379*GFL + 33.3418*OSL+ 67812.4402*PGR -187529.0478)				
Long Run Coefficients				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
CEM	6184.501507	3407.002686	1.815232	0.1124
GFL	49.437899	98.055970	0.504180	0.6296
OSL	33.341781	8.968514	3.717648	0.0075
PGR	67812.440209	18239.501999	3.717889	0.0075
C	-187529.047844	56442.503503	-3.322479	0.0127

Source: Authors Computation using Eviews 9

Table 3 shows the value of the ECM approximately gave 36%, meaning that the disequilibrium is corrected (or adjusts to) its previous dis-equilibrium period at a speed of 36% in the following year. This indicates that the rate of adjustment is low. The result in Table 3 shows the long- run and short run relationship between the dependent variable AGDP and the other regressors. In both the short run and long run, the coefficient of CO2 emission is positive (3538.22) and (6184.5015) respectively which were not in agreement with our *apriori* expectation ($\beta_1 > 0$) indicating that agricultural output will be positively affected and thus increasing productivity. Thus, 1 unit increase in CEM will increase agricultural output by 3538.2228 billion in the short run and 6184.5015 billion in the long run. With a p-value of 0.0163 which is lower than our critical value (0.05) CEM is significant in the short run whereas it is not significant in the long run since the p-value of 0.1124 is greater than 0.05 (5%).

The sign for Gas flaring (GFL) is positive both in the short run (29.3753) and long run (49.4379) as shown from the result in Table 3 which is not in conformity with our *apriori* expectation ($\beta_2 > 0$). Thus, 1 unit increase in GFL will increase agricultural output by 29.3753 billion in the short run and 49.4379 billion in the long run. The p-value of 0.0576 and 0.6296 in both the long run and short run respectively which are greater than 0.05 indicated that the impact of gas flaring is insignificant. The coefficient of oil spillage (OSL) is positive in both the short run (1.6383) and long run (33.3418) respectively which was not in line with our *apriori* expectation ($\beta_3 > 0$). In the short run, OSL has a p-value of 0.1107 which is not significant being greater than 0.05. In the long run however, since the p-value of 0.0075 is less than 0.05(5%) it indicates that oil spillage has significant effect on agricultural productivity in Nigeria.

Also from table 3, population growth rate (PGR) has a positive sign in both the short run (14312.2109) and run long (67812.4402) which indicate a positive relationship. This is not in line with our *apriori* expectation ($\beta_4 < 0$). Thus, a 1 unit increase in PGR will increase agricultural productivity by 67812.4402 billion in the long run. The p-value of 0.0041 and 0.0075 in both the short run and long run respectively being lower than 0.05 indicates the result is statistically significant at the 5% level of significance.

NORMALITY TEST

For the purpose of policy analysis, it is necessary that the models disturbances follow a normal distribution. From results and graphs of the Jacque-Bera normality test presented in figure 1, it can be seen that the disturbance terms of both models are normally distributed. In order to overcome the problem of model selection and lag length, the Akaike Information Criterion was used with a maximum of 3 lags of both the dependent variable and the regressor as reflected in the figure 1 (1993-2016). The Jarque Bera (JB) normality test conducted revealed that our variables are normal as our probability value of 0.259190 is higher than our 0.05 (5%) level of significance. Thus, the null hypothesis (of no normality) is rejected at the 5% level of significance.

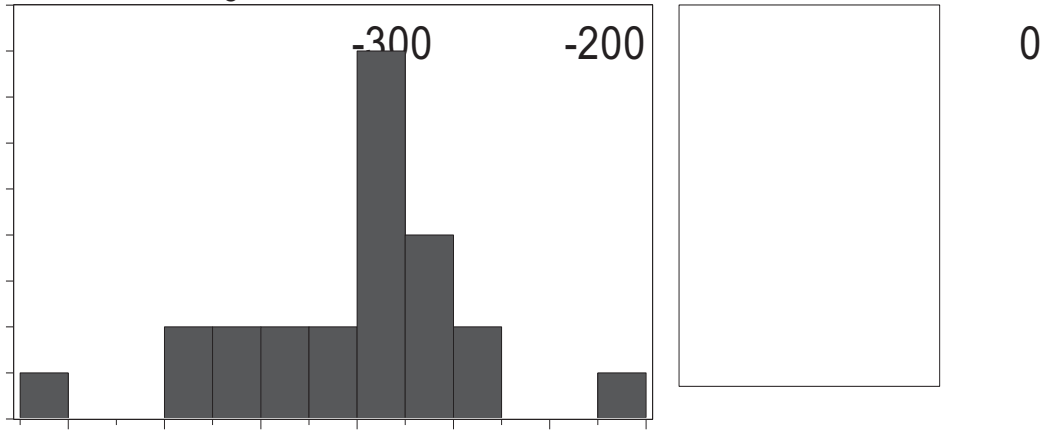

Figure 1: Normality Test Result.
Source: Authors Computation using Eviews 9

POST-ANALYSIS TESTS

The Heteroskedasticity Test Result

Table 4: The White's Heteroskedasticity Test

F-statistic	0.398759	Prob. F(16,7)	0.9394
Obs*R-squared	11.44408	Prob. Chi-Square(16)	0.7813
Scaled explained SS	1.486722	Prob. Chi-Square(16)	1.0000

Source: Authors Computation using Eviews 9

For the purpose of this study, the Heteroscedasticity test (Breusch-Pagan-Godfrey) is done to verify whether the constant variance assumption is violated in the models. From Table 4, the P-value (White's F statistics) of 0.9394 is greater than the level of significance of 0.05. This means that there is no heteroskedasticity.

AUTO-CORRELATION-DURBIN-WATSON TEST RESULT

Table 5: Auto-correlation -Durbin-Watson test

F-statistic	2.873094	Prob. F(2,5)	0.1477
Obs*R-squared	12.83325	Prob. Chi-Square(2)	0.0016

Source: Authors Computation using Eviews 9

From table 5, the P-value of the Breusch-Godfrey Serial Correlation LM Test is 0.1477 which is greater than the level of significance of 0.05. This implies that there is no serial correlation.

MULTICOLLINEARITY TEST RESULT

Table 6: Multicollinearity Test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
AGD(-1)	0.012718	548.2173	249.8555
CEM	1267048.	172.4851	9.688479
CEM(-1)	1617410.	227.3829	12.71764
CEM(-2)	1307250.	182.8520	10.46662
CEM(-3)	846974.9	117.7288	6.938903
GFL	167.7288	203.2168	50.28104
GFL(-1)	209.4135	279.6342	62.97281
GFL(-2)	235.8896	343.8639	69.18644
OSL	0.805776	125.9347	11.48137
OSL(-1)	1.895791	279.6309	26.11202
OSL(-2)	1.605508	219.3833	23.26025
OSL(-3)	2.514448	283.6609	22.40291
PGR	11690517	38983.55	44.00836
PGR(-1)	1.38E+08	457021.0	359.0659
PGR(-2)	3.68E+08	1213974.	937.7834
PGR(-3)	1.40E+08	462399.8	343.7796
C	4.70E+08	232427.7	NA

Source: Authors Computation using Eviews 9.

The result from table 6 shows the Variance Inflation Factor (VIF). Since the value of the Uncentred VIF is greater than the centred VIF, it means there are no multicollinear variables in the model. This implies the absence of multicollinearity among the independent variables.

DISCUSSION OF FINDINGS

Based on the ARDL Cointegrating and Long Run Form, it was discovered that CO2 emission has a positive relationship with agricultural productivity in the long run. This is contrary to our expectation, but the probable reason could be that, the release of fumes and C02 as a result of mechanized agriculture though may affects the farmers' health, will in the long run increase agricultural output thus improving general economic growth. Also, CO2 serve as an essential ingredient for photosynthesis by plant to increase agricultural yield. The higher the level of CO2 available to plants in the atmosphere the better it is utilized for conversion into carbohydrates and glucose with the aid of sunlight and chlorophyll. This however did not in any way imply that environmental pollution as a result of C02 emission should be left unchecked.

Gas flaring (GFL) was discovered to have a positive relationship with agricultural productivity. Thus, increased gas flaring activities in the Nigerian petrochemical industry will in the long run increase agricultural output. This finding is not consistent with that of Atuma and Ojeh, (2013), and Odjugo (2011) who observed that crops cultivated on farmlands produced low yields, and their nutrient statuses are reduced due to the closeness to gas flaring sites. This is not surprising as a result of the fact that the dominant agricultural hubs in northern and western part of Nigeria are not so close to gas flaring sites. The agricultural impact of gas flaring is limited to the Niger Delta oil producing state which is just a fraction of real agricultural hub of Nigeria. However gas flaring should be adequately contained from spreading to the known agricultural hub of the nation as this might give a different outcome.

Also, oil spillage (OSL) was found to have a positive and significant relationship with agricultural productivity from our findings. With regards to the findings of Omoregie (1998), most of the fishes produced in Nigeria are from well safeguarded and controlled fish ponds free from

oil spillage. Thus, oil spillage has not adversely affected fish production in Nigeria. In addition, population growth rate (PGR) was found to have a positive relationship with agricultural productivity. Agriculture is the most labour intensive industry in Nigeria, thus an increase in population provides more labour force and manpower that drive the agricultural sector onto increased productivity. This is notably as a result of productivity of the labour force as more people embrace the agricultural policy of the government. This however, contradicts the findings of Ibrahim, Iheanacho, and Bila (2015) that analyzed the econometric causes and impact of deforestation on agriculture in Nigeria and observed that population growth rate is a factor that is significantly affecting agricultural productivity through deforestation and the loss of forest cover by man due to competition for space and fuel woods.

CONCLUSION AND RECOMMENDATIONS

This paper has empirically examined the impact of various components of environmental degradation, namely: Carbon dioxide (CO_2) emission, Gas flaring, Oil spillage and Population growth rate on agricultural productivity in Nigeria. The overall evidence from the study suggests that environmental degradation has not negatively affected agricultural productivity in Nigeria based on the available data. Rather, by channeling her rapidly growing population to the agricultural sector, it will provide a pool of labour force and manpower that will increase the productivity of the agricultural sector in Nigeria. Therefore, this paper recommends that appropriate enabling environment should be created in the rural area to encourage young able-bodied men to embrace agricultural and by so doing Nigeria will be maximizing her comparative advantage in terms manpower and vast agricultural land. Moreover, a deliberate policy should be put in place to checkmate rapid population growth in order to lessen pressure on the national budget as well of preventing the redundancy of labour as a result of technological innovations and increased mechanization.

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APPENDIX A

Table 3: Data on Agriculture Gross Domestic Product (AGDP), Gas Flaring (GFL), Oil Spillage (OSL), Carbon dioxide Emission (CEM) and Population Growth Rate (PGR).

YEAR	AGDP	GFL	OSL	CEM	PGR
1990	106.63	77.48	160	0.4	2.62
1991	123.24	77.84	201	0.41	2.58
1992	184.12	78.26	367	0.64	2.55
1993	295.32	77.47	428	0.56	2.52
1994	445.27	79.94	515	0.42	2.5
1995	790.14	79.5	417	0.31	2.49
1996	1070.51	72.55	430	0.35	2.49
1997	1211.46	72.23	339	0.35	2.5
1998	1341.04	69.79	390	0.34	2.51
1999	1426.97	64.68	398	0.37	2.51
2000	1508.41	53.84	400	0.64	2.52
2001	2015.42	48.48	405	0.66	2.53
2002	4251.52	74.3	415	0.76	2.53
2003	4585.93	42.71	437	0.7	2.55
2004	4935.26	35.26	500	0.71	2.57
2005	6032.33	40.22	490	0.66	2.6
2006	7513.3	35.83	510	0.57	2.62
2007	8551.98	31.33	525	0.51	2.64
2008	10100.33	26	550	0.52	2.66
2009	11625.44	24.07	545	0.46	2.67
2010	13048.89	19.32	537	0.5	2.68
2011	14037.83	16.99	673	0.53	2.69
2012	15816	15.53	844	0.49	2.69
2013	16816.55	15.22	522	0.48	2.68
2014	18018.61	12.92	1087	0.45	2.66
2015	19636.97	11.02	753	0.45	2.63
2016	21523.51	11.07	749	0.44	2.83

Source: Central Bank of Nigeria (CBN) statistical Bulletin 2016, Department of Petroleum Resource (DPR) 2016 and World Bank's World Development Indicator (WDI), 2015.

APPENDIX B

UNIT ROOT TEST WITH STRUCTURAL BREAKS

Null Hypothesis: AGD is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.208515
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: D(AGD) is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 8 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.12210
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: CEM is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.146000
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: D(CEM) is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 1 (Newey-West automatic) using Bartlett kernel

		LM-Stat.

Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.058543
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: GFL is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 0 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.143461
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: D(GFL) is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 3 (Used-specified) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.134878
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: OSL is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Used-specified) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.128851
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: D(OSL) is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Used-specified) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.074452
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: PGR is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Used-specified) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.183157
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

Null Hypothesis: D(PGR) is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Used specified) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.078894
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

ARDL BOUNDS TEST

ARDL Bounds Test
Date: 05/03/18 Time: 11:28
Sample: 1993 2016
Included observations: 24
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	10.63437	4

Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Dependent Variable: AGDP
Method: ARDL
Date: 05/03/18 Time: 11:30
Sample (adjusted): 1993 2016
Included observations: 24 after adjustments
Maximum dependent lags: 3 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (3 lags, automatic): CEM GFL OSL PGR
Fixed regressors: C
Number of models evalulated: 768
Selected Model: ARDL(1, 3, 2, 3, 3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
AGD(-1)	0.644912	0.112773	5.718671	0.0007
CEM	3538.223	1125.632	3.143321	0.0163
CEM(-1)	-1453.193	1271.774	-1.142650	0.2908
CEM(-2)	2135.268	1143.350	1.867554	0.1041
CEM(-3)	-2024.255	920.3124	-2.199531	0.0638
GFL	29.37532	12.95101	2.268187	0.0576
GFL(-1)	12.31871	14.47113	0.851261	0.4228
GFL(-2)	-24.13922	15.35870	-1.571697	0.1600
OSL	1.638295	0.897650	1.825092	0.1107
OSL(-1)	2.839592	1.376877	2.062342	0.0781
OSL(-2)	1.818588	1.267086	1.435252	0.1943
OSL(-3)	5.542796	1.585701	3.495486	0.0101
PGR	14312.21	3419.140	4.185910	0.0041
PGR(-1)	20833.67	11761.86	1.771290	0.1198
PGR(-2)	-25684.77	19185.19	-1.338781	0.2225
PGR(-3)	14618.28	11848.33	1.233784	0.2571
C	-66589.34	21673.70	-3.072357	0.0180

R-squared	0.999692	Mean dependent var	7774.958
Adjusted R-squared	0.998989	S.D. dependent var	6926.070
S.E. of regression	220.2392	Akaike info criterion	13.81183
Sum squared resid	339537.2	Schwarz criterion	14.64628
Log likelihood	-148.7419	Hannan-Quinn criter.	14.03321
F-statistic	1421.211	Durbin-Watson stat	2.088975
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

COINTEGRATION RESULTS

ARDL Cointegrating And Long Run Form
Dependent Variable: AGDP
Selected Model: ARDL(1, 3, 2, 3, 3)
Date: 05/03/18 Time: 11:29
Sample: 1990 2016
Included observations: 24

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CEM)	3538.2228	1125.63220	3.143321	0.0163
D(CEM(-1))	-2135.268245	1143.350168	-1.867554	0.1041
D(CEM(-2))	2024.255360	920.312415	2.199531	0.0638
D(GFL)	29.375317	12.951015	2.268187	0.0576
D(GFL(-1))	24.139220	15.358698	1.571697	0.1600
D(OSL)	1.638295	0.897650	1.825092	0.1107
D(OSL(-1))	-1.818588	1.267086	-1.435252	0.1943
D(OSL(-2))	-5.542796	1.585701	-3.495486	0.0101
D(PGR)	14312.21098	3419.139850	4.185910	0.0041
D(PGR(-1))	25684.77051	19185.185190	1.338781	0.2225
D(PGR(-2))	-14618.27928	11848.325280	-1.233784	0.2571
CointEq(-1)	-0.355088	0.112773	-3.148697	0.0162

Cointeq = AGDP - (6184.5015*CEM + 49.4379*GFL + 33.3418*OSL +
67812.4402*PGR -187529.0478)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CEM	6184.501507	3407.002686	1.815232	0.1124
GFL	49.437899	98.055970	0.504180	0.6296
OSL	33.341781	8.968514	3.717648	0.0075
PGR	67812.440209	18239.501999	3.717889	0.0075
C	-187529.047844	56442.503503	-3.322479	0.0127

MULTICOLLINEARITY TEST

Variance Inflation Factors
Date: 05/03/18 Time: 11:32
Sample: 1990 2016
Included observations: 24

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
AGD(-1)	0.012718	548.2173	249.8555
CEM	1267048.	172.4851	9.688479
CEM(-1)	1617410.	227.3829	12.71764
CEM(-2)	1307250.	182.8520	10.46662
CEM(-3)	846974.9	117.7288	6.938903
GFL	167.7288	203.2168	50.28104
GFL(-1)	209.4135	279.6342	62.97281
GFL(-2)	235.8896	343.8639	69.18644
OSL	0.805776	125.9347	11.48137
OSL(-1)	1.895791	279.6309	26.11202
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PGR	11690517	38983.55	44.00836
PGR(-1)	1.38E+08	457021.0	359.0659
PGR(-2)	3.68E+08	1213974.	937.7834
PGR(-3)	1.40E+08	462399.8	343.7796
C	4.70E+08	232427.7	NA

AUTO-CORRELATION -DURBIN-WATSON TEST

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.873094	Prob. F(2,5)	0.1477
Obs*R-squared	12.83325	Prob. Chi-Square(2)	0.0016

HETEROSKEDASTICITY TEST

Heteroskedasticity Test: Breusch -Pagan-Godfrey

F-statistic	0.398759	Prob. F(16,7)	0.9394
Obs*R-squared	11.44408	Prob. Chi-Square(16)	0.7813
Scaled explained SS	1.486722	Prob. Chi-Square(16)	1.0000

NIGERIA TRADE FLOWS AND THE EFFECT OF POLITICAL INSTABILITY: A GRAVITY MODEL APPROACH

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Abstract

This study examined Nigeria's trade flows and the effect of political instability. Data were collected from 2008 to 2014 for 18 countries. The Gravity panel data were used. The results revealed that political instability negatively impacts on Nigeria's trade flows by 0.06531%. This study, therefore recommends that for Nigeria to experience increased trade flows which will translate into economic growth and subsequent economic development, the federal government should stabilize the political system. Unstable political environment affected the inflow of trade and discouraged international investments. The ever-changing political system and the unstable government create tensions, lower foreign and domestic investments in the country. Political instability scare foreign investors.

Keywords: *Political instability, Gravity panel model, Trade flows, international trade.*

JEL Classification*: F14, F1*

INTRODUCTION

International trade leads to increase in income, in the level of investment and in the state of technical knowledge in the country. The increase in investment and improvements in innovation and technological progress then leads to increased productivity, competitiveness, trigger a further increase in trade and in income. This positive feedback continues and brings about a virtuous circle of increased trade, rising income, and

economic development. Nevertheless, experience has shown that successful export performance requires a broadly supportive policy environment, including macroeconomic stability, public investment in infrastructure and human capital, as well as policies that provide adequate incentives for investment in the export sector (Matthias, & Königer, 2012).

These have not been translated into the Nigerian economy, as the economy suffered its slowest growth over the years and decline in trade flows. The decline in Nigeria's trade flows is attributed to the global macroeconomic crises and the changes in the international trade pattern in the era of globalization. For instance, the trade flows from Nigeria with other countries of the world has been on the decline. This is because Nigeria's total merchandise trade reduced to N3.65 trillion in the fourth quarter of 2015, compared to N4.02 trillion in the previous quarter of 2014. The country's total trade value of 2015 stood at N16.42 trillion, which is N7.25 trillion or 30.6 percent less than the total trade value for 2014 (Obinna & Emejo, 2016; National Bureau of Statistics NBS, 2015).

This has highlighted the need for clearer understanding of the factors underlying a country's balance of trade position (Khan, & Hossain, 2010). While a country's overall trade may be balanced, a country may have bilateral deficits with many of its trading partners (and surpluses with others). The relationship between the overall trade flows and its determinants may not necessarily be the same with the bilateral trade flows.

Trade flows between countries depend on a number of factors. Earlier studies, like Beckerman (1956), Ullman (1956), Smith (1964), Linneman (1969) and Yeats (1969), suggested that distance, product, category, political stability, cultural similarity, colonial past, membership in an economic union, and standard demographic variables such as GDP and population are determinants of trade. Consequently, in the context of developing economies like Pakistan, India, China, Bangladesh and Sri

Lanka, Tariff, Import duty, Inflation, Foreign Direct Investment (F.D.I), Exchange Rate, Transportation Cost and Gross Domestic Product (GDP) determine trade volume, based on the gravity equation framework in which foreign trade depends in between countries.

Available studies in Nigeria like Aliyu and Bawa, (2015) and Adewuyi and Bankole (2012) on international trade with the applicability of gravity model have examined the determinant of trade flows in Nigeria without considering political instability. However, earlier studies outside Nigeria like Beckerman (1956), Ullman (1956), Smith (1964), Linneman (1969) and Yeats (1969), have considered political instability. Therefore, it is on this premise that this research seeks to examine the implications of political instability on Nigeria's trade flows with the application of gravity model. This study is divided into five sections: Introduction, which explains the motivation and background of the study. Section two, which is the literature review explain the concepts, theories, empirical reviews and the effect of political instability on Nigeria's trade flows. Section three which is the methodology contains the sources of data and method of data analysis. Sections four and five are the result and discussion of findings and the conclusion and recommendations respectively.

LITERATURE

CONCEPT OF TRADE FLOWS

Trade flows are the sum of inter and intra-industry trades. It is the exchange of goods and services, and of the international movement of factors of production. Foreign trade is often favourable to growth as well as a necessary condition for rapid growth for both big and small countries (Arodoye & Iyoha, 2014).

Net export countries run a trade surplus due to the fact that more goods are sold to the international market than purchase from the international market. Demand for that country's currency then increases

because international clients buy the country's currency in order to buy these goods. This causes the value of the currency to rise (Long, 2009). Consequently, net import countries experience trade deficit due to the purchase of more foreign goods than they sell to the international market. In order to purchase these international goods, importers sell their domestic currency and buy a foreign currency. This causes the value of the domestic currency to fall. Clearly, a change in the balance of payments from one country to another has a direct effect on currency levels. Therefore, it is important for countries to keep abreast of economic data relating to this balance and understand the implications of changes in the balance of payments (Long, 2009). This study adopted the trade flows measure of trade (exports-imports). It is the quantity of goods that one country sells to other countries minus the quantity of goods that a country buys from other countries as a measure of trade flows.

CONCEPT OF POLITICAL INSTABILITY

Political instability is regarded as a serious malaise harmful to economic performance. Political instability is likely to shorten policymakers' horizons leading to sub-optimal short-term macroeconomic policies (Aisen & Veiga, 2011). It may also lead to a more frequent switch of policies, creating volatility and thus, negatively affecting macroeconomic performance and trade flow. Political instability is measured by the number of times in a year in which political uprising is triggered is indeed globally widespread displaying remarkable regional differences. The widespread phenomenon of political (and policy) instability in several countries across time and its negative effects on their economic performance has arisen the interest of several economists (Aisen & Veiga, 2011). As such, the profession produced an ample literature documenting the negative effects of political instability on a wide range

of macroeconomic variables, including, among others, GDP growth, private investment, and inflation.

According to Alesina, Ozler, Roubini, and Swagel, (1996) political instability significantly lower the growth of GDP in countries and time periods with a high propensity of government collapse. Also, Jong-a-Pin (2009) found that higher degrees of political instability lead to lower economic growth. In the case of private investment, Alesina and Perotti (1996) show that socio-political instability generates an uncertain political-economic environment, raising risks and reducing investment.

Political instability also leads to higher inflation as shown in Aisen and Veiga (2006). Quite interestingly, the mechanisms at work to explain inflation in their paper resemble those affecting economic growth, namely; that political instability shortens the horizons of governments, disrupting long-term economic policies conducive to a better economic performance. Political instability in this study is the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.

POLITICAL INSTABILITY AND TRADE FLOW

Political stability is very important for normal macroeconomic and business environment in a country. Political risks largely depend on political stability and good governance of the government (Husain, 2009). Political stability enhances the probability of attracting more trade inflows. Nigeria in recent times has had a series of instabilities in the political system, this, in turn, has unfavourably affected the inflow of trade and discourages the international investments. The ever-changing political system and the unstable government has created political tensions it affect the level of foreign and domestic investment in the country. Political instability is an unfavourable situation since it affects the country's economic development and growth process by its dent in

the physical and human resources. The consistent increase in Political instability makes foreign investors reluctant to bring any projects until they are assured that the business environment is conducive and favourable (Brada, Kutan, & Yigit, 2005). World Bank, 2011; UNCTAD, 2010). World Bank report (2011) categorically mentioned that the private sector low investment in any country is attributed to political instability.

THEORETICAL REVIEW

There are several theories in international trade flows. However, for this study, Hecksher – Ohlin Trade Theory is adopted. Heckscher – Ohlin theory focuses on the differences in relative factor endowments and factor prices between nations as the most determinants of trade. The model identified differences in pre-trade product prices between nations as the basis for trade. The theory assumed two countries, two commodities and two factors. There is perfect competition in both factor and product markets. It assumed that factor input; labour and capital in the two countries are homogeneous. Production function also exhibits constant returns to scale. Production possibility curve is concave to the origin. The model suggests that the less developed countries that are labour abundant should specialize in the production of the primary product, especially agricultural product because the labour requirement of agricultural is high except in the mechanized form of farming.

In the same vein, the less developed countries should import capital-intensive products, mostly the manufactured goods from developed countries that are capital intensive. Heckscher Ohlin theory concludes that trade increases total world output, all countries gain from trade, trade enables countries to secure capital and consumption of goods from other parts of the world. Thus, trade stimulates economic growth (Nageri, Ajayi, Olodo, & Abina, 2013). The justification is because Nigeria exports those items in which it has a comparative advantage

based on factor endowments compared to other countries. This is why Posner (1961) and Vernon (1966) stated that trade occurs because of differences across countries in technologies (Ricardian theory), in factor endowments (H-O theory), differences across countries in technologies as well as the continuous renewal of existing technologies and their transfer to other countries.

THEORY OF GRAVITY MODEL

The theory of gravity model stated that trade between countries can be compared to the gravitational force between two objects: it is directly related to countries' size and inversely related to the distance between them. Exports from country *i* to country *j* are explained by their economic sizes, their populations, direct geographical distances and a set of dummies incorporating some characteristics common to specific flows. Gravity models employ the gravitational force concept as an analogy to explain the volume of trade, capital flows, and migration among the countries of the world (Deardorff, 1998). The gravity model establishes a standard for trade-flow volumes as determined by Gross Domestic Product (GDP), population, and distance. The effect of policies on trade flows can then be evaluated by adding the policy variables to the equation and estimating deviations from the baseline flows.

Gravity model begin with Newton's Law for the gravitational force (GF_{ij}) between two objects *i* and *j*. In an equation form, this is expressed as:

$$GFij = \frac{MiMj}{Dij} \quad i \neq j \qquad \ldots 1$$

Where:
GF_{ij} = Gravitational force
M_iM_j = Masses of the objects
D_{ij} = Distance between them
i = country i
j = country i

In this equation, the gravitational force is directly proportional to the masses of the objects (M_i and M_j) and indirectly proportional to the distance between them D_{ij}. Gravity models are estimated in terms of natural logarithms, denoted "ln". In this form, what is multiplied in equation (1) becomes added, and what is divided becomes subtracted, translating equation 1 into a linear equation:

$$\ln GF_{ij} = \ln M_i + \ln M_j - \ln D_{ij} i>j \quad \ldots 2$$

Where:

GF_{ij} = Gravitational force

M_i= Mass of object *i*

M_j = Mass of object *j*

D_{ij} = Distance between objects *i* and *j*

ln = Natural Logarithm

Gravity models of international trade adopted equation (2) for this study by replacing Gravitational Force (GF) with Trade Flows (TF) from county *i* to country *j*. Distance is often measured using "great circle" calculations. The handling of mass in equation (2) takes place via four alternatives. In the first alternative with the most solid theoretical foundations, mass in equation (2) is associated with the Gross Domestic Product (GDP) of the countries. In this case, equation (2) becomes:

$$\ln E_{ij} = \alpha + \beta_1 \ln GDP_i + \beta_2 \ln GDP_j + \beta_3 \ln D_{ij} \quad \ldots 3$$

Where:

E_{ij} = Economic Gains

GDP_i= Gross Domestic Product of country *i*

GDP_j = Gross Domestic Product of country *j*

D_{ij} = Distance between countries *i*and *j*

ln = Natural Logarithm

In general, the expected signs here are $\beta_1, \beta_2 > 0$. However, the economics of equation (3) can lead to the interpretation of *GDP* as income, and when applied to agricultural goods, Engels' Law allows for *GDP* in the destination country to have a negative influence on demand for imports.

Hence it is also possible that $\beta_2 < 0$. From equation (3), political stability (POL) is therefore, incorporated into the model which form the adopted model for this study.

$$\ln E_{ij} = \alpha + \beta_1 \ln GDP_i + \beta_2 \ln GDP_j + \beta_3 \ln D_{ij} + \beta_4 \ln POL_{ij} \quad \ldots 4$$

EMPIRICAL REVIEW

Srivastava and Green, (1986) who reported that political stability is an insignificant determinant of trade. They concluded that stable nations tend to be the higher-level exporters when bilateral trade relations are examined. Conversely, there is the very little effect of the instability of the importing nation on the intensity of trade, this variable being an insignificant determinant of trade in all but a couple of instances. As anticipated, low levels of instability in the exporting nation are associated with high trade intensity indices.

METHODOLOGY

This study adopted a panel regression estimation technique. Panel data is an important method of longitudinal data analysis because it allows for a number of regression analyses in both spatial (units) and temporal (time) dimensions. In Panel regression, there are three possibilities: Pooled Regression Model, Fixed Effect Model, and the Random Effects Model (Greene, 2008). Data were collected from the World Bank, World Wide Governance Indicators (WGI), International Monetary Funds (IMF) and the Central Bank of Nigeria (CBN), from 2008 to 2014 for 18 countries, for Nigeria's trade flows and Nigeria's trading partners for Gross Domestic Product and political stability were obtained. Nigeria's major trading partners as 31st March 2018 used for this study are the United States of America (USA), Brazil, South Africa, Netherland, Spain, India, United Kingdom (UK), Indonesia, France, China, Belgium, Germany, South Korea, Japan, Thailand, United Arab Emirate (UAE) and Ivory Coast.

MODEL SPECIFICATION

The model formulation for this study followed the model of Frankel (1997), Sharma and Chua (2000) and Hassan (2000, 2001) which were modified to suit the Nigerian situation. The gravity model of Nigeria's Trade Flows, the model is stated thus:

$\ln TF_{ijt} = \alpha + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln D_{ijt} + \beta_4 POL^S_{ijt} + v_i + u_t + \varepsilon_{ijt}$ ...5

Where:

ln = Natural Logarithm

TF_{ijt}= trade flows, the balance of trade (exports-imports) from *i* to *j* at time *t,*

GDP_{it} = Gross Domestic Product of country i

GDP_{jt}= Gross Domestic Product of country j

D_{ijt}= the distance between countries *i* and *j* at time *t*

POL^S_{ijt}= Political instability of countries i and j at time t (Quality of governance: Reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence. Measured as estimate of governance (ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance) (Kaufmann, Kraay, & Massimo, 2014).

v_i = country fixed effect

u_t = time effect

ε_{ijt}= component error term

α = constant

β_1 β_2 $\beta_3$and $\beta_4 > 0$ the slope values of the independent variables.

ESTIMATION AND RESULTS

Multicollinearity was tested for the independent variables for this study. The effect of multicollinearity is that the estimated regression coefficients of the independent variables that are correlated tend to have large sampling errors. Variance inflation factor (VIF) was used to te st for multicollinearity. The rule of thumb is that, if VIF exceeds 10, there is the reason for some concern about the presence of multicollinearity

(Stevens, 2002). Table 1 showed the result of the multicollinearity and it indicated that there is no multicollinearity among the independent variables.

Table 1: Multicollinearity

Variable	VIF	1/VIF
lndijt	2.97	0.336930
lngdpjt	2.58	0.387758
lngdpit	1.54	0.648405
polsijt	1.37	0.732479
Mean VIF	2.06	

Source: STATA 14.0 Output

Table 2: Results of Pooled, Fixed and Random Effects Regression Estimates

	Expected sign	Panel A Pooled coefficient	P-value	Panel B Fixed coefficient	P-value	Panel C Random coefficient	P-Value
$\ln GDP_{it}$	+	0.52133	0.001**	.3445916	0.080***	0.5213273	0.000**
$\ln GDP_{jt}$	+	0.00856	0.757	.0314044	0.696	.0085603	0.024**
$\ln D_{ijt}$	-	0.01631	0.869	Dropped	Dropped	.0163057	0.144
$POLS_{ijt}$	-	-0.0006531	0.986	.0476079	0.843	-.0006531	0.861
CONSTANT		12.53141	0.000**	14.46247	0.000**	12.53141	0.000**
R^2		0.3903		0.0647		0.3903	
N		144		144		144	
F*		8.25	0.000*	14.42	0.000*	56.56	0.000*
Hausman Test		-	-	3.73	p-value	0.5892	
Corr (Ui, X)		-	-	-0.9181	-	0	-

Dependent variable: TF_{ijt}.

Note: * ** *** show significance at 1%, 5% and 10% respectively

Table 2 shows that the random effects model is a better estimator than the fixed effects model since the Hausman test result shows a chi-square value of 3.73, with a p-value of 0.5892 at 5% significance level.

Table 2 showed the result of the relationship between the dependent variable (trade flows) and the independent variables (Gross Domestic Product for countries *i* and *j*, the distance between them and political instability.

The effect of political instability on Nigeria's trade flows is negative. The result of the pooled regression result in *Panel A* showed that political instability is insignificant with a coefficient of -0.0006531. The fixed effect result in *Panel B* has a coefficient of 0.0476079 which indicated a positive and insignificant effect. Consequently, the random effect in *Panel C* showed that it has an insignificant negative impact on Nigeria's trade flows. This means that a 1% increase in the political instability will bring about a 0.065% decrease in Nigeria's trade flows for the pooled, increases by 4.76% the fixed effect, and decreases by 0.065% for the random effect model. This means that trade flows is inelastic to political instability, indicating that political instability determines the level of trade flows in an economy.

DISCUSSION OF FINDINGS

Political instability was found to impact negatively on Nigeria's trade flows. This means that political instability has no significant effect on Nigeria's trade flows. The result is consistent with the work of Srivastava and Green, (1986) who reported that political stability is an insignificant determinant of trade. They concluded that stable nations tend to be the higher-level exporters when bilateral trade relations are examined. Conversely, there is the very little effect of the instability of the importing nation on the intensity of trade, this variable being an insignificant determinant of trade in all but a couple of instances. As anticipated, low levels of instability in the exporting nation are associated with high trade intensity indices.

CONCLUSION AND RECOMMENDATIONS

This research empirically examined the Nigeria trade flows and the effect of political instability on the application of Gravity model approach. The study formulated a static model with political instability and other control independent variables, while trade flow is the dependent. Panel regression (pooled, fixed and random effects) econometric technique was used to achieve the desired objectives. The findings of the study revealed that Political instability has an insignificant negative impact on Nigeria's trade flows. Hence the study recommends that for Nigeria to experience increased trade flows which will translate into economic growth and subsequent economic development, the federal government should effectively stabilized the political system. Unstable political environment affected the inflow of trade and discourages the international investments. The ever-changing political system and the unstable government create tensions lower foreign and domestic investment in the country. Political instability scare foreign investors.

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APPENDIX A

Table 3: The data collected for the estimation of the model and test of hypotheses were collected from 2008 to 2014 for 18 countries which were used for the study. *T*rade flows, Gross National Product of Nigeria (exporter), Gross National Product of importer countries (measured in Billion Dollars), the distance between two countries (in KM) and Political stability.

ID	Year	Country	TFijt	lnGDPit	lnGDPjt	lnDijt	POLSijt
USA	2008	1	3.699749954	5.343271612	5.825161998	9.272563715	0.560430706
	2009	1	3.044260107	5.139620535	9.576229237	9.272563715	0.427456498
	2010	1	3.242559048	5.444998792	9.613021609	9.272563715	0.435301721
	2011	1	3.316454216	5.514182494	9.650775183	9.272563715	0.597174764
	2012	1	3.529677122	5.576691252	9.695514286	9.272563715	0.632173896
	2013	1	3.611274145	5.657633819	9.729116308	9.272563715	0.608164668
	2014	1	2.668266299	5.755852967	9.771576675	9.272563715	0.64491988
Brazil	2008	2	3.699749954	5.343271612	7.410673118	8.876823763	-0.292797953
	2009	2	3.044260107	5.139620535	7.391606955	8.876823763	0.164363906
	2010	2	3.242559048	5.444998792	7.669917664	8.876823763	0.0057122
	2011	2	3.316454216	5.514182494	7.813848593	8.876823763	-0.13636902
	2012	2	3.529677122	5.576691252	7.71768277	8.876823763	0.045203622
	2013	2	3.611274145	5.657633819	7.715504441	8.876823763	-0.278286517
	2014	2	2.668266299	5.755852967	7.703437838	8.876823763	-0.124729449
South Africa	2008	3	3.699749954	5.343271612	5.611129761	8.792291418	0.044112764
	2009	3	3.044260107	5.139620535	5.653947765	8.792291418	-0.113223091
	2010	3	3.242559048	5.444998792	5.900349306	8.792291418	-0.018998522
	2011	3	3.316454216	5.514182494	6.002263528	8.792291418	0.031663395
	2012	3	3.529677122	5.576691252	5.946310265	8.792291418	-0.020949561
	2013	3	3.611274145	5.657633819	5.860156396	8.792291418	-0.05752949
	2014	3	2.668266299	5.755852967	5.869720552	8.792291418	-0.040560294
Nether-lands	2008	4	3.699749954	5.343271612	6.774116452	8.790877754	0.863300323

	2009	4	3.044260107	5.139620535	6.682609725	8.790877754	0.908683598
	2010	4	3.242559048	5.444998792	6.657506426	8.790877754	0.913827419
	2011	4	3.316454216	5.514182494	6.725656497	8.790877754	1.096227765
	2012	4	3.529677122	5.576691252	6.64703057	8.790877754	1.16966033
	2013	4	3.611274145	5.657633819	6.684620478	8.790877754	1.117080331
	2014	4	2.668266299	5.755852967	6.731061059	8.790877754	1.234886352
Spain	2008	5	3.699749954	5.343271612	7.37832937	8.485083137	-0.399010092
	2009	5	3.044260107	5.139620535	7.284897041	8.485083137	-0.465644538
	2010	5	3.242559048	5.444998792	7.235206232	8.485083137	-0.28915298
	2011	5	3.316454216	5.514182494	7.283356878	8.485083137	0.038947556
	2012	5	3.529677122	5.576691252	7.187818905	8.485083137	-0.012726055
	2013	5	3.611274145	5.657633819	7.214274071	8.485083137	0.014589448
	2014	5	2.668266299	5.755852967	7.255099628	8.485083137	0.189985926
India	2008	6	3.699749954	5.343271612	7.10923056	8.936824155	-1.101068258
	2009	6	3.044260107	5.139620535	7.219160958	8.936824155	-1.32833147
	2010	6	3.242559048	5.444998792	7.443395069	8.936824155	-1.233152509
	2011	6	3.316454216	5.514182494	7.53908131	8.936824155	-1.296164036
	2012	6	3.529677122	5.576691252	7.527658422	8.936824155	-1.251998186
	2013	6	3.611274145	5.657633819	7.534041778	8.936824155	-1.187474966
	2014	6	2.668266299	5.755852967	7.598788226	8.936824155	-1.259636092
UK	2008	7	3.699749954	5.343271612	7.904546337	8.873468055	0.455756187
	2009	7	3.044260107	5.139620535	7.704102794	8.873468055	0.10636314
	2010	7	3.242559048	5.444998792	7.739328728	8.873468055	0.401284516
	2011	7	3.316454216	5.514182494	7.809800625	8.873468055	0.352284104
	2012	7	3.529677122	5.576691252	7.817804574	8.873468055	0.411211789
	2013	7	3.611274145	5.657633819	7.838249068	8.873468055	0.483377099
	2014	7	2.668266299	5.755852967	7.947153159	8.873468055	0.468744482
Italy	2008	8	3.699749954	5.343271612	7.748529909	8.630878956	0.529223979

	2009	8	3.044260107	5.139620535	7.657579063	8.630878956	0.340511918
	2010	8	3.242559048	5.444998792	7.630067009	8.630878956	0.474065632
	2011	8	3.316454216	5.514182494	7.695462358	8.630878956	0.505783677
	2012	8	3.529677122	5.576691252	7.608067728	8.630878956	0.513671637
	2013	8	3.611274145	5.657633819	7.636247885	8.630878956	0.50986284
	2014	8	2.668266299	5.755852967	7.683165163	8.630878956	0.524292431
Indonesia	2008	9	3.699749954	5.343271612	6.235378884	9.366317953	-1.085317969
	2009	9	3.044260107	5.139620535	6.288997317	9.366317953	-0.758516371
	2010	9	3.242559048	5.444998792	6.56433778	9.366317953	-0.853800714
	2011	9	3.316454216	5.514182494	6.740014504	9.366317953	-0.765245318
	2012	9	3.529677122	5.576691252	6.777419916	9.366317953	-0.57504034
	2013	9	3.611274145	5.657633819	6.768809254	9.366317953	-0.500470281
	2014	9	2.668266299	5.755852967	6.756163489	9.366317953	-0.400076306
France	2008	10	3.699749954	5.343271612	7.953357362	8.673170773	0.527894735
	2009	10	3.044260107	5.139620535	7.87340211	8.673170773	0.474764138
	2010	10	3.242559048	5.444998792	7.851591915	8.673170773	0.670789421
	2011	10	3.316454216	5.514182494	7.931917332	8.673170773	0.593310356
	2012	10	3.529677122	5.576691252	7.868126818	8.673170773	0.550286531
	2013	10	3.611274145	5.657633819	7.914749597	8.673170773	0.423687816
	2014	10	2.668266299	5.755852967	7.967520012	8.673170773	0.502927518
China	2008	11	3.699749954	5.343271612	8.416256432	9.200593021	-0.480801672
	2009	11	3.044260107	5.139620535	8.515296594	9.200593021	-0.428204
	2010	11	3.242559048	5.444998792	8.687845763	9.200593021	-0.657177746
	2011	11	3.316454216	5.514182494	8.898636882	9.200593021	-0.606386006
	2012	11	3.529677122	5.576691252	9.015466078	9.200593021	-0.552419662
	2013	11	3.611274145	5.657633819	9.124932472	9.200593021	-0.546090901
	2014	11	2.668266299	5.755852967	9.213092382	9.200593021	-0.610010137
Belgium	2008	12	3.699749954	5.343271612	6.233949835	8.760625526	0.62100786

	2009	12	3.044260107	5.139620535	6.16222579	8.760625526	0.792106986
	2010	12	3.242559048	5.444998792	6.157040424	8.760625526	0.781590223
	2011	12	3.316454216	5.514182494	6.241814622	8.760625526	0.93469274
	2012	12	3.529677122	5.576691252	6.180478245	8.760625526	0.900993824
	2013	12	3.611274145	5.657633819	6.227642777	8.760625526	0.917316973
	2014	12	2.668266299	5.755852967	6.281846098	8.760625526	1.020748961
Germany	2008	13	3.699749954	5.343271612	8.199938666	8.422222954	0.927811146
	2009	13	3.044260107	5.139620535	8.103730185	8.422222954	0.834550619
	2010	13	3.242559048	5.444998792	8.104884721	8.422222954	0.784861803
	2011	13	3.316454216	5.514182494	8.197383166	8.422222954	0.837712109
	2012	13	3.529677122	5.576691252	8.139689397	8.422222954	0.774780929
	2013	13	3.611274145	5.657633819	8.198628179	8.422222954	0.927077293
	2014	13	2.668266299	5.755852967	8.262495762	8.422222954	0.834786181
South Korea	2008	14	3.699749954	5.343271612	6.8366942	9.385721231	0.373008
	2009	14	3.044260107	5.139620535	6.7263053	9.385721231	0.483289
	2010	14	3.242559048	5.444998792	6.9225355	9.385721231	0.401665
	2011	14	3.316454216	5.514182494	7.0161360	9.385721231	0.461230
	2012	14	3.529677122	5.576691252	7.0296171	9.385721231	0.465119
	2013	14	3.611274145	5.657633819	7.1080813	9.385721231	0.547554
	2014	14	2.668266299	5.755852967	7.1761681	9.385721231	0.543089
Japan	2008	15	3.699749954	5.343271612	8.4865659	9.451088057	1.308465
	2009	15	3.044260107	5.139620535	8.5241968	9.451088057	1.371873
	2010	15	3.242559048	5.444998792	8.6116643	9.451088057	1.573045
	2011	15	3.316454216	5.514182494	8.6836616	9.451088057	1.567794
	2012	15	3.529677122	5.576691252	8.6890884	9.451088057	1.613109
	2013	15	3.611274145	5.657633819	8.4973031	9.451088057	1.646153
	2014	15	2.668266299	5.755852967	8.4859764	9.451088057	1.754096
Thailand	2008	16	3.699749954	5.343271612	8.3211773	9.207436159	-0.419930

	2009	16	3.044260107	5.139620535	8.2797149	9.207436159	-0.280469
	2010	16	3.242559048	5.444998792	8.4638616	9.207436159	-0.315848
	2011	16	3.316454216	5.514182494	8.5398805	9.207436159	-0.290064
	2012	16	3.529677122	5.576691252	8.5923775	9.207436159	-0.341651
	2013	16	3.611274145	5.657633819	8.6437175	9.207436159	-0.330240
	2014	16	2.668266299	5.755852967	8.6033990	9.207436159	-0.300632
UAE	2008	17	3.699749954	5.343271612	5.7540794	9.063463176	1.130633
	2009	17	3.044260107	5.139620535	5.5404907	9.063463176	0.954904
	2010	17	3.242559048	5.444998792	5.6609515	9.063463176	0.928728
	2011	17	3.316454216	5.514182494	5.8539108	9.063463176	1.072748
	2012	17	3.529677122	5.576691252	5.9501190	9.063463176	1.176244
	2013	17	3.611274145	5.657633819	5.9820075	9.063463176	1.293150
	2014	17	2.668266299	5.755852967	6.0218725	9.063463176	1.254797
Ivory Coast	2008	18	3.699749954	5.343271612	3.1572982	7.65860517	-1.087696
	2009	18	3.044260107	5.139620535	3.1133375	7.65860517	-1.081908
	2010	18	3.242559048	5.444998792	3.1339278	7.65860517	-1.137880
	2011	18	3.316454216	5.514182494	3.1820874	7.65860517	-1.036231
	2012	18	3.529677122	5.576691252	3.2065603	7.65860517	-0.867835
	2013	18	3.611274145	5.657633819	3.3424377	7.65860517	-0.787146
	2014	18	2.668266299	5.755852967	3.4746027	7.65860517	-0.775121

Sources: DOTS (Direction of Trade Statistics), Central Bank of Nigeria statistical bulletin, World Bank and International Monetary Funds (IMF)

THE RELATIONSHIP BETWEEN FISCAL DEFICITS AND MACROECONOMIC AGGREGATES: A VECTOR AUTO REGRESSION APPROACH

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Abstract

This study evaluated the relationship between fiscal deficit and economic growth rate, interest rate, real exchange rate, inflation rate and current account deficit. The study is guided by two objectives; the autoregressive distributed lag (ARDL) model approach was used which is best suited for variables of different order of intergration. The secondary data was used, drawn from the 2016 Central Bank of Nigerian Statistical bulletin. The unit root test was conducted on the data to avoid spurious regression results. The ARDL Bounds Test was conducted using for optimal lag length. The results show that only economic growth is statistically significant while other variables are not. It is therefore recommended that policy makers should strive to use fiscal deficit sparingly in the short run but can use it in the long run since it shows a positive relationship with growth rate of the economy. This would help the economy pick up.

Key Words: *Phillip-Perron, deficit, co-integration, inflation, autoregressive model*

JEL: *C31; H53; H62*

INTRODUCTION

In less developed countries, government use public debt as an imperative tool to finance its expenditures. Economic growth can be increased by effective and proficient utilization of resources to achieve macroeconomic goals. However, if the public debt is not properly utilized, it would restrict economic growth and become the biggest curse for the economy.

Fiscal deficits are excess of government (public) expenditure over revenue. The measurements of this surplus has, however, been divergent as it has not been uniformly applied among countries. Governments may regard positive shocks as permanent, and negative shocks as temporary, and as a result, they may tend to finance their deficit by borrowing when revenue starts falling. A resulting heavy debt service burden, coupled with low government revenues and high expenditures, may subsequently lead to the emergence of recurrent budget deficits (Neaime 2008).

A careful study of the budget structure of Nigeria since her independence indicates that fiscal deficit is a recurring feature of the public sector. This is not suprising in view of the growing desire on part of the governments to provide for the demand for economic and social overheads as well to enhance the living conditions of the citizens. There is the view that fiscal deficits could be a veritable tool for ehancing accelarated growth and development in a developing economy (Thorton, 1990), though this depends on the mode of financing the deficit and, thus, sustainability of the fiscal deficit profile.

Fiscal deficits have been on the increase since independence; the rapid growth was enhanced by huge increases in oil revenue. Quantitatively, the federally collected revenue, which registered barely N633 million in 1970, surged through N4.5 billion in 1974 to slightly above N15.0 billion in 1980. The disparity between government revenue and expenditure generated enlarged deficits from the second half of the 1970s, except in 1979. In 1975-1978, for example, the cummulative fiscal deficit of the central government was N4.8 billion (CBN 2011). Relative to gross domestic product (GDP), fiscal deficit osciliated between 2% and 7% in the period. Evidence suggests that government deficit, notably for many years, has been financed largely through money creation by the Central Bank. Consequently, monetary policy has been vastly

expansionary, with direct implications for price inflation and exchange rate.

According to Oluba (2008), 32 out of 43 years from 1965 in Nigeria have been deficits in the overall fiscal balance of Nigeria; some of the years actually declared as surplus were years of fiscal deficits which were so converted through the manipulation by the ministry of finance. Notwithstanding, there has been frantic efforts made, especially by the Federal government to reduce the amounts of deficits in th economy. The Nigerian people are therefore left perplexed as to why these borrowed funds, instead of impacting positively on the macroeconomic variables and creating employment opportunities as they were told by the executives, have ended up being passed down as a burden to them and from one administration to the other. Deficits are meant to accelearate economic activities during depression through induced aggregate demand. But this has not been the case for Nigeria. There were obvious fall in the standard of living of the citizens, decline in the growth of the economy, persistant unfavourable balance of payment, increased public debt (local and foreign), continued depletion of the foreign reserves, little or no savings, decline in exports, increased inflationary pressure, continous dependence on external economies, etc. Most studies reviewed show inconclusive evidences or conflicting ideas on the effect of fiscal deficits on these macroeconomic variables like interest rate, current account deficit, exchange rate and inflation rate. Even the results of the extant works conducted in the Nigerian context also shows conflicting results in their conclusions. This study is poised to answer the following questions: does government fiscal deficit have any significant relationship with some macroeconomic aggregates? Is there any long run relationship among these variables?

LITERATURE REVIEW

Under the traditional Keynesian theory, government spending stimulates the economy, reduces unemployment and makes households feel wealthier. This follows their assumption that some economic resources are unemployed and that a large number of individuals in the economy are myopic or liquidity constrained. As a result, as money demand rises, interest rates will increase and thus, investment will decline. If this is tax-financed, then this rise in interest is smaller as output is smaller. If money financed, there is no rise because money supply rises concurrently with money demand. If it is deficit-financed, the associated rise in public debt and a constant money supply implies that in order for agents to hold this new, more illiquid composition of money and bonds, interest rates must rise.

The Keynesians recognize the possibilities of government spending crowding-out private (investment) spending through increased cost of credit (interest-rate). Hence the recommendation by Musgrave (1984) as cited in Okpanachi and Abimiku (2007) that fiscal deficit should be implemented only during a depression when interest rates are likely to be unresponsive in order to avoid the dampening effect of rising interest-rates on private investment expenditure.

Another important theoretical model from which the relationship between the fiscal deficit and interest rate, and thus the crowding-out effect, can be described is the Ricardian Equivalence Hypothesis (REH) of Barro (1974). In its most simplistic form, the REH considers that all government spending must be financed by taxation either now or sometime in the future. In other words, a government deficit is simply deferred taxation. Households know this, and if there is a bond-financed tax reduction, agents will increase savings and buy the government bonds in order to hedge their future tax payment (i.e. the taxes raised to pay back the bonds). This exogenous increase in bond demand perfectly

matches the exogenous increase in bond supply by the government and neither interest rates nor the consumption path of individuals will change.

The Neoclassical theory envisions far-sighted individuals planning consumption over their own life cycles. Fiscal deficits raise total lifetime consumption by shifting taxes to subsequent generations. If economic resources are fully employed, increased consumption necessarily implies decreased saving. Interest rates must then rise to bring capital markets into balance. This rise in interest rates in turn, results in a fall in private investment; In such case persistent deficits "crowd out" private domestic capital accumulation.

However, there are Keynesians who provide a counter argument to the crowd-out effect by making reference to the expansionary effects of fiscal effects. They argue that usually fiscal deficits result in an increase in domestic production, which makes private investors more optimistic about the future course of the effect. Eisner (1989) is an example of this group, who suggests that increased aggregate demand enhances the profitability of private investments and leads to a higher level of investment at any given rate of interest. Hence, deficits may stimulate aggregate saving and investment, despite the fact that they raise interest rates. He concludes that rather than crowding out investment, there is tendency for crowding in effects of fiscal deficits.

The conventional view of inflation, which is based upon the quantity theory of money, assumes that 'inflation is always and everywhere a monetary phenomenon' (Friedman 1968): in other words, expansion of the money supply is considered to be a factor which, in the medium term, determines the rate of price increase. The most direct connection between government deficits and inflation is that by increasing the real value of outstanding bonds and perceived net wealth,

a deficit can raise total spending and the price level because the economy is operating at full employment (Dwyer, 1982).

Barro (1978; 1979) put forward hypothesis that deficits are a result of inflation, rather than inflation being a result of deficits. The government deficit is the change in the nominal value of outstanding government bonds, if the anticipated inflation increases, the nominal value of bonds must increase to maintain the real value of outstanding bonds. Because the central bank is concerned with smoothing interest rate movements, it would then tend to increase the money supply (Darrat, 1985).

The long-run effects of the monetary financing of the deficit depend on the use to which the funds so generated by the government are put. According to Boariu and Bilan (2007), if the resources resulting from the additional money issued in order to cover the fiscal deficit are employed to finance investment projects, which induce a rising output, the original increase in the money stock available in circulation will have as equivalent a rising quantity of goods and services subject to transactions. On the other hand, if the additional resources are employed to finance final consumption expenses, which do not determine a subsequent growth of GDP, the increase in the price level will be permanent and the monetary financing of the fiscal deficit will be inflationary.

The relationship between fiscal deficits and economic indicators has been studied empirically. Cebula (1999) applied an open-economy loanable funds model to assess whether a long-run relationship that exists between fiscal deficits and long-term interest rates in the United Kingdom (UK) in the period from 1972 to 1991; In Cebula's model, the nominal long-term interest rate is a function of the expected future inflation, ex ante real short-term interest rate, the percent change in real

gross domestic product, the real net capital flow and the real net borrowing by the central government. He found that there was a long-term positive relationship between the nominal long-term interest rate and fiscal deficit in the UK from 1972 to 1991.

Knot and De Haan (1999) utilized the deficit announcement effect methodology to examine the relationship between fiscal deficits and interest rates in Germany over the 1987-93 periods. Their results suggested that the positive relationship between fiscal deficits and interest rates is due to fact that government debt may crowd out private investment. Ewing and Yanochik (1999) examined the impact of federal fiscal deficits on the term structure of interest rates in Italy over the period 1977:1-1991:3. Using the co-integration technique, this study suggested that fiscal deficits increase the yield spread between long-term government bonds and the three-month Treasury bill rate. Further tests reveal the absence of any 'reverse causality', supporting the hypothesis of this study. Their findings are consistent with those of Cebula (1999) who found that UK deficits exhibit a significant effect upon the term structure of interest rates. This finding suggests that fiscal deficits may hinder long-term economic growth in Italy, via the crowding out effect, by increasing long-term interest rates relative to short-term interest rates.

Vamvoukas (2000) examined the linkage between fiscal deficit and interest rate in Greece over the time periods 1949-1994, 1953-1994 and 1957-1994. Within the methodological framework of co-integration, ECM strategy and several diagnostic and specification tests, the empirical findings support the Keynesian model of a significant and positive relationship between fiscal deficit and interest rate. Modeste (2000) utilized the loanable funds model of interest rate determination to investigate the relationship between fiscal deficit and interest rate movements. A basic tenet of that model is that interest rates would rise (fall) as economic forces either increase (decrease) the demand for

loanable funds or reduce (increase) the supply of such funds. He applied his methodology (loanable funds framework and error correction) for Jamaica over the period 1964-1996. This study has found that the government's fiscal deficits have exerted a significant positive effect on the long-term interest rate. Adding to this result, a major implication of this study is that fiscal deficits, to the extent that they force up interest rates, can cause "crowding out" of private investment; As a result, as the previous event occurs, one can expect capital formation to be retarded and long term growth to be inhibited.

In their study, Agha and Khan (2006) studied the relationship between fiscal deficits and inflation in Pakistan using vector error correction model. Their findings show that inflation has a long run relationship with fiscal deficits and government debts to the banking system; and that 1 billion rupees increases in government debts to the banking sector would increase 0.0048 percentage points in price level in two years. Similarly, an expansion of 1 billion rupees in fiscal deficits increases the general price level by 0.0215 percentage points.

For Nigeria, the empirical work of Anyanwu (1998) has not revealed a significant positive association between overall fiscal deficits and its foreign financing and domestic nominal deposit interest rates, but there appears to be evidence for a significant positive association between domestic financing of fiscal deficits and domestic nominal deposit rates during the period 1987 to 1995. Specifically, the work posits that domestic financing of fiscal deficits, the level of real income, and foreign interest rates play important roles in the determination of the deposit rates in Nigeria, Ghana, and the Gambia.

Akpokodje (1998) using time series data in order to avoid potentially spurious regression emanating from non-stationarity of the data series, tried to estimate long-run relationship using standard

ordinary least square (OLS) techniques. The long-run regression results indicated that a fiscal policy weakened by fiscal deficit has a strong and significant adverse impact on private investment in the long-run. The result indicates that a percentage increase in fiscal deficit is capable of contracting private investment by as much as 61 percentages. This negative impact confirms the crowding out effect of government's fiscal deficit programme on private investment in Nigeria.

The study of Adam and Bankole (2000) revealed a positive relationship between interest rate and fiscal deficit. They argue that increasing reliance on domestic financial markets for financing government deficits has a significant impact on interest rate in Nigeria. Ezeabasili, Isu, and Mojekwu (2011) investigated the effect of fiscal deficits on nominal interest rate in Nigeria using co-integration and error correction model techniques. The study shows that there exists a positive and significant relationship between fiscal deficit and interest rate in Nigeria.

Empirical investigations examining the relationship between inflation and fiscal deficits have not reached a consensus and are fraught with contradictory results. For example, Guess and Koford (1984), Mehra (1994) and Fisher et al (2002) all find a significant positive relationship between fiscal deficits and inflation.

In their study of Nigeria, Ebiringa (1996), Ozurumba (2012) found a strong negative relationship with fiscal deficits and inflation; and for Ozurumba the direction of causality runs from fiscal deficit to inflation. Ozurumba(2012) used is the autoregressive distributed lag (ARDL) model and the Granger-causality test to examine the casual relationship between inflation and fiscal deficits in Nigeria. The result shows that there exists a significant negative relationship between growth in fiscal deficit (as a % of GDP) and inflation and that there is a uni-directional

causality running from fiscal deficit to inflation. Egwaikhide (1997) used a macroeconomic model to examine the effects of fiscal deficits on the trade balance in Nigeria over the 1973-93 periods by using the OLS method. Evidence from policy simulations indicate that fiscal deficits arising from increased government spending adversely affect the balance of trade irrespective of whether it is money-financed or external borrowing.

Oladipo, et al (2012) used the pair wise causality test and Error Correction Model (ECM) technique to test the causal relationship between fiscal deficits and trade deficits in Nigeria. The result showed that there was a strong link between budget deficits and trade deficits. The result supported the existence of bidirectional causality between budget deficits and trade deficits in Nigeria. Oladipo, et al (2012) also examined the effects of twin deficits in Nigeria for the period 1970-2008 using time series data and analysed using econometric techniques. The results showed there was a bidirectional causality relationship between budget deficits and current account deficits in Nigeria.

METHODOLOGY

The methodology applied in this study is Auto-Regressive Distributed Lag (ARDL) bound cointegrated technique as proposed by Pesaran et al.(1996), Pesaran and Shin (1999) and Pesaran et al. (2001). This model has proved to produce robust and efficient estimates and does not impose the restrictive assumption that all the variables under study must be integrated of the same order, unlike other approaches. Pesaran et al. (2001) shows that the ARDL models yield consistent estimates of the long run coefficients that are asymptotically normal irrespective of whether the underlying regressors are I(1) or I(0). Again, shows that this model produces unbiased estimates of the long run model and valid t-statistics even when some of the regressors are

endogenous. Further, bound test approach appears more appealing than other rival tests in the small sample size cases with many parameters. According to Kripfganz and Schneider (2016), Pesaran, et al (2001) provided lower and upper bounds for the asymptotic critical values depending on the number of regressors, their order of integration, and the deterministic model components with the following cases:

1. No intercept, no time trend.
2. Restricted intercept, no time trend.
3. Unrestricted intercept, no time trend.
4. Unrestricted intercept, restricted time trend.
5. Unrestricted intercept, unrestricted time trend.

First, the variables will be tested for unit Harris and Sollis (2003) root, using augmented Dickey-Fuller (ADF). This is necessary to be sure of the order of integration of the variables, that is, to ascertain whether the variables are of I(0) or of I(1). It is expedient that we note that this test is a necessary but not a sufficient condition for bound test. Following the unit root test, the variables were subjected to cointegration by using the bound test approach, after which the long run and short run analysis were carried out on the impact of remittances on the health outcome. The autoregressive distributed lag (ARDL) mo del is thus shown as follows:

$$\log GDPgr_t \quad _0 \quad _1 \log FD_t \quad _2 CAD_t \quad _3 INF_t \quad _4 \log RINT_t \quad _5 \log FD_{t\ 1}$$
$$_6 \log CAD_{t\ 1} \quad _7 \log INF_{t\ 1} \quad _8 \log RINT_{t\ 1} \quad _t \ldots\ldots\ldots\ldots\ldots\ldots 1$$

where,

GDPgr = Growth rate of GDP
FD = Fiscal deficits
CAD = Current account balance
INF = Inflation rate
RINT = Real Interest rate
= Error term.

PRESENTATION AND ANALYSIS OF RESULT

In this section, we present the empirical results and analysis based on the specified models. As discussed earlier, before we go ahead with ARDL bound testing, we shall first test for the stationarity of all the variables that will be used in the analysis to ensure their order of integration, and to make sure that none of the variables is I(2).

UNIT ROOT TESTS

– Unit root tests and the order of integration

On table 4 below, we present the summary of the unit root test result for the variables in the model. The Philip Peron (PP) test is the main test used. The bandwidth for the test was arrived at using the Bartlett-kernel procedure. The result indicates that all other variables apart from GDP growth rate and interest rate were non-stationary, since their absolute value of Philip Peron test statistic exceeded the critical value only at first difference. Furthermore, the results in table 4.1 indicate that these variables with the exception of GDP growth rate and interest rate become stationary at first difference and this enabled the use of the error correction model in the autoregressive framework. The result also showed that none of the variables is I(2) thereby further justifying the use of ARDL model for the study.

Table 4.1: Summary of Philip Peron Unit root test result of the series

Variables	Test Critical Values (5% Level)	Philip Peron test stat	Order of integration
FD	-1.951000	--2.692420	I(1)
GDPGR	-1.948140	-5.159671	I(0)
CAD	-3.513075	-20.58901	I(1)
INF	-1.948313	-13.18871	I(1)
RINT	-3.510740	-7.690480	I(0)

Source: Authors computation with Eviews 9

ARDL BOUND TEST

The ARDL bound testing procedure is used to check if a long run relationship exist among the variables in a model. The series do not necessarily require pre-testing of unit roots and hence the order of cointegration can be determined irrespective of their order integration (Pesaran and Shin, 1999). The critical value of the ARDL Bound testing depends on selected lag length; for this reason, the optimal lag (p) is determined empirically based on Hannan Quinn Criterion (HQC). The critical values reported in Pesaran et al. (2001) are equally adopted. Table 4.2 reports the result of the ARDL approach to co-integration.

Table 4.2: The ARDL bound test

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	K
F-statistic	5.321595	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.2	3.09
5%	2.56	3.49
2.5%	2.88	3.87
1%	3.29	4.37

From the result on table 4.2 above, it can be viewed that the bound test F-statistics of 5.321595 is greater than the upper bound critical value 3.49 at 5% level of significance. This indicates that there is a long run relationship among the variables. And this result qualifies us to move on with the estimation of the ARDL model.

ESTIMATION RESULTS

Table 4.3: Estimated Long-run Coefficients Based on ARDL (3,0,2,1,2)

Regressor	Coefficient	Standard Error	t-Statistics	p-Value
Dependent Variable: GDPGR				
FD	0.005544**	0.001886*	2.939419	0.0039
CAD	0.000000	0.000000*	0.726742	0.4687
INF	0.078021	0.050441*	1.546794	0.1243
RINT	0.132338	0.087230*	1.517124	0.1316
C	0.510521	2.742400*	0.186158	0.8526

Notes: R^2 =0.610827

Adjusted R^2 = 0.489098

S.E of regression = 2.650439

F-statistics = 8.536931

Prob(F-statistics) = 0.0000

Durbin Watson = 2.017627

(**) Denote significant at 5% level(*) denotes Heteroscedasticity and Autocorrelation (HAC) consistent standard errors. *Source: Authors computation using Eviews 9.0*

Based on table 4.3, the long-run impact of fiscal deficit on Nigeria growth rate is positive as expected, indicating that a unit increase in fiscal deficit increases Nigeria's growth rate by 0.005 units. The result is also statistically significant. The other macroeconomic variables such as current account balance, inflation rate and real interest rate are all not significantly related to Nigeria's growth rate based on the findings as indicated on the table 4.3. This could be attributed to the defects of monetary authorities in Nigeria.

However, from expectations, when fiscal deficit is positive, the growth rate increase just in the short run, while it could negatively affect growth rate in the long run, as the Keynesians firmly believe that fiscal deficit spending by the fiscal authority affects growth positively, while the neoclassical believe it is detrimental to growth. However, the Ricardians believe fiscal deficit is neutral to long run economic growth

(Onwioduokit & Bassey, 2013). The objective here is to find the long run relationship between fiscal deficit and macroeconomic variables in Nigeria of which growth rate represent aggregate macroeconomic variables for this study and the study finds a positive and significant long run relationship between fiscal deficit and Nigeria's growth rate; This finding serves as a confirmation to that of Keynesian postulations against the neoclassical realities pushed for increased government intervention by means of deficit financing as a solution to economic recession. However, the findings are contrary to the findings of Koford (1984), Jenkins (1997) and that of Anyanwu (1998).

The next step is to analyse the short run dynamic of the model under study. Short-run dynamics of the equilibrium relationship are obtained through the error correction model and the results are presented in table 4.4 below. The error correction term measures the speed at which the endogenous variable adjusts to change in the explanatory variables before converging to its equilibrium level.

Table 4.4: Short run Results and Diagnostics Tests results

Dependent Variable: GDPGR				
Regressor	**Coefficient**	**Standard Error**	**t-Statistics**	**p-Value**
D(GDPGR(-1))	0.460815	0.073260	6.290125	0.0000
D(GDPGR(-2))	0.173609	0.074625	2.326428	0.0215
D(FD)	0.004027	0.002889	1.394112	0.1656
D(CAD)	0.000000	0.000000	3.270249	0.0014
D(CAD(-1))	-0.000000	0.000000	-1.894835	0.0603
D(INF)	-0.052710	0.044028	-1.197204	0.2334
D(RINT)	0.124368	0.028574	4.352536	0.0000
D(RINT(-1))	-0.073034	0.028905	-2.526656	0.0127
CointEq(-1)	-0.213734	0.036297	-5.888546	0.0000
Diagnostic Tests				
Test		**F-statistics**	**Prob. Value**	
[2] SERIAL		2.655190	0.0741	
[2]Heteroskedasticity Test: Breusch-Pagan-Godfrey		1.531846	0.1205	
[2] REMSAY		0.263000	0.6089	

Source*: Authors' computation using Eviews 9.0*

Table 4.4 reports the result of short dynamics of the model. The result shows there is no significant relationship between fiscal deficit and growth rate in the short run while there is a significant relationship between current account balance and growth rate in the short and also a significant relationship between real interest rate and growth rate in the short run. The negative statistically significant estimate of CointEq(-1) validates the established long run relationship among the variables in the model. The results also indicate that the estimate of CointEq(-1) is -0.213734 and it is statistically significant at 5 percent level. This implies that about 21 percent of the deviations from long run equilibrium are corrected for in the next quarter period, that is, that is, it may take about 5 quarters to move from short run to the long period.

Also, the result of the diagnostic tests shows there is no problem of serial correlation as we fail to reject the hypothesis of no serial correlation. Also, the model is well specified as indicated by the Ramsey test result and the hypothesis of equal variance is equally not rejected.

CONCLUSION AND RECOMMENDATIONS

The study has been able estimate the relationship between fiscal deficit and other macroeconomic viable. The results show that all the variables are not stationary of the same order, hence the need for the use of autoregressive distributed lag model (ARDL). The critical value of the ARDL Bound testing depends on selected lag length; for this reason, the optimal lag (p) is determined empirically based on Hannan Quinn Criterion (HQC). This indicates that there is a long run relationship among the variables. And this result qualifies us to move on with the estimation of the ARDL model.

The long-run impact of fiscal deficit on Nigeria growth rate is positive as expected, indicating that a unit increase in fiscal deficit increases Nigeria's growth rate by 0.005 units. The result is also

statistically significant. The other macroeconomic variables such as current account balance, inflation rate and real interest rate are all not significantly related to Nigeria's growth rate based on the findings; However, the othe r macroeconomic variables such as current account balance, inflation rate and real interest rate are all not significantly related to Nigeria's growth rate;

The implication of the findings is that from the variables used it is only the growth rate of the economy that is affected by the fiscal deficit. This means that current account balance, real interest rate and inflation rate do not influence the growth rat of the economy following the model.

It is therefore recommended that policy makers should strive t o use fiscal deficit sparingly in the short run but can use it in the long run since it shows a positive relationship with growth rate of the economy. This would help the economy to pick up if it has been going down.

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