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URBAN VS RURAL RESIDENTS' SAVINGS IN FORMAL FINANCIAL INSTITUTIONS IN THE NIGER DELTA REGION, SOUTHERN NIGERIA: AN EXPLORATORY STUDY

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Abstract

Household savings in the formal financial sector constitute a significant proportion of domestic savings in developing economies. Meanwhile, the proportion of Nigerian population that save in formal financial institutions is low making the understanding of factors that may influence household savings behaviour important for policy makers. This study examines the association between residing in the urban versus rural area and the decision to save in the formal financial institutions (banks) compared to the informal financial sector using household level primary data from the Niger delta region of Nigeria. Results from the logistic regression model employed in the study revealed that residing in the urban area against the rural area significantly increases the propensity to save in the formal financial institutions compared to the informal financial sector. Banks in the region concentrate in the urban areas and this implies that taking banking services closer to the people can potentially increase formal savings. The study thus suggests interventions that will be useful in the design of policies to foster formal savings as well as financial inclusion.

Keywords: *Household Savings, formal savings, financial inclusion, demographics*

1. Introduction

Nigeria, like other developing countries, has been seeking ways to foster formal savings in the country (CBN, 2019). In 2010, only 24% of adult population in Nigeria saved through a regulated financial institution (EFInA, 2010). The Nigerian government through the Central Bank of Nigeria, launched the National Financial Inclusion Strategy, NFIS, in 2012 following the EFInA (2010) report (CBN, 2019). One of the major aims of the initiative is to increase the proportion of Nigerian adults that save in the regulated financial institutions from 24% in 2010 to 60% in 2020. However, the EFInA (2018) financial inclusion survey indicated that there was progress as 24% of the Nigerian adult population saved in a regulated financial institution indicating a variance to the 2020 target of less than 36%. This suggests that the launch of the initiative is yet to produce the desired outcome even if it has been on and running for six years. Given this context, an examination of factors that may influence savings decision is appealing as the findings have the potential to influence policy that may foster formal savings as well as financial inclusion.

In developing economies, household savings in the formal financial sector constitute a significant proportion of domestic savings, a major determinant of economic development (Obayelu, 2012). This suggests that informal savings is not a substitute for formal savings with regards to economic development emphasising the role of financial inclusion in national growth (Efobi et al, 2014). However, barriers to formal financial access may lead to household's dependence on the informal financial sources like family members, friends, and cooperative savings and credit associations for savings and subsequently, reduces the propensity to save in the formal financial sector (Paxton, and Zhuo, 2011). Thus a major question to address is whether proximity to a formal financial institution, a phenomenon that is typical in developing economies, constitutes a barrier to savings in the formal financial sector. This study therefore focuses on examining the influence of residing in the urban area versus rural area, as a measure for household proximity to a formal financial institution, on household decision to save in the formal financial institution compared to the informal sector controlling for income, age, gender and education level of household head as well as number of dependents.

The remainder of the study is arranged thus: section two presents the literature review, the description of the methodology and data used in addressing the research question of this study is done in section three, presentation of results and discussion of findings is carried out in section four and section five is the conclusion.

2. Literature review

According to Shem (2002), savings behaviour at the micro level, is a function of perceived household utility, influenced by both personal attributes and institutional characteristics. Among the personal attributes and institutional characteristics are income level, age, gender, household size, major source of income, education and distance from financial institution, (Shem, 2002). The magnitude and direction of the influence of some of these attributes on savings behaviour can be explained by neo-classical theories namely; the life cycle theory and permanent income hypothesis (Mirach and Hailu, 2014; Kibet et al, 2009). These theories fundamentally express savings as a function of income and consumption. Income was found to be a significant predictor of household savings in Bole district in Ghana (Mumin et al., 2013), Pakistan (Rehman et al, 2011), Morocco (Abdelkhalek et al, 2010) and Uganda (Kibet et al, 2009). Rehman et al, (2011), Abdelkhalek et al, (2010), Kibet et al, (2009) and Mumin et al. (2013) discovered a negative relationship between number of dependents and savings rate in Pakistan, Morocco, Uganda and Ghana respectively. Furthermore, education level has been revealed to positively influence household savings in Bole district (Mumin et al., 2013) in Ghana. Conversely, Rehman et al, (2011) found that households with educated heads were likely to save less compared to their uneducated counterparts in Pakistan. Additionally, Rehman et al, (2010) discovered that urban households saved more than rural households in Pakistan. However, studies in the Nigerian context are limited. Obayelu, (2012) used cross sectional data to reveal age, household size and income as significant determinants of savings among rural farming households in western Nigeria. Adetunji and David-West, (2019) employed secondary data from the 2016 Access to Finance (A2F) survey of EFInA to show that income only had a significant effect on frequency of informal savings and that being young and female as well as residing in the rural area is

significantly associated with increased frequency of informal savings among individuals in Nigeria.Adetunji and David-West, (2019) used individual level data and could not account for the consumption effect from the number of dependents. Whereas Bersales and Mapa, (2006) and Mason (1988) argued that having age and number of dependents in a single model ensures a more reliable estimation of savings behaviour as number of dependent is a more precise measure of consumption which is crucial to savings decision. The model of this study incorporates age and number of dependents in the analysis to fill this estimation gap. In addition, none of the studies on Nigeria examined the impact of proximity on household savings decision in the formal financial sector and this is the gap in literature which this study fills. Therefore, the objective of this study is to seek an understanding of the influence of residing in the urban versus rural area, as a measure for proximity to a formal financial institution, on household decision to save in the formal financial sector rather than the informal financial sector controlling for income, age, gender and education level of household head as well as number of dependents.

3. **Materials and Methods**

3.1 **Study area**
This study was conducted in the Niger delta region of Nigeria that lies on Latitude 5.3223 and Longitude 6.4692[1]. The Niger delta is a region of strategic importance to the economy of Nigeria due to oil production. The region provides a convenient landscape for the present study as economic immigration driven by oil production has significantly influence its social and ethnic heterogeneity, notwithstanding the lack of basic infrastructures like good roads, electricity and others (Tukur and Hajj, 2017). Settlements in the region are largely rural as only one percent, where formal financial infrastructures concentrate, can be regarded as urban areas[2]. The study focuses on four states namely; Akwa-Ibom, Rivers, Bayelsa and Delta in which half of the region's population settles over a surface area of 450000sq.km (Benedict, 2011).

3.2 Sampling and data collection

Data was collected from a total of 500 households through a multi-stage sampling technique. First, a map of the region available at the Niger Delta Development Commission (NDDC) office was used as a sampling frame to purposively select the four states that the study focuses on and their capital cities namely; Akwa-Ibom, Rivers, Bayelsa, Delta and Uyo, Port Harcourt, Yenegoa, Asaba respectively. At the second stage, four villages in the neighbourhood of the selected capital cities were selected resulting in 20 settlements (4 urban and 16 rural areas). At the fourth stage, the 20 selected settlements were allocated to 10 enumerators equally with the instruction to randomly select participating households[3]. A survey was used to illicit credit,

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[1] The Niger delta region comprises nine states, which are Akwa-Ibom, Bayelsa, Abia, Cross River, Edo, Rivers, Delta, Ondo and Imo.

[2] Port Harcourt, Warri, Asaba, Benin, Akure, Calabar, Uyo, Umuahia, Aba, Owerri and Yenagoa are the main cities (NDDC, 2019).

[3] The enumerators were trained at the Centre for Rural Development and Skill Acquisition (CRDSA), University of Uyo, Akwa-Ibom State on how to administer the survey effectively on heads of household who are public servants, organised private sector employees or self-employed on a door-to-door basis.

savings and other relevant household characteristics data from respondents in January 2017. The enumerators returned 500 completed surveys in total. Missing data in some of surveys reduced the useful sample size to 487 and 20.32% (99 households) saved with the formal sector which is close to 24% reported by EFInA (2018) at the national level. However, 42.30% (206 households) saved a proportion of their most recent income in either the formal or informal financial sector. Thus, the total sample size for this study is 206 households in line with the objective of the study.

3.3 Model specification

Households saved in either the formal financial sector (bank) or the informal financial sector (family, friends, thrift collectors, cooperative savings and credit associations,). This makes the dependent variable binary in nature. Therefore, a logit model that defines household's decision to save in the formal financial sector can be estimated as, $K_i = K(S_i = 1)$ with the underlying assumptions that, $K_i = \Pi(X'\beta) = \frac{e^{X'\beta}}{1 + e^{X'\beta}}$ where, β is a vector of parameters and the vector X comprises the predictors of savings decisions[4]. The estimation from the model produces $\hat{\beta}$, the unbiased estimates of the model coefficients β and making it possible to show that:

$$ln\left(\frac{K}{1-K}\right) = logit(K) = X'\beta \qquad [1]$$

This suggests that the probability of saving in the formal sector, ▯ can be estimated for each household using $\hat{\beta}$ and appropriate values for X.

The empirical specification of the logit model used in this study to estimate household decision to save with the formal sector or otherwise is thus expressed as;

$$S_i = f(X^T, \mathcal{E}_i) \qquad [2]$$

Where (S_i) is the dependent variable that takes the value, one if a household saved in the formal financial sector and the value of zero if a household saved in the informal sector, while $\mathcal{E}_i$ is a stochastic error term. X^T, includes urban-rural dummy which captures the location of a household, income, age, gender and education level of household head as well as number of dependents. Table 1 presents a detailed description of the variables used in the estimation.

4. Results and Discussion

4.1 Descriptive statistics

Table 1 presents descriptive statistics of the variables used in the estimation. The results show that 51.94% (107 households) saved with the informal sector while 48.06% (99 households) saved with the formal sector. The average age of the heads of households in the sample was 41.48 years and 77.67% had completed secondary education while 22.33% did not complete secondary education suggesting a high

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[4] $\Pi(X'\beta) = \frac{e^{X'\beta}}{1 + e^{X'\beta}}$, is the logistic cumulative distribution function.

literacy rate in the sample. Also, 20.39% of households surveyed resided in the urban area and 79.61% resided in rural area with 30.58% headed by female and 69.42% headed by male. The average income of households is 109,360.40 Naira and each household had about three non-income earning members.

Table 1: Variable Definitions and Sample Descriptive Statistics

Variable Name	Type	Description	% or Mean
Dependent Variable			
Save	Binary	1 = household saved with the formal sector	48.06%
		0 = household saved with the informal sector	51.94%
Independent Variables			
Age	Continuous	Age of the head of household (years)	41.48
Gender		1 = household head is female	30.58%
		0 = household head is male	69.42%
Education level	Binary	1 = household head completed secondary education	77.67%
		0 = household head did not completed secondary education	22.33%
Income	Continuous	Average monthly income of household (Naira)	109,360.40
Location	Binary	1 = household is located in the urban area	20.39%
		0 = household is located in the rural area	79.61%
Dependents	Continuous	No. of non-income earning household members	2.82
Total			206

4.2 **Logit model estimates of household decision to save in the formal sector**
Table 2 presents the logistic regression estimates of household decision to save with the formal sector. The results suggest that residing in the urban area rather than the rural area significantly increases the probability to save with the formal sector by 0.264. This explains the role of proximity to formal financial institutions on the decision to save in the formal sector as formal financial institutions concentrate in the urban areas putting the rural resident at a disadvantage position in terms of proximity.

Table 2. Logit regression estimates of households' decision to save in the formal sector (presented as marginal effects)

Explanatory Variables	Marginal Effects
Location	0.264 (0.076)***
Log of Average Income	0.433 (0.144)***
Gender	0.077 (0.063)
Age	0.008 (0.004)**
Dependents	-0.039 (0.021)
Education level	0.367 (0.105)***
Constant	-16.323 (4.107)***
Observations	206
Prob. > chi2	0.0000

*, ** and *** denote significance at 10%, 5% and 1% respectively. Standard error in parentheses.

Household income has a significant positive relationship with the decision to save with the formal sector compared with informal sector. The marginal effect of household average income indicates that the probability to save in the formal sector by a household increases by 0.433 with a percentage increase in the average income of a household. This corroborates the finding of Mumin et al., (2013) in Ghana and inconsistent with Adetunji and David- West, (2019) who found no evidence that income level significantly drives the frequency of savings with the banks in Nigeria. Although gender of household head does not have a significant effect on the choice of a sector for savings, the marginal effect of gender suggests that the probability of saving in the formal sector increases by 0.077 when the head of the household changes from male to female. The results also show a positive significant relationship between age, education level of household head and formal savings. For age, being a year older by a household head is associated with 0.008 increase in the probability to save in the formal financial sector against the informal sector suggesting that household saving is motivated by the need to save for retirement which is in line with the life cycle hypothesis. Similarly, completing secondary education increases the probability of saving in the formal sector by 0.367 indicating the importance of financial literacy on formal savings decisions. This appears logical as the level of understanding of financial information at the disposal of household heads will determine their financial decisions. There is no significant evidence that number of dependents influences formal savings but the marginal effect is noteworthy. The marginal effect of number of dependents shows that the probability to save in the formal sector declines by 0.039 with an additional dependent to a household suggesting that increase in the number of dependents means increase in the consumption level and less savings.

To ensure that the problem of multi-collinearity did not influence the estimates from the model, the Variance Inflation Factor (VIF) was used in checking the consistency of the logit model parameters. The result indicated no significant collinearity (see Table 3).

Table 3 - VIF results

Variables	VIF
Log-average-income	1.86
Education level	1.62
Age	1.35
Dependents	1.21
Sex	1.03

5. **Conclusion.**

This paper examined the influence of residing in the rural versus urban area on the decision to save with the formal financial institutions compared to the informal sector controlling for income, age, gender and education level of the head of household as well as number of dependents in a household in the Niger delta region of Nigeria. The results show that residing in the urban area instead of the rural area is significantly associated with the decision to save in the formal sector rather than the informal sector. Since banks in the region concentrate in the urban areas, this implies that taking banking services closer to the people can have a positive effect on formal savings and equally increase the use of other formal financial services. The estimates of the control variables suggest that, a household with high income earning, young as well as educated head saved in the formal sector rather than the informal sector. To increase formal savings and deepen financial inclusion, the following recommendations are made; (i) systems and processes that support taking formal financial services closer to the people should be adopted by the banks and other stakeholders in the formal sector; (ii) programmes and initiatives with economic empowerment potentials targeted at the economically disadvantaged adults should be implemented to increase income of households; (iii) stakeholders in the formal financial sector should collaborate with the local authorities and Non-Governmental Organisations to conduct financial literacy outreach to sensitize the people on the importance of saving with the formal financial institutions.

Data used in this study was drawn from the Niger delta region and so caution is advised in generalising the findings to Nigeria as the socio-economic characteristics of other regions in the country may differ. In this regards, future study can utilise country level data to provide empirical evidence on the influence of any regional differences that may exist on household savings behaviour in Nigeria.

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ELECTRONIC BANKING AND COMMERCIAL BANKS' PERFORMANCE IN NIGERIA: AN ARDL APPROACH

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Abstract

The paper evaluated the impact of electronic banking on the performance of commercial banks in Nigeria. The ex-post facto research design was employed; quarterly aggregate secondary, time series data were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin and Nigerian Insurance Deposit Corporation (NDIC) reports. The data collected for the period spanning between Q1 2012 and Q4 2019 were analysed using the Autoregressive Distributed Lag (ARDL Bound) testing approach to co-integration and vector error correction model. Findings from the study suggested that there exist a long run and short run association between the variables used in the study, while in the long run mobile banking, point of sale and internet banking all had positive and significant impact on the net interest margin of commercial banks, while automated teller machine exerted a negative and significant impact. In the short run, also, automated teller machine, mobile banking, point of sale and internet banking all expressed positive impact on the net interest margin of commercial banks. The study amongst others things recommended that commercial banks should step up the level of education and awareness provided for any financial innovations, such as bank codes to make transfer among banks. More investment in the provision and deployment of more Point of Sales terminals should be undertaken. Also, a constant upgrade of the security of the online platforms should be undertaken to ensure safety and protection of customers' interests.

Keywords: *Electronic banking, Net interest margin, ARDL co-integration, Commercial banks, Nigeria*

Introduction

In every economy, efficiency of the payment system to a large extent ensures the smooth operation of economic activities and at the heart or the backbone of the payment system is the banking industry. It is believed that electronic payment system innovation is vital and important in keeping business running efficiently, and the banks are at the forefront of it (Gallati, 2003). Given the sensitive nature of the banking industry, the competitive, dynamic, complex and very unpredictable environment in which banks operate, the banks have traditionally been in the forefront of harnessing technology to improve their products and services to ensure profitability and proper functioning of the economy (Ugbede, Yahaya & Edicha, 2019). In the same vein, Nwakoby, Okoye, Ezejiofor, Anukwu and Ihediwa (2020) observed that modern banking is extremely dynamic and experience rapid changes as a result of technological improvement, increased awareness and demands that banks serve their customers electronically.

Information Technology has influenced banking operations, transactions and service delivery known as e-banking, which has made available channels through which banking is done conveniently, thus, minimizing customer queues in banking halls, administrative expenses and the complexities associated with traditional banking (Perry-Quartey 2018, Harelimana 2018). Electronic-banking (e-banking) involves the provision of retail and small value banking products and services through electronic channels as well as large value electronic payments and other wholesale banking services delivered electronically (The Basel Committee on Banking Supervision, 1998).

Given these technological changes occurring in the banking industry, the traditional method of banking such as cash payment, cheques, payment order which has always been time consuming is gradually phasing away, as a result of the adoption of e-banking which has resulted into efficiency of their operations, thus e-banking has become an integral part of banking and has contributed to the profitability of banks (Harelimana, 2018). According to literature, the availability of e-banking is expected to affect the mixture of financial services produced by banks, the manner in which banks deliver these services and the resulting financial performances of these banks. With this in mind, Nigeria has strived to become a financial and economic hub not just in Africa but in the globe, knowing that bank are very useful to this quest, as focus has been on increased innovative in the industry to make it globally competitive. According to Polatoglu and Kin (2001) despite the fact that internet banking transaction costs the institution only one twentieth of a teller transaction, most banks at the introduction of e-banking, avoided it because they simply did not see the benefits of using it. However, in case of Nigeria, ever since the year 1986 when Societe Generale Bank of Nigeria (SGBN) now Heritage Bank Plc. introduced e-banking as documented by Nwakoby et al (2020), all the banks in Nigeria have adopted it, despite the challenges associated with e-banking. This could be attributed to the various reforms undertaken, making the banking sector to position itself for innovations to improve service delivery and profitability, proliferation of the internet, coupled with the world increasingly addicting to e-business, manifested in the preference of electronic payment channels to cash transactions.

Available evidence suggests that globally, without exception to Nigeria, the increased penetration of e-banking has redefined banking operations never like before (Shehu, Aliyu & Musa, 2013). Also, statistics from CBN (2019) and NDIC (2019) revealed that there has been a steady rise in the use of e-banking channels such as Automated teller machine, Point of sale, internet banking, mobile banking etc, even as Net interest margin of banks remained in appreciable territories, one may ask if this scenario is as a result of the e-banking penetration.

Furthermore, the interaction between e-banking and the profitability of banks has been a controversial subject among researchers and policy makers owing to the mixed result of previous studies. Studies of Ugbede, Yahaya and Edicha (2019), Mustapha (2018) and Akhisar, Tunay and Tunay (2015) supported a significant impact, while Nwakoby et al (2020), Ugwueze and Nwezeaku (2016) and Mawutor (2014) documented a non-significant impact. The lack of consensus in the previous studies constitutes a problem, making it imperative to embark on this study.

Literature Review

Given the important roles the banks play in any economy, evolving means designed to ensure efficiency and profitability will always be the intention of banks and technology has been a veritable tool for attaining such goals. Given Perry-Quartey (2018) position that the core intention of banks has always been to conveniently and cost-effectively serve their clients, while in the process grow their profit levels and competitiveness, embracing e-banking has become a norm. As documented by Mawutor (2014) the average consumers are more informed than ever before, while clearly noted in literature that the effects of customers' behaviour or satisfaction on the performance of the banking sector are visible. Prominent factor in attaining this satisfaction or influenced behaviour was the introduction and adoption of e-banking in their operations.

Scholars have posited that the term, electronic banking is a term that is technically complex to define as attempt made to define it has resulted into different interpretations, even as Harelimana (2018) held that e-banking has been used by many banking institutions, since they have used other forms of information technology (IT) in order to enhance their efficiency and effectiveness through speeding up their activities , while Perry-Quartey (2018) posited that electronic banking has been defined in many ways by researchers mainly because it does not refer to one but a series of channels through which customers can make inquiries and execute transactions through telephones, digital television, computer or mobile phone.

According to Jehangir, Zahid, Jan and Khan (2016) Electronic banking is an automated delivery of new and traditional banking products and services, using electronic channels, like computers and telecommunication technologies, making it possible for customers to access their accounts; make enquiries; initiate and perform transactions via electronic channels. Also in the view of Drigă and Isac (2014) electronic banking is seen as the automated delivery of traditional and modern banking products through electronic channels based on information and communication technology. Also Charity-Commission (2003) described e-banking to includes both computer and telephone banking, hinged on the use of information and communication technology by banks to provide services and manage customer relationship more quickly and most satisfactorily. While The Basel Committee on Banking Supervision (1998) gave an elaborate definition of electronic banking to be the provision of retail and small value banking products and services through electronic channels as well as large value electronic payments and other wholesale banking services delivered electronically. Furthermore Burr (1996) viewed e-banking as an electronic connection between the bank and the customer in order to prepare, manage and control financial transactions. From the foregoing e-banking simply entails the use of information communication technology to electronically conduct banking operation and business, which include deposit taking, lending, account management, the provision of financial advice, electronic bill payment, and the provision of other electronic payment products and services.

Comparing the traditional system of banking with that hinged on e-banking, banks now provide fast information delivery from customer to customer making it obvious that better and improved services exist in electronic enable banks and nonbanks (Singhal & Padhmanabhanm, 2008). In reality, e-Banking has reduced if not eliminated physical and geographical boundaries and limitations of banking services as well as in financial institutions (Harihara & Pavithra, 2012).

This has resulted in the minimization of queues in the banks, confirmation of the validity of transactions by customers especially in overseas transactions is almost immediate compare to the recent past, and thus facilitating the flow of remittance and much needed foreign exchange into the economy and improving the earning capacity of banks. The revolution has brought a lot of consciousness to the banking industry through its simplicity and efficiency in processing and delivery of customers services unlike in the former system of payments which involves a lot of documentation and physical presence (Onyike, Ekeagwu & Alamba, 2020; Tijani & Ilugbemi, 2015).

E-banking has effectively employed the e-Payment which is the substitute to cash which includes but not limited to debit cards, credit cards, Automated teller machines, mobile banking, telephone banking, electronic funds transfer, direct debits/credits, internet banking etc. Although, the use of these payment mechanisms are not totally free from problems often, customers experience delay in having access to the services provided through this electronic channels (Olakah, 2012). But despite of the challenges associated with the use of electronic banking channels, it has to large extent provided respite and convenience to the banking public (Tijani & Ilugbemi, 2015).

Okifo and Igbunu (2015) in their study highlighted the perceived challenges of e-banking to include lack of awareness on the benefits of new technologies, fear of risk, dearth of trained personnel in key organizations, customers resistance to new payment mechanisms, while Atanbasi (2010) and Daukwamb (2009) maintained that security is a major challenge. Furthermore, high rates of illiteracy, lack of seriousness by banks, high cost of internet, frequent power interruption were identified, while in the view of Ovia (2002) inadequate infrastructure possess a significant challenge to e-banking in Nigeria.

Over the years electronic banking services have evolved According to Mawutor (2014) the services can be categorised as follows:

Internet Banking
Bank increasingly use internet to facilities in performing banking activities. Internet banking uses technology and brings the bank closer to the customer Mawutor (2014). In the view of Thulani, Tofara and Langton (2009) Internet banking refers to systems that enable bank customers to get access to their accounts, apply for loans and general information on bank products and services through the use of bank's website, without the intervention or inconvenience of sending letters, faxes, original signatures and telephone confirmations. This provides a mechanism for extending banking services without bank branches to a wide segment of customers at a greatly reduced cost.

Point of Sale Terminals
This e-banking system allows a bank customer to pay for goods and services purchased at the point of purchase by having funds transferred from his account to the vendor. Payment instruction are transmitted and processed electronically and this facilitates the card system (Nzotta, 2004).

Mobile Banking

This banking service which was developed following the introduction of the General System of Mobile Telecommunication (GSM), whereby the customer enjoys conventional banking services suing SMS or USSD codes. Nzotta (2004) believes that this service in Nigeria has been greatly facilitated in Nigeria by the reliability and cost effectiveness of the test messaging services provided by various GSM networks

Automated Teller Machines

In Nigeria Automated Teller Machines represents the most visible form of e-banking channel. According to (Rose, 1999), ATMs can be described as computer terminal, having recordkeeping system and cash vault in one unit, permitting customers to enter the bank's book keeping system with a card holding a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank's computerized records 24 hours a day. Oluyemi (2001) maintain that transaction on the ATM's rely on an extensive communication system that include both regional and network that can interact with each other to ensure smooth operations.

Theoretical review

Bank Focused Theory

The bank focused theory was propounded by Kapoor (2010), which has been widely used in studies of relating to e-banking. The theory propounds that conventional banks can use non-traditional but low cost conventional delivery mechanisms or channels to provide banking services to their numerous and existing   customers. Thus it presents an alternative means for traditional method of making available a wide range of financial products and services to customers rather than visiting the bank, which in turn attracts some advantages in the form of more control and branding visibility to the financial institutions concerned and achieving economies of scale by serving money customers at low cost (Kapoor, 2010). This is not without risk as critics have highlighted to include customer safety and conformance to the rules guiding the prevention of illegal financial activities (Kumar et al., 2006). The channels of delivery include the mobile banking, automated teller machines (ATMs), mobile banking, Internet banking, Point of Sale (POS) among others. In view of this study, bank focused theory is relevant, since the emphasis here is on electronic platforms as a means of delivering services.

Empirical review

There is a growing list of literature the subject. Considerable numbers were reviewed to fully evaluate the subject and they include:

Nwakoby et al (2020) evaluated the impact electronic banking on the profitability of deposit money banks in Nigeria. The research design employed by the study was the *ex post facto* and data was collected from the sampled 9 deposit money banks in Nigeria selected from the population of 15 quoted banks on the Nigerian Stock Exchange which was from their various annual reports and accounts and also from CBN Statistical bulletins for the period that covered 2009 and 2018. The ordinary least squares framework of panel regression analysis was employed and findings from the study suggested that ATM and POS had negative but insignificant effect

on return on equity of deposit money banks in Nigeria, while Mobile banking has positive but insignificant effect on return on equity of deposit money banks in Nigeria.

In their study Ugbede, Yahaya and Edicha (2019) examined the influence of electronic payment on financial performance of commercial banks in Nigeria. Panel data utilized for the study were sourced from Central Bank statistical bulletin and the annual reports and accounts of selected Nigerian banks. The data collected was analysed using Panel data regression analysis. Findings suggested that ATM negatively but insignificantly influenced the profitability of the sampled banks. While on the other hand POS and internet banking both exerted positive and significant effect on the bank profitability.

Using multiple regression analysis in analysing the data sourced from the CBN Statistical Bulletin, Bariweni (2019) evaluated the effect of electronic payment systems on the performance of commercial banks in Nigeria with focus on their asset base. The findings from the study revealed that there exists a significantly positive effect of ATM transactions, Internet (online) banking transactions and mobile banking transactions on the assets base of commercial banks in Nigeria.

Mustapha (2018) studied the effect of e-Payment technology on bank performance in Nigeria, concentrating within the period 2012 to 2017 and the quarterly data collected for study was analysed using panel least squares method of regression analysis. Findings from the study indicated that Point of sale, mobile banking and online banking all positively and significantly impacted the performance of Nigerian banks, while Automated teller machine exerted a significantly negative impact on the financial performance of banks in Nigeria.

With evidence from Rwanda, Harelimana (2018) evaluated the role of electronic payment system on the financial performance of financial institutions in Rwanda which focused Equity Bank Ltd, covered the period between 2012 and 2016. The study employed both primary and secondary data and a sample of 155 respondents were drawn from a total population of 253. Data collected were analyzed using descriptive statistics and multiple regression analysis. Findings from suggested simple application procedures for loan, low collateral requirements, Low costs of accessing finance, Low interest rates and Guarantee from government were factors that influenced customer's access to electronic payment. Furthermore, the study indicated that Electronic Card Banking, Mobile banking, Internet Banking and Online remittance all exerted positive and significant impact on the profitability of Equity bank ltd.

Taiwo and Agwu (2017) examined the roles e-banking adoption has played in the performance of organizations using a case study of commercial banks in Nigeria. They adopted the survey research design and sourced the data for the study through a well-structured questionnaires administered on the staff of the selected four banks, which include; Eco Bank, UBA, GTB and First bank. The Karl Pearson product moment correlation was employed in analyzing the data collected. Findings from the study revealed that the adoption of electronic banking has improved the operational efficiency of banks in Nigeria and the introduction of new channels into their e-banking operations did increase their performances.

Obiekwe and Mike (2017) investigated the effect of Electronic Payment Methods (EPM) on the profitability of commercial banks in Nigeria. Five (5) banks were sample from the total banks listed in the Nigerian stock exchange, and data was sourced from the annual reports of the selected bank and CBN statistical bulletin for the period 2009 to 2015. The Panel Least Squares (PLS) estimation technique was adopted as the preferred analytical tool. Findings from the study suggested that Automated Teller Machine (ATM) and Mobile Phone payment significantly affected the profitability of commercial banks in Nigeria, while, Point of Sale (POS) exerted an insignificant effect on the profitability of commercial banks in Nigeria.

In their study of the relationship between electronic banking and the performance of Nigerian commercial banks, Ugwueze and Nwezeaku (2016) focused on total deposit liability of commercial banks as proxy for bank performance. Analysing the data collected with ordinary least squares estimation techniques of regression analysis, findings revealed that POS did not exert any significant effect on both the savings and time deposits but significantly influenced demand deposits.

To evaluate the impact of electronic-based banking services on the profitability of commercial bank, Akhisar, Tunay and Tunay (2015) collected data from selected 23 commercial banks in both developed and developing countries for the period covering 2005 to 2013. The data collected was analysed using the panel data regression. Findings from the study suggested that ATM ratio, point of sale (POS) and web (internet) banking transmitted a positive and significant effect on the return on equity and assets of commercial banks both developed and developing countries.

Based on data from Ghanaian banks, Mawutor (2014) examined the effect of electronic banking on banks profitability of in Ghana with focus on Agricultural Development Bank. Survey research design was adopted and data was collected through a well structured questionnaires administered on 150 respondents. Findings indicated that e-banking has improved the bank's customer relationship, the bank has rendered effective services and e-banking has impacted the profitability of the Agricultural Development bank.

To analyse the impact of electronic banking on profitability of commercial banks Njogu (2014) focused and employed data from Kenyan commercial banks. The multiple regression analysis was employed in analysing the data collected. Findings from the study suggested positive and significant impact of electronic banking on the financial performance of commercial banks.

Shehu et al. (2013) investigated the effect of electronic banking products on the performance of Nigerian listed Deposit Money Banks (DMB), a sample of 6 Deposit Money Banks (DMB) were selected. The data collected was analysed using multiple regression analysis. Findings revealed that E-mobile and SMS alert has positively impacted the return on equity of DMBs both only the impact of SMS alert was significant, while E-Direct ATM exerted negative and the return on equity of Deposit Money Banks (DMB) in Nigeria, only the impact of ATM was statistically significant.

Analyzing the various literature reviewed, most of the studies conducted on the subject employed survey research design, or selected sample banks as basis for their the investigation. None employed industry wide aggregate data which did not exclude any bank in Nigeria. Most of the previous studies employed either profit, ROA, ROE, deposit liability, asset base, Sortino index or economic value added (EVA) among others to represent bank's profitability but using Net interest margin as a proxy for bank's profitability was rare to literature.

Methodology
Research design
Given the nature and scope of the study, the *ex-post facto* research design was employed.

Nature and sources of data
For the purpose of this study, the time series data for the variables under investigation were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin and the Nigerian Deposit Insurance Corporation (NDIC) quarterly report. The quarterly time series data for the study covered the period Q1 2012 to Q4 2019. The choice for the period was predicated on two factors, availability of data and the cashless policy in Nigeria which came into force in 2012. The Net interest margin used as the index for measuring performance was rare to literature, which is a performance index peculiar to banks. Other e-banking channels adopted as proxies for e-banking which was based on literature included internet banking, mobile banking, Point of sale terminal and Automated teller machine. In analyzing the data gathered,

Validity and reliability of data
Given that the data employed were secondary in nature and sourced from reputable institutions like the Central Bank of Nigeria and Nigerian Deposit Insurance Corporation gives credence to the validity and reliability of the dataset. Furthermore, diagnostics test were also conducted on the data collected to ensure it does not lead to spurious result and conclusion.

Analytical technique
Autoregressive Distributed Lag (ARDL) approach to co-integration test and vector error correction model which was a deviation from previous studies were adopted. Furthermore, other complementary diagnostic tests such as the unit root test serial correlation test, heteroscedasticity test and Ramsey RESET test were conducted to ensure appropriateness of the result.

Model Specification
In a bid to clearly evaluate the impact of e-banking channels on the profitability of commercial banks in Nigeria, the study adapted the model of Mustapha (2018) thus modified the model to reflect desire of the study. Autoregressive Distributed Lag (ARDL) approach designed by Pesaran *et al.* (2001) was utilized in the study. The choice of the ARDL was predicated on its superior properties. It is based on the assumption that the ARDL framework tend to be more suitable when the sample size is small and also it can be implemented when the variables are of mixed order i.e I(0) and I(1) which overcame the restriction that variables must be integrated at

the same order. Furthermore, the technique estimates both the long run and short run parameters simultaneously and it provides very reliable efficient and consistent result sample sizes whether small or big and it involves just a single-equation set-up, making it simple to implement and interpret. These features made it superior to other similar procedures and the prefer choice for this study

The ARDL formulation can be written as follow;

$$\ln NIM_t = \lambda_0 + \lambda_1 \ln ATM_t + \lambda_2 \ln MOBILE_t + \lambda 3 \ln INTB_t + \lambda 4 \ln POS_t + \mu_t \dots \quad (2)$$

While the error correction representation of the series used to estimate the short run association can be specified as follows:

$$\Delta NIM_t = \lambda_0 + \lambda_1 \Delta \ln ATM_t + \lambda_2 \Delta \ln MOBILE_t + \lambda 3 \Delta \ln INTB_t + \lambda 4 \Delta \ln POS_t + \eta ECMt\text{-}1 + \varepsilon t \dots \quad (3)$$

The *a priori* expectation of the parameters is given as $\beta_1, \beta_2, \beta_3,$ and $\beta_4 > 0$

Table 1: Synopsis of Variables Measurement/Description

Name of variable	Acronym	Measurement	Source
Net Interest Margin	NIM		NDIC report
Automated Teller Machine	ATM	Total value of ATM transactions	CBN(2019)
Mobile Banking	Mobile	Total value of Mobile transactions	CBN(2019)
Point of Sale	POS	Total value of Point of sale transaction	CBN(2019)
Internet Banking	INTB	Total value of internet payment	CBN(2019)

Source: Survey 2020

Result and discussion

Data utilized for the study is presented in the appendix. In time series analysis, variables ought to be tested for stationarity before further operations. Though the ARDL framework may not require any pretesting but the aim here is to make sure I(2) variables does not exist in order to avoid spurious results. In this study, the conventional Augmented Dickey Fuller ADF tests for unit root was conducted and the result presented in Table 2

Table 2: Summary of Augmented Dickey Fuller (ADF) Unit Root Tests Result with Trend and intercept

Variables	ADF Test Statistics	Critical Values @ 5%	P-value	Order of Integration
*Ln*NIM	-4.589277	-3.562882	0.0048	I(0)
*Ln*ATM	-7.212632	-3.568379	0.0000	I(1)
*Ln*MOBILE	-4.688749	-3.580623	0.0043	I(1)
*Ln*POS	-21.48074	-3.587527	0.0000	I(1)
*Ln*INTB	-4.693142	-3.562882	0.0027	I(0)

Source: Computation by authors with E-view 9.0.

Result of the ADF unit root test as shown in Table 2, indicated that the time series of the variables were integrated of mixed order, this was informed by P-values being less than 5% level of significance.

ARDL Bounds Test
Having established the non-existence of I(2) variable, and the conditions for the ARDL framework has been satisfied, the ARDL bound testing approach to cointegation was conducted and the result presented in Table 3

Table 3: Result of the ARDL Bounds Test for Co-integration

Variable	F-statistics	Cointegration
F(NIM/ ATM, MOBILE, INTB, POS)	8.951916	Cointegration
Critical value	Lower bound	Upper bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Computation by authors with E-view 9.0.

Having an F-statistic coefficient of 8.95 which is greater than all the upper bound and lower bound values, indicates that a long run relationship exists between Net interest margin, automated teller machine, mobile banking, internet banking and point of sale, which is a desired outcome. With evidence of cointegration, the next step is to estimate the long run parameters and the result presented in Table 4

Table 4: Estimated long run relationship

Variable	Coefficient	P-value
C	198.52	0.0123
LOGATM	-33.78	0.0167
LOGMOBILE	6.09	0.0184
LOGPOS	26.02	0.0060
LOGINTB	16.18	0.0016
R^2	0.977	
F-statistics	7.47	0.0317
Durbin-Watson stat.	1.916	

Source: Computation by authors with E-view 9.0.

From the evidence of the long run estimates, it suggested that Automated teller machine exerted a negative and significant impact on the net interest margin of commercial banks in Nigeria given the coefficient of -33.78 and P-value of 0.0. This indicated an increase in the use of Automated teller machine leads to the decrease in the net interest margin of commercial bank. Furthermore, mobile banking, point of sale and internet banking all had positive and significant impact on the net interest margin of commercial banks suggesting as mobile banking, point of sale and internet banking increases, net interest margin increases and vice-versa. Evaluating the overall model, there is an indication that the explanatory variables accounted for 97.7 percent of the changes that occur in the net interest margin of commercial banks within the period under review, this was predicated on the R^2 coefficient of 0.977. While the F-statistic revealed that the regressors jointly exerted a significant impact on the dependent variable, which also suggests that the model was well specified. Finally the Durbin-Watson statistic of 1.916 suggests the absence of serial correlation.

Short-Run Dynamic Regression Results
After the estimation the long-run parameters, the short-run dynamic parameters within the ARDL framework was also estimated and the result is presented in Table 5

Table 5: Result of the Short-run error correction estimates

Variable	Coefficient	P-value
D(NIM(-1))	1.474992	0.0416
D(NIM(-2))	1.262254	0.0337
D(NIM(-3))	0.514467	0.1143
D(LOGATM)	27.381854	0.1243
D(LOGATM(-1))	35.636599	0.0789
D(LOGATM(-2))	62.390378	0.0526
D(LOGATM(-3))	40.614949	0.1951
D(LOGMOBILE)	4.340592	0.2712

D(LOGMOBILE(-1))	6.083244	0.0605
D(LOGMOBILE(-2))	9.348628	0.0267
D(LOGPOS)	31.848671	0.0343
D(LOGPOS(-1))	34.969839	0.0166
D(LOGPOS(-2))	44.464326	0.0117
D(LOGPOS(-3))	28.091046	0.0483
D(LOGWEB)	6.582675	0.1425
D(LOGWEB(-1))	10.189952	0.1247
D(LOGWEB(-2))	8.560554	0.1655
D(LOGWEB(-3))	6.348837	0.2324
ECT(-1)	-3.437526	0.0080

Source: Computation by authors with E-view 9.0.

Results of the short-run dynamic coefficients in relations with the long-run association derived through the ECM equation as shown in Table 5 revealed that the lagged error-correction term was as desired, negatively signed and significant at 5% level, which supports the view indicating the existence of a short-run association between the variables. With an error term of -3.43, this suggests that its adjustment speed of returning to equilibrium after a period of shock seem to be very high.

Furthermore, the directions expressed by the short-run dynamic effect were not entirely maintained to the long-run.

Results of diagnostic tests

In a bid to ensure reliability of the results obtained, tests for heteroscedasticity, serial correlation and stability of the model were conducted and the outcome of the diagnostic test are presented in Tables 6, Figures 1 and 2.

Table 6. Results of diagnostic tests

	Test Statistics	P-value
Breusch-Godfrey Serial Correlation test	0.274580	0.7846
ARCH Heteroskedasticity Test	0.562639	0.8322

Source: Computation by authors with E-view 9.0.

Fig 1. Plot of CUSUM test
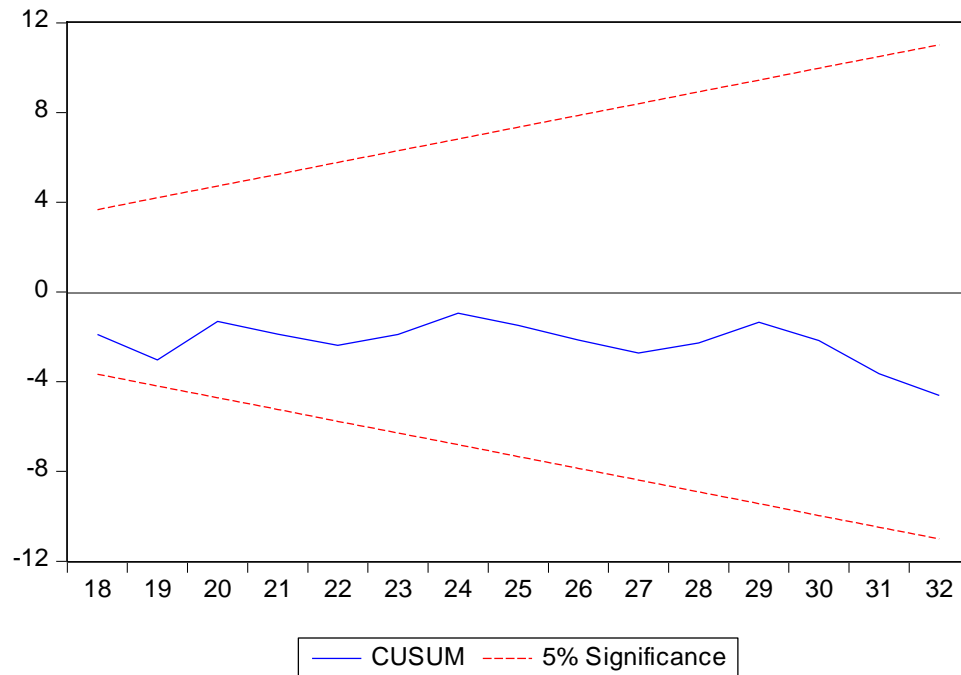
Fig 2. Plot of CUSUMSQ test
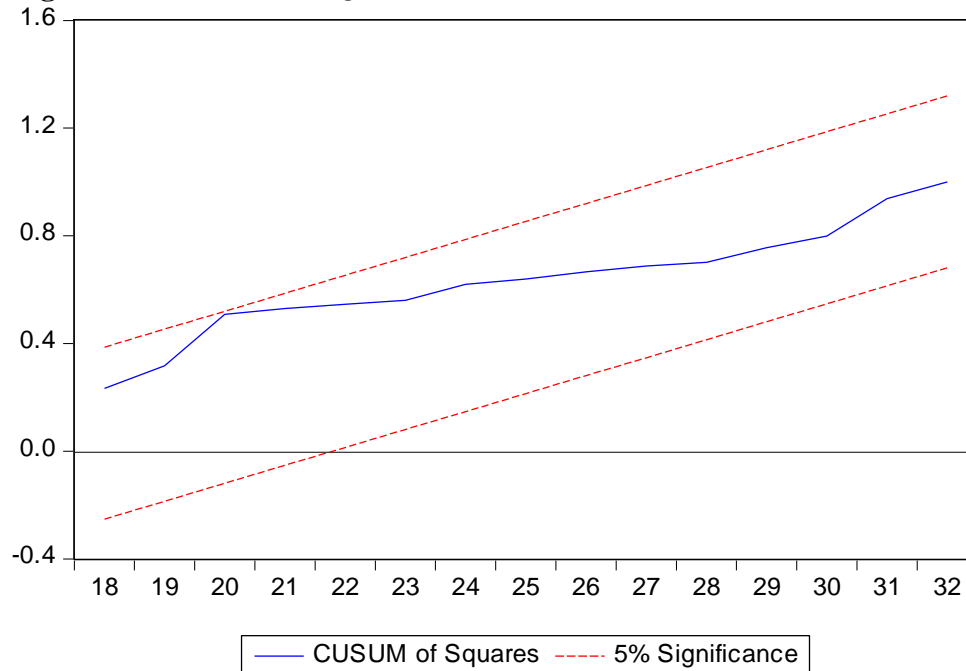
The results of the Breusch-Godfrey serial correlation test and ARCH Heteroskedasticity test presented on Table 6, does not suggest the presence of serial correlation among variables as well

as no evidence for heteroscedasticity. Furthermore, to examine the stability of the long-run parameters together with the short-run movements for the model, the cumulative sum (CUSUM) and cumulative sum squares (CUSUMSQ) tests proposed by Borensztein *et al.* (1998) were relied upon to express the stability of coefficients. Figures 1 and 2, plot the CUSUM and CUSUM of squares statistics from a recursive estimation of the model. It can be seen from Figure 1 and 2 that the plot of CUSUM and CUSUMSQ stays within the critical 5% bounds, providing evidence that the parameters of the model do not suffer from any structural instability over the period of study. In other words, all the coefficients in the model are stable, which is a desired outcome.

Discussions
From the results, there is an indicated an increase in the use of Automated teller machine leads to the decrease in the net interest margin of commercial bank. This is inconsistent with *a priori* expectation but consistent with the findings of Nwakoby *et al* (2020), Ugbede *et al* (2019) and Mustapha (2018). This may not be unconnected to the capital intensive nature of setting up/ installing and operating the Automated teller machine which might have a negative impact on the profitability if not properly managed. Also, the positive impact of mobile banking, point of sale and internet banking on the net interest margin of commercial banks is a testament to the increased focus and concentration of bank on these e-banking channels.This is in line with *a priori* expectations and support the findings of Ugbede et al (2019), Bariweni (2019), Mustapha (2018) and Akhisar et al (2015).

Furthermore, in the short-run, close examination revealed that automated teller machine had a positive but insignificant impact in all the lag periods on net interest margin, this maybe unconnected with the enthusiasm showed by customers, and cost of setting up the machine has not taken any toll on the performance of the banks. Also mobile money exerted a positive impact on the net interest margin of commercial banks but the impact became significant after 2 periods which consistent with *a priori* expectations suggesting the easy acceptance of the channel. Furthermore, point of sale expressed a positive and significant impact on the net interest margin of commercial banks, even as the deployment of POS was easy with less disruption from network issues, ensured its smooth operations, coupled with low cost of deployment. Finally internet banking had a positive impact on the net interest margin of commercial banks

Conclusion and Recommendations
The paper evaluated the nexus between e-banking and commercial bank performance in Nigeria covering the Q11992 to Q4 2019. In evaluating the data collected, the ARDL approach to co-integration and VECM to examine the long run and short run relationships among the variables employed was adopted. Findings from the study suggested that there exists a long run and short run association between the variables used in the study. Furthermore, in the long run mobile banking, point of sale and internet banking all had positive and significant impact on the net interest margin of commercial banks, while Automated teller machine exerted a negative and significant impact, this may not be unconnected to the capital intensive nature of setting up/

installing and operating the Automated teller machine. In the short run, also, Automated teller machine, mobile banking, point of sale and internet banking all expressed positive impact on the net interest margin of commercial banks. Influenced by the findings, the study amongst others things recommend that commercial banks should step up the level education and awareness given to any financial innovations, such as bank codes to make transfer among banks as this will in no small measure increase the use of mobile banking. More investment in the provision and deployment of the Point of Sales terminals should be undertaken as this will improve their profitability and efficiency level. Also constant upgrade of the security of their online system to ensure safety and protection of customer`s interest will encourage the use of internet banking

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Data on variables employed

		NIM	ATM N' Billion	POS N' Billion	WEB N' Billion	MOBILE N' Billion
	1	1.08	496.16	12.00	7.89	1.97
2012	2	1.35	496.16	12.00	7.89	1.97
	3	1.98	496.16	12.00	7.89	1.97
	4	7.58	496.16	12.00	7.89	1.97
2013	1	1.85	707.23	40.25	11.83	35.70
	2	6.82	707.23	40.25	11.83	35.70
	3	7.1	707.23	40.25	11.83	35.70
	4	8.11	707.23	40.25	11.83	35.70
2014	1	1.93	919.97	78.02	18.51	86.62
	2	1.95	919.97	78.02	18.51	86.62
	3	5.2	919.97	78.02	18.51	86.62
	4	7.16	919.97	78.02	18.51	86.62
2015	1	1.86	992.56	112.13	22.90	110.59
	2	2.89	992.56	112.13	22.90	110.59
	3	6.09	992.56	112.13	22.90	110.59
	4	14.79	992.56	112.13	22.90	110.59
2016	1	2.65	1,069.99	144.76	31.69	135.24
	2	3.2	1,134.50	163.71	26.28	168.28
	3	0.41	1,246.80	189.95	30.76	223.06
	4	1.96	1,536.85	260.58	43.63	230.31
2017	1	0.02	1,502.06	285.98	46.57	260.59
	2	0.68	1,544.23	324.13	37.09	295.24
	3	2.13	1,558.76	364.55	45.58	239.36
	4	0.94	1,832.55	435.15	55.35	306.82
2018	1	1.44	1,568.95	474.73	60.74	329.12
	2	1.4	1,603.17	543.63	53.26	410.57
	3	1.2	1,591.01	650.41	69.07	498.08
	4	1.85	1,716.96	714.35	221.53	592.94
2019	1	1.19	1,539.26	633.81	107.64	100.69
	2	1.86	1,699.16	749.82	116.26	1,155.64
	3	1.01	1,622.93	856.86	120.57	1,428.12
	4	1.26	1,651.25	964.27	133.66	1,687.10

Source: CBN Statistical Bulletin, NDIC Quarterly report

INSURANCE SECTOR ACTIVITIES AND FINANCIAL MARKET STABILITY IN NIGERIA

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Abstract
This paper examined insurance sector activities and financial market stability in Nigeria. The objective of the study is to analyze the relationship between insurance industry activities and financial market stability and economic growth in Nigeria. Ex-post facto research design was adopted. The explanatory variables used are Gross Premium Income (GPI), claims expenditure (CLAIMS), investments (INV) and total assets (TIA) of the insurance industry. While financial market stability was measured as the ratio of market capitalization and Gross Domestic Product (MCAP/GDP), economic growth was measured by growth rate of real GDP (GDPr). Data was collected from CBN Statistical Bulletin 2018 and Insurance Digest of various years published by Nigeria Insurers Association (NIA) for 19 years (2000-2018). The collected data was analyzed using trend analysis, unit root tests, cointegration analysis and multiple linear regression technique. The findings showed that total assets of the insurance industry have direct and significant relationship with MCAP/GDP; claims expenditure of the industry showed a positive relationship with MCAP/GDP. Also insurance industry activities showed an insignificant relationship with economic growth. It was concluded that insurance industry activities is related to financial market stability and that insurance industry does not enhance economic growth in Nigeria. Recommendations made include the need for increased level of long-term investments by insurance firms in Nigeria in order to promote economic growth and the need for continuous payment of claims by the industry to ensure confidence in the insurance industry in order to enhance financial market stability.

Keywords: *Gross Premium Income, Financial Market Stability, Market Capitalisation, Economic Growth*

Introduction

Several studies have shown empirically that insurance companies are an important and growing class of financial market participants, especially in the capital market. They insure a wide variety of businesses and household risks, thereby facilitating financial and economic activities and stability (Oke, 2012); Richard and Victor, 2013; Dickinson, 2010). At the same time financial market stability is also considered sacrosanct since an unstable financial market portends contagious effects for the wide economy. The effects of the 2007/2008 world financial crisis are still a fresh testimony to this fact. Thus, an unstable financial market will affect individuals, corporations, government, banks, insurance companies, and capital market in ways that are better left unimagined.

Insurance companies are an important part of the Nigerian financial market. Their activities of indemnification and drive to maximizing profit and wealth had made them become investors and intermediaries in a broad range of financial markets activities. They bring innovative insurance approaches to capital market deepening, provide insurance cover for financial risks, and develop new instruments that help bridge the gap between banking and insurance products. Through these services and products, insurance firms have created new opportunities for individuals, financial institutions and other corporate organisations to fund their activities and hedge risks, thereby contributing to the development, increased liquidity in the financial market and overall economic improvement (Donwa and Odia, 2010).

A thriving insurance sector is not only the result of an efficient financial system but is also an important aspect of a healthy modern economy. Insurance promote long- term savings that support sustainable long- term development. By pooling these savings from many small investors in the economy into large accumulations of investable funds, insurance firms commit these pooled resources into a wider range of investments on a large scale which is expected to be more beneficial to the economy.

According to the European Commission working document (2014), the financial system is critically important for the economic well-being of households and corporations as it fulfills different functions through which it serves the economy and facilitates sustainable growth. The financial system intermediates between ultimate providers of funds (lenders, savers or investors) and the ultimate users of funds (borrowers, entrepreneurs or spenders). The channeling of funds between lenders and borrowers facilitates productive investment and efficient capital allocation in the economy. Hence, the financial system perform risk transformation and provides insurance services to risk – averse households and firms, enabling the later to achieve superior risk - reward outcomes compared to a situation without an insurance sub-system in the financial system.

Stable financial system is one in which financial institutions, markets and their infrastructures facilitate the smooth flow of funds between savers and investors such that its help to promote growth in economic activities (Jovanic, 2014). Economists have demonstrated that economic growth and insurance development are interdependent and that a world without insurance would be much less developed and less stable. Theoretical studies and empirical evidence have shown that countries with better developed financial system enjoy faster and more stable long – run growth of which insurance companies contributes to. Well – developed financial markets have a significant positive impact on total factor productivity, which translates into higher long – run development (Oke, 2012).

In spite of all the expectations of the mitigating impact of insurance sector to improving investment and financial market stability, there has been a sluggish and distorted growth in this sector. Studies have proven empirically that unfavorable macroeconomic environment influences insurance industry negatively (Chikaodinaka, 2009). In Nigeria, the insurance industry has not grown as expected based on the untapped potentials in the last 35 years (World Bank, 2006). An instance is the pre-capitalization comparison of the Nigerian and Chinese insurance industry. The insurance industry in China covering an approximately ten times the Nigerian population generates USD$6 billion in premium annually, while that of Nigeria is USD$0.6 billion, a fraction of a tenth of China's. After the capitalization of this sector between 2003 and 2005, which placed life insurance on the benchmark of ₦2 billion, non – life at ₦3 billion and re-insurance at ₦10 billion, average premium generated per insurance firm in China which is two

hundred times that of Nigeria at USD$1.17 billion (African Re, 2011). Suffice it to say that the rationale for the reforms of the insurance sector was due to inadequate capital for competitive operations; poor public perception of its activities; low insurance penetration; low capacity for financial risk management; and poor information and technology (IT) infrastructure amongst others (Babalola, 2008). Thus, this article therefore, seeks to investigate the role of insurance industry activities in promoting financial market stability, improving investments and encouraging economic growth.

To achieve these objectives, we hypothesized that:

i.   Insurance industry activities have no significant effect on financial market stability;
ii. Insurance industry activities have no significant effect on economic growth.

This study is divided into five sections. Section one is the introduction, section two provides the review of related literature, section three is the method of study, section four explains the data, the specification of empirical model and discussion of findings. Section five is the conclusion and policy recommendations.

REVIEW OF RELATED LITERATURE

The concepts of insurance and development of the financial market, financial sector development, economic growth and insurance were reviewed, while attempt was made to link this study to existing theories, and empirical literature.

Insurance Industry and the Development of Capital Market

There have been growing concerns in the literature about the role of insurance on the facilitation of financial market stability. Dickinson (2010), opined that through the investment of insurance premium paid by policyholders and the investment of shareholders' funds, the transmission of saving is fed through into the wider economy. The mechanism through which this transmission takes place is the capital market. The range of investments in which an insurance company can invest its funds within a given economy will depend on the degree of development of the local capital market. Savings mobilized and invested in the capital market by insurance companies clearly acts as an important stimulus to the growth of both the economy and the capital market itself. Therefore, there is a dynamic interaction at work, with the accumulation of savings through insurance, the investments of these savings in the capital market leading to the development of capital market, both (insurance sector and capital market) evolving together, one assisting the other.

Again, according to Al-Faki (2006) in Donwa and Odia (2010), the capital market is seen as a network of specialized financial institutions, mechanisms, processes and infrastructure that bring together suppliers and users of medium to long – term capital for investment in socio – economic developmental projects. The market is divided into the primary and secondary market. The primary market provides the avenue through which government and corporate bodies raise fresh funds through issuance of securities which is subscribed to by the general public or selected group of investors. The secondary market provides an avenue for sale, re-sale and purchase of existing securities. Hence, the growth and development of any country is strengthened by the capital market.

It support government and corporate initiatives, financed the exploitation of new ideas and facilitate the management of financial risk. As opined by Akinbohungbe (1996) and Adebuji (2005), the rate of economic growth has been linked to the sophistication of the financial market

and capital market efficiency. Both markets facilitates the mobilization and channeling of funds into productive constituents and ensuring that the funds are used for the pursuit of socio – economic growth and development without being idle.

Financial Sector Development, Economic Growth and Insurance

By financial sector development, we are referring to the financial and capital market development, including the major indicators of financial sector depth and efficiency as well as capital market liquidity and transparency (USAID, 2006). The depth and efficiency of a country's financial sector largely determine how well its economy allocates resources. As such an improved financial depth (that is greater variety and availability of financial services and instruments) advances economic growth by providing economic agents more opportunities to save, invest, and borrow. Enhanced financial depth and efficiency translate into increased level of financial intermediation, investment, and productive resource allocation. Thus, the mechanisms through which insurance work to stimulate economic growth revolve around the role insurance plays in deepening and improving the efficiency of the financial sector.

Studies such as Lee, Lin and Zeng (2016); Madukwe and Anyanwaokoro (2014); Outreville (2013); Haiss and Sumegi (2008); and Babalola (2008) have shown that insurance influences financial activities in the following ways:

i.   Insurers measure and manage non-diversifiable risk faced by creditors and borrowers more efficiently than other financial institutions, facilitating the provision of credit;

ii.   Insurers generate price signals for risk that enables the economy to allocate its resources more efficiently among activities;

iii.   Insurers often offer competitive and contractual savings vehicle than other financial institutions;

iv.   Due to their success in making contractual savings products and the nature of their liabilities, life insurance and to some extent non-life insurance firms' can be an important source of long-term finance and;

v.   By mobilizing substantial funds through contractual savings products, and investing them in bonds and stocks, insurers help stimulate the growth of debt and equity markets.

As known, the amount of lending by financial institutions to the private sector is one of the best indicators of the efficiency of a country's financial system. In an efficient financial system, there is greater demand and supply of credit when financial institutions can measure, manage, and price risk better, and borrowers, lenders, and investors can transact with more information available and at minimal costs (Kugler, Maurice, and Ofoghi, 2005); Harichandra and Thangavelu, 2004);Impavido, Gregorio, Musalem, Alberto and Vittas, 2002).

Theoretical Underpinnings

The role of insurance industry to financial development and economic growth has attracted more attention in several literatures across the world. Likewise, myriad of theories have been put forward to show how financial institutions activities stimulate financial development and economic growth. These include the Bagehot's 1874 finance-growth nexus, Shaw (1973) and Mckinnon (1973) financial liberalization theory, Patrick (1966) supply-leading and demand-following theories and Harrod-Domar growth theory of the 1950s. Though these theories

explored the impact of finance on financial development from different perspectives, they all converged in their propositions and agreement that increased level of financial liberalization is a causative factor for enhanced financial development in an economy.

The financial liberalization theory by Shaw (1973) and McKinnon (1973), showed that liberalization of financial services can exert a positive effect on growth rate of the economy. These theorists explained that this may be possible when resources are distributed efficiently, and interest rates level move towards market equilibrium. Patrick (1966) theorized on the association between economic growth and financial development by hypothesizing two likely connections- the "demand-following" and "supply-leading". The "demand-following" theory stated that financial development increases as the economy improves; while the "supply-leading" phenomenon, stated that the general growth of financial institutions leads to an economic increase (Lee, Lin and Zeng, 2016).

On the other hand, Harrod-Domar growth theory explained that a well-developed financial intermediation process can stimulate economic growth via the marginal productivity of capital, the efficiency indirecting investments savings rate and technical innovations (Onyekachi and Okoye, 2013). These theories recognize the channels to growth model and by this, try to link the financial intermediation function of insurance companies toboth financial development and economic growth. Many empirical evidences have also been provided by Haissand Sumegi (2008); Madukwe and Anyanwaokoro (2014); Mojekwu, Agwuedo and Olowokudejo (2011) and Outreville (2013) suggesting that insurance market activities stimulates financial development and stability, and growth in the economy. However this theory is anchored on the financial liberalization theory by Shaw (1973) and McKinnon (1973). A robust insurance industry with several liberalization policies is depicted by the Nigerian insurance industry, and as such there are expectations of the positive roles of industry activities towards financial development and stability, and economic growth

Empirical Literature

Numerous empirical literature have established the link between insurance and financial market stability and economic growth in Nigeria and globally. The relationship between economic growth and financial growth was investigated and established by several studies in the literature (Arestis and Demetriades, 1997; Levine and Zervos, 1998; Ward and Zurbruegg, 2002; Rousseau and Wachtel, 1998; Ying-jun and Ye-ting, 2012; De Fiore andUhlig, 2011; Outreville, 2013). Kugler and Ofoghi (2005) established that national insurance and reinsurance market not only being a characteristic feature of economic growth, is a pronounced determinant of financial stability given that it plays an important financial intermediation role in the financial system, ensuring that the available pool of funds from clients are placed in profitable investments as well as providing risk covers for various individuals and institution in the financial markets.

Furthermore, International Association of Insurance Supervisors (2011) report on the effect of insurance industry on financial stability, concluded that insurance industry's role in ensuring financial stability was proved during the last round of global financial crisis between 2007 and 2008. The report surmised that insurance business model confers financial stability through financial intermediation and risk coverage during financial crises and distortions. Similarly, Hussel, Ward and Zurrubegg (2005) established empirically that insurance activities promotes financial stability and development, and at the same time positivelycontributes to

economic growth and development. Akgakoba (2010) and Oke (2012) viewed the insurance capacity to influence financial development and stability as central to their function in the financial system and in the economy, establishing that insurance activities promotes financial stability in Nigeria.

DATA AND METHODOLOGY

Data for this study are mainly secondary data. These data were sourced from Central Bank of Nigeria statistical bulletin 2018 and Insurance Digest of various years published by Nigeria Insurers Association (NIA) and covers 19 years (2000-2018). This study was designed with ex-post facto method, hence the statistical and econometric treatment of the secondary data collected in order to establish the relationship between the various variables in the study as hypothesized. The explanatory variables used in the measurement of the activities of the insurance industry include insurance industry gross premium income (GPI), aggregate claims expenditure (CLAIMS), aggregate investments of the industry (INV) and total assets (TIA). Financial market stability was measured using the ratio of market capitalisation to real Gross Domestic Product (MCAP/GDP) while economic growth was measured using the growth rate of real Gross Domestic Product (GDPr) from the year 2000 to 2018.

The models specified for the hypothesized relationship earlier stated in this study is presented as follows:

$$MCAP/GDP = \alpha_1 + \beta_1 GPI + \beta_2 CLAIMS + \beta_3 INV + \beta_4 TIA + \epsilon_1 \quad - \quad - \quad - \quad - \quad \text{(Equ.1)}$$
$$GDPr = \alpha_1 + \beta_1 GPI + \beta_2 CLAIMS + \beta_3 INV + \beta_4 TIA + \epsilon_1 \quad - \quad - \quad - \quad - \quad - \quad \text{(Equ.2)}$$

Where:

MCAP/GDP= Ratio of Market Capitalization to GDP (Financial Market Stability)

GDPr= Growth rate of Gross Domestic Product (Economic Growth)

GPI = Insurance Industry Aggregate Gross Premium Income

CLAIMS = Insurance Industry Aggregate Claims Expenditure

INV = Insurance Industry Aggregate Investments

TIA = Insurance Industry Total Assets

α_1= regression line intercept

β_1-β_4= regression coefficients of the explanatory variables

ϵ_1= error or random term

ANALYSIS AND DISCUSSION

Trend Analysis

Analysis of the data collected for was presented in a table and this study was conducted using descriptive and statistical techniques. Trend of the data analyzed using a histogram and a line graph.

The data for this study is presented in Table 1 below:

Table 1: Trend of Economic Growth (GDPr), Financial Market Stability (MCAP/GDP), Insurance Industry Gross Premium Income (GPI), Insurance Industry Claims Expenditure (CLAIMS), Insurance Industry Investments (INV) and Insurance Industry Total Assets (TIA) from 2000 to 2018.

YEAR	GDPr (%)	MCAP/GDP (%)	GPI(₦' Million)	CLAIMS (₦' Million)	INV (₦' Million)	TIA (₦' Million)
2000	5.518500	1.993813	22531.46	5629.520	25192.64	61600.00
2001	6.666848	2.621941	28981.29	6110.520	32157.27	78060.48
2002	14.60438	2.641438	37765.89	6856.145	36940.87	85255.73
2003	9.502606	4.286735	43441.81	9415.200	54642.84	124267.37
2004	10.44200	6.032173	50100.83	12084.040	74590.75	141222.03
2005	7.008457	7.738663	67465.56	12402.400	121844.2	203113.12
2006	6.725974	12.80369	81583.75	76276.110	216359.9	307542.61
2007	7.318081	30.71051	89104.89	15843.730	329247.9	427497.16
2008	7.199287	20.78341	126470.30	25864.870	336491.4	573154.46
2009	8.353344	14.10227	153127.12	49498.930	343894.2	586459.54
2010	9.539786	18.16114	157336.81	37589.560	351459.9	585015.79
2011	5.307924	17.86673	175756.75	39389.160	359192.0	621095.14
2012	4.205890	24.69710	252138.08	73162.280	252138.1	661967.57
2013	5.487793	30.17685	267835.30	92951.090	267835.3	750923.70
2014	6.222942	25.12942	307507.50	108733.450	566937.8	838547.42
2015	2.786398	24.63405	328621.88	96331.220	651630.3	941278.08
2016	-1.583065	23.82664	333975.88	113294.080	737189.4	1039680.79
2017	0.823987	30.84917	504730.98	124471.330	884175.0	1633203.84
2018	1.930000	31.37664	NA	NA	NA	NA

Source: Central Bank of Nigeria (CBN) Statistical Bulletin 2018, Nigeria Insurers Association (NIA) Digest (various years)

An evaluation of the trend of market stability using the ratio of Market Stabilization (MCAP) to real Gross Domestic Product (GDP) indicates that the capital market recorded improved stability levels between the year 2000 and 2010. This can be attributed to continuous financial development and economic shocks especially during the recent recessionary period in the country. While it may be stated that within these years the market is gradually building resilience, it is not without fragility of the early years between 2007 and 2012 as shown in Figure 1.

MCAP/GDP
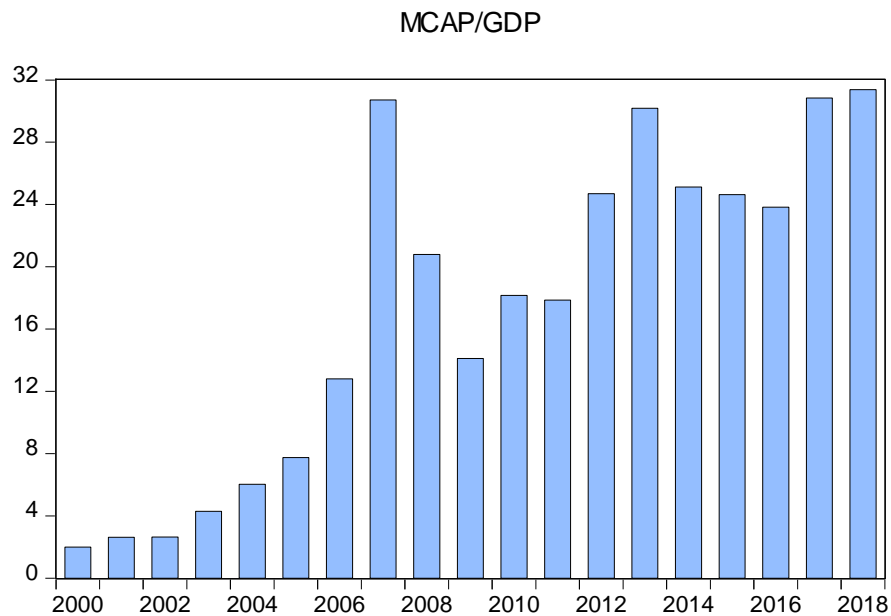
Figure 1: Trend of Financial Market Stability from 2000 to 2018

Market dynamics as reflected by stock market capitalization between 2014 and 2016 indicates that the capital market witnessed changes in the level of stability. This is not isolated with the reactions to the market due to the build-up and after-math of the 2015 general election and the onset of recession in the country. However in recent years (2017-2018), the market is gradually becoming stable. On the other hand within the same period, growth rate of GDP has been oscillating back and forth. As shown in Figure 2, Gross Domestic Product (GDP) growth rates have been stable. With a high growth rate in 2001 to a negative growth rate in 2015, economic growth in Nigeria is not devoid of distortions. This fragility in growth may possibly be associated with different policy reversals and poor implementation of economic policies which have been acculturated by successive administrations in the country.

GDPr
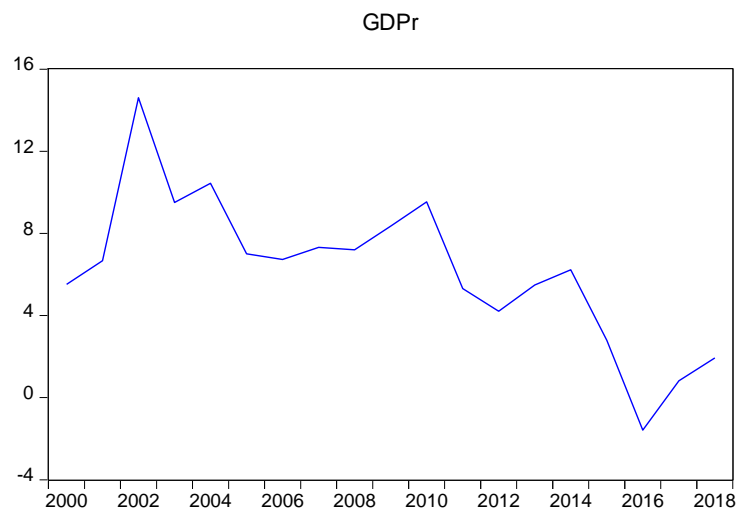
Figure 2: Trend of Economic Growth in Nigeria (2000-2018)

Unit Root Analysis

This analysis was conducted to establish the suitability of the research data for analysis including regression analysis with respect to the existence of unit root. Data with unit root problem are considered non-stationary and are not suitable for regression analysis.This test of data adequacy was conducted using the Philips-Perron method at 5% level of significance. The summary of the results is presented in Table 2.

Table 2: Philips-Perron Unit Root Test Result

Variable	Philips-Perron Adjusted t-statistic (Critical Values at 5%)	P-value	Order of Integration
GDPr	-5.715210 (-3.052169)	0.0003	I(1)
MCAP/GDP	-7.646871 (-3.052169)	0.0000	I(1)
GPI	-3.649892 (-3.081002)	000523	I(2)
CLAIMS	-10.46111 (-3.065585)	0.0000	I(1)
INV	-8.052785 (-3.081002)	0.0001	I(2)
TIA	-3.466323 (-3.081002)	0.0105	I(2)

Source: Researcher's Compilation from E-views 10.0 output (2019)

Table 2 indicates that at 5% level of significance and at different levels of integration, all the variables were found to be stationary. However, it must be pointed out that GDPr, MCAP/GDP and CLAIMS were found stationary at first difference; the remaining variables (GPI, TIA, and INV) were found to be stationary at second difference. This indicates that these variables- GPI, INV and TIA had unit root problems at level and first difference. This will lead to the log-linear transformation of the models earlier stated in order to ensure that numbers are scaled down and the effect of trend in the data series is eliminated in order to avoid spurious regression results when it is conducted in the study.

Cointegration Analysis

This test was conducted to ensure the confirmation of a possible long-run equilibrium relationship between insurance industry activities as measured by GPI, CLAIMS, INV and TIA and financial stability (MCAP/GDP) and economic growth (GDPr in Nigeria. The test was conducted for both models in the study using Johansen Cointegration technique. The results from the test are presented in Table 3 and 4.

Table 3: Johansen Cointegration Test Result for Model One
Date: 11/28/19   Time: 10:21
Sample (adjusted): 2002 2017
Included observations: 16 after adjustments
Trend assumption: Linear deterministic trend
Series: GDPr GPI CLAIMS INV TIA
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.989515	146.6755	69.81889	0.0000
At most 1 *	0.902184	73.74985	47.85613	0.0000
At most 2 *	0.681087	36.55521	29.79707	0.0072
At most 3 *	0.469989	18.26984	15.49471	0.0186
At most 4 *	0.397704	8.112113	3.841466	0.0044

Source: Researcher's Computation (2019)

The result shows that the variables in the model (GDPr, GPI, CLAIMS, INV, TIA) are cointegrated going by the exhibited Trace statistic and probability values. Table 4 also showed the same outcome for the model with variables MCAP/GDP, GPI, CLAIMS, INV and TIA, with the result from the Trace statistic, max Eigen value and p-values indicating the possibility of at most four (4) cointegrating equations among the variables. This implies the existence of a possible long-run equilibrium relationship among insurance industry activities and economic growth and financial market stability.

Table 4: Johansen Cointegration Test Result for Model Two
Date: 11/28/19   Time: 10:23
Sample (adjusted): 2002 2017
Included observations: 16 after adjustments
Trend assumption: Linear deterministic trend
Series: MCAP_GDP GPI CLAIMS INV TIA
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.994659	172.0529	69.81889	0.0000
At most 1 *	0.952209	88.33638	47.85613	0.0000
At most 2 *	0.824463	39.68179	29.79707	0.0027
At most 3	0.459757	11.84331	15.49471	0.1646
At most 4	0.117036	1.991542	3.841466	0.1582

Source: Researcher's Computation (2019)

Regression Analysis

The logarithmic transformation of the models earlier specified allowed for the elimination of all the features of the data series that could cause the production of a reliable regression results. This is given as:

$$LogMCAP/GDP = \alpha_1 + \beta_1 LogGPI + \beta_2 LogCLAIMS + \beta_3 LogINV + \beta_4 LogTIA + \epsilon_1 \quad \text{(Equ.3)}$$

$$GDPr = \alpha_1 + \beta_1 LogGPI + \beta_2 LogCLAIMS + \beta_3 LogINV + \beta_4 LogTIA + \epsilon_1 \quad - \quad \text{(Equ.4)}$$

Multiple regression analysis was conducted and the summary of the regression result is given as follows for the models:

MCAP/GDP = -9.30 -0.79GPI+0.03CLAIMS -0.11INV+1.73TIA

t-stat   = (-7.6482) (-1.6307) (0.1620)   (-0.2967) (2.4124)

P-value   = (0.0000) (0.1269)   (0.8738)   (0.7714) (0.0313)

R^2= 0.9340; Adj. R^2= 0.9137; Durbin-Watson=1.22; F-stat.=46.017
Source: E-views output (2019)

The above result indicate that financial market stability (MCAP/GDP) will decline by an average of 9.30% if all the explanatory variables are held constant (i.e. GPI=CLAIMS=INV=TIA=0). Similarly, a 1% change in the level of GPI will lead to a decrease of 0.79% in MCAP/GDP; a 1% increase in CLAIMS will lead to an increase of 0.03% in MCAP/GDP; a 1% increase in insurance industry aggregate investments (INV) will lead to a decrease of 0.11% in MCAP/GDP and a 1% increase in insurance industry total assets (TIA) will grow capital market stability by 1.73%. Between the association of market stability and insurance industry, the result showed that adjusted R^2 stood at 0.9137. This indicates that 91.37% of departures from the norm have been accounted for by insurance industry activities. The unaccounted 8.63% of these changes in market stability is due to other factor not considered in this study. Furthermore, from the results only total assets (TIA) of the insurance industry showed significant effect on market stability (MCAP/GDP) with a probability value of 0.03 while the other explanatory variables (GPI, CLAIMS, INV) did not. The Durbin-Watson stat value of 1.22 indicates the absence of serial correlation since using the rule of thumb, that the model Durbin-Watson value from 1 to 3 is considered appropriate. The F-stat value of 46.01 showed that the model is a good fit in explaining the variations in market stability (MCAP/GDP) and with a probability value less than 0.05, the hypothesis that market stability is predicated on insurance industry activities is accepted.

For the second hypothesis, the multiple regression results are summarized below:

GDPr= 31.43- 2.25GPI - 0.99CLAIMS- 0.43INV +1.31TIA
t-stat   = (2.2521) (-0.4005) (-0.4719) (-0.0973) (0.1594)
P-value   = (0.0422) (0.6953)   (0.6448)   (0.9224) (0.8758)
R^2= 0.4234; Adj. R^2= 0.2459; Durbin-Watson=1.39; F-stat. =2.386

The above result indicates that growth rate of GDP will increase by an average of 31.43% if all the explanatory variables are held constant. Likewise, a 1% growth in GPI will lead to loss of 2.25% in growth rate of GDP; a 1% increase in CLAIMS will lead to a decline of 0.99% in GDPr; a 1% increase in INV will also lead to a decrease of 0.43% in GDPr, while a 1% growth in total assets of insurance industry (TIA) will boost GDP growth by 1.31%. The abysmal relationship between economic growth and insurance industry is summarized by the outcome of the adjusted coefficient of determination (Adj. R^2) value of 0.2459, which implies that low predictive power of the explanatory variables to explaining alterations in economic growth. These variables can only explain 24.59% of the variations in GDPr leaving out 75.415 of the changes to be explained by other factors in the economy. Furthermore, none of the variables showed a statistically significant relationship with growth rate of GDP. The Durbin-Watson stat value of 1.39 indicates the absence of autocorrelation going by the rule of thumb. Finally, the model failed in the goodness-of-fit test since it cannot explain the variations in economic growth (GDPr) with an F-statistic value of 2.386 and a probability value of 0.1047. This implies the rejection of the hypothesis that insurance industry foster economic growth.

Conclusion and Recommendations

The nexus between insurance activities and financial stability is apparently evidenced by the empirical results as shown in the study. The direct relationship between insurance claims expenditure and total assets implies that increased insurance industry activities possess the potential and capacity to instill resilience in the capital market. This is given the fact that insurance industry is associated with the non-substitutability of risk management services and the provision of funds for long-term investments in the capital market. This is further embellished with the growth in the pension industry which adds weight to the importance of the insurance industry to financial market stability in Nigeria. With the propositions of the Mckinnon-Shaw financial development and liberalization theory established, insurance industry in Nigeria by virtue of their activities via assets and claims payment bears on financial market stability in Nigeria.

With respect to economic growth, experts have it that the potentials of insurance industry towards economic growth are only based on the prospects of the industry rather than results on ground. Insurance industry is known to contribute less than 2% to real GDP in Nigeria hence it is not surprising that the empirical results in this study had shown that there is no significant relationship between insurance industry activities in Nigeria and economic growth in the last 19 years (2000-2019). This implies that there is need for further development in the insurance industry. Recent policy for the recapitalization of the industry is one way amongst several that will increase the capacity of the insurance industry to contribute more to economic growth and development.

Finally, with the foregoing, it is recommended that insurance companies should be very active in terms of investments. They should develop voracious appetite for profitable long-term investments in the financial markets. This would enhance market stability and economic growth. Also there is need for further development of the insurance industry in order to enhance their capacity to write up huge policies which are currently channeled off-shore. Their capacity to increase both gross premium income and claims payment will be an advantage to the industry, a plus to market stability and a catalyst to economic growth.

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FINANCIAL STATEMENT ANALYSIS: A BASIS FOR MEASURING FIRM FINANCIAL PERFORMANCE

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Abstract

Most stakeholders pay inadequate attention to the analysis of financial statement of firms in which they have interest. As a result, the financial characteristics designed to measure the firms' financial performance and how well the interest of the stakeholders is served may be undermined. For the needed insights into the part that financial statement analysis plays in measuring firm performance, this study provides analytical evidence of how financial characteristics and financial performance are integrally connected. Utilizing data from 20 Nigerian quoted manufacturing firms for the accounting period spanning 2014 through 2018, results of correlation and regression show that, with exception of asset turnover ratio used as proxy for business activity, other ratios representing liquidity and leverage dimensions of financial characteristics are significantly related with financial performance. These findings have many implications for stakeholders, particularly the management which are advised to give adequate priority to financial statement analysis as part of the financial decision support system.

Keywords: *Financial characteristics, financial performance, financial statements, stakeholders.*

1.0 Introduction

Studies on corporate financial reporting have been a major focus in the finance and accounting literature, with emphasis on the strict adherence of firms to extant accounting standards in their financial reporting practices, whereas the analysis of the emerging financial statements for business decisions receive only a passing mention (Gafarov, 2009; Ekanem and Ekanem, 2012; Asuquo, 2013; Mbobo and Ekpo, 2016).

Financial reporting and financial statement analysis are complementary finance functions. While the primary objective of the former is to provide useful information required by stakeholders (within and outside the entity) for their rational business decisions, the latter is to enable them leverage on the information content of the financial statements.

Stakeholders have different information needs and are expected to utilizing the financial statements to draw valid business conclusions based on their peculiar needs and circumstances. For instance, the funds providers typically belong to the external group of stakeholders who are interested in information that would enable them assess the firm's prospects for improved future net cash flows, to decide whether their loan interest would be paid as and when due as well as the eventual recovery of the principal sum.

In the contrary, shareholders and prospective investors are concerned with information that would enable them evaluate the firm's ability to pay dividends, the possibility of increase in market price of shares and potential risks associated with their investments. Similarly, the government requires information for the regulation of business, tax assessments and as a basis for national statistics and policy formulation. The employees on their part, are interested in information which can assist them assess the entity's ability to live up to expectation in terms of their salaries, retirement benefits, fringed benefits and other conditions of service over time. Competitors too, are not left out; though their interest might be of secondary consideration to the reporting entity, the financial information could assist them in planning their competitive strategies.

Asechemie (1996), argued that beyond serving the needs of diverse stakeholders for making economic decisions, financial statements are important source of information for the scrutiny of managers by their principals. Through the reports, the management gives account of stewardship to those who provided resources for the firm's operations. That is to say, they are performance evaluation instruments designed for the accountability and probity of management by its shareholders. The reports enable them to monitor and evaluate how well the managers serve their interest over time.

Financial statements are of general purpose in nature because of the impracticability of firms producing different or specialized financial reports that would meet the divergent interest of all stakeholders. The International Financial Reporting Standards (IFRS), which were initially addressed as International Accounting Standards (IAS) have statutorily provided the guidelines for the structure, minimum requirements and contents of financial statements that supposedly considers all parties who may have interest in the firm.

The information provided in the general purpose financial statements are typically aggregates and summaries of financial dealings that may not necessarily convey full sense for business decisions on their face value. Under the circumstance, it behoves on parties having interest in the firm to analyze, evaluate and interpret the financial statements in relation to their needs.

However, a vast majority of stakeholders are inept at the task of analyzing financial statements and are equally unwilling to seek the assistance of experts. These attitudes have resulted in gross abuse of financial statements and, of course the ultimate purpose of financial reporting. Upon the receipt of firms' financial statements, many primary stakeholders, including the management itself, merely glance through them to see whether the business has made profits during the relevant period, and then put away the documents without recourse to the implications of the classified figures therein.

This attitude of taking the financial statements for granted is rather unfortunate because stakeholders in whose interest the documents are produced ought to understand the purpose and utilize them for their desired information and investment decisions. Such information could assist them in assessing business strengths and weaknesses, making better investment decisions and planning resources. It could as well serve as an instrument of rewarding the firm's management and staff, redirecting the focus of policy makers and as an early warning system.

In recognition of this ugly trend, this study advances an understanding of the importance of financial statement analysis with analytical evidence of the link between financial characteristics (liquidity ratios, financial leverage ratios, activity ratios and profitability ratios derived from financial statement analysis) and financial performance. The remaining part of the paper is organized as follows: Section 2 provides a brief conceptual and theoretical background on the subject. Section 3 presents the research hypotheses developed for the study, and Section 4 is devoted to the research methods. Section 5 presents data analysis and discussions, while Section 6 draws conclusion and makes recommendations.

Conceptual Issues and Theoretical Framework

2.1 Financial Statement and its Analysis

Financial statements are a set of reports prepared by the management of an entity with the intention of meeting the needs of a broad group of users who are not in position to make direct demand for reports tailored according to their information needs (Asechemie, 1996; Mirza and Holt, 2011; Gibson, 2013). They are prepared annually, usually at the end of every financial year with the basic objective of assisting stakeholders in decision making. The International Financial Reporting Standards (IFRS) provides the guidelines for the structure, minimum requirements and contents of financial statements. It has listed the component of a complete set of financial statements for a given financial year to comprise statement of financial position, statement of comprehensive income, statement of changes in equity, statement of cash flows, and notes comprising statement of accounting policies and other explanatory information. However, in order to give a clearer view of the firm's financial position, the reporting entity may also include the value added statement and the statement showing changes in equity. These requirements are applicable to all general purpose financial statements (Epstein and Eva, 2007).

Alexander, Britton and Jorissen (2014), explained that because financial statement comprises the basic financial information that is expected to be accessed by a broad group of users it is called general purpose financial statement. This, and other non-financial reports such as general economic conditions and expectations, political climate and events, industry and company outlooks can assist stakeholders assess the liquidity, profitability and commercial viability of a reporting entity.

As indicated earlier, the general purpose financial statement is produced to provide financial information that would enable existing and potential investors, lenders, trade and expense creditors as well as those who for valid reasons have interest in the entity make specialized business decisions. Stakeholders need information about the entity's financial performance and events or circumstances that might likely affect its assets, liabilities and equity. Such information would enable them in planning and timing of cash flows associated with business activities and similar economic decisions. These decisions are crucial and can only be made in the light of certain financial information.

Financial statement analysis aims at deriving meaning from a set of financial statements prepared by the accountant. It is an attempt at interpreting the accountant's work to obtain more facts about the performance, solvency and profitability of a firm. The process involves majorly the use of ratios which compares relevant interrelated figures in the financial statements to establish a trend and obtain financial information that can be useful for numerous investment purposes.

2.1 Financial Characteristics

Firms financial characteristics are typically financial ratios derived from the financial statements. Most previous researchers (Nguyen, 2001, Helfert, 2003; Hosan, 2010) used liquidity, leverage, profitability and activity ratios to describe firms' financial characteristics.

Financial or accounting ratios provide a quick diagnostic report of a firm's financial health and trigger off subsequent management actions within the entity. To make sense out of ratio analysis, they are better compared with corresponding ratios of other periods and/or with those of other firms within the same industry. Interpreting ratios in isolation could result in misleading decisions.

2.2 Financial Performance

The concept of financial performance according to Aktan and Bulut (2008), is a firm's ability to generate new resources from day to day operation over a given period of time. Financial performance indicators can be either traditional or market-based. Traditional indicators are based on accounting data derived from the financial statements. These indicators are frequently used by stakeholders to monitor the performance of firms in which they have interest. According to Ajanthan (2013); Ayodele and Oke (2013), financial indicators primarily make use of accounting ratios to measure firm's past performance. Although there are many types of ratios, Umoren (2018), identified five commonly used ratios to be profitability, liquidity, activity, financial leverage and market value ratios derived from stock exchange values.

For the purpose of this study, we adopt the traditional performance indicators.

2.3 Theoretical Review

Financial statement analysis and firms' financial performance can be located and explained within the context of a number of theories. The most relevant theoretical support for the subject is the Resource Based Theory (RBT). The emergence of resource based theory is credited to Wernerfelt (1984). Pearce and Robinson (2011) in Charles, Ahmed and Joshua (2018) define RBT as a method of analyzing and identifying a firm's strategic advantages based on the examination of its distinct combination of assets, skills, capabilities, and intangible resources.

The central idea of the theory is that the firm is a collection of resources which if optimally combined could enhance organizational capacity for improved performance. The financial performance implications of the theory are obvious. One might reasonably argue that though most firms have both tangible and intangible resources, the manner in which the resources are managed determines the competences and competitive advantage the firms have over their competitors in earning above average profits. Moreover, other than concentrate in industry factors, the theory addresses firm characteristics, including the financials which are measured by liquidity, leverage and profitability as well as management efficiency ratios.

The theory is premised on the fact that if resource selection is incorporated into the financial decision making process of the firm it would engender optimal performance. RBT is important in the study of competition and in taking informed business decisions, which could benefit both the management and other stakeholders of a firm. The theory addresses the observed fact of multiplicity of stakeholders' interests in the firm.

3.0 Hypotheses

3.1 Liquidity and Financial Performance

Assessing liquidity essentially implies an investigation into a firm's ability to meet its maturing obligation, and whether such ability is improving or deteriorating over time. The most stringent indicator used for the purpose is quick ratio (Meric, Rose, Weidman and Meric, 1997; Van Horne, 2004; Okwu, Nworji and Oliwuru, 2012). Arising from the foregoing, our first hypothesis is stated thus:

H_{01}: There is no significant relationship between liquidity ratios and financial performance.

3.2 Activity and Financial Performance

The management of a firm is expected to use the business assets as productive as possible. Shareholders are interested in the degree with which the management is able to generate revenue through productive engagement of the firm's resources. Productivity is measured in terms of the efficiency and effectiveness in resource utilization. One of the ratios used in assessing the efficiency with which the firm manages its assets to generate returns is asset turnover. The ratio gives an assessment of past managerial efficiency in the deployment of company assets and is considered to be a good guide to the likely level of future profits (Lucey, 1996; Pandey, 2005; Hansan, 2010). Therefore, our second hypothesis is as follows:

H_{02}: There is no significant relationship between business activity ratios and financial performance.

3.3 Financial Leverage and Financial Performance

The evaluation of a firm's financial leverage relates to the means by which a firm finances its operations, and its long-term ability to pay its obligations as and when due. The primary measure of leverage is gearing ratio (Van Horne, 2004; Gibson, 2013). The ratio shows the extent to which a firm uses debt as a source of finance. It indicates the percentage of the capital structure that is financed by debt. Thus, our third hypothesis is as follows:

H_{03}: There is no significant relationship between financial leverage ratios and financial performance.

4.0 Methods and Procedures

4.1 Research Design and Data Collection Procedure

The study is a causal research which utilized secondary data from the annual report and accounts of 20 quoted manufacturing firms obtained from the Nigerian Stock Exchange for the accounting period spanning 2014 through 2018. The sample firms were purposively chosen from a

population of 120. The plan was to obtain analytical evidence of how firms financial characteristics and financial performance are integrally connected, using Nigeria as a test case. The plan entailed the following steps:

   (i)   Calculation of financial ratios considered appropriate for the study
   (ii)   Trend analysis of the ratios calculated
   (iii)   Investigating the possibility of collinearity among the ratios
   (iv)   Using the relevant ratios (liquidity, leverage and activity dimensions) to examine their relationship with financial performance (profitability ratios), noting their variances and correlations.

4.2 Variables Measurement

The number of variables examined was limited to only four: liquidity, leverage, activity and financial performance. These variables were identified to be most popularly used by researcher (such as, Jaggi and Considine, 1990; Hutchinson and Mengersen, 1993; Brigham, 1995; Rose, Westerfield and Jaffe, 1999) to define financial characteristics and were consistent with the objectives of the present study.

    (i) Liquidity:
            Acid test ratio = (Quick assets)/Current liabilities
    (ii) Financial Leverage:
            Debt ratio = Total debt/Total assets
    (iii)Activity:
            Asset turnover = Sales/Total assets
    (iv)Financial performance:
            This was measured using the following variables:
            (a) Return on capital employed (ROCE) = Net profit/Capital employed
            (b) Return on sales = Net profit after tax/Sales

            This approach has been popularly used by researchers such as Rose, Westerfield and Jaffe, 1999.

4.3 Model Specification

The generalized mathematical model form is symbolically represented as:

$$Y_t = \beta_o + \beta_1\chi_{1t} + \beta_2\chi_{2t} + \ldots \beta_p\chi_{pt} + \epsilon_t \qquad \text{(Eq. 4.3.1)}$$

Where;

Y_t = Dependent variable

$X_t \ldots \chi_{pt}$ = Independent variables
ϵ_t = error term
By making some standard assumptions, equation 4.3.1 is restructured into linear multiple regression equation (Eq. 4.3.2) as follows:
$$Y_t = \beta_o + \beta_1\chi_{1t} + \beta_2\chi_{2t} + \beta_3\chi_{3t} + \epsilon_t \qquad \text{(Eq. 4.3.2)}$$
Where;
Y_t = Profitability

$\chi_{1t} =$ Liquidity
$\chi_{2t} =$ Leverage
$\chi_{3t} =$ Activity

5.0   **Data Analysis and Discussion**

From the model specified in sub-section 4.3, the effects of financial characteristics on financial performance was tested using the regression method and the results summarized in Tables 1, 2 and 3. From Table 1, the R Square is 19.7%, inferring that the independent variables only explain about 19.7% of the total variation in the dependent variable. In order to have full grasp of the relationship for practical inference, it is important to note that among the independent variables only activity is insignificant. While 19.7% of the variance in the dependent variable (financial performance) is jointly explained by liquidity and leverage, over 80% of it is begging for attention in the improvement of activity.

In practical terms, financial performance is anchored majorly on firm level of activity which needs to be heightened to ensure improved performance. Thus, as surprising as this finding might appear, it should be borne in mind that return on capital employed and net profit after tax were negatively related to asset turnover. This was undoubtedly so in view of the fact that asset turnover was arrived at by dividing sales by total assets. In this wise, an increase in asset turnover resulting from increased sales would bring about a decrease in net profit after tax since the latter is derived by dividing net profit by sales. Secondly, return on capital and net profit after tax are fundamentally related, with the possibility of multicollinearity when they are used together.

In the light of the above reasoning, table 2 further shows that the p-value of 0.0000 associated with F- test is less than 5% level of significance, indicating that the overall model is a good fit. Moreover, as evidenced in table 3, the constant term is significant at 5% level of significance, with financial performance assuming the value of 5693.861 when the dependent variables are excluded from the model.

With respect to the hypotheses, correlation analyses have provided reasonable evidence of individual relationship between the independent variables and financial performance. With the exception of activity dimension of financial characteristics, the rest dimensions have positive and significant effects on financial performance. The result of the correlation analysis is summarized in Table 4. Before testing the hypotheses, tolerance and variance inflation factor (VIF) was conducted to test for multicollinearity of the independent variables. The results revealed that there is no collinearity among the explanatory variables, given that VIF values of 1.059, 1.035, and 1.039 for liquidity, leverage and activity respectively were less than 10 (Table 3).

The hypothesis of no relationship between financial performance and liquidity (acid test ratio) is rejected given that the p-value of 0.019 associated with the t-test is less than 5% level of significance. This indicates that there is a linear relationship between financial performance and liquidity. Again, since the coefficient of liquidity is -9.080, it means any unit increase in liquidity would decrease financial performance by 9.080. Also, the correlations coefficient ($r = -0.278$) between the two variables is negatively significant given that P-value of 0.005 is less than 5% level of significance. The existence of negative relationship between these two variables should

be interpreted with care. The practical implication is that inadequate or surplus flow of liquidity will hamper the level of financial performance of the firm. This finding supports Van Horne (2004) theory of the trade off between liquidity and profitability (financial performance). The result is also consistent with other empirical researches on the subject (Okwu, Nworji and Oliwuru, 2012; Ajanthan, 2013; Ayodele and Oke, 2013) which affirm the fact that there is an optimal liquidity threshold that firms' efficiency can be reasonably guaranteed after which depletion would set in.

The hypothesis of no relationship between financial performance and leverage (debt ratio) is at best rejected given that the p-value of 0.000 associated with the t-test is less than 5% level of significance. Since the coefficient of leverage is 32.180, it supposedly implies that there is a linear relationship between financial performance and leverage, and that any unit increase in leverage would increase financial performance by 32.180. Also, the correlation coefficient (r = 0.386) between the two variables is positively significant since the P-value of 0.000 is less than 5% level of significance. That is, there exists a positive relationship between the two variables.

The relationship between financial performance and debt should be interpreted with caution as increase in leverage beyond a certain limit may not always result in increase in financial performance. As pointed out by Nguyen (2001) and corroborated by Pandey (2005), when the rate of return on assets exceeds the cost of debt, debt ratio is positively related to profitability. But, when the debt ratio continues to increase, the cost of debt will increase and profitability (as a measure of performance) will decrease making the debt ratio to be negatively related to the profitability.

The hypothesis of no relationship between financial performance and activity (asset turnover) is supported as the p-value of 0.718 associated with the t-test is greater than 5% level of significance, indicating that an insignificant positive relationship exists between the variables. The coefficient of activity is -1.738, meaning that a unit increase in activity would decrease financial performance by 1.738. Also, the correlations coefficient (r = 0.053) between the two variables is not significant given that P-value of 0.604 is greater than 5% level of significance.

This finding follows the earlier explanation given on the regression results that return on capital employed and net profit after tax were found to be negatively related to asset turnover since asset turnover was arrived at by dividing sales by total assets. The effect of an increase in asset turnover resulting from increased sales invariably brought about a decrease in net profit after tax since the latter was obtained by dividing net profit by sales. Consequently, in view of the limited number of observations or sample frame used for the study, the finding was obviously distorted.

5.0 Concluding Remarks
In this study, we have examined the financial characteristic of select quoted manufacturing firms in Nigeria and provided evidence of their relationship with financial performance. The empirical results using regression and correlation indicate that the independent variables, measured by liquidity and leverage ratios are significantly correlated and jointly explain part of the variance in the dependent variable, while activity ratios proved otherwise.
Notwithstanding the few exceptions to the general findings occasioned by the approach of deriving the dependent variable, the strength of the study is its practical implication that statistical significance alone is not enough to explain the relationship between the dependent and

independent variables. The fallout of this is that despite the overall significance of the model, it can only explain a very small variation in the dependent variable due to the negative relationship that exists among the variables used in deriving the financial performance and activity ratios.

On the basis of the foregoing, we recommend that future studies should increase the period of observation, disaggregate the dependent variables, and separately model them against the independent variables using canonical correlation model. Furthermore, we wish to underscore the shortcomings of ratios in performance evaluation, particularly as items in the financial statements are subjected to different definitions and the fact that a number of information is lost in the process of computing ratios. In this wise, for meaningful analysis of financial statements, consideration should always be given to economy-wide as well as industry and firm specific factors. Overall, the study offers evidence that firms' stakeholders, particularly the management should give adequate attention to financial statement analysis as part of the financial decision support system.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
	0.444	0.197	0.172	1970.16151

Source: Researchers' computation

Table 2: ANOVA (Over all Model Significance)

Model	Sum of Squares	df.	Mean Square	F	Sig. (P-value)
Regression	91395822.148	3	30465274.049	7.849	0.000
Residual	372627490.362	96	3881536.358		
Total	464023312.510	99			

Source: Researchers' computation

Table 3: Individual Parameter Significance

Model	Coefficients	Std. Error	T	Sig. (P-value)	VIF
Constant	5693.861	751.904	7.573	0.000	
Liquidity	-9.080	3.809	-2.384	0.019	1.035
Leverage	32.180	8.539	3.769	0.000	1.059
Activity	-1.738	4.799	-0.362	0.718	1.039

Source: Researchers' computation

Table 4: Correlations

		Financial Performance	Liquidity	Leverage	Activity
Financial Performance	Pearson Correlation	1	-.278[**]	.386[**]	.053
	Sig. (2-tailed)		.005	.000	.604
	N	100	100	100	100
Liquidity	Pearson Correlation	-.278[**]	1	-.169	-.099
	Sig. (2-tailed)	.005		.092	.327
	N	100	100	100	100
Leverage	Pearson Correlation	.386[**]	-.169	1	.181
	Sig. (2-tailed)	.000	.092		.071
	N	100	100	100	100
Activity	Pearson Correlation	.053	-.099	.181	1
	Sig. (2-tailed)	.604	.327	.071	
	N	100	100	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

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CONTAGION EFFECT OF BREXIT REFERENDUM ON NIGERIA STOCK MARKET

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Abstract

The study examined the contagion effect of BREXIT referendum on the performance of the Nigerian stock market. Event Study methodology was adopted to analyze the data obtained from the Nigerian Stock Exchange (NSE) spanning the period 1st May, 2015 to 31st June, 2016. The results provided evidence that the BREXIT referendum negatively and significantly impacted on all share index (ASI) of the NSE which was used as proxy for stock market performance during the study period. The results further indicated that on the event day and till the 5th post-event day, the stock market returns showed a negative response to the events. The study concluded that the information content of the BREXIT referendum is useful for valuing securities in the market. These findings have important implications for the optimal strategies of risk-averse stock market investors. Hence, the study recommended that the Government and the Nigerian stock market key players should keenly watch and monitor emerging events around the globe, as these often have implication for emerging markets through contagion.

Keywords: *Abnormal returns, contagion, event study, stock market.*

1. Introduction

Globalization, or internationalization has made the world so interconnected, leading to improvement in market efficiency through information and communication technology enhancement that has hugely shortened the time for transference of policies, news and actions from one financial market to another. Some studies have documented that prices in the financial market fluctuate consequent upon major events. Example of such major events are national elections result announcement, legalization of trade unions, national labour union strike, annual budget announcement, referendum result, etc. (Osuala, Onoh and Nwansi,2018; Khan, Baig, Usman, Shaique and Shaikh, 2017; Sathyanarayana, and Gargesha, 2016; Osuala and Agbeze, 2016). Stock markets can be influenced by sudden events but the manner and rate at which the market reacts to such events will vary depending on the type of event being investigated and also on the "environment" in question. It is likely that conclusions reached based on developed markets might differ in comparison to emerging markets.

The Efficient Market Hypothesis (EMH) which was propounded by Fama (1970) maintains that the prices of securities reflect all the available macro and micro economic information. This assumption of perfect capital market is hinged on the belief that the investors and other capital market participants are rational in their decision making process. Still, emerging facts from the field of behavioural finance have come to cast aspersions on this belief held by EMH theorists. Behavioural finance protagonists maintain that the stock market is not altogether efficient. Some of the new fields in behavioural finance such as the Overreaction Hypothesis (OH) claims that

investors overreact to emerging information in some cases. For example, stock prices may move upward too far in reaction to favorable news, and may also move downward too far in reaction to unfavorable news (De Bondt and Thaler, 1985, 1987). Another emerging field in behavioural finance is the Uncertain Information Hypothesis (UIH) which holds that uncertainty and risk will increase in financial markets following the release of unexpected information so that investors cannot properly react to unexpected news, and therefore they could initially set security prices below their fundamental values. According to the UIH, there will always be a positive market correction following both favorable and unfavorable events (Ajayi, Mehdian, and Perry, 2006; Mehdian, Perryand Nas, 2008). Besides, several recent empirical studies have documented evidences of irrationality and deviations from sound investment judgments on the part of capital market participants, and have laboriously tried to prove that the stock market is not entirely efficient as claimed by EMH. Behavioural finance also suggests that psychological factors influence investors' investment decisions.

BREXIT referendum, being a significant event, is expected to have a contagion effect across financial markets around the globe, especially emerging market economies. Stock markets ideally are expected to react to the event. But the challenge for investors and regulators is the fact that they are usually uncertain about the timing, magnitude and direction of the reaction (Isaac, Yinping, Braimah and Ramous 2016). The referendum would have a very robust economic implication for market investors and regulators around the world especially from the context of the EU. It is in the light of the foregoing that this study analyzed the contagion effect of BREXIT referendum on Nigeria stock market.

This study is unique in the sense that there has not been a study to the best of the knowledge of the authors that empirically explored the connection between BREXIT referendum result announcement and stock market performance in Nigeria using the event study methodology.

2. **Review of Related Literature**

BREXIT is an abbreviation for "British Exit". BREXIT is a new concept, and it refers to the United Kingdom referendum to exit from the European Union (EU). This referendum involved a Yes or No vote by the citizens of United Kingdom either to exit or remain in the EU. Proponents of BREXIT believe Britain is being held back by the EU, which they say imposes too many rules on business, and charges billions of pounds annually in membership fees for little in return. Moreover, they feel that Britain must reduce the number of people coming to Britain to live and work, and also take back full control of their borders. On June 23rd, 2016, the people of Britain voted to exit from the EU, which is considered an important referendum. Withdrawal from the EU has been a right under Article 50 of the Treaty on European Union of EU member states since 2007 (Capriglione, 2016).

The European Union is an economic and political partnership among 28 European countries. In order to avoid going to war and to improve the economic cooperation with each other, these countries agreed to form the EU after the World War Two. Since then, these countries treat their association as 'one market', allowing goods and people to trade around. To facilitate the same, they traded with a single currency "Euro", which was used by around 19 member countries. Estimates put the EU GDP at more than $18,000 billion and a population of more than 500 million, and it is considered to be the biggest economy in the world (Capriglione, 2016).

Contagion is a situation in which feelings, ideas, or problems spread very quickly from one place to another. Wagan and Ali (2014) defined it as the spread of financial disturbances from one country to others. According to Asongu (2012), contagion effect could be explained as the process of market change transmission to other countries after a country experiences a major event. Secondly, contagion effect could be explained as the propagation of shocks between two countries in excess of what should be expected, based on the fundamentals after considering co-movements triggered by common shocks. Lastly, contagion effect is defined as the change in the transmission mechanisms that take place during a period of turmoil, and is appreciated by a significant increase in cross-market correlations.

Schmukler (2004) identified three channels of contagion. The first is called *real links* which are often associated with trading activities, and which can also be explained as spillover effects across countries. These real links have generally been associated with trade or foreign direct investment. For example, if two countries are trading partners and compete in the same external market, a devaluation of the exchange rate of one country deteriorates the other country's competitive advantage. In order to rebalance its external sectors, the losing country would want to devalue its own currency. The Sino-American trade relation today is a typical example.

The second channel is called *financial link*. This is a situation where two economies are connected through the international financial system. This connection is created when international investors engage in global diversification of financial portfolios and connect different economies financially. Countries with internationally traded financial assets and liquid markets tend to be subject to contagion. Banks and institutional investors can spread a crisis from one country to another. For example, when international investors decide to shift their portfolios following the outbreak of a crisis in one country, they need to sell assets from third countries to hedge their positions as noted by Kodres and Pritsker (2002). This mechanism puts downward pressure in asset values from these countries, thus propagating the initial shock.

Lastly is the channel due to herding behaviours or panics. The root of herding behaviour is asymmetric information. When information remains costly, investors must remain uniformed. Therefore, investors try to infer future price changes based on how other markets react. Furthermore, in the context of asymmetric information, what the other market participants are doing might convey information that each uniformed investors do not have (Calvo and Mendoza, 2000). The subject of herding behaviour is one of multiple equilibria. If markets regard a country's state to be good, then large capital inflows can take place. If markets judge the country as being in a bad state, then rapid capital outflows and consequently, a crisis can take place. In a world of "multiple" equilibria external shocks can quickly force the economy to shift from a "good" to a "bad" equilibrium. When investors suddenly become concerned about emerging markets for any reason, Wall Street reacts and European markets follow. When investors observe a crisis in Thailand, they may react to it thinking about a potential crisis in Indonesia and Malaysia, and a crisis indeed takes place. Both developed and developing countries' markets are prone to these panics. Because investors know little about developing countries, they are probably more vulnerable to herding behaviour in these markets. Unfortunately, uninformed investors are the ones that find market changes more informative.

3.0 **Methodology**

The study examined the impact of BREXIT referendum on the Nigerian stock market using event study methodology. For the purpose of the study, the needed data comprising of current market price of some selected stocks and all share index (ASI) sourced from the Nigerian stock exchange daily official list over the period 1st May 2015 to 31th June 2016 were used. The judgmental sampling approach was used and each of the companies selected was expected to meet the following criteria:

    i. It must have been listed in the Nigerian stock market some six months before the period of the study.

    ii. It must also have the necessary data required for the study period.

    iii. It must be a company that does not have a constant current market price.

3.1 Model Specification

The standard event study method was used for analyzing relevant data set obtained for the study. An event study measures the impact of new information on the return of financial assets. Osuala (2010) outlined the basic steps in an event study analysis as follows:

    i. *Identification of the event date*. This is the date on which the event occurred, that is, when the market first learnt of the event.

    ii. *Definition of the event window*. This refers to the number of trading days preceding and following the event date that are considered necessary to capture both the leakage, if any, and the time needed for the data to effectively reach the marketplace.

    iii. *Definition of the estimation period*. The estimation period is the period of time over which no event has occurred. It is used to establish how the returns should behave normally (i.e., in the absence of the event).

    The time-line for a typical event study is shown in figure 1.

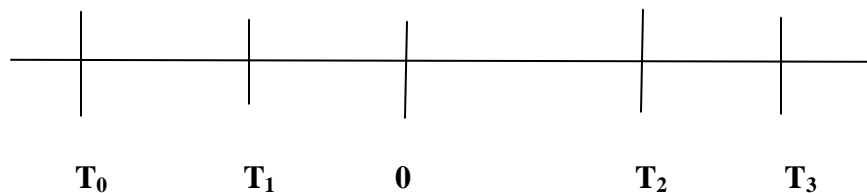$$T_0 \qquad T_1 \qquad 0 \qquad T_2 \qquad T_3$$

Fig. 1: The time-line for a typical event study
Source: *Compiled by author*.
• The interval T_0-T_1 is the estimation period (estimation window)

  • The interval T_1-T_2 is the event window
  • Time 0 is the event date in calendar time
  • The interval T_2-T_3 is the post-event window
  • There is often a gap between the estimation and event periods

iv. *Selection of the sample of firms*. This entails definition of a criterion to screen the firms based on 3.0 (i - iii) above.

v. *Calculation of "normal" returns* (the returns that would have occurred in the absence of the event). There are several approaches for characterizing the normal returns, namely, the mean return, the market return, portfolio return and risk-adjusted return. Each of the methods has its own pros and cons.

vi. *Calculation of abnormal returns* (that is the excess return arising from the occurrence of the event of interest. To calculate the abnormal returns (ARs), the actual return for the sample firms for each day in the event window are subtracted from the estimated normal return for each day in the event window. The cumulative aggregation of the ARs yields the cumulative abnormal returns (CARs).

vii. *Evaluation of the statistical significance of the Average Ab*normal *Retur*ns *($\overline{AR}$) a*nd Cumulative *Ab*normal *Retur*ns. By determining the statistical significance of the $\overline{AR}$, you are then determining the significance of the event, which is the punch line of an event.

The market return approach was used for characterizing the normal returns, and it is given as:

$R_{it} = a_i + \beta_i R_{mt} + e_{it}$ [1]

where:

R_{it}: is realized rate of return of the *i*-th security during period *t,*
R_{mt}: is rate of return on the equally-weighted market index (m) at period *t*,
e_{it} : is a random variable that is expected to have a mean value of zero.
a_i, β_i: are the intercept and slope parameters for firm *i,* respectively.

The abnormal return (AR) for the *i-th* common stock on day *t*, is given by:

$$AR_{it} = R_{it} - (\hat{a}_i + \hat{\beta}_i Rm_t)$$ [2]

where $(\hat{a}_i + \hat{\beta}_i Rm_t)$ is the expectedrate of return,[E(R)]; the coefficients $\hat{a}_i$ and $\hat{\beta}_i$ are Ordinary Least Squares estimates of a_i and $\beta_{i,}$ estimated from a regression of daily security returns on daily market returns from t = -60 to t = -1 (t = -60 to t = -1 is the estimation window). It should be noted however, that in an efficient market (where investors have rational or unbiased expectations), E(AR$_{it}$) = 0, where E(AR$_{it}$) is expected abnormal return.

The individual security's abnormal returns, AR$_{it}$, is aggregated and averaged across all the observations in order to obtain the average abnormal return at time *t,* (AR$_t$) as shown below:

$$\overline{AR_t} = \frac{\sum_{i=1}^{N} AR_{it}}{N}$$ [3]

where N is the number of events in the sample. The reason for averaging across firms is that stock returns are noisy, but the noise tends to cancel out when average cuts across a large number of firms. Finally, the average abnormal returns are tested for their statistical significance.

Before the statistical significance of the abnormal returns can be determined, the standard deviation of the abnormal returns in the estimation period needed to be computed first. To do this, the following steps were followed:

(a) For each time period *t* in the estimation period, the average abnormal return over all securities was calculated. For example, as the estimation period in this study is 60 days and there are 23 companies in the sample, after calculating average of all companies in the sample there will be 60 average abnormal returns (one for each day). Algebraically:

$$\overline{AR}_t = \frac{\sum\limits_{i=1}^{23} AR_{it}}{N}$$

where $\overline{AR}_t$ is the average abnormal returns across all companies at time *t* in the estimation period.

(b) The average abnormal return over all companies for the whole estimation period had to be calculated. To do this, the average of the average abnormal returns in the estimation period, ($\overline{\overline{AR}}^{PEP}$) was calculated. Algebraically:

$$\overline{\overline{AR}}^{PEP} = \frac{\sum\limits_{t=1}^{T} \overline{AR}_t}{T} \tag{5}$$

where $\overline{\overline{AR}}^{PEP}$ is the average abnormal return over all companies in the control period and $\overline{AR}_t$ is the average abnormal return over all securities in period *t*.

$\overline{AR}_t$ and $\overline{\overline{AR}}^{PEP}$ are used in the calculation of the standard deviation of the abnormal returns. Abnormal returns from the event period are not used so that the standard deviation estimate is protected from being biased by the uncharacteristic movements in share price returns during this period.

Given the estimates for $\overline{AR}_t$ and $\overline{\overline{AR}}^{PEP}$, then the expected abnormal return's standard deviation was estimated.

(c) The standard deviation of the abnormal returns in the estimation period was obtained using the formula:

$$\sigma(AR) = \sqrt{\frac{\sum\left(\overline{AR}_t - \overline{\overline{AR}}\right)^2}{T-d}} \tag{6}$$

where T represents the length of the pre- event window, and *d* is the number of parameters.

(d) In the last but one step, the average abnormal return over all securities in each period in the event period was calculated. The individual security's abnormal returns (AR_{it}) is aggregated and averaged across all the observations at a distinct time using the formula:

$$\overline{AR_t}^{EP} = \frac{\sum_{i=1}^{N} AR_t^{EP}}{N} \qquad [7]$$

where N is defined as the number of firms in the sample and *t* refers to period t in the event time. By aggregating the periodic average abnormal returns over a particular time interval, L cumulatively, the cumulative average returns (CAR) was obtained.

$$CAR_t = \sum_{i=1}^{L} \overline{AR}_L \qquad [8]$$

Where *L*= length of the event window,

(e.) The final step is to test the statistical significance of each average abnormal return $\overline{AR}_t$ and cumulative abnormal return CAR_t in the event period. This is simply done by dividing each average abnormal return in the event period by the standard deviation estimate calculated in (c) above. If we presume that the average abnormal returns over all companies are independent, identically distributed and come from a normal distribution, the test statistic is distributed as a Student's *t* with the degrees of freedom equal to (*T-l*). Averaging the abnormal returns as was done takes care of data problems such as cross-sectional correlation. The *t* – statistic is obtained as:

$$t = \frac{AR_t^{EP}}{S(\overline{AR})} \qquad [9]$$

where AR_t^{EP} is average abnormal return at time, *t* in the event window and *S(AR)* equals estimate of the standard deviation of the average abnormal return estimated over the estimation window. For cumulative average abnormal returns, the t-test *formula is:*

$$t = \frac{CAR_t}{(\sigma_{i,PRE} \sqrt{Nt})} \qquad [10]$$

where *Nt* equals the absolute value of event day, *t* plus 1 (Kusnadi and Sohrabian, 1999).

4. Findings and Discussions

Table 1 shows the result of the abnormal returns in the Nigerian stock market in response to the BREXIT referendum result

Table 1. Results of Average Abnormal Returns and Cumulative Average Abnormal Returns across the Event Window

Event window	$\overline{AR_t}^{EP}$	t-value	CAR$_t$t-value		Critical Value
-5	7.904544	1.421425	7.903544	0.579961	1.833
-4	5.744064	1.032919	13.6456	1.096924	
-3	5.554543	0.998839	19.19872	1.725409	
-2	-5.57397	-1.00233	13.62450	1.414046	
-1	7.009807	1.26053	-6.61035	-0.840490	
0	-10.3221	-1.85616	-16.54543	-2.974290	
1	-10.9028	-1.96976	-27.49536	-3.498570	
2	-11.5416	-1.96059	-38.39534	-3.985710	
3	-11.1954	-2.07546	-49.9356	-4.489302	
4	-11.1954	-2.01321	-61.135 6	-4.916052	
5	-11.4723	-2.06299	-72.6624	-5.32977	

Source: Compiled by the authors

The result indicates that on the event day and till the 5th day after the occurrence of the event, the stock market returns showed a negative and statistically significant response to the event. The t-values of the average abnormal returns and cumulative average abnormal returns from the event day to the 5th post-event day were statistically significant at 5 percent level which suggests that investors at the Nigeria stock market viewed Britain's exit from the European Union as a significant negative development with grave adverse effect on the market. In other words, the referendum result had a contagion effect on the Nigerian stock market.

4.2 Descriptive statistics on the performance of the Nigeria stock market subsequent to the BREXIT referendum.

Descriptive statistics were used to examine if indeed BREXIT referendum and Nigeria stock market *all share index* exhibited time varying volatility and leptokurtosis. The result of the descriptive analysis is presented in table 2.

Table 2: Descriptive statistics of the performance of the Nigeria stock due to BREXIT referendum

Parameter	AARB	AARA	CARB	CARA
Mean	4.126	-11.212	9.548	-49.908
Medium	5.740	-11.200	13.620	-49.930
Maximum	7.900	-10.900	19.190	-27.490
Minimum	-5.570	-11.540	-6.610	-72.600
Std. Dev.	5.505	0.292	9.875	17.861
Skewness	-1.385	-0.046	-0.926	-0.015
Kurtosis	3.104	1.304	2.542	1.692
Jarque-Bera	1.602	0.601	0.758	0.356
Probability	0.449	0.740	0.684	0.837
Sum	20.630	-56.060	47.740	-249.540
Sum Sq.Dev.	121.206	0.340	390.091	276.092
Observations	5	5	5	5

Source: *Computed by the author from data obtained from CBN statistical bulletin 2017. AARB = Average Abnormal Returns before the Event; AARA = Average Abnormal Returns after the Event; CARB = Cumulative Abnormal Returns before Event; CARA = Average Abnormal Returns after the Event.*

The result in Table 4.2 showed that the sum of the average abnormal returns before the event, average abnormal returns after the event, cumulative abnormal returns before the event, and average abnormal returns after the event in Nigeria within the period under study were 20.63%, -56.06%, 47.74%, and -249.54% respectively. The mean average abnormal returns before the event, average abnormal returns after the event, cumulative abnormal returns before the event, and average abnormal returns after event in Nigeria during the event period were 4.13%, -11.21%, 9.55%, and -49.91% respectively. It is observed that, the standard deviation values of average abnormal returns before the event, average abnormal returns after the event, cumulative abnormal returns before the event, and average abnormal returns after the event in Nigeria during the event period under study were 5.51%, 0.29%, 9.88% and 17.86% respectively, an indication of high volatility in the market arising from the referendum result announcement. As shown in table 4.2, all series are negatively skewed suggesting an asymmetrical left tailed distribution. Furthermore, the Jarque-Bera statistics of the series indicated that all the series exhibited normality.

5. Conclusion

The study examined the contagion effect of BREXIT on the Nigerian stock market using the event study methodology. From the result of the analysis, it is concluded that BREXIT caused statistically significant negative abnormal return in the stock market. The study recommends that the Government and the Nigerian stock market key player should keenly watch and monitor emerging events around the globe, as these often have implication for emerging market economies through contagion.

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INSURANCE FIRMS RISK APPETENCY AND DEMAND FOR REINSURANCE IN NIGERIA

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Abstract

This paper examines the risk appetite of insurance firms with respect to their demand for reinsurance in Nigeria. The objectives of the study include to examine the influence of growth of gross premium, capital adequacy, risk retention ratio and operating profit (measures of risk appetite of insurance companies) and reinsurance dependence on ceded premium and ratio of ceded premium (indicators of demand for reinsurance). The study design is ex-post facto method and secondary data was collected from Central Bank of Nigeria Statistical Bulletin 2018 and Nigeria Insurers' Digest of various years. Data was limited to 24 years (1996-2019). Data was analysed using unit root, conitegration and multiple regression method. It was established from the results that capital adequacy, risk retention ratio and operating profit of insurance companies significantly influence reinsurance dependence on ceded premium and ratio of ceded premium while growth of gross premium positively affects ratio of ceded premium. Based on this, it was concluded that there is a long-run significant relationship between insurance appetite and demand for reinsurance in Nigeria. Recommendations include the need for insurance companies to increase their demand for reinsurance by increasing their risk appetite through building up their capital adequacy and also policy makers to provide a framework that allows insurance companies to cede more of their businesses to reinsurance firms in Nigeria.

Introduction

The importance of the insurance industry in the Nigerian economy is underpinned by its ability and capacity to provide protection against numerous risks and, to provide succor when there is loss to the insured in form of compensation based on the insurance contract. It also provides investable resources from the pool of premium income from the different insureds. Thus, the insurance industry is considered vital to economic growth and development. This importance has been asserted from time to time by several studies such as Abass and Obalola (2018); Chen, Hamwi and Hudson (2001); and Cummins and Weiss (2009) and insurance practitioners in Nigeria to underscore the fact that the consumption of insurance is relevant and inevitable for individuals, government and private organizations. This is because the industry helps to check the negative effects of risk. In this case, while the insurance companies provide protection for the insured against risk, there is also the reinsurance companies which provide increasing capacity for the management of various risks by the insurance companies. The reinsurer is the insurer for the insurance companies.

The mainstay of insurance business is the mutualistic relationship between insurance and reinsurance companies. While the various insurance companies' provision of protection to the rest of the economy signals increases in their risk appetite, the reinsurance firms provide more protection to the insurers, making sure that all the risks are spread very widely and effectively

that even the largest of those risks can be accommodated without unduly burdening an individual, government or corporate consumer of insurance products or services. Suffice it to say that, perhaps there cannot be a thriving insurance business without a proper and effectively functioning reinsurance segment. Therefore, as the demand for insurance policies increases, it is expected that the demand for reinsurance on the part of the insurance companies must also appreciate. This is based on an increasing capacity for the insurance firms to take more risks. Thus, increased business for the insurance firms will likely mean increased appetite for risks in the economy. This is expected to increase the demand for reinsurance, therefore enhancing reinsurance business in the country.

As more insurance companies assume more risks occasioned by them taking more insurance businesses individually or through syndication, the risk appetite of the industry will likely increase. Through this, there will be more reinsurance business. This is simply because reinsurance serves the vital purpose that provides the original insurer the chance to at least make some gains or breakeven from the insurance transaction (Abass and Obalola, 2018). Since the consumer of insurance product is insured by the insurance firms, reinsurance insures the insurance business and as such it is expected that perhaps there should be the likelihood of the existence of a relationship between increased consumption of insurance products and the level of demand of reinsurance, especially where more risks are assumed by the insurance companies.

Increased consumption of insurance in this case either by the individuals, government agencies and institutions and corporate bodies is expected to be fueled by the embarking of each of these groups in more risky waters of business. This is further enhanced through increased capitalization of insurance and reinsurance firms. Where this is the case, these consumers of insurance could be said to be anything but risk averse. This increased voracity for risky ventures especially under economic, political and socio-cultural conditions such as obtained in Nigeria may indicate an increased risk appetite. This will translate to more businesses, more investments, and increased commitment of various resources towards productive ventures. An increased level of risk appetite for all classes of insurance consumers is likely also to increase the capacity of the insurance companies as they write more policies, hence increased level of gross premium collected, lower retention ratio, and increased ceded premium. This capacity is expected to be enhanced and embellished by reinsurance firms by giving them the pedestal and spine to provide policies to higher limits. There is need to examine the possibility of a relationship between risk appetite of insurance companies and their demand for reinsurance in Nigeria.

Statement of the Problem

With more than fifty-five (55) insurance firms operating as life, non-life, composite and takaful insurance providers in Nigeria, having risk-loving consumers rather than risk-averse consumers will be consequent to increased generation of more revenue through gross written premium income, more investments, and expansion of more products and services. This consequently is expected to rub off on the three (3) existing registered reinsurance firms in the country since there will be increased ceding of business as well as decreased retention ratio by the conventional insurance firms. However, there are various challenges that bedevil the insurance industry in Nigeria, like decreased level of awareness for insurance products, indifference attitude of consumers in Nigeria to insurance consumption, problems of delayed payments of claims, challenges of marketing of the insurance policies, and dire economic conditions in the country. This may make insurance firms to take less risks, amounting to low-

risk appetite due to decreased patronage and unfavourable economic conditions. This my likely affect the demand for reinsurance as far as less gross premium is written by the insurance companies.

Furthermore, many industry experts have decried the increasing level of most companies patronizing foreign insurance companies when it comes to high-risk products that come with huge amount of premiums. This undermines the risk appetite of the local or domestic insurance companies, leading to less ceding of premium or businesses to the reinsurance firms in the industry. There is need to examine the veracity of this assertion. Similarly, empirical studies on risk appetite and the demand for insurance in Nigeria have had minimal mention than deserved in insurance literatures especially in Nigeria. This has been due to the perceived unsatisfactory performance of the Nigerian insurance industry in a prospective large market with huge potentials with reasons adduced for this to include poor claims management, increasing level of poverty, unfavourable pricing of insurance products and so on. This could limit the risk appetite of insurance companies, and affect their demand for insurance. It is on this bases that this study examines the influence of insurance firms risk appetite, considering growth rate of gross premium collected, risk retention ratio, capital adequacy ratio and solvency ratio, on the demand for reinsurance in Nigeria.

Research Objectives

The primary purpose of this research is to examine the influence of insurance firms risk appetite on the demand for reinsurance in Nigeria. Specifically, this study sought to achieve the following objectives:

i. To examine the influence of growth of gross premium collected, solvency ratio, risk retention ratio, operating and capital adequacy of insurance firms on reinsurance gross premium.
ii. To find out if there is any relationship between growth of gross premium collected, solvency ratio, risk retention ratio, operating and capital adequacy of insurance firms and ratio of ceded premium to reinsurance companies.

Research Hypotheses

The following hypotheses were formulated for this study:

H_{01}: Growth of gross premium collected, solvency ratio, risk retention ratio, and capital adequacy of insurance firms have no significant influence on reinsurance gross premium.

H_{02}: There is no significant relationship between growth of gross premium collected, solvency ratio, risk retention ratio, capital adequacy of insurance firms and ratio of ceded premium to reinsurance companies.

Risk Appetite in the Insurance Industry

For insurance companies, the risk appetite notion is at the core of their concerns, lying at the essence of their activities. This notion of risk appetite defines the risk that any insurer is willing to take to carry out each operation successfully. This is because, sustainability and profitability of the insurer is dependent on the insurer's capacity to mutualize and manage risks, a task that requires a flawless in-house organisation. The insurer is also required to take into account restrictions and obligations set out by the legal framework. In doing this within the company, it is up to the general management and to the board of directors to devise mechanisms

and operating principles that make it possible to fulfill the objectives set out by management and shareholders. This implies that insurance and reinsurance companies' do not all share the same vision of risk, with guidelines varying considerably from one company to another. Some insurers would underwrite risks that others would not. This appetite or attraction for risk depends on a multitude of factors which include shareholders' requirements in terms of profitability, the level of expertise attained, experience acquired in the area considered, competition, and reinsurance or retrocession coverage.

While exploring the risk appetite concept in scholarly research, Aven (2013) explained that a definition that states that risk appetite is "the level of risk that an organisation is willing to accept", only shows a downward side of the concept while the definition which states that risk appetite is "the amount of risk an entity is willing to accept in pursuit of value", exposes the value dimension of the concept. Aven (2013) argues that a risk appetite statement that incorporates a value dimension may improve the risk considerations by shifting the focus from "isolated risk acceptability judgments" to more "balanced considerations" that are more in line with "basic principles of risk management". In line with this, Aven (2013) proposed a general definition of risk appetite of an insurance company to be "appetite for risky activities in pursuit of values". Risk appetite is thus the amount of specific risk and aggregate risk that an organisation chooses to take during a defined time period in pursuit of its objectives.

Furthermore, Chapman (2006) posits that risk appetite is the degree of risk, on a broad-based level, that an insurance business is willing to accept in pursuit of its objectives. Management of insurance firms considers the business's risk appetite first in evaluating strategic alternatives, then in setting boundaries for downside risk. D'Arcy (2009) explains that risk appetite is the level of uncertainty an insurance company is willing to assume given the corresponding reward associated with the risk. An insurance company with a high-risk appetite would be a company accepting more uncertainty for a higher reward, while a company with a low-risk appetite would seek less uncertainty, for which it would accept a lower return. Finally, the Financial Stability Board (FSB) through its "Principles for a Risk Appetite Framework" published in 2013 (FSB, 2013) explained that risk appetite as the aggregate level and types of risk a financial institution is willing to assume within its risk capacity to achieve its strategic objectives and business plan. Here, risk capacity refers to the maximum level of risk the financial institution can assume given its current level of resources before breaching constraints determined by regulatory capital and liquidity needs, as well as other customers and stakeholders (FSB, 2013).

Insurance Risk Appetite and Reinsurance Demand

Reinsurance demand can also be termed as reinsurance utilization (Abass and Obalola, 2018). Thus, reinsurance demand is the purchase of reinsurance by an insurer not only for the apparent current condition of risk assumed but also its future conditions (Desjardins & Dionne, 2017). The decision to reinsure can be seen as a specialised form of risk finance that may further lead to the relaxation of regulatory constraint on the ratio of capital to insurance, underwriting capacity, expected bankruptcy costs, and capital management decision (Garven & Tennant, 2003).

Cummins and Weiss (2002) assert that the market of reinsurance is based on pure risk, that is, the risk category where loss is the only possible outcome, with no positive or beneficial result. The individuals and businesses transfer their pure risk to insurers and in turn pay an adequate amount as consideration in the form of a premium. The insurer, on the basis of law of large numbers, then diversifies the risks by making pools of loses related to many policyholders, so that the losses can become more predictable. The insurers may transfer all, or part of risk to a reinsurer, whether local or global. The insurers demand reinsurance because it reduces their burden of pure risk.

Furthermore, Garven and Tennant (2003) argued that the success of an insurer is not solely dependent upon an adequate amount of premium but also on the provision of credible assurance to policyholders that their claims will be paid in the event of a loss. The insurer uses reinsurance to cover its two concerns. First is to pay the claim in the event of a loss and second is to remain financially solvent and stable. Meier and Outreville (2006) argued that by using reinsurance the direct insurer can increase its volume of premiums more than it would be able to with the given amount of capital.

Accordingly, Swiss Re (2002), Baur and Donoghue (2004) and Cummins and Trainar (2009) assert that reinsurance provides advisory services to primary insurer such as advice on underwriting and pricing policies. The reinsurers' greater experience of dealing with the risks develops extensive expertise relating to pricing, insurance underwriting and exposure management that can cause a significant increase in the economic value of the primary insurer. Reinsurers provide useful information and play an important role in setting rates, adjusting claims, assessing risk, underwriting risk and assisting insurers in handling claims more efficiently, selecting premiums, designing reinsurance contracts and analyzing the existing portfolios of the direct insurer. Chen, Hanwi and Hudson (2001), Swiss Re (2003), Zeng (2005), Powell & Sommer (2006) and Cummins et al. (2008) emphasized that reinsurance provides stability of losses experienced and specialized services which cause a reduction in the unnecessary volatility of a firm's earnings.

Theoretical Framework

Corporate Demand Theory (CDT)

According to Abass and Obalola (2018), this theory was propounded by Mayers and Smith (1990) and later expanded and supported by Adiel (1996) and Plantin (2006). Corporate Demand theory explains the motives for an insurer to demand for reinsurance and also contains the premises for the positive and negative aspect of reinsurance. The theory proposes that consumption of reinsurance is beneficial on the short run while an over reliance may indicate that the risk undertaken by an insurer is low and may be at huge cost (Lee & Lee, 2012; Froot, 2001). This theory implies that if the demand for reinsurance by an insurance firm is low, then the risk appetite of that insurance company is also low. Conversely, if the reinsurance demand is high, then the insurance firm has a high appetite to insure various degrees of risks

Thus, the Corporate Demand Theory (CDT) provides the motives for the purchase of reinsurance explaining that the main motivation for purchasing reinsurance is increased risk assumed (Plantin, 2006; Hoerger, Sloan and Hassan, 1990; Adiel, 1996; Redja, 2004; Cole and McCullough, 2006; Adams, Hardwick and Zou, 2008). The implications of this theory to an

insurance firm with high-risk appetite is an increase in reinsurance premium, and lower retention capacity. This theory therefore recognizes increased reinsurance demand will lead to reduction in gross premium collected, a decrease in retention ratio, and an increase in ceded premium. These forms most of the variables being used in this study, hence this theory is the anchor theory of this study.

Empirical Review

Abass and Obalola (2018) investigated the impact of risk appetite, reinsurance utilisation on the performance of non-life business in the Nigerian insurance market. The study employed mixed method research design, a pragmatist paradigm that allows combination of qualitative and quantitative approaches within different phases of the research process. The quantitative study adopted regression analysis using logarithmic transformation of model while the qualitative study adopted thematic content analysis. The findings of the study established statistically significant influence of risk appetite on reinsurance utilization.

Iqbal and Rehman (2014a) examined the relationship between reinsurance demand and performance of domestic non-life stock insurers currently operating in the private sector in Pakistan. The results of this study were found to be consistent with previous studies performed in other parts of the world. The results showed that reinsurance utilization improves the performance of the firm, as such it enhances risk appetite or the capacity of the insurance firms to take higher risks. Cummins, Feng and Weiss (2011a) investigated the reinsurance-risk management counterpart relationships in property-liability insurers in United States of America using Corporate Demand Theory (CDT) as a base. They study found that ceding firms' performance (increased appetite for risk) is positively related to reinsurance utilization and exposure, but adversely related to concentration in reinsurance counterparties.

The negative impact of reinsurance to insurance companies was highlighted by Lee and Lee (2012) through the study examining the determinants of insurer retentions for property-liability insurance companies in the Taiwan insurance industry. The findings from the study proved that insurers that are more profitable are better prepared to absorb large unexpected losses if they cede more to reinsurance companies (increased reinsurance demand). The findings also revealed that insurance companies' performance and reinsurance are interdependent. Cole and McCullough (2006) found that the firm size of an insurance company affects the demand for reinsurance, while Baunan and Berge (2016) while exploring an understanding of what risk appetite is by examining the most influential enterprise risk management frameworks, reports from practitioners, and scholarly research on the subject, found that that there is a consensus in the literature that risk appetite is a top-down element of enterprise risk management, and enhances demand for reinsurance.

Methodology

Quantitative research method was adopted in this study. This research method was utilized because it allows for the collection and use of secondary data to establish and determine the nature and degree of relationships between dependent and independent variables in this study. The population of this study comprised of all the insurance and reinsurance companies in

Nigeria. The population of this study is fifty-eight (58) insurance companies which comprised of fifty-five (55) insurance firms and three (3) reinsurance companies in Nigeria (National Insurance Commission (NAICOM, 2020).

The secondary data for the study was sourced through Nigeria Insurers' Association (NIA) Digest (various years), Insurance Market Statistics of National Insurance Commission (NAICOM) (various years), and Central Bank of Nigeria (CBN) Statistical Bulletin 2018. The data used were aggregate data of all the insurance and reinsurance companies as reported by these sources

Data collected was limited to 24 years (1996-2019) due to difficulty in obtaining data on the variables for the period of 2020 and years before 1996. The dependent variables used as measures of reinsurance demand include reinsurance dependence on ceded premium and ratio of ceded premium (Obalola and Abass, 2018) while the indicators of risk appetite of the insurance industry (Independent variables include growth rate of Gross premium income, risk retention ratio, capital adequacy and operating profit. Data on the dependent variables which include reinsurance dependence on ceded premium (RDCP) and ratio of ceded premium (RCR) was computed from the data collected from the secondary sources earlier stated as and using the formulas provided in Obalola and Abass (2018) and Aduloju and Ajemunigbhunm (2017).

Reinsurance dependence on ceded Premium (RDCP) = $\dfrac{\text{Net Premium Ceded}}{\text{Total Assets of Insurance Industry}}$

Ratio of Ceded Premium (RCR) = $\dfrac{\text{Net Premium Ceded}}{\text{Net Premium of Insurance Industry}}$

The models for this study are as follows:

i. $RDCP = \beta_0 + \beta_1 GPR + \beta_2 CAD + \beta_3 RTR + \beta_4 PRT + \mu_1$ (1)

ii. $RCR = \beta_0 + \beta_1 GPR + \beta_2 CAD + \beta_3 RTR + \beta_4 PRT + \mu_1$ (2)

Where:
RDCP = Reinsurance Dependence on Ceded Premium (Reinsurance Premium)
RCR   = Ratio of Ceded Premium
GPR   = Growth rate of Gross Premium of Insurance Industry in Nigeria
RTR   = Risk Retention Ratio of Insurance Industry in Nigeria
CAD   = Capital Adequacy of Insurance Industry in Nigeria
$\beta_1, \beta_2, \beta_3, \beta_4$ = regression coefficients

β_0 = regression constant or intercept

μ_1 = error term

Multiple regression method was adopted for the analysis of data in this study. Augmented Dickey Fuller (ADF) unit root test was conducted to determine the presence or absence of unit root in the variables. Johansen Cointegration was also used to establish cointegration among the variables.

Results and Discussion

Data Presentation
The data for this study is presented in Table 1.
Table 1: Trend on Reinsurance Dependence on Ceded Premium (RDCP), Ration of Ceded Premium (RCR), growth rate of Gross Premium (GPR) of insurance industry, Capital Adequacy Ratio (CAD), Retention Ratio (RTR) and Operating Profit (PRT) from 1996 to 2019.

YEAR	RDCP (%)	RCR (%)	CAD (%)	RTR (%)	GPR (%)	PRT (₦'Million)
1996	3.580855	9.341692	39.10922	47.5	-17.99	9437.200
1997	3.382870	11.72647	44.34467	41.5	-1.35	9264.300
1998	3.134554	11.11639	43.21565	39.3	6.82	9732.100
1999	2.623985	9.011590	51.09829	59.2	24.89	8674.100
2000	2.091422	5.717854	45.64783	75.2	54.35	16902.000
2001	1.782119	4.800100	59.09963	79.3	28.63	22870.800
2002	1.746174	3.941951	58.45057	47.3	30.31	30909.800
2003	1.218347	3.485140	41.05950	50.1	15.03	34026.600
2004	0.966731	2.724979	54.61871	62.3	15.33	38016.800
2005	0.968087	2.914542	42.02708	55.5	34.66	55063.200
2006	0.654073	2.465628	30.92860	69.2	20.93	5307.700
2007	0.480697	2.306234	28.48455	74.1	9.22	18199.415
2008	1.548919	7.019594	30.43625	72.4	41.93	6334.538
2009	1.460445	5.593340	32.36535	77.2	21.08	19503.585
2010	1.888272	7.021045	33.28988	77.3	2.75	4315.506
2011	1.522323	5.379636	30.52549	77.1	11.71	5008.842
2012	1.755735	4.609537	29.67105	76.4	43.46	5324.608
2013	1.713732	4.804750	26.64957	74.1	6.23	4997.577
2014	1.461887	4.176075	24.13693	72.3	9.60	-691.724
2015	1.512468	4.554887	22.68632	69.4	6.48	6133.426
2016	1.475335	4.854412	20.73149	67.2	1.09	15021.490
2017	1.051511	4.155500	19.92041	73.3	30.79	18836.931
2018	1.253200	4.585100	23.03310	72.5	36.55	23266.090
2019	1.396200	4.635500	25.73550	68.1	38.53	29483.050

Source: Central Bank of Nigeria (CBN) Statistical Bulletin 2019, Nigeria Insurers Association (NIA) Digest (various years), and Industry Market Statistics by National Insurance Commission (NAICOM) (various years).

Data Analysis
        Pre-estimation analysis of the data was conducted using correlation and unit root test. Bivariate correlation was conducted to establish the absence of multicollinearity, while unit root analysis was conducted to determine to ensure the absence of non-stationarity of data, ensuring the adequacy of the data for possible multiple regression analysis.

Correlation Analysis

This analysis was conducted using simple bivariate to establish the existence or not of multicollinearity in the variables used in the study. The correlation results are presented in Table 2:

Table 2: Correlation Results for Variables

Variable	RDCP	RCR	CAD	RTR	GDPR	PRT
RDCP	1.000000					
RCR	0.927817	1.000000				
CAD	0.318916	0.194049	1.000000			
RTR	-0.552033	-0.490346	-0.443650	1.000000		
GDPR	-0.343923	-0.326320	0.209732	0.338482	1.000000	
PRT	-0.336971	-0.412724	0.485055	-0.292687	0.278187	1.000000

Source: Researcher's Computation (2021)

Table 2 shows that the correlation coefficient between Capital Adequacy (CAD) and reinsurance dependence on ceded premium (RDCP) and Ratio of Ceded Premium is 0.3189 and 0.1940 presently, which indicates a low positive correlation between the variables. The correlation between growth rate of Gross Premium of the insurance firms' (GPR) and reinsurance dependence on ceded premium (RDCP) and Ratio of Ceded Premium -0.3439 and -0.3263 presently, which indicates a negative correlation between the variables. Also Operating Profit (PRT), also showed a negative correlation with reinsurance dependence on ceded premium (RDCP) and Ratio of Ceded Premium, with R value at -0.3369 and 0.4127 respectively. Finally, Risk Retention Ratio (RTR) showed negative correlation with reinsurance dependence on ceded premium (RDCP) at -0.5520 and Ratio of Ceded Premium at -0.4903. Given the determined correlation coefficient values, it can be stated that there are no multicollinearity problems with the variables.

Unit Root Analysis

This test was used to establish the stationarity properties of the data series in this study. Thus, as suggested by Levine, Lin and Chu (2002) data set with non-stationary properties will be one whose statistical properties change over time A data series or time series will be said to possess stationarity properties if the statistical properties remain constant over time. This indicates that the data set will not produce spurious results when subjected to multiple regression analysis. This analysis was conducted using Augmented Dickey-Fuller (ADF) test.

This analysis carried out using the Augmented Dickey Fuller (ADF) unit root analysis as used in Obalola and Abass (2018) and Aduloju and Ajemunigbhunm (2017). The results from these analyses are presented below in Table 3.

The summary of the result of the unit root analysis is presented in Table 2.

Variable	ADF Test Statistic	Critical Values at 5%	P-value	Level of Integration
RDCP	-4.128356	-3.020686	0.0051	1
RCR	-4.707577	-3.020686	0.0015	1
GPR	-3.988876	-3.012363	0.0065	0
CAD	-3.892381	-3.029970	0.0088	1
RTR	-4.441608	-3.029970	0.0028	1
PTR	-6.961721	-3.020686	0.0000	1

Source: Researcher's Computation (2021)

Table 1 indicates that the hypothesis of the existence of unit root was accepted for all the variables except growth rate of Gross Premium (GPR) of insurance companies. GPR was found stationary at order of integration equal to zero (i.e., level). Further analysis of the other variables was conducted at order of integration equal to unity (first difference). At first difference, the remaining variables which include reinsurance dependence on ceded premium (RDCP), ratio of ceded premium (RCR), capital adequacy ratio (CAD), risk retention ratio (RTR) and operating profit (PRT) were found to be stationary since their p-values were all within the 5% acceptable region. Based on this, the null hypothesis of the presence of unit root is rejected for the data set in all the variables.

Cointegration Analysis

Cointegration is an econometric technique which embeds the notion of a long-run relationship between variables in a statistical or economic model of those variables. Hence, if a long-run relationship exists, then it implies that the variables in question are co-integrated. Therefore, to establish the possibility of the existence of a long-run relationship between the risk appetite of insurance firms and the demand for reinsurance in Nigeria, a cointegration analysis is justified, showing the possibility of the existence of a sustained short-run equilibrium relationship in the long-run. This test was conducted using Johansen cointegraion Test. The result of the test for the two models stated above in equations 1 and 2 are presented below:

Table 4: Unrestricted Cointegration Rank Test
Series: RDCP GPR CAD RTR PRT
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.955104	114.8485	69.81889	0.0000
At most 1 *	0.764328	52.78040	47.85613	0.0161
At most 2	0.567640	23.87414	29.79707	0.2058
At most 3	0.290930	7.104217	15.49471	0.5655
At most 4	0.011345	0.228207	3.841466	0.6329

Series: RCR GPR CAD RTR PRT
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.932350	104.8751	69.81889	0.0000
At most 1 *	0.673147	51.00703	47.85613	0.0245
At most 2	0.517989	28.64216	29.79707	0.0675
At most 3	0.462757	14.04638	15.49471	0.0817
At most 4	0.077819	1.620274	3.841466	0.2031

Source: Researcher's Computation (2021)

Table 4 presented the Johansen cointegration test result for the two models in the study. For the models with RDCP, GPR, CAD, RTR and PRT, and RCR, GPR, CAD, RTR, PRT the p-values results of the trace statistics and max-eigenvalue indicates the presence of at least two (2) cointegrating equations in each of the models. Thus, the null hypothesis is rejected. This indicates that there is a possible ling-run equilibrium relationship between reinsurance dependence on ceded premium (RDCP), ratio of ceded premium (RCR) and the independent variables. The independent variables are growth rate of gross premium income (GPR), capital adequacy (CAD), risk retention ratio (RTR) and operating profit (PRT).

Multiple Regression Analysis

The Ordinary Least Square (OLS) regression result for the first model is presented in Table 5:

Table 5: OLS multiple regression output for Model One

Dependent Variable: RDCP
Method: Least Squares
Date: 04/19/21   Time: 09:57
Sample: 1996 2019
Included observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.992087	0.942967	4.233539	0.0004
CAD	0.021346	0.010711	1.992815	0.0608
RTR	-0.037359	0.011271	-3.314568	0.0036
GPR	0.000813	0.007596	0.107076	0.9159
PRT	-3.76E-05	9.46E-06	-3.970478	0.0008
R-squared	0.657567	Mean dependent var		1.694581
Adjusted R-squared	0.585475	S.D. dependent var		0.789444
S.E. of regression	0.508272	Akaike info criterion		1.667453
Sum squared resid	4.908476	Schwarz criterion		1.912881
Log likelihood	-15.00944	Hannan-Quinn criter.		1.732565
F-statistic	9.121307	Durbin-Watson stat		1.102663
Prob(F-statistic)	0.000275			

Source: Researcher's computation (2021)

Table 5 indicates that reinsurance dependence on ceded premium (RDCP) will increase by an average of 3.99% if all the independent variables are held constant. Furthermore, an additional 1% growth in Gross Premium income (GPR) of insurance companies will lead to an increase in reinsurance dependence on ceded premium (RDCP) by 0.0008%; a 1% increase in capital adequacy of insurance companies will increase RDCP by 0.02%; a 1% increase in risk retention ratio (RRR) will also lead to a decrease of 0.04% in RDCP while a 1% increase in operating profit (PRT) will lead to latent loss of 0.000037% in reinsurance dependence on ceded premium. The adjusted R^2 value of 0.5855 indicates the predictive power of the independent variables to explain the variations in reinsurance dependence on ceded premium. The remaining 41.45% is accounted for by other factors external to this study as shown by the standard error of regression. Also, Capital adequacy (CAD), risk retention ratio (RTR) and operating profit (PRT) all showed statistically significant relationship with reinsurance dependence on ceded premium given by their respective computed t-statistic values which were greater than the critical t-statistic value of 1.729 at 5% level of significance and degree of freedom of 19. The growth rate of Gross Premium (GPR) of insurance industry showed a positive with RDCP.

Based on the suggestions provided by Field (2009), a Durbin-Watson statistic (DW-Stat) value that lies between 1 and 3 is acceptable as being free of serial correlation, the Durbin-Watson (DW-stat) of 1.1 indicates the absence of autocorrelation. The F-statistic value of 9.12 indicates the robustness of the model in explaining the changes in the independent variables. This indicates goodness-of-fit. Since the probability of the F-statistic value is less than 5%, then

the null hypothesis will fail to be accepted. Therefore, growth rate of gross premium, capital adequacy, risk retention ratio and operating profit significantly influences reinsurance dependence on ceded premium.

The OLS multiple regression result for the second model is presented in Table 6:

Table 6: OLS multiple regression for model Two

Dependent Variable: RCR
Method: Least Squares
Date: 04/19/21   Time: 08:31
Sample: 1996 2019
Included observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.32996	3.279650	4.369358	0.0003
CAD	0.040419	0.037255	1.084935	0.2915
RTR	-0.127966	0.039201	-3.264392	0.0041
GPR	0.012748	0.026420	0.482494	0.6350
PRT	-0.000131	3.29E-05	-3.968904	0.0008

R-squared	0.605609	Mean dependent var	5.455914
Adjusted R-squared	0.522580	S.D. dependent var	2.558451
S.E. of regression	1.767778	Akaike info criterion	4.160375
Sum squared resid	59.37571	Schwarz criterion	4.405803
Log likelihood	-44.92450	Hannan-Quinn criter.	4.225487
F-statistic	7.293895	Durbin-Watson stat	1.123284
Prob(F-statistic)	0.000979		

Source: Researcher's Computation (2021)

Table 4 indicates that ratio of ceded premium (RCR) will increase by an average of 14.33% if all the independent variables are held constant. Similarly, an additional 1% growth in Gross Premium income (GPR) of insurance companies will lead to an increase of 0.01% in ratio of ceded premium (RCR); a 1% increase in capital adequacy of insurance companies will increase ratio of cede premium (RCR) by 0.04%; a 1% increase in risk retention ratio (RRR) will lead to a decrease of 0.13% in ratio of ceded premium (RCR) while a 1% increase in operating profit (PRT) will lead to 0.0001% decline ratio of ceded premium (RCR). The adjusted R^2 value of 0.5226 indicates the predictive power of the independent variables to account for the variations in ratio of ceded premium (RCR). The unaccounted 47.74% of variations in the dependent variable is by other factors alien to this study as shown by the standard error of regression. Furthermore, only risk retention ratio (RTR) and operating profit (PRT) showed statistically significant relationship with ratio of ceded premium (RCR) based on their respective computed t-statistics and probability values.

In line with the suggestions of Field (2009), there is no serial correlation given thee the Durbin-Watson statistic value of 1.12 lies between the acceptable range of 1 to 3. The F-statistic value of 7.29 indicates that the model is a good fit. Hence, with a probability value of 0.001, the null hypothesis will fail to hold and is rejected. Therefore, growth rate of gross premium, capital adequacy, risk retention ratio and operating profit significantly influences ratio of ceded premium (RCR).

Conclusion and Recommendations

The value insurance and reinsurance offer in an economy has been the subject of many studies. Despite this both are known to complement each other hence the performance of one somehow depends on the other. This is the case in as shown by the relationship between the insurance firms risk appetite, represented by retention ratio, capital adequacy, operating profit, growth rate of gross premium collected, and the demand for reinsurance as indicated by ratio of cede premium, and reinsurance dependence on ceded premium. With the reinsurance companies providing the insurance firms greater capacity for healthy competition based on the size of policies written, their ability to get businesses may depend to a large extent on their capacity to undertake or write up more risks. This was established in this study by the significant relationship between operating profit, risk retention ratio and capital adequacy and demand for reinsurance as indicated by reinsurance dependence on ceded premium and ratio of ceded premium. When more risks are written by insurance firms, with more net premium earned, and less the premium retained, thus signaling increasing demand for reinsurance. This aligns with the postulates of the corporate demand theory.

With diminishing risk retention ratio serving as a sign that insurance companies are consuming reinsurance products and services, showing significant relationship with ratio of ceded premium, and reinsurance dependence on ceded premium, while increase in the gross premium income relates directly to the ratio of ceded premium to reinsurance companies, increased risk appetite of insurance firms' influences their demand for reinsurance. Despite capital adequacy, retention ratio, growth of gross premium income, and operating profit having varying degrees of influence on the demand for reinsurance in Nigeria, it can be concluded that that risk appetite of insurance companies has a long-run relationship between risk and demand for reinsurance in Nigeria.

Based on this it is recommended that insurance companies should increase their risk appetite by increasing their capital adequacy, and retaining less premium in order to stimulate increased demand for reinsurance in Nigeria. One way is to enhance their capital bases. The soon to be implemented or enforced new re-capitalization regime is a right step in this direction. Also, there is need for insurance companies to generate more premium income. This will lead to increased ceding of premium to the reinsurance companies especially in cases where the higher risks are assumed.

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RISK-TAKING PROPENSITY, CAPITAL STRUCTURE AND PERFORMANCE OF INSURERS IN POST-RISK BASED CAPITAL REGIME IN NIGERIA

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Abstracts

This paper investigates the moderating role of risk-taking propensity in the relationship between capital structure and performance of insurance firms under risk based capital (RBC) regime in Nigeria. The aim of RBC is probably more of protecting the policyholders than the insurance companies and investors as empirical evidence on specific capital structure component such as equity and technical provision fund to which RBC has direct link with and firm performance with risk-taking as moderating variable is scarce; this could lead the company into practices that are less likely to improve their performance significantly. This study therefore examines the moderating effect of risk-taking propensity on: (i) the relationship between equity ratio and each of insurers' return on asset (ROA) and earnings per share (EPS); (ii)) the relationship between technical provision ratio and each of insurers' ROA and EPS. Data were collected from published financial report of listed insurers and analyzed with fixed and random effect models using two-stage least square (2SLS) estimation. Results show that risk-taking propensity moderates technical provision ratio and ROA relationship and do not moderate the relationship between technical provision ratio and EPS while equity ratio does not moderate the relationship between each of insurers' ROA and EPS. For performance optimization, further RBC policy should incorporate performance measures relating to technical provision fund and encourage insurers to take calculable risks with high capital raised to meet RBC requirements.

Key Words – Risk based capital, capital structure, risk-taking propensity, insurance performance, prospect theory.

1.0. Introduction

Capital structure is considered the foundation of corporate existence and has been studied extensively in corporate finance literature and related fields (Dhaene, Hulle, Wuyts, *et al.*, 2015; Santosa and Farinellib, 2015). Conventionally, finance theories and empirical studies describe capital structure as comprising of equity and debt, but insurance capital structure comprises equity and technical provisions (Florio and Leoni, 2017; Eling and Marek, 2014). Equity is ownership contribution whereas technical provision is the combination of financial debts (insurance funds, creditors and accruals) and outstanding claims, all of which constitute insurance liabilities (Dhaene, *et al.*, 2015). These liabilities have enormous opportunity costs such as loss of business, loss of premium, loss of profit, loss of credit worthiness, loss of fund and high rental costs that together, can affect insurance performance negatively. It is however, regrettable that studies on capital structure, although not exhaustive within insurance companies,

often limit measurement of capital structure to only financial debts which are interest bearing liabilities. This calls for a recalibration of capital structure to include the non-interest bearing liabilities when studying financial institutions like insurance firms. The need for this recalibration is to ensure that capital structure is adequately and correctly measured within insurance research failure of which could result in measurement error and ultimately unreliable estimates that can mislead the organization in their application and use of capital structure to drive performance.

In past studies, moderating effect studies on capital structure of financial firms that include both interest and non-interest bearing liabilities are scarce (Pervan, Curak, and Mariajnovic, 2012); few studies focused on banks while insurance is often left out (Pervan and Kramarić, 2010; Abor, 2007). However, even in few studies, there is no consensus on direct link between capital structure and performance. This inconsistency has led these authors to question the moderating effect of other variables such as Risk-taking Propensity (RTP) or risk-taking behaviour (RTB)) or corporate risk behaviour (CRB). This questioning is in line with the suggestion of past authors to include latent variables in the analysis of capital structure and firm performance relationship to see if the inconsistencies could be resolved. This is due, probably to the demonstration by some authors that CRB affects capital deployment vis-à-vis firm performance (Baranoff, *et al.,* 2007; Shim and Lee, 2017; Dan-Jumbo, 2016). In a mediated research framework, , though complex, mediated the association between 'capital structure' and 'firm performance' in the US (Eastburn and Sharland, 2017).

However, these authors did not address the level of risk-taking, which suggests further investigation. For instance, Eastburn and Sharland (2017) once said, "Overly-aggressive risk attitudes can foster outcomes which can ultimately undermine financial performance, while risk-averse activity can have its own ramifications on profits". This statement signifies that the level of risk-taking is an important factor in performance evaluation. The problem now is whether or not the level of risk taking can moderate the relationship between capital structure and performance of insurance companies in Nigeria. Finding answer to this question would enable insurance companies to take more or less risk and with which capital in order to drive performance. The overall objective of this study therefore, is to investigate the moderating effect of risk-taking behaviour on the relationship between capital structure and insurance performance following the implementation of RBC policy in Nigeria. Specific objectives are as follows:

i.   To examine the effect of insurance performance on capital structure
ii.   To examine the moderating effect of CRB on the relationship between equity ratio (EQR) and earnings per share (EPS) of insurers in Nigeria
iii.   To examine the moderating effect of CRB on the relationship between equity ratio (EQR) and returns on asset (ROA) of insurers in Nigeria
iv.   To examine the moderating effect of CRB on the relationship between technical provision ratio (TPR) and earnings per share (EPS) of insurers in Nigeria
v.   To examine the moderating effect of CRB on the relationship between technical provision ratio (TPR) and return on asset (ROA) of insurers in Nigeria

The inclusion of the first objective is to enable the researchers check if insurance performance measures are endogenous variables in the model which will informed the application of two

Stage Least Square (2SLS) estimation procedure to correct for the endogeneity or reverse causality problem in the estimated parameters.

The choice of insurance companies in Nigeria is germane in the sense that capital-performance relationship may change given the complexity and level of development of a country's capital markets (Shyu, 2013). Again, Nigerian has one of the biggest and most frequently regulated insurance markets in Africa. Recent regulation of concern is the proscription of fixed capital standards (FCS) and introduction of risk-based capital (RBC) requirement by the National Insurance Commission (NAICOM) under the aegis of solvency I. Although RBC policy is designed to protect policyholders, its unintended consequences on firm performance may have been overlooked. Principally, RBC demands that insurers hold an amount of capital to protect itself against adverse movements in its risk profile (Oyugi and Mutuli, 2014).

However, after implementing RBC policy, the Nigerian insurance sector is still weak (IMF, 2013) and as at 2020, the sector's penetration ratio is put at 0.7% of GDP (PWC, 2020) which is still an indication of a weak sector by global standard. Critics have said that such policy is unsuitable for developing economies because it can lead to excess capital, which can affect performance (Toporowski, 2008). This study contributes to existing literature on insurance capital structure, behavioural finance from insurance perspective by the introduction of risk-taking measures and to theory via prospect theory application in management science studies. The paper is discussed in five sections. Following this introduction are literature review, methodology, results and discussion, and finally conclusion and implications.

2.0   Literature Review

The review of relevant literature in this study is organized in two major sections namely he theoretical framework, and empirical framework. This is done to provide theoretical support and empirical support to the arguments advanced in this study on the hypothesized relationship among the variables of the study.

2.1. Theoretical Framework.

Capital-performance relationship has always been investigated using capital structure theories. The one which is applied here is the dynamic trade-off theory. To explain the introduction of CRB as a moderating variable, a second theory called the prospect theory is applied. The dynamic trade-off theory states that every firm has an actual and target capital level and what matters is the speed of adjustment (SoA) with which the firm moves toward the target level. Empirical model of this theory as used in literature (Akpan *et al.,* 2017b; Dang, Kim and Shin, 2012) identifies profitability (or performance) as relating with capital structure thus:

$$d_{it} \quad = \quad d_{it}^* + \mu_{it} \quad = \quad \beta^{'}X_{it} + \mu_{it} \qquad [2.1]$$

(Where d_{it} is actual leverage (debt) ratio; d_{it}^* = target leverage ratio; X_{it} = k x 1 vector of exogenous variables; β =vector coefficients; μ_{it} = error term.)

Performance (profitability) is one of the most used exogenous variables and substituting and making any of these determinants into model 2.1 will return a model used in this study where performance is the dependent variable and leverage the independent variable.

This study also applies prospect theory to explain the moderating role of risk-taking behaviour of organizations. The theory states that firm's CEOs (nay firm) exhibit both risk-seeking and risk-averting behavior when the outcome is either below or above reference points respectively (Holmes *et al*., 2011 and Shimizu, 2007). By inference, firms would seek risk when performance is low, probably to improve performance. This would imply that high risk taking would result in high performance; and because risk seeking involves the use of funds (equity or debt), the relationship between these funds and firm performance could be moderated by the level of risk taken by the firm. These theories are used to study these interrelationships using the framework presented in Figure I as propose by Akpan *et al.* (2017a).
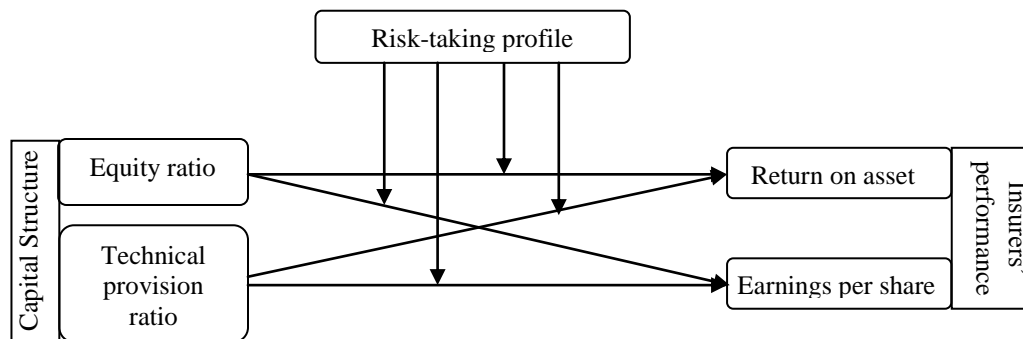

Figure I: Framework for Capital Structure, Risk-Taking Behaviour And Performance

2.2. **Empirical Reviews**

In brief, significant studies carried out in non-insurance firms have found both positive (Bandyopadhyay and Barua, 2016; Majumdar and Sen, 2010) as well as negative (Nwude, *et al*., 2016; Avci, 2016; Foo *et al*., 2015) association between capital structure and firm performance, but without reference any capital policy related regime. Others found no association (Davydov, 2016). In the insurance sector, some empirical results show no direct association between higher capital and performance of insurers (Muhlnickel *et al,* 2016). Another study showed that capital structure of insurers (measured by leverage ratio) and performance (measured by profitability) associates negatively (Kaya, 2015). In some studies, it is observed that insurers' performance is associated with capital and risk under RBC (Yusof, Lau, and Osman, 2015; Cheng and Weiss, 2012a&b; Lai, 2011) but they authors did not specifically used risk-taking behaviour as a moderating variable in their studies. This present study does used it to further explain the relationship between capital and performance of insurance companies in Nigeria. Risk is a complex phenomenon and it is an inextricable part of organizational life (Eastburn and Sharland, 2017; Dan-Jumbo, 2016). Risk-taking is defined in many ways by many authors (Hamid, Rangel, Taib, and Thurasamy, 2013); but in all, it is the propensity to engage in behaviours that have the potential to be harmful or dangerous, yet at the same time provide the opportunity for some kind of positive outcome.

Empirical outcomes shows that capital and risk-taking can interact to explain firm performance (Mankaï and Belgacem, 2015; Cheng and Weiss, 2013; Jokipii and Milne, 2011). It is argued that insurer's 'performance' depends jointly on the level of total risk in its asset-liability portfolio

as well as its capitalization (Shim, 2010). Some empirical studies showed that risk-taking positively moderates capital-performance relationship (Yung-Chieh, 2016; Vatavu, 2015). Others found negative moderation (Eikenhout, 2015) and mixed moderation effect (Hamidah, 2016). Capital 'structure' allocation is argued as having a link with insurance pricing, risk and performance management and that such allocation decisions are made within the framework of enterprise risk (Zec, 2012; Baranoff *et al.,* 2007). All of these show that risk-taking behaviuor of firms is an important in capital-performance relationship, yet it is rarely investigated using a moderated research framework where CRB is included as a moderating variable.

Literature on the effect of RBC policy implementation via capital structure (which measurement differs from conventional proxies) on specific performance measures of insurance firms are insufficient, hence this study. Following theoretical prediction, and contention that, 'borrowed capital (which technical provision fund or ratio - TPR is part of) can create wealth' (Muscettola, 2013); and that 'higher capital requirements are important to insurers' (Muhlnickel, *et al.,* 2016), our a priori expectations are contained in Table I.

3.0   Data and Methodology

3.1   Sample and Variables of Study

The data for this study were extracted from financial report of 15 listed insurers from 2008 to 2015 from the Nigerian Stock Exchange (NSE), NAICOM, and each company's website. The dependent variable of this study is performance of insurance companies, measured by earnings per share (EPS) and returns on asset (ROA). The independent variable is capital structure represented by equity ratio (EQR) and technical provision ratio (TPR). Insurer's risk-taking behavior (CRB) is the moderating variable. Asset growth, tangibility, interest rate, inflation rate, growth rate of gross domestic product (GDPr), age, size, and business risk constitute the controlled variables of the study. Some of the proxies and arguments for their use in this study follows other past studies (Bandyopadhyay and Baura, 2016; Kartheeswari, and Rajeswari, 2012Shim, 2010; De Haan and Kakes, 2010; Bromiley, 2010; Gomez-Mejia *et al.,* 2007). Table 1 presents variables and their operationalization.

Table 1. *Variables Description* and *Expected Signs*

Variables	Description	Code	Expected Signs EPS & ROA
Dependent			(+/-)
Earnings per share	Ratio of net profit to number of equity shares	eps	
Returns on assets	Ratio of net profit to total asset	roa	
Independent:			
Equity Ratio	Ratio of shareholders fund to total capitaisation	eqr	–
Technical provision ratio	Ratio of total technical reserves to total assets	tpr	+
Moderating			
Risk-taking behaviour	Dummy variable 1 for risk-taker and 0 otherwise	crb	+
Controlled:			
Insurer age	Natural log. of current less incorporation year	lag	–
Insurer size	logarithm of total asset	lsz	+
Asset tangibility	Ratio of fixed asset to total asset	tan	+

Insurer's growth	Ratio of change in total asset to total asset	igw	+
Tax rate	Ratio of current year's tax to EBIT in %	tar	−
Inflation rate	Annual consumer price index in %	inf	−
Growth rate of GDP	Value of gross total annual output in %	gdp	+
Opportunity asset risk	Variance in ROA	oar	+

3.2 Model Estimation

In this study, a fixed effect (FE) and random effect (RE) technique of analysis were employed using a two stage least square (2SLS) estimation procedures to account for endogeneity problem in our models. The models used is derive from model 2.1 and is similar to that used by past researchers (Abata, and Migiro, 2016; Olokoyo, 2013; Semykina and Wooldridge, 2010). The baseline models for this study are as follows:

$$caps = \delta_t + \alpha_1 roa_{i,t} + \alpha_2 eps_{i,t} + \alpha_3 oar_{i,t}$$
$$+ \alpha_4 crb_{i,t} + \alpha_5 lag_{i,t} + \alpha_6 lsz_{i,t} + \alpha_7 tan_{i,t}$$
$$+ \alpha_8 igw_{i,t} + \alpha_9 tar_{i,t} + \alpha_{10} linf_{i,t} + \alpha_{11} gdp_{i,t} + \mu_{i,t} \qquad [3.1]$$

$$Perf = \delta_t + \alpha_1 \widehat{cap} * crb_{i,t} + \alpha_2 lag_{i,t} + \alpha_3 lsz_{i,t} + \alpha_4 tan_{i,t}$$
$$+ \alpha_5 igw_{i,t} + \alpha_6 tar_{i,t} + \alpha_7 inf_{i,t} + \alpha_8 gdp_{i,t} + \mu_{i,t} \qquad [3.2]$$

Where $caps = \widehat{cap} = [\widehat{eqr}$ = predicted equity ratio, $\widehat{tpr}$ = predicted technical provision ratio]; Perf = Insurance performance measured by EPS and ROA; δ = constant term, α = coefficient for explanatory and controlled variables, μ = stochastic error term. Other variables are as defined in Table 1. However, model 3.1 is used to test for the first stage effect. Model 3.2 was used at the second stage to test for direct and interaction effect of the predicted and risk variables on EPS and ROA.

4.0   Results and Discussion

4.1. Descriptive statistics
The descriptive statistics of variables of this study is presented in Table 2 and discussions are restricted to key variables, which include EPS, ROA, EQR, TPR, and CRB. From table 2, the mean values for EPS and ROA are 1.5632 and 1.7365 respectively, meaning that sampled insurance companies have good performance during the period. However, performance in terms of ROA is better than in terms of EPS, meaning that, management gained more than shareholders did. The mean value for EQR and TPR are 0.6963 and 0.2548. This implies that sampled insurers had 69.63% of equity and only 25.48% of technical provision in its capital structure. This is in line with the known tradition that insurers naturally depend more on internal fund which equity is key constituent than external source of fund. CRB has the mean value of 0.4666, which indicates about 46.66% risk-taking preference of insurers, thus reflecting their known below average risk taking preferences.

Table 2: Descriptive Statistics of Variables

Variable	Obs	Mean	Std.Dev.	Min	Max
Roa	120	1.7365	.1180	.9998	1.9996
Eps	120	1.5632	.1226	1	2
Eqr	120	.6963	.1879	.138	.98
Tpr	120	.2548	.1502	.01	.743
Oar	120	1.6051	.2066	1.0001	2.0004
Crb	120	.4666	.5009	0	1
Lag	120	1.5921	.1263	1.23	1.756
Lsz	120	7.0034	.2482	6.573	7.9
Tan	120	.1081	.1266	.001	1.077
Igw	120	1.0781	.0880	1	2
Tar	120	1.5212	.0874	1	2
Inf	120	1.4597	.3191	1	2
Gdp	120	1.6133	.3270	1	2

4.2. **Correlations**

Table 3 contains correlation among variables. Interest rate had a reasonable high correlation with inflation and as such, it is excluded from the model. However, both EQR and TPR all have positive correlation with all performance measures (EPS and ROA) while CRB has a negative and positive correlation with ROA and EPS respectively. In all, at 50% threshold, there were no significant correlations among the explanatory variables used for this study.

Table 3: Correlation between Variables

	Roa	eps	eqr	tpr	oar	Crb	lag	lsz	Tan	igw	tar	inf	Gdp
roa	1.00												
eps	0.38	1.00											
eqr	0.03	0.03	1.00										
tpr	0.02	0.05	-0.91	1.00									
oar	-0.17	0.10	-0.28	0.34	1.00								
crb	0.00	-0.04	-0.35	0.29	0.31	1.00							
lag	-0.08	-0.04	-0.06	0.09	-0.07	-0.17	1.00						
lsz	0.07	0.19	-0.32	0.31	0.24	0.25	-0.07	1.00					
tan	-0.19	-0.13	-0.20	0.16	-0.07	0.20	0.18	-0.30	1.00				
igw	0.08	0.31	-0.21	0.23	0.17	0.10	0.01	0.35	-0.05	1.00			
tar	-0.11	-0.03	0.13	-0.14	0.04	0.09	0.01	-0.07	-0.04	-0.02	1.00		
inf	-0.13	0.13	0.13	-0.19	0.03	-0.27	-0.15	-0.15	-0.13	-0.11	0.02	1.00	
gdp	-0.10	0.02	0.19	-0.23	0.03	-0.26	-0.16	-0.17	-0.12	-0.01	0.13	0.46	1.00

4.4 **Regression Results**

Table 4 through to 8 presents regression results for each of the research thrust and objective as returned by their respective theory-based empirical models. Interestingly, in all the models their respective Wooldridge f-test and VIF values were insignificant, thus indicating the absence of autocorrelation and multicollinearity problems while F-test (for FE models) and Wald $X^2(10)$ (for RE models) values were all significant, indicating the goodness of fit of the respective models.

4.4.1 **Results of Insurance performance effect on capital structure**

To ascertain empirically, the existence of endogenous relationship between insurance performance and its capital structure, model 3.1 was applied and the result is presented in Table 4. The Housman results of 16.01 and 5952.79 show that RE and FE model were appropriate in this test for EQR and TPR respectively. The results show that EPS and ROA each relates negatively though insignificantly with TPR. Relying on theoretical prediction of a negative capital performance link, it is confirmed that, to some extent capital and performance are endogenous, hence the choice of 2SLS estimation procedure to handle this endogeniety problem.

Table 4: Insurance Performance Regression **on** *Capital Structure*

Regressands	Equity ratio (eqr)		Technical provision (tpr)	
Regressors	**RE**	**FE**	**RE**	**FE**
Roa	0.193	0.403	-0.254	-0.346
	(0.81)	(1.64)	(-1.20)	(-1.62)
Eps	0.143	0.147	-0.0854	-0.0973
	(1.05)	(1.12)	(-0.76)	(-0.89)
Oar	-0.0928	1.168*	0.171	-0.474
	(-0.79)	(2.56)	(1.81)	(-1.19)
Crb	-0.0792*	-0.0558	0.0351	0.0270
	(-2.20)	(-1.40)	(1.19)	(0.81)
Lag	-0.149	-1.449	0.107	1.338
	(-0.82)	(-1.77)	(0.73)	(1.93)
Lsz	-0.129	0.0649	0.0751	-0.0953
	(-1.49)	(0.52)	(1.07)	(-0.90)
tan	-0.332*	-0.0227	0.435*	0.344
	(-2.24)	(-0.13)	(2.44)	(1.49)
igw	-0.242	-0.247	0.175	0.208
	(-1.44)	(-1.59)	(1.27)	(1.60)
tar	0.105	-0.0317	-0.0654	0.0493
	(0.65)	(-0.20)	(-0.50)	(0.37)
inf	-0.0255	-0.0414	-0.0260	0.00439
	(-0.51)	(-0.77)	(-0.63)	(0.10)
gdp	0.0466	0.00368	-0.0495	-0.00984
	(0.97)	(0.07)	(-1.27)	(-0.22)
_cons	1.940*	0.774	-0.705	-0.619
	(2.46)	(0.46)	(-1.10)	(-0.43)
N	120	120	120	120
F-test/Wald $X^2(12)$	31.17***	2.68**		2.83**
R2	0.3323	0.0215	0.3200	0.0012
Hausman Chi2(12)	16.01		5952.79***	
Mean VIF	1.81			1.93

t statistics in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.4.2 **Results of Risk-taking Propensity effect on the link between EQR, and TPR and each of ROA and EPS**

Results for the above interrelationships are presented in Tables 7 and 8. Table 7 contains result for the interaction of risk-taking behaviour with EQR in explaining EPS and ROA. From the table, RE model predicts the interaction between EQR and risk taking in explaining both EPS and ROA. The model returned insignificant negative and positive coefficients of -0.0260 and

0.0471 for EQR-risk-taking interaction effect on EPS and ROA respectively. From these, we conclude that insurer's risk-taking does not moderate equity-performance (EPS and ROA) association. This means that, in RBC regime, investing equity capital in more risky project is less likely to result in increased performance in terms of EPS and ROA.

Table 7: *Moderating Effect Result* of *Risk-Taking* on *Equity* and *Insurers' Performance Association*

Regressors	Earnings per share (EPS)		Returns on Asset (ROA)	
	RE	**FE**	**RE**	**FE**
eqrhatcrb	-0.0260	-0.0344	0.0471	0.0992*
	(-0.72)	(-0.79)	(1.30)	(2.42)
lag	-0.0201	-0.432	-0.0526	-0.810
	(-0.19)	(-0.65)	(-0.41)	(-1.29)
lsz	0.0456	0.107	-0.0298	0.0673
	(0.84)	(1.07)	(-0.49)	(0.71)
tan	-0.122	-0.0593	-0.289**	-0.146
	(-1.27)	(-0.42)	(-2.87)	(-1.09)
igw	0.412**	0.390**	0.110	0.109
	(3.26)	(3.05)	(0.92)	(0.90)
tar	0.0346	0.139	-0.102	-0.116
	(0.28)	(1.07)	(-0.87)	(-0.94)
inf	0.0729	0.0637	-0.0368	-0.0433
	(1.94)	(1.46)	(-1.04)	(-1.04)
gdp	-0.0295	-0.0466	-0.0217	-0.0376
	(-0.80)	(-1.04)	(-0.62)	(-0.88)
_cons	0.741	0.869	2.171***	2.726*
	(1.57)	(0.76)	(4.19)	(2.50)
N	120	120	120	120
F-test/Wald $X^2(8)$	24.26**	3.10**	16.05*	2.09**
R2	0.1748	0.0910	0.1376	0.0319
Hausman Chi2(8)	14. 56		7. 71	
Wald chi2 (15)	-	-	-	
Wooldridge f-test	3.386		2.232	
Mean VIF	1.24		1.24	

t statistics in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8: *Moderating Effect Result* of *Risk-Taking* on *TP* and *Insurers' Performance Association*

Regressors	Earnings per share (EPS)		Returns on Asset (ROA		
	RE	**FE**	**RE**	**FE**	**FE – Robust**
tprhatcrb	0.0482	0.212	0.0811	0.354**	0.354**
	(0.58)	(1.85)	(0.99)	(3.30)	(3.16)
Lag	0.000753	-0.893	-0.0758	-1.360*	-1.360*
	(0.01)	(-1.29)	(-0.64)	(-2.10)	(-2.16)
Lsz	0.0378	0.171	-0.0459	0.103	0.103
	(0.62)	(1.71)	(-0.76)	(1.09)	(1.13)
Tan	-0.123	0.0712	-0.299**	-0.0454	-0.0454
	(-1.23)	(0.49)	(-3.01)	(-0.33)	(-0.33)
Igw	0.404**	0.352**	0.0861	0.0163	0.0163
	(3.21)	(2.75)	(0.71)	(0.14)	(0.17)
Tar	0.0382	0.0472	-0.107	-0.185	-0.185
	(0.31)	(0.36)	(-0.90)	(-1.49)	(-1.34)
Inf	0.0830*	0.0844	-0.0390	-0.0377	-0.0377
	(2.24)	(1.96)	(-1.09)	(-0.93)	(-1.35)

Gdp	-0.0205	-0.0259	-0.0204	-0.0247	-0.0247
	(-0.55)	(-0.58)	(-0.57)	(-0.59)	(-0.48)
_cons	0.722	1.216	2.360***	3.497**	3.497*
	(1.41)	(1.06)	(4.60)	(3.23)	(2.97)
N	120	120	120	120	120
F-test/ Wald X^2(10)	24.37**	3.53***		2.79**	59.98***
R2	0.1693	0.0378	0.1359	0.0157	0157
Hausman Chi2(8)	14.70		21.42**		
Wald chi2 (15)				1491.87***	
Wooldridge f-test	2.919			2.902	
Mean VIF	1.31			1.31	

t statistics in parentheses; * *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001

Table 8 contains result for the interaction of risk-taking behaviour with TPR in explaining EPS and ROA. Whereas, RE model predict TPR-risk taking behaviour interaction effect on EPS, a FE- corrected model predicts such association with ROA. The RE model returned an insignificant positive coefficient of 0.0471 for the relationship between EQR and ROA while the FE model returned a significant positive coefficient of 0.354 for the relationship between TPR and ROA. Generally, it is established that after implementing RBC policy in Nigeria, risk-taking does not moderate TPR-EPS association while it does on TPR-ROA association. This means that risk-taking with TPR improved led to improved ROA and no significant effect on EPS.

4.5   **Summary and Discussion of Findings**
From the findings of this study, capital structure measured by EQR, significantly contributes positively to EPS and ROA in RBC. This finding is implicitly supported by Vatavu (2015). The model returning this result shows that firm factors like age, growth risk-taking via investment and macroeconomic factors such as inflation play a significant deterministic role in this result, meaning that these factors must be considered in capital-performance related decisions on equity, EPS and ROA. However, measured by TPR, capital structure does lead to a marginal reduction in EPS as predicted by tradeoff theory while relating positively and insignificantly to ROA. This result affirms the statement that borrowed capital (*sic*. TPR) can destroy wealth (*sic*. EPS) (Muscettola, 2013). The insignificant positive association between TPR and ROA may be theoretically non-compliant. This signifies that RBC policy may have contravened the norms of operation within the sector. Thus, with EPS as corporate objective, it may be better to use more equity than debt-based financing under RBC scenarios.

Overall, there are some past studies supporting this positive finding (Nwude, *et al.,* 2016; Avi, 2016; and Shyu, 2013) as well as negative finding (Bandyopadhyay and Barua, 2016). Concerning CRB, the results show in general, that the level of risk-taking does not moderate capital-performance association except in the case of TPR and ROA. This draws attention to the fact that insurers are not known to be high risk-takers. This probably, is because they are equity-based financing entities. In that sense, there are huge agency problems because managers may not be creative and less likely to assume calculated risks. Instead, they tend to rely on equity fund to fulfill any obligation that may arise and invest in less risky projects. It is not surprising therefore, that the level of risk-taking does not moderate or result in higher level of performance as other authors found (Shyu, 2013; Vatavu, 2015). Thus, the more technical funds insurers had,

the more efficient they were in assuming risky projects than with equity funds during the period reviewed.

5.0   Conclusions and implications of study

In this paper, we investigated the direct and interaction effect among capital structure, risk taking behaviour and insurance performance from 2008-2015 in Nigeria. Based on the outcome of the analysis, we conclude that during this period, insurance firms recorded improved performance in EPS and ROA with equity and a marginal loss in EPS with technical provision. Risk-taking did not moderate capital structure–performance association except in the case of TPR and ROA. These findings present some theoretical, policy and managerial implications. Theoretically, the prediction of tradeoff theory does not support majority of the findings in this study. This would mean that other capital structure theories like free cash flow, agency theory etc, which predict positive association could be adopted in analyzing capital structure of insurance firms. This could lay support to the claim that capital structure of insurance firms is different from that of non insurance firms, hence the need for exclusive reconsideration of insurance capital structure in the light of theoretical prediction and analysis.

The policy implication is that, RBC may protect the insured, but EPS and ROA may be sacrificed, making it difficult to imagine how the insured could be protected when the firm is not performing better. Therefore, it may be important for policy makers to reconsider an inclusive performance goal in future RBC policy, taking into consideration performance-related risk-based factors. Such policy could be to impose maximum required capital (MRC) to foreclose the potential of holding excess capital and its associated costs. Less dependency on equity may be emphasized in such policy directive. Practical implications revolve around choice of financing. Our empirical evidence suggests that equity financing is better for insurers; but for high risk projects for high ROA, debt-based sources or TPR is most appropriate. Future studies should consider improving sample size, including other performance indicators and capital structure measure like retained earnings as well as other measures of risk-taking especially as real business world is not made of binary entities as risk-taking was so calibrated in this study.

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IMPLICATIONS OF FINANCIAL INCLUSION FOR ECONOMIC GROWTH IN NIGERIA

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Abstract
This paper was on examination of the implications of financial inclusion for economic growth in Nigeria. The importance of financial inclusion in Nigeria is underscored by the commitment of the government and financial regulatory authorities to capture the many financially excluded citizens, and thus promote inclusive growth in Nigeria. The objective of the study was to establish the impact of financial inclusion on economic growth in Nigeria. Descriptive and ex-post-facto designs were adopted and financial inclusion was measured by the number of bank accounts per 1000 adults (BBPA), the number of bank branches per 100,000 adults (BRBA), proportion of small firms with a line of credit (SFLC), and the number of automated teller machines (ATMs) in Nigeria while economic, growth was measured by the growth rate of real Gross Domestic Product (GDPr). Data were collected for 16 years (2004-2019) from IMF's Global Financial Inclusion Database 2019 and Central Bank of Nigeria (CBN) statistical bulletin 2019. Data were analyzed using descriptive statistical tests, single equation cointegration tests, and the ordinary least square (OLS) multiple regression method. The results revealed that the number of bank accounts per 1000 adults, and the proportion of small firms with a line of credit have an inverse impact on the growth rate of GDP. Also, the number of bank branches per 100,000 adults and the number of ATMs per 100,000 adults have a direct impact on the growth rate of GDP. However, the combined impact of the indicators for financial inclusion on the growth rate of GDP in Nigeria was found to be significant. The indicators of financial inclusion also showed a high predictive power having explained 68.64% of the variations in the growth rate of GDP. It was concluded that financial inclusion has significant and long-run implications for economic growth in Nigeria. Recommendations made include the need to prioritize digital financial services (DFS) in the country through the deployment of more ATMs in Nigeria and innovative financial products for small and medium scale enterprises in Nigeria.

Keywords: Financial Inclusion, Digital Financial Services (DFS), National Financial Inclusion Strategy, economic growth, Gross Domestic Product, Single equation cointegration.

1.0 Introduction

Globally, discussions on the value of any financial system to an economy within the context of finance and financial development, are centered on four interrelated phenomena. These are financial stability, financial deepening, financial efficiency, and recently financial inclusion. Financial stability deals with the ability of the financial system to facilitate and enhance economic processes and manage financial risks and absorb shocks. Financial depth determines the size of the financial institutions and markets concerning legal requirements or tradition,

quality of institutions, capital account openness, and trade openness. Financial efficiency deals with how well financial institutions and markets in the financial system deliver financial services, while financial inclusion involves the proportion of individuals and firms that have access to and use financial services ((International Monetary Fund, 2019).

The issue of financial deepening and inclusion has dominated financial and economic policies in Nigeria with recent empirical evidence suggesting the likelihood of a link between financial depth, inclusion, and economic growth and development (Onaolapo, 2015; Onalo, Lizam, and Ahmad, 2017). As such high level of financial depth has been associated with a decline in inequality, while financial inclusion is considered essential in alleviating poverty and generally towards achieving inclusive growth. This has led to the enunciation of financial inclusion policy and vigorous implementation by the Central Bank of Nigeria (CBN).

It is further noted that financial exclusion may be based on self-exclusion due to lack of trust or understanding of financial services, cultural or religious reasons, insufficient income, and having access through a family member, nevertheless, the lofty goals of financial inclusion to both financial development and economic growth cannot be overemphasized. These include increased access to finance, increased usage of the accessed finance, and greater innovations in financial services.

The revised National Financial Inclusion Strategy 2018 indicating that a total of 40.1 million adult Nigerians (41.6% of the adult population) were financially excluded in 2016, 55.1% of the excluded population were women, 61.4% of the excluded population were within the ages of 18 and 35 years, 34.0% had no formal education, and 80.4% resided in rural areas (Central Bank of Nigeria, 2018). Some related problems persist in terms of the implementation of the financial inclusion strategy. As such the prospects of financial inclusion are far-fetched.

Statement of the Problem

The financial inclusion objectives of the government in Nigeria include promoting a financial system that is accessible to all Nigerian adults at an inclusion rate of 80% by 2020 and boosting the growth of Gross Domestic Product (GDP) in Nigeria by 12.4% by 2025 (Central Bank of Nigeria, 2018). While serious efforts have been made through the roll-out of different programs such as rural banking, the proliferation of payment points through Point of Sale (POS) across the country, and licensing of mobile banking platforms such as Paga, FirstMonie, MTN mobile money, Opay, and others towards achieving the targeted financial inclusion rate, same cannot be said of the boosting of economic growth in Nigeria. This is because between 2018 and now, the economy has witnessed several negative growth rates culminating in a recessionary economy, and a reduction in domestic output. The rate of growth in Gross Domestic Product (GDP) has been abysmal when compared to the lofty goals set out through the promotion of financial inclusion policy in Nigeria. This may raise concerns on the capacity of financial inclusion to engender growth in domestic output in the country. With the foregoing, this paper is designed to examine the implications of financial inclusion for economic growth in Nigeria.

Objectives of the Paper

The main objective of this article is to examine the implications of financial inclusion to economic growth in Nigeria. The specific objectives include:

i. To examine the trend of financial inclusion in Nigeria in the past fifteen years (2004-2018).

ii.   To establish the implications of financial inclusion for economic growth in Nigeria from 2004 to 2018.

Based on this, the hypothesis for this study is given as follows:

H_0: Financial inclusion has no significant implications for economic growth in Nigeria

Significance and Limitation of the Paper

The study is expected to contribute to policy papers on financial inclusion by various authorities and agencies directly involved in the formulation and implementation of the National Financial Inclusion Strategy (NFIS) in Nigeria. These include the Central Bank of Nigeria, Deposit Money Banks (DMBs), Insurance companies, Finance companies, Discount houses, mobile money service providers and agents, Microfinance institutions (MFIs), savings and thrift institutions, and many more. Other stakeholders in the financial inclusion strategy which include telecommunications companies, Nigeria Interbank Settlement System (NIBSS), and other payment solutions providers expected to understand the importance of their services towards the success of financial inclusion strategy and consequently economic growth. This paper is limited by the unavailability of data on financial inclusion given that the issue of financial inclusion became apparent with the rollout of ATM services in 2005 and the adoption of the National Financial Inclusion Strategy (NFIS) in Nigeria in 2012.

This paper is divided into five sub-headings; the introduction, literature review, methodology, results and discussion, and conclusion and recommendations.

2.0   Select Literature Review
Conceptual and Empirical Discussion

In the context of the National Financial Inclusion Strategy (revised) 2018, financial inclusion is achieved when adult Nigerians have easy access to a broad range of formal financial services that meet their needs at affordable costs (Central Bank of Nigeria, 2018). The services include but are not limited to, payments, savings, credit, insurance, pension, and capital market products. Thus, financial inclusion means availability, accessibility, and use of formal financial service for all (Kumar, 2013). This implies that the provision of "access to payments and remittance facilities, affordable financial services, savings, loans, and insurance services by formal financial system is represented by financial inclusion strategy. In Nigeria, an investigation conducted by the Enhancing Financial Innovation and Access (EFInA) in 2010 showed that Nigeria has the highest proportion of financially excluded adults of about 46.3%, compared with 26.0% in South Africa, 33.0% in Botswana, and 32.7% in Kenya (Okoye, Adetiloye, Erin and Modebe, 2017). This was disheartening hence the introduction of financial inclusion strategy by the government. The advent of financial inclusion was aimed at:

i.   Providing ease of access to financial products and services,
ii.   Financial products must be within easy reach of all segments of the population and should not have onerous requirements.
iii. Use of a broad range of financial products and services

Thus, financial inclusion implies not only access but usage and innovations of a full spectrum of financial services including, but not limited to payments, savings, credit, insurance, and pension products. Under financial inclusion, financial products are designed according to the

need of people, financial products are designed to meet the needs of clients and should consider income levels, as well as access to distribution channels. In examining the meaning of financial inclusion, the Central Bank of Nigeria (2018) identified the following implications:

 i.   The requirement for financial products should be simple enough to bring such services within easy reach of all segments of the population.
 ii. Services should be broad enough to enable access, choice, and usage and specifically include but are not limited to payments, savings, credit, insurance, pension, and collective investment products.
 iii. Financial products should be designed to meet the needs of clients taking into cognizance income levels and nearness to clients to be served through proper and appropriate distribution channels.
 iv. Prices for financial services such as interest rates and other indirect costs should be affordable even to low-income groups.

The importance of financial inclusion has been shown by the effects of financial sector development which makes two mutually reinforcing contributions to poverty reduction. The first according to Beck, Demirguc-Kant, and Levine (2007) is its impact in accelerating economic growth and direct benefits to the poor and the second according to Akpan (2012) and Cull, Ehrbek, and Holle (2014), it provides appropriate financial services to help improve household welfare and spur small enterprise activity. Furthermore, Cull, Ehrbek, and Holle (2014) explained that there is also macroeconomic evidence to demonstrate that economies with deeper financial intermediation tend to grow faster and reduce income inequality. According to research conducted by McKinsey and Company (2016), the potential economic benefits of digital financial services alone as an essential component of financial inclusion include:

 i.   Bringing 46 million new individuals into the formal financial system
 ii. Boosting GDP growth by 12.4% by 2025 (US$ 88 billi6n)
 iii. Attracting new deposits worth US$ 36 billion
 iv. Providing new credit worth US$ 57 billion
 v.   Creating 3 million new jobs
 vi. Reducing leakages in the government's financial management annually by US$ 2 billion

Theoretical Framework

Several theories have been propounded concerning finance, financial development, and economic growth. One of such important theories is the financial development and economic growth theory. Financial development and economic growth theory are of the view that financial development is a major determinant of economic growth. The advocates for this view which include McKinnon (1973), Shaw (1973), Kapur (1976), and Fry (1978) maintained that financial development plays a key role in the process of economic growth.

Specifically, the theorists advocated for a liberal financial system to mobilize an increased volume of financial saving and allocate it to productive investment, thereby contributing to economic growth. This theory proposed that a repressed financial sector will hamper development in ways such as low savings rate, inefficient financial intermediaries, and restrictive financial policies for credit facilities and investment hence retarding economic growth.

Empirical Review

Having identified the enormous potentials of financial inclusion, an increasing number of empirical studies have been conducted and most of these had suggested that financial inclusion is a precondition for economic growth (Mohan, 2006; Chibba, 2009; Manji, 2010; Kpodar and Andrianaivo, 2011). Onalo, Lizam, and Kaseri (2017) examined the financial inclusion-growth relationship in Nigeria. The study evaluated the effects of deposits (RDDEPOSIT) of rural dwellers and loans (RDLOAN) to rural dwellers through rural branches of commercial banks, on Gross Domestic Product (GDP). The researchers found that rural dwellers' deposits and loans with rural branches of commercial banks have an influence on the performance of Nigeria's economy in terms of GDP.

Okoye, Adetiloye, Erin, and Modebe (2017) investigated the effect of financial inclusion on economic growth and development in Nigeria using the Ordinary Least Squares technique. Financial inclusion was measured in the study using the loan to deposit ratio, financial deepening indicators, loan to rural areas, and branch network. Economic growth was measured by growth in GDP over successive periods, while per capita income was adopted as a measure of poverty, hence an index of development. The researchers found that financial inclusion has promoted poverty alleviation in Nigeria through rural credit delivery. This study fails to capture the International Monetary Fund's globally provided basic indicators of financial inclusion which includes the number of bank accounts per thousand adults, the number of bank branches per a hundred thousand adults, proportion of small firms with lines of credit, and the number of Automated Teller Machines (ATMs) per a hundred thousand adults in Nigeria. This creates a gap in the literature.

Sarma and Pais (2011), in a cross country analysis, found that income, income inequality, adult literacy, telephone and internet usage, and urbanization is an important factor in explaining the level of financial inclusion in a country. The study argued that financial exclusion is a reflection of social exclusion, as countries with low GDP per capita have relatively lower rates of literacy, poorer connectivity, and lower urbanization seem to be less financially inclusive.

Allen, Carletti, Cull, Senbet, and Valenzuela (2014) found that population density is more important for financial development and financial inclusion than elsewhere. The study showed evidence that mobile banking improves financial access. In Nigeria; Onaolapo (2015) examined the effects of financial inclusion on the economic growth of Nigeria (1982 - 2012). The data employed consisted of bank branch network, loans to rural areas, demand deposits, liquidity ratios, capital adequacy, and Gross Domestic Product. Extracted data spanning about thirty years (1982-2012). The Ordinary Least Square (OLS) method using STATA 10 was used in the analysis of the data. The overall results from the study revealed that inclusive bank financial activities greatly influenced poverty reduction (R^2=0.74) but marginally determining national economic growth. This study also failed to capture important financial inclusion variables including the number of bank accounts per thousand adults, number of bank branches per a hundred thousand adults, the proportion of small firms with lines of credit, and the number of Automated Teller Machines (ATMs) per a hundred thousand adults in Nigeria.

3.0   Data and Methodology

Descriptive and ex-post facto research designs are adopted in the study. The description of the patterns of financial inclusion and how it impacts economic growth based on past established information makes these designs suitable for this study. The explanatory variables for

financial inclusion used include bank branches per 100,000 individuals in Nigeria, number of Automated Teller Machines (ATM5) in Nigeria per 100,000 individuals, number of bank accounts per 1000 persons, and proportion of small firms with an established line of credit. These are considered some of the best measures of financial inclusion globally as provided by the International Monetary Fund's (IMF) Global Financial Inclusion Database 2018. The explained variable is the growth of real Gross Domestic Product (GDP) in Nigeria.

Data were mainly secondary and were derived from the Central Bank of Nigeria (CBN) Statistical Bulletin 2018 and Global Financial Inclusion Database 2018 by the International Monetary Fund (IMF). The treatment of data was conducted using Ordinary Least Square (OLS) multiple regression techniques. This was supported with descriptive statistics and a single equation cointegration test as provided by Engle and Granger (1987) and Philips and Ouliaris (1990).

The data were presented below:

Table 1: Trend of Economic Growth and Financial Inclusion Indicators in Nigeria from 2004 to 2019

YEAR	GDPR (%)	BAPA	BRPA	SFLC (%)	PATM
2004	10.44	231.410	4.695	2.50	NA
2005	7.01	239.180	4.174	2.45	0.680
2006	6.73	255.090	3.779	2.72	1.779
2007	7.32	294.005	5.207	2.80	4.474
2008	7.20	309.536	6.264	3.20	8.636
2009	8.35	460.955	6.478	2.90	11.457
2010	5.31	468.979	6.561	4.33	11.220
2011	9.54	500.605	6.405	7.70	11.937
2012	4.21	639.219	5.815	8.60	11.487
2013	5.49	645.333	5.904	9.52	13.305
2014	6.22	647.924	5.548	12.00	16.179
2015	2.79	661.890	5.418	14.00	16.203
2016	-1.58	673.220	5.363	15.75	16.730
2017	0.82	681.450	5.490	16.70	25.360
2018	1.93	716.590	5.630	22.50	36.150
2019	2.27	848.450	6.315	24.35	63.490

Source: IMF Global Financial Inclusion Database (2019) and Central Bank of Nigeria (CBN)

Statistical Bulletin 2019
Where:
GDPr = Growth rate of Gross Domestic Product (GDP) in Nigeria
BAPA = Number of Bank Accounts per 1000 adults in Nigeria
BRPA = Number of Bank Branches per 100,000 adults in Nigeria
SFCL= Proportion of Small Firms with line o Credit
PATM Number of ATMs per 100,000 adults.

From the above, the model for the perceived linear partial equilibrium relationship between the indicators of financial inclusion and growth of real GDP in Nigeria is stated as follows:

GDPr = f(BAPA, BRPA, SFLC, PATM)   -   -   -   -   -   -   (1)

GDPr = α_0 + β_1BAPA+ β_2BRPA + β_3SFLC + β_4PATM +μ_1 -   -   -   (2)

Where:

α_0 is the regression intercept

β_1- β_4 are the estimated coefficients of explanatory variables

μ_1 is the stochastic term

From the foregoing functional relationship, it is expected that all the explanatory variables will produce positive coefficients, thus in terms of a priori, $\beta_1>0$; $\beta_2>0$; $\beta_3>0$; $\beta_4>0$. This is because the attainment of a good level of financial inclusion is expected to add value to economic growth in the country. That is in line with the objectives of the Nigerian Financial Inclusion Strategy 2012 as revised in 2018.

4.0 Results and Discussion

Descriptive Analysis

The result from the descriptive statistical analysis is presented in Table 2.

Table 2: Descriptive Statistical Analysis Result

Statistic	GDPR	BAPA	BRPA	SFLC	PATM
Mean	5.253125	517.1147	5.565375	9.501250	16.60580
Median	5.855000	569.9120	5.589000	8.150000	11.93700
Maximum	10.44000	848.4500	6.561000	24.35000	63.49000
Minimum	-1.580000	231.4100	3.779000	2.450000	0.680000
Std. Dev.	3.292794	199.4176	0.810020	7.350806	15.71095
Skewness	-0.408267	-0.185530	-0.771548	0.728881	1.926342
Kurtosis	2.423664	1.703187	2.852310	2.314517	6.437182
Jarque-Bera	0.665927	1.212940	1.601973	1.729973	16.66087
Probability	0.716796	0.545272	0.448886	0.421057	0.000241
Sum	84.05000	8273.836	89.04600	152.0200	249.0870
Sum Sq. Dev.	162.6373	596511.0	9.841998	810.5152	3455.675
Observations	16	16	16	16	15

Source: Researcher's Computation (2019)

The results from the descriptive statistical analysis show that data on the growth of Gross Domestic Product (GDP), bank accounts per 1000 adults (BAPA), number of bank branches per 100,000 adults showed negative skewness with a value -0.408%, -0.186%, and -0.771%

respectively. This implies that the data on those variables are fairly skewed with the values between -0 and 1. Data on the proportion of small firms with a line of credit (SFLC) and penetration of Automated Teller Machines (ATMs) per 100,000 adults exhibited the existence of fairly positively skewed distribution with values 0.729% and 1.926% respectively.

The existence of fewer tails in the growth rate of real GDP, bank branches per 100,000 adults (BRPA), and proportion of small businesses with a line of credit (SFLC) was shown from the obtained kurtosis values of 2.424%, 2.852%, 2.315% respectively. However, the number of bank accounts per 1000 adults showed the existence of a slightly heavy tail with a kurtosis value of 1.703%, while the number of ATMs per 100,000 adults showed the presence of outliers through the kurtosis value of 6.437%. This shows that the distribution for the number of ATMs per 100,000 adults is leptokurtic. The mean and median values of the variables as shown in the results were very close which may indicate the normality or bell-shaped distribution of the data used.
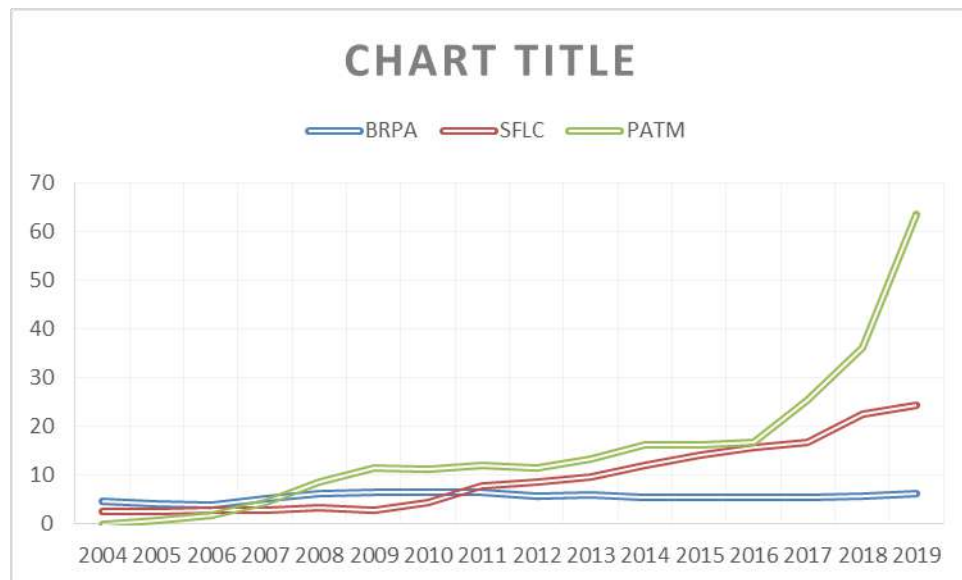

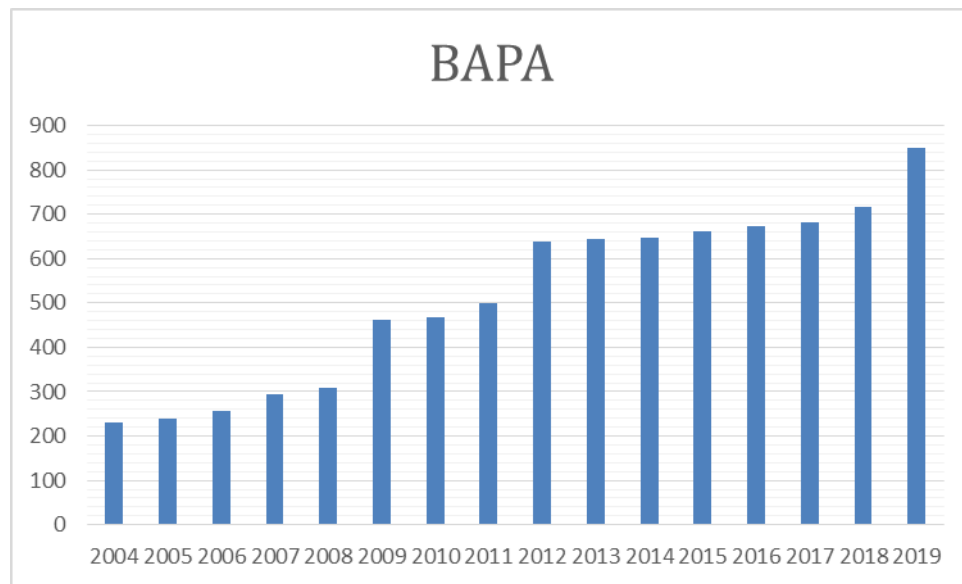Figure 1: Trend of BRPA, PATM, and SFLC in Nigeria from 2004 to 2019

Figure 2: Trend of Number of bank accounts per 1000 adults in Nigeria from 2004 to 2019,

Furthermore Figures 1 and 2 show the trend of the bank accounts per 1000 adults, bank branches per 100,000 adults (BRPA), proportion of small businesses with a line of credit (SFLC), and number of ATMs per 100,000 adults. The diagram indicates gainful improvement in the level of these indicators especially in terms of bank branches per 100,000 adults in Nigeria, the proportion of small firms with a line of credit, and the level of penetration of ATMs per 100,000 adults. The same increased level of trend is shown by the number of bank accounts per 1000 adults (BBPA) in figure 2. This implies that the financial inclusion strategy is being implemented and that the gains of such implementation are gradually becoming realistic incrementally.

Unit Root and Cointegration Analysis
Under the assumption of non-zero drift in the regressors, the Engle-Granger (1987) single equation residual-based tests for cointegration were carried out. This test is simply a unit root test applied to the residuals obtained from a static OLS cointegrating regression. Under the assumption that the series are not cointegrated, the residuals are unit root nonstationary. Therefore, a test of the null hypothesis of no cointegration against the alternative of cointegration may be constructed by computing a unit root test of the null of residual nonstationarity against the alternative of residual stationarity. The excerpt from the result is presented in Table 3.

Table 3: Engel-Granger Single Equation Residual Cointegration Test Output

Date: 04/29/21   Time: 12:09
Series: GDPR BAPA BRPA SFLC PATM
Sample (adjusted): 2005 2019
Included observations: 15 after adjustments
Null hypothesis: Series are not cointegrated
Cointegrating equation deterministic: C GDPR BABA BRPA SFLC PATM
Automatic lags specification based on Schwarz criterion (maxlag=2)

Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
GDPR	-4.998408	0.1057	-90.13534	0.0000
BAPA	-4.111897	0.2573	-15.47274	0.2078
BRPA	-5.575397	0.0559	-51.35803	0.0000
SFLC	-4.849125	0.1243	-64.06558	0.0000
PATM	-3.429288	0.4866	-36.32866	0.0000

*MacKinnon (1996) p-values.
Warning: p-values do not account for user-specified deterministic regressors.
Source: Researcher's Computation (2021)

The output in Table 3 showed mixed results for the regressors. For the presence of unit root, probability of the z-statistic indicates the absence of unit root in the growth rate of GDP, the number of bai± branches per 100,000 adults, the proportion of small firms with the line of credit, and penetration of ATMs per 100,000 adults hence they are all stationary while non-stationarity was found in the number of bank accounts per 1000 adults. On cointegration between the regressors, the computed tau-statistic values show the rejection of the null hypothesis of series not cointegrated since there is at least one cointegrating relationship as shown by the probability of tau-statistic for the number of bank branches per 100,000 adults (BRPA) which was derived as 0.0559. Based on this it can be stated that series are stationary and cointegrated. Thus it is inferred that a possible long-run equilibrium relationship may exist between the growth of Gross Domestic Product (GDP) and financial inclusion in Nigeria. By establishing this, multiple regression analysis was performed.

Regression Analysis
The Ordinary Least Square (OLS) regression result output from E-views 10.0, is presented in Table 4. This indicates the functional nature of the relationship between the explained variables and explanatory variables used in the study.

Table 4: OLS Regression Output

Dependent Variable: GDPR
Method: Least Squares
Date: 04/29/21   Time: 11:44
Sample (adjusted): 2005 2019
Included observations: 15 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.102394	4.569038	1.335597	0.2113
BAPA	-0.002912	0.008717	-0.334029	0.7453
BRPA	0.576136	1.052027	0.547644	0.5959
SFLC	-0.449702	0.305632	-1.471384	0.1719
PATM	0.096883	0.090848	1.066427	0.3113

R-squared	0.686365	Mean dependent var	4.907333
Adjusted R-squared	0.560910	S.D. dependent var	3.093081
S.E. of regression	2.049594	Akaike info criterion	4.534362
Sum squared resid	42.00835	Schwarz criterion	4.770379
Log-likelihood	-29.00771	Hannan-Quinn criterio	4.531848
F-statistic	5.471039	Durbin-Watson stat	2.296080
Prob(F-statistic)	0.013450		

Source: Researcher's Computation (2021)

Table 4 indicates that real Gross Domestic Product (GDP) will by implication that the number of bank accounts per thousand adults (BAPA), number of bank branches per a hundred thousand adults (BRPA), the proportion of small firms with lines of credit (SFLA), and number of Automated Teller Machines (ATMs) per a hundred thousand adults in Nigeria (PATM) are held constant, growing by 6.10%. Similarly, an additional number of bank account per 1000 adults opened in deposit money institutions in Nigeria (BAPA) will by implication boost decimate the growth of real GDP by 0.003%; an extra bank branch established per 100,000 persons (BRPA) will however lead to 0.58% gains in real GDP growth rate; a 1% increase in the proportion of small firms with the line of credit will also cause real Gross Domestic Product (GDP) growth rate to decline by 0.45% while an extra ATM per 100,000 persons installed by banks will lead to 0.09% growth in real GDP.

The implication of these for economic growth is that increase in the number of bank accounts per 1000 adults in Nigeria and percentage of small firms with a line of credit from banks in Nigeria as it stands within the context of the period covered in this study has failed to support economic growth in Nigeria. On the other hand, the number of bank branches per 100,000 adults and the number of Automated Teller Machines (ATMs) in Nigeria has shown a glimpse that it can instill growth in the Nigerian economy. These implications of the number of bank accounts per a thousand adults (BAPA), number of bank branches per a hundred thousand adults (BRPA), the proportion of small firms with lines of credit (SFLA), and number of

Automated Teller Machines (ATMs) per a hundred thousand adults in Nigeria (PATM) for economic growth were found to be statistically insignificant at 95% confidence level, based on the probability values returned by the regressors. The probability values were found to be beyond the 5% acceptable region in this study.

Furthermore from the coefficient of determination (R^2) value of 68.64%, it was shown that the variables of financial inclusion BAPA, BRPA, SFLC, and PATM have a high predictive power to explain 68.64% in the variations in the growth rate of real GDP in Nigeria. This implication is that financial inclusion has a high capacity to confer changes in economic growth in Nigeria. The remaining 31.36% of the variations will be accounted for by the standard error of the regression. The multiple regression combination of the variables is bereft of serial correlation going by the Durbin-Watson statistic (DW-stat) value of 2.29, going by the rule of thumb. Similarly, according to Field (2009), distribution with a DW-stat value that lies between 1 and 3 is considered free from autocorrelation.

Furthermore, the probability value of the F-statistic was derived as 0.013 while the computed F-statistic for the overall model is given as 5.471. This indicates that that the multiple regression model for establishing the implications of indicators of financial inclusion for the growth rate of Gross Domestic Product (GDP) has goodness-of-fit. Based on this, the null hypothesis will fail to hold and therefore is rejected given that the probability value of the F-statistic is within the 5% acceptable region. Thus it can be said that a combined implication of financial inclusion as indicated by the number of bank accounts per 1000 adults, number of bank branches per 100,000 persons, percentage of small firms with a line of credit, and number of ATMs per 100,000 persons for the growth rate of Gross Domestic Product (GDP) in Nigeria, is significant.

5.0   Conclusion and Recommendations

No doubt enhanced financial inclusion has implications for financial development, as well as economic growth in Nigeria. Individually, the number of bank accounts per 1000 adults and proportion of small firms with a line of credit showed negative implications, while the number of bank accounts per 100000 adults, and the number of ATMs per 1000000 persons in the country showed direct implications. However, empirical results in this study have shown that the combined implications of the number of bank accounts per 1000 adults, number of ATMs per 100,000 adults, proportion of small firms with a line of credit, and the number of bank branches per 100,000 adults for the growth of real Gross Domestic Product (GDP) within the period covered in this study is significant. Based on this, financial inclusion has significant implications for economic growth in Nigeria.

In the light of the above conclusion, the following policy recommendations are made:

i.   The key to enhanced financial inclusion is the introduction, improvements, and innovations in digital financial services (DFS), hence there is a need for the deployment of more Automated Teller Machines (ATM5) in the country. This should be supported with other technology-driven innovative digitalized financial services to foster more economic growth.

ii.   One of the disadvantaged groups targeted through the National Financial Inclusion Strategy (NFIS) is small and medium scale enterprises (SMEs). This group is still disadvantaged despite the gains already made in financial inclusion in Nigeria. There

is a need for specialized credit line services, dedicated to small firms in Nigeria if the country is going to boost its economy through industrial expansion.

iii.   Though more bank branches established by deposit money institutions (DFIs) may contribute to key to unlocking the potentials of financial inclusion, and enhancing growth, banks should evolve towards branchless digital banking with the deployment of more technology and innovative products or services.

iv.   More mobile money operators, payments solutions providers, and financial technology companies, agent bankers should be licensed by the regulators (especially CBN) to enhance the usefulness of bank accounts. This will promote financial inclusion and enhance economic growth via increased savings.

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EMPIRICAL ASSESSMENT OF MANPOWER DEVELOPMENT PROGRAMMES IN HIGHER INSTITUTIONS IN NIGERIA

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Abstract

The paper assesses manpower development programmes in higher institutions in Nigeria. The main thrust of the paper is to ascertain the extent to which manpower development programmes increase staff efficiency and productivity in higher institutions in Nigeria. Two research questions were developed to guide the paper. The paper adopts a descriptive survey design. One hundred and twenty (120) respondents were sampled for the study while total populations of one hundred (100) staff both junior and senior were selected. The respondents were staff of five higher institutions from Ebonyi State of Nigeria. The instrument for data collection was basically a structured questionnaire. Data generated from the field were presented and analyzed with descriptive statistics, while tables, frequency counts and percentages scores were computed to test the research hypotheses with the aid of Statistical Package for the Social Sciences (SPSS). The Pearson Product Moment Correlation Co - efficient was used to test the hypotheses postulated. The result from the analysis showed that manpower development programmes increase staff efficiency and productivity in higher institutions in Nigeria. The paper therefore, submits inter-alia, that institutions of higher learning should embrace manpower development as an institutional and management strategy, so as to improve knowledge, skills and attitude required by employees, which will in turn commutatively enhance institutional efficiency and productivity in Nigeria.

Keywords: Manpower development programmes, higher institutions, SPSS and Nigeria

Introduction

Man is dynamic in nature and the need to be current and relevant in all spheres of human endeavour makes manpower development a necessity in order to keep track with the current events and the dynamics of technology (Chukwu, 2012). Several programmes have been introduced in higher institutions in Nigeria and beyond to sustain manpower development, which yielded greater results in recent times. Such programmes are seminars, conferences, workshops, symposiums, induction training, in-service training, on-the-job training, conventions, colloquiums and so on. Some staff in higher institutions may have the requisite skills, knowledge, abilities and competencies needed to fit into a specific job function, some others may require extensive training to acquire the necessary skills to be able to fit in a specific job function and also make significant contribution to the performance of higher institution (Oribabor, 2012).

Manpower development is a necessary work activity that makes a very significant contribution to the overall effectiveness and profitability of higher institution (Adeniyi, 2010). It follows, therefore, that employees' performance in respect of achieving institutional goals and successes is a function of the quantum of the relevant skills and knowledge, and positive work attitude they have acquired from constant manpower development programmes whether through training, in-house training programmes or out-of-work training courses they attended (Onuka, 2006). Manpower development is therefore, the mainstay of the higher institutional growth. In other words, the success of higher institutions depends on the ability and expertise of those who operate it both at the managerial and lower levels of operation. Such abilities and expertise usually stem from the knowledge they possess and training received (Adeniji and Onasote, 2006).

In a specific term, manpower development involves providing learning and development opportunities, making training intervention and planning, conducting and evaluating training programmes (Omole, 2004). The need for improved productivity in any higher institution has become a universally accepted phenomenon for efficient and effective manpower development. It has further become necessary, in view of modern global advancement, to invest in human capital training and development. By implication, therefore, the need for higher institutions to take staff development programmes for their employees seriously has become an undisputable imperative. Absence of such staff development programmes in higher institutions often manifests tripartite problems of incompetence, inefficiency and ineffectiveness. Training and development are aimed at developing competences such as technical, human, conceptual and managerial for the furtherance of individual and institutional growths (Oribabor, 2012).

Consequently, manpower development is a very critical issue in the survival and accomplishment of the desired goals of any institution. However, it has been generally observed that there has been a progressive decline in the ability of the available manpower development programmes in Nigeria to cope with the challenges facing many Nigerian universities. This trend could be viewed to have resulted in inadequate level of skill acquisition by staff of higher institution. Again, higher institutions in Nigeria have not been engaging in programmes that will stimulate manpower development. Such programmes as seminars, conferences, workshops, symposia, in-service training, on-the-job training, conventions, colloquia are barely organized. Therefore, employees are performing below standard or below expectations absence of these programmes. Thus, the major thrust of this paper is to ascertain the extent to which manpower development programmes increase staff efficiency and productivity in higher institutions in Nigeria. The paper seeks to address certain questions as; to what extent do manpower development programmes increase staff efficiency in higher institutions? and to what extent do manpower development programmes enhance staff productivity in higher institutions? This paper is therefore, poised to providing answers to these questions.

Hypotheses:

HO: There is no significant relationship between manpower development programmes and staff efficiency and productivity in higher institutions in Nigeria.

HI: There is a significant relationship between manpower development programmes and staff efficiency and productivity in higher institutions in Nigeria.

Theoretical and Empirical Literatures

This paper adopts expectancy theory of motivation. This theory is of the belief that the employees can actually achieve the expected performance level required after undergoing training. This theory assumes that manpower development is composed of two elements: that there is always a valence or value attached to rewards; and that the instrumentality or the belief that the employee will receive the reward upon reaching a certain level of performance is definite. The proponent of this theory Grant (1996) further states that manpower development practice encourages high skills and abilities, e.g. careful selection and high investment in training can be specified to establish the link between manpower development and institutional performance. The theory further argues that expectations of institutional performance depend on the employee performance because human resource capital of the organization plays an important role in the institutional performance. During the training programme, employees are taught company expectations and objectives. They are shown the ladder through which they can attain their own objectives. This gives rise to goal congruence and consequently, everyone pulls in the same direction thereby making coordination easy. The theory is relevant to this paper because of the fact that skills or human resource development make a significant difference to institutional performance and that expected skills obtained through training enhance development of the workforce.

However, issue of manpower development programmes has received scanty submission as it affects training at the higher institutional echelon. For instance, Victor and Jonathan (2013) conducted a study on the empirical analysis of training and manpower development, employee productivity and organizational performance in Nigeria. The study applied structured questionnaires to a sample size of 75 drawn by simple random sampling. The data generated was analyzed using descriptive statistics. The findings of the study show that majority (about 70 percent) of the respondents agreed that training and manpower development have enhanced their efficiency and job productivity. The study concluded that institutions should conduct training needs assessment to ensure that the right personnel are given proper training. This study is similar to the present study because they both made use of structured questionnaire, simple random sampling and both studies were done in Nigeria. In contrast, the dissimilarity between the previous study and the present study lies on the sample size of data used. While the present study used a sample size of 100, the previous study employed a sample size of 75.

Further, Ugoji (2008) conducted a research on the effect of training and development on organizational performance in Nigeria. The study used secondary data. Four hypotheses were

developed to see the impact of all the independent variables on the overall organizational performance. The results show that training and development, on the job training, in-service training, off-the-job training, training design and delivery style have positive significant effect on organizational performance. Appiah, Boamah, Baryeh, Browne, Ferkah, and Marku-Ablerdu (2013), presented a report on views of Employees on Training and productivity and other performance indicators using a mental analysis. The study yielded a clear result that investment in training has a positive and significant impact on company performance indicators. This result confirms the key role attributed to the investment in skills in the European strategy for smart and sustainable growth, Europe 2020, and the initiative agenda for new skills and jobs (European Centre for the Development of Vocational Training - ECDVT, 2011). The results of meta-analysis from 67 studies suggest that training is positively related to human resource outcomes and organizational performance but is only very weakly related to financial outcomes.

Richard and Johnson (2012) conducted a study to determine if productivity is a driving force for investment in training and management development in the Banking Industry in Nigeria. The study relied on both qualitative and quantitative analysis of data, using descriptive and inferential statistics. The entire staff of the 25 commercial banks as at 2007 in Nigeria was the population of the study and a total of 320 questionnaires were administered. The study found that productivity is really one of the driving forces for investment in training and management development. The present study is similar to the previous study because the studies were both done in Nigeria, but differ significantly because the present study used higher institutions of learning while the previous study used banking industry. Again, the pervious study administered 320 questionnaires while the present study engaged 100 questionnaires.

Harel and Tzafrir (1999) attempted to find out whether staff training has any implication in job performance, behaviour, attitudes, skills, knowledge and achievement of the goals of a business organization in Nigeria. The sample size was determined on the basis of three categories of staff namely: general staff, senior staff and management staff. They used chi-square to test the postulated hypothesis. THey showed that effective training leads to acquisition of skill and knowledge required for employee to perform effectively on the job. Their result reveals that training has a high positive impact on employee and reduces the nature of hazards on the job in the accomplishment of corporate objectives. Both studies are similar because they were done in Nigeria, dissimilar in the area of method of analysis. While the present study used descriptive method of analysis, the previous study engaged a chi square to test the relevant hypotheses postulated. Finally, Happiness and Michael (2014) investigated on the impact of training and development on organizational effectiveness: evidence from selected public sector organizations in Nigeria. Adopting a survey design, the study distributed sixty six (66) questionnaires and only fifty five (55) were completed and returned. Data generated were analyzed with descriptive statistic while the corresponding hypotheses were tested with the chi square, Pearson's Correlation and linear regression. Their findings indicated that there is a positive relationship between training/development and organizational effectiveness. They therefore concluded that effective training is an investment in the human resources of an organization with both immediate and long range returns.

Methodology
This paper adopted a survey method. The population of the study is made up of the staff of the department of business education or accountancy in five selected higher institutions in Ebonyi State which include; Ebonyi State University, Abakaliki; Federal University Ndufu-Alike, Ikwo; Ebonyi State College of Education, Ikwo; Akanu Ibiam Federal Polytechnic, Unwana and Federal College of Agriculture, Ishiagu. The sources of data were both from primary and secondary. The primary data were collected through questionnaire administration while the secondary sources were obtained from textbooks, internets and journals. The design of the questionnaire was based on a four (4) point scale format. A total of one hundred and twenty (120) staff (both junior and senior) were sampled and out of which one hundred staff made up of forty junior staff and sixty senior staff were selected, which formed the sample size. Consequently, hundred questionnaires were distributed and returned within two weeks. Finally, the data generated from the field were presented and analyzed with descriptive statistics, while tables, frequency counts and percentages scores were computed to test the research hypotheses with the aid of Statistical Package for the Social Sciences (SPSS). The Pearson Product Moment Correlation Co - efficient was used to test the hypotheses postulated. The hypotheses were tested at 0.05 level of significance.

Data Presentation and Discussion
This section presents and analyses relevant results obtained through questionnaires distributed to respondents of the study area. This was done to provide answers to the research questions posed. However, the corresponding hypotheses were tested using the Pearson Product Moment Correlation Coefficient at 0.05 level of significance. Thus, the estimation done here employed the use of Statistical Programming for Social Sciences (SPSS), package 17.0 version.

Research Question 1: To what extent do manpower development programmes increase staff efficiency in higher institutions in Nigeria?

This sub section of this paper was included to elicit information that bothers on the opinion of the respondents on the extent to which manpower development programmes have increased staff efficiency in higher institutions in Nigeria. Table 1 below presents the demographic details of the respondents.

Table 1: The extent to which manpower development programmes have increased staff efficiency in higher institutions

S/N	Questionnaire Item	VHE	HE	LE	VLE	N	X	Remarks
1.	Manpower development programmes increase staff efficiency	70	28	2	-	100	3.69	High Extent
2.	Manpower development programmes increase staff effectiveness	80	18	1	1	100	3.78	High Extent
3.	Manpower development programmes increase staff competence	75	25	-	-	100	3.76	High Extent
4.	Manpower development programmes increase staff proficiency	78	20	2	-	100	3.77	High Extent
5.	Manpower development programmes increase staff skillfulness	82	14	2	2	100	3.76	High Extent
	Grand Mean						**3.75**	

Source: Field Work, 2018

Table 1 above contains the analysis of the responses of the staff of the five (5) selected higher institutions in Ebonyi State for the study and their respective ratings. From the table, the evidence gathered showed that the mean score of items 1, 2, 3, 4 and 5 were respectively 3.69, 3.78, 3.76, 3.77 and 3.76, having an average mean of 3.75. This suggests an average score being higher than the mean score of 2.5. The implication of this finding is that manpower development programmes have increased overall staff efficiency in higher institutions in Nigeria.

Research Question 2: To what extent do manpower development programmes enhance staff productivity in higher institutions?
The aim of this section is to elicit information concerning the extent to which manpower development programmes have enhanced staff productivity in higher institutions in Nigeria. Table 2 below shows the demographic details.

Table 2: The extent to which manpower development programmes enhance staff productivity in higher institutions

S/N	Questionnaire Item	VHE	HE	LE	VLE	N	X	Remarks
6.	.Manpower development programmes enhance staff productivity	68	26	4	2	100	3.61	High Extent
7.	Manpower development programmes enhance staff output	72	20	7	1	100	3.64	High Extent
8.	Manpower development programmes enhance staff efficacy	80	17	3	3	100	3.78	High Extent
9.	Manpower development programmes increase staff proficiency	82	15	2	1	100	3.78	High Extent
10.	Manpower development programmes increase staff skillfulness	74	20	3	3	100	3.14	High Extent
	Grand Mean						**3.59**	

Source: Field Work, 2018

The Table 2 above shows that items 6, 7, 8, 9 and 10 accepted that manpower development programmes enhance staff productivity in higher institutions in Nigeria. This was supported by their mean scores which were respectively 3.61, 3.64, 3.78, 3.78 and 3.14 and averaged 3.59. The above results implied that within the scope of five selected higher institutions in Ebonyi State, manpower development programmes have enhanced staff productivity in higher institutions in Nigeria.

Test of Hypotheses

HO: There is no significant relationship between manpower development programmes and staff efficiency and productivity in higher institutions in Nigeria.
HI: There is a significant relationship between manpower development programmes and staff efficiency and productivity in higher institutions in Nigeria.

Table 3: Summary of Pearson Product Moment Correlation Coefficient of manpower development programmes and staff efficiency and productivity in higher institutions in Nigeria.

Variables	N	Mean	S.D	S.E	DF	t-Cal	t-Tab	Decision
Manpower development programmes and staff efficiency and productivity is not significant.	100	12.146	4.816	0.620	180	4.248*	1.96	Significant
Manpower development programmes and staff efficiency and productivity is significant.	100	15.022	4.703					

Source: SPSS, 17.0 version *P<0.05

The hypothesis was tested using Pearson Product Moment Correlation Co – efficient (PPMCC). The result indicates that the r – calculated (4.248) is greater than the r – table (1.96) at 98 degree of freedom and 0.05 level of significance. Therefore the null hypothesis which states that there is no significant relationship between manpower developments programmes and staff efficiency and productivity in higher institutions in Nigeria .was rejected. The implication of this result is that there was a significant relationship between manpower development programmes and staff efficiency and productivity in higher institutions in Nigeria. This suggests that programmes such as induction training, in-service training, on-the-job training, conventions, colloquiums and so on, have helped to a great extent in increasing staff efficiency and productivity in Nigerian higher institutions.

The evidence above coincides with the recent work of Victor and Jonathan (2013) who conducted a study on the empirical analysis of training and manpower development, employee productivity and organizational performance in Nigeria, and found that 70 percent of the respondents agreed that training and manpower development have enhanced their efficiency and job productivity. They therefore, concluded that institutions should conduct training needs assessment to ensure that the right personnel are given proper training.

Subsequently, the finding is in agreement with those of Richard and Johnson (2012) who conducted a study to determine if productivity is a driving force for investment in training and management development in the Banking Industry in Nigeria. Their study relied on both qualitative and quantitative analysis of data, using descriptive and inferential statistics. Their study found that productivity is really one of the driving forces for investment in training and management development. Also, their result is in line with that of Thang (2009) who conducted a study on human resource training, organizational strategy and firm performance in Vietnam, and concluded that companies that implemented training in 2006 have increased sales, productivity of manufacturing companies by 0.18 percent.

Finally, the findings were also in comformity with Harel and Tzafrir (1999) who attempted to find out whether staff training has any implication on job performance, behaviour, attitudes, skills, knowledge and achievement of the goals of a business organization in Nigeria, and concluded that effective training leads to acquisition of skill and knowledge required for employee to perform effectively on the job. Their result further reveals that training has a high positive impact on employee and reduces the nature of hazards on the job in the accomplishment of corporate objectives.

Concluding Remarks

This paper has succeeded in establishing that manpower development programmes increase staff efficiency and productivity in higher institutions in Nigeria. The findings of this study have clearly shown that training and development are work activity that can make a very significant contribution to the overall effectiveness and profitability of higher institutions of learning. The effectiveness and success of higher institution therefore lie on the people who form and work within the institution. Thus, for any organization to succeed, training and re-training of the staff in form of workshop, conference, seminars, should be vigorously pursued and made compulsory. The paper, therefore is of the opinion that institutions of higher learning in Nigeria should embrace manpower development as an institutional and management strategy. It seeks to improve knowledge, skills and attitude required by employees to perform adequately on a given task or job, which will commutatively, enhance institutional productivity.

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ECONOMIC ENVIRONMENT AND FINANCIAL INTERMEDIATION IN NIGERIA

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Abstract

In this paper, the researcher examined the influence of economic environment on financial intermediation in Nigeria. Ex post facto research design was used in the study. Annual time series data obtained from CBN Statistical Bulletin for the period spanning 1975 and 2018 were used in the study. Total Deposits of DMBs (TDEP) was used as a proxy for financial intermediation while Deposit Rate (DPT), Inflation Rate (INFL), Gross Domestic Product (GDP), and Unemployment rate (UPLMT) were independent variables. Autoregressive Distributed Lags (ARDL) technique of multiple regression was adopted in the study. It was found that INFL, GDP and UPLMT have a positive relationship with TDEP whereas DPT has a negative relationship with TDEP. It was recommended that government should provide the necessary environment that would reduce unemployment and inflation and grow the economy in order to grow banks deposits.

Keywords: Financial intermediation, Autoregressive Distributed Lags, Bounds Test

1.0 BACKGROUND OF THE STUDY

Every business operates in an environment which influences and dictates the extent to which the business can flourish in its operations. The environment is divided into internal and external components. The internal environments are within the control of the business whereas the external environments are uncontrollable by the business and as such equally influence all other businesses operating in the environment in the same way. In other words, the internal environment comprises elements that are specific to the business while the external environment is systemic and general in nature.

According to Nickels, McHugh and McHugh (2005) as cited in Acha, Michael and Essien (2017), the business environment consist of surrounding factors that either help or hinder the development of businesses. This include the economic and legal environment, the technological environment, the competitive environment, the social environment, and the global environment. The global environment surrounds all other environmental influences. They posited that businesses grow and prosper in a healthy environment. The resultant effects are high job growth and the wealth that makes it possible to have a high standard of living and a high quality of life. Ball, McCulloch, Frantz, Geringer and Minor (2004) put it this way, 'the term environment means all the forces influencing the life and development of the firm. The forces can be classified as external or internal.' According to them, external forces consist of the following: competitive, distributive, economic, socioeconomic, financial, legal, physical, political, socio-

cultural, labour, and technological. A firm operating across borders must deal with the forces of three kinds of environments – domestic, foreign and international. In contrast, a firm whose business activities are carried out within the borders of one country needs to be concerned essentially with only the domestic environment. However, no domestic firm is entirely free from foreign or international environmental forces because the possibility of having to face competition from foreign imports or from foreign competitors that set up operations in its own market is always present.

In this study, the researcher is particularly interested in economic environment which he sees as the mother of all other environments in a domestic economy. Competitive, distributive, socioeconomic, financial, legal, political, socio-cultural, labour, technological and any other forces or environments can only be found and their influences studied in a particular geographical location, otherwise known as an economy. Their influences can only be related to an economy and these vary from economy to economy. Besides, economic variables or factors have direct impact on the well-being of individuals living in the economy and also the businesses operating in the economy. The economic environment here can be divided into micro and macroeconomic environments. This study is concerned with the macroeconomic environment as financial intermediation has to do with the economy as a whole.

Financial intermediation has to do with the movement or transfer of funds from surplus economic units to the deficit economic units of the economy for the purpose of consumption, production or investment which would enhance the productive capacity and overall output of the economy and employment. The idea of financial intermediation awakens the need for a financial system that would provide the rules and regulations and financial arrangements, institutions and agents that interact with each other and the rest of the world to foster economic growth and development of a nation (Ekezie, 2006). Financial intermediation has two sides – the supply side and the demand side. The supply side which is known as the surplus economic units are the creditors who provide the needed funds and the demand side also known as the deficit economic units are the borrowers who need the funds for their varying purposes.

Economic factors that are of interest to both depositors and the financial intermediaries/institutions (FIs) influence the amount of funds that can be mobilised from the surplus units. Also, the amount of funds that can be given out by the FIs to the deficit economic units is a function of the monetary policies of the particular economy. The suppliers of funds get returns on the funds in form of interest (deposit) rate and the users of funds pay some cost (interest) to obtain it from the financial intermediaries. Olowe (1998) affirms that interest is the payment made for the use of money. The difference between what the intermediaries collect from the users of funds and what they (the intermediaries) pay to the suppliers of funds is called spread.

Deposits typically have the characteristics of being small-size, of low-risk and with high liquidity while loans are of larger-size, of higher-risk and illiquid. Banks bridge the gap between the needs of lenders and borrowers by performing a transformation function. These functions include: size transformation; maturity transformation; and risk transformation (Casu, Girardone and Molyneux, 2006). According to Kashyap, Rajan, and Stein (2002) as cited in CBN (2013), deposit-taking and lending by banks are closely related. Both activities reflect the liquidity

transformation function of banks and share a similar overhead. Hence it is useful to analyze loans and deposits in tandem, as is done through the loan to deposit ratio. It is a core indicator for liquidity mismatch.

In Nigeria, financial intermediation is the responsibility of licensed financial institutions and financial markets with regulators appointed to oversee the operations and enforce compliance to enabling laws. The financial institutions include banks and non-banks financial institutions. Banks include the Central Bank of Nigeria (CBN) as the apex bank, the commercial banks, merchant banks, development banks, specialised banks, microfinance banks, mortgage banks and discount and finance houses. Non-banks financial institutions include insurance companies and pension funds administrators. The financial markets comprise the money market and the capital market. Money market is for short term funds while capital market is for long term funds. Since the financial system is a set of rules and regulation, there is need for regulators who monitor compliance to these rules and regulations and sanction non-compliance to ensure efficient and robust financial system. The regulators include Federal Ministry of Finance for Central Bank of Nigeria; Central Bank of Nigeria and Nigeria Deposit Insurance Commission (NDIC) for other financial institutions and money market; National Insurance Commission (NAICOM) for Insurance companies; Pension Commission (PENCOM) for Pension funds administrators and Securities and Exchange Commission (SEC) for capital market.

The researcher was motivated by the directive of the Federal Government of Nigeria enforcing the Treasury Single Account (TSA) which led to the movement of public sector funds from Deposit Money Banks (DMBs) to the Central Bank of Nigeria, an action which has been blamed for the recent high level of retrenchment in the banking industry, high cost of funds and lower volume of funds available as credits to borrowers coupled with the country's exchange rate situation and inflation rate. The TSA policy implementation tends to negatively impact financial intermediation in the country. The researcher is afraid that with the interplay of the economic variables, private sector deposits alone may not be enough to drive the expected growth and development in the country, hence, the need for a closer examination of economic environment and financial intermediation in Nigeria. The economic variables to be examined here include deposit rate, inflation rate, nominal value of Gross Domestic Product and unemployment rate. The fear being nursed is in line with the position of Sheriff and Amoako (2014), that the total volume of deposits mobilized by the banking sector determines to a large extent, the supply of loanable funds, and that an increase in total deposits is expected to increase the supply of loanable funds and lead to a reduction in lending rates.

The broad objective of this study is to assess the impact of economic environment on the supply side of financial intermediation (total deposits of DMBs);

In line with the objectives of the study, the following hypothesis is formulated to guide the study.

i) H_o: There is no significant relationship between deposit rates, inflation rate, Gross Domestic Product, Unemployment rate and total deposits of deposit money banks in Nigeria.

Findings from this study shall be of benefit to many stakeholders in the economy including the monetary authorities, financial institutions, members of economic management team (EMT), students of finance and economics and researchers in the area of finance and financial intermediation.

This study covered financial intermediation as it is supervised and regulated in the Nigeria. Private sector deposits as used in the study encompasses demand deposits, savings deposits and time/fixed deposits of private individuals and firms in Nigeria. Special emphasis shall be on the economic environment, that is, the implications of some government decisions and monetary policies on financial intermediation in Nigeria. The study covered the period between 1975 and 2018. In the study, aggregate data of all licensed commercial Banks in Nigeria were used.

This study was organised in five sections. Section one which is the introduction encompasses the background of the study, statement of the problem, objectives of the study, research hypothesis, significance and scope of the study. Section two dealt with the review of related literature which is broadly divided into conceptual framework, theoretical framework and empirical review. In section three, the researcher discussed the research methodology applied in the study under different sub-headings such as type of data, sources of data, model specification and tools of data analysis. Section four covered results and discussion while the summary of the work, conclusions in line with the findings of the study and recommendations were presented in section five.

2.0 REVIEW OF LITERATURE

In this section of the study, the researcher reviewed literature in the area of economic environment of business and financial intermediation in the Nigerian economy. The section is divided into three major sub-sections, namely; conceptual framework, theoretical framework, and empirical review and evaluation of the literature reviewed.

According to Haruna (2013) the macroeconomic environment affects the performance of the banking sector to the extent that it influences the ability of borrowers to timely honour their debt repayment obligation. An unstable macroeconomic environment exhibits a positive correlation between the lending rate and the nonperforming loan portfolio. Schlais, Davis and Schlais (2011) posit that in real life the economy is highly intertwined with the political environment. At times the political environment is spurred by the current economic conditions. Other times, economic phenomenon occurs as a direct result of some political action.

2.1: **Financial Intermediation in Nigeria**

Normally, financial intermediation is meant to engender economic growth and development in any economy. That is why an efficient and robust financial system is a precondition, else, we talk about direct finance – where there are no intermediaries and the parties depend on luck and chance to recover their funds/monies. It is against this backdrop that financial intermediation was introduced to take care of the risks inherent in direct finance, though, at a cost. The vehicles of financial intermediation are financial intermediaries (FIs) and

financial markets. It is through the mechanism of (FIs) and financial markets that funds are transferred and allocated to the most productive opportunities of the economy.

According to Yakubu and Affoi (2014), literature that debated on the intermediary role of banks in the economic growth abound. In any case, there seem to be a general consensus that the role of intermediation of banks help in boosting economic growth. Akintola (2004) identified banks' traditional roles to include financing of agriculture, manufacturing and syndicating of credit to productive sectors of the economy. He also posited that credit is an important aspect of financial intermediation that provides funds to those economic entities that can put them to the most productive use. Theoretical studies have established the relationship that exists between financial intermediation and economic growth. For instance, (Schumpeter, 1934; Goldsmith, 1969; Shaw, 1973) strongly emphasized the role of financial intermediation in economic growth. Similarly, Greenwood and Jovanovich (1990) observed that financial development can lead to rapid growth. In a related study, Bencivenga and Smith (1991) explained that development of banks and efficient financial intermediation contributes to economic growth by channelling savings to high productive activities and reduction of liquidity risks. They therefore concluded that financial intermediation leads to growth. This study becomes necessary as the researcher is yet to find any quantitative empirical study on the impact of economic environment on financial intermediation.

2.2: **Theoretical Framework**:

Following the traditional theory of resource allocation of the Arrow-Debreu model which held that economic agents interact through markets and there is no role for financial intermediaries and hence intermediation, a number of theories have argued against this traditional dogma to explain the role of financial intermediation such as the theory of asymmetric information (imperfect information) and agency theory, all of which lead to market imperfections and thus transactions costs. The rationale for the existence of intermediaries such as banks is that they can reduce information and transactions costs that arise from information asymmetry between lenders and borrowers. Consequently, the modern theory of financial intermediation which is hinged on two arguments namely; intermediaries (such as banks) ability to provide liquidity and their ability to transform the risk characteristics of assets comes to play. Thus, banks for example are able to act as coalitions of depositors that provide households with insurance against idiosyncratic shocks that adversely affect their liquidity positions (Diamond and Dybvig, 1983). The agency argument for the role of intermediaries activities is in the creation of value arising from the qualitative asset transformation; in a situation where the supply of and demand for credit, for example, cannot be fully met in the market.

Casu (2006) posit that there are five theories that explain why financial intermediation (banking) exists. The theories relate to: delegated monitoring; information production; liquidity transformation; consumption smoothening; and the role of banks as a commitment mechanism.

In this paper, the theories of asymmetric information, delegated monitoring, liquidity transformation, consumption smoothening, agency and commitment mechanism are relevant.

2.3: **Empirical Review:**

Yakubu (2014) analyzed the impact of the commercial banks credit on economic growth in Nigeria from 1992 to 2012. In order to examine the role of commercial bank credit to the economy, the commercial bank credit to the private sector of the economy was used to estimate its impact on Nigeria's economic growth which was proxied by gross domestic product. Using the ordinary least square, it was found that the commercial bank credit has significant effect on the economic growth in Nigeria. Being a good achievement, it requires more efforts to maintain and sustain it. The following recommendations were made to that effect: better and stronger credit culture should be promoted and sustained; there should be strong and comprehensive legal framework that will continue to aid in monitoring the performance of credit to private sector and recovery debts owed to banks; bank should share among themselves information on bad debt; and preferred sectors like agriculture and manufacturing should be favoured in terms of granting loans.

Badun (2009) investigated the link between financial intermediation by banks and economic growth. Special attention was paid to the issues of causality, non-linearity, time perspective, financial intermediation proxies, and interaction terms. The review showed that there were still quite a few unresolved issues in empirical research, which causes scepticism towards prioritizing financial sector policies in order to cause economic growth. Progress in the finance and growth literature is slow and researchers seem to go round in circles. A possibly fruitful direction for future empirical research is the relationship between government and banks, especially from the standpoint of political economy.

Ermolina (2015) inquired into the role that businesses play in economic growth and the circumstances that are necessary for stable business development. He pointed out that recent literature focuses on the factors of business environment promoting or constraining firm growth. Using the country aggregate values of the firm level World Bank Enterprise Survey (WBES) data on the subjective estimates of the business obstacles, 128 countries were classified into six clusters. Owing to the fact that firms report many obstacles to growth, the contributions of 13 obstacles to business environment were recalculated for understanding the major business constraints. Cross tables analysis found that there is a correlation between the prevalence of the business obstacles and national income growth, export growth, high technology export. The results have important implications for the priority of reforms. Corruption, electricity and tax rates are the main business constraints in the world. Moreover, access to finance and competition in the informal sector of economy are also the major obstacles for business in the part of the countries studied.

Xu (2010) asserted that in the past decade, the World Bank has promoted improving business environments as a key strategy for development, which has resulted in a significant amount of investment in collecting firm-level investment climate surveys across countries. The key finding was that the effects of business environments are heterogeneous and depend crucially on industry, initial conditions, and complementary institutions. Some elements of the business environment, such as labour flexibility, low entry and exit barriers, and a reasonable protection from the "grabbing hands" of the government, seem to matter a great deal for most economies. Other elements, such as infrastructure and contracting institutions (courts and access to finance), hinge on their initial status and the size of the market.

Anthony (2012) investigated the determinants of bank savings in Nigeria and the impact of bank savings and bank credits on Nigeria's economic growth from 1970 - 2006. He adopted two impact models; Distributed Lag-Error Correction Model (DL-ECM) and Distributed Model. The empirical results showed a positive influence of values of GDP per capita (PCY), Financial Deepening (FSD), Interest Rate Spread (IRS) and negative influence of Real Interest Rate (RIR) and Inflation Rate (INFR) on the size of private domestic savings. Also a positive relationship exists between the lagged values of total private savings, private sector credit, public sector credit, interest rate spread, exchange rates and economic growth. It was recommended, among others, that government's effort should be geared towards improving per capita income by reducing the unemployment rate in the country in a bid to accelerate growth through enhanced savings.

Bassett, Chosak, Driscoll and Zakrajsek (2013) posited that identifying macroeconomic effects of credit shocks is difficult because many of the same factors that influence the supply of loans also affect the demand for credit. Using bank-level responses to the Federal Reserve's Loan Officer Opinion Survey, they constructed a new credit supply indicator: changes in lending standards, adjusted for the macroeconomic and bank-specific factors that also affect loan demand. Tightening shocks to this credit supply indicator led to a substantial decline in output and the capacity of businesses and households to borrow from banks, as well as widening of credit spreads and an easing of monetary policy.

Ogiriki and Andabai (2014) examined the relationship between financial intermediation and economic growth in Nigeria using data spanning 1988 and 2013. Secondary data collected from the CBN statistical Bulletin and National Bureau of Statistics were used. Hypotheses were formulated and tested using Vector Error Correction Model and the test for stationarity proved that the variables are integrated in the order which implied that unit roots did not exist among the variables. There is also long-run equilibrium relationship between economic growth and financial intermediation and the result also confirmed about 96% short-run adjustment speed from long-run disequilibrium. The coefficient of determination indicates that about 89% of the variations in economic growth are explained by changes in financial intermediation variables in Nigeria. The study therefore recommended that the monetary authorities should properly control and regulate the activities of the intermediaries in order to achieve a sound financial system in the country, and finally, that efforts should be made by monetary authorities to prevent banks from possessing excess liquidity which could lead to inflation in the economy.

Eriemo (2014) examined the macroeconomic determinants of bank deposits in Nigeria using data covering the period between 1980 and 2010. The researcher analyzed the effects of various macroeconomic indicators, on the performance of banks within the context of deposit mobilization of banks and its determinants. The parsimonious ECM result showed that in Nigeria, bank investment, bank branches, interest rate and the general price level are important determinants of bank deposit. The Vector Error Correction and Johansen cointegration test indicate a long run relationship among the variables and the ECM result showed a satisfactory speed of adjustment. It was thus recommended among others that both the banks and the monetary authorities should take these factors into serious consideration when attempting to improve the deposits of banks as these will go a long way in increasing aggregate investment.

3.0 **METHODOLOGY**

In this section, discussion will cover research design, data required, sources of data used in the study, model specification and analytical procedures adopted in the study. The ex post facto research design was adopted in the study. Data required for the study were annual data in respect of the variables chosen for the study and the data were sourced from the Annual Report of Central Bank of Nigeria (CBN) and various editions of CBN Statistical Bulletins.

3.1 **Model Specification**

Financial intermediation has two parts: the deposit (supply) side and the credit (demand) side. This study focused on the supply side of the financial intermediation and the chosen variables were regressed against total deposits of DMBs in the economy. Therefore, total deposits of DMBs is the dependent variable. The independent variables used were: deposit interest rate (DPT), inflation rate (INFL), Gross Domestic Product (GDP), and unemployment rate (UPLMT)

Therefore, the functional model for the study is presented as follows:

$$TDEP = f(DPT, INFL, GDP, UPLMT) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\text{ Equation 3.1}$$

Where
TDEP   = Total Deposits of Deposit Money Banks (₦'Bn)
DPT   = Average Deposit Rate of DMBs (%)
INFL   = Growth Rate of Inflation (%)
GDP   = Nominal Value of Gross Domestic Product (₦'Bn)
UPLMT   = Unemployment Rate (%)

The above equation can be stated explicitly as follows:
$$TDEP = \beta_0 + \beta_1 DPT_{it} + \beta_2 INFL_{it} + \beta_3 GDP_{it} + \beta_4 UMPLT_{it} + \epsilon \dots\dots\dots\dots\dots\text{ Equation 3.2}$$
$$+ \qquad - \qquad + \qquad -$$
Where
ϵ = Error term
β_0 = Constant
$\beta_1 \dots \beta_4$ = Coefficients of the independent variables

The operators beneath the variables are the expected sign of the relationship with the dependent variable.

3.5 Analytical Procedure: Data collected for this study were analysed using descriptive statistics and multiple regression technique through Eviews statistical software package version 9.

4.0 RESULTS AND DISCUSSION

4.1 Descriptive Statistics:

This section is meant to describe the data used in the study as shown in the Table 4.1.

Table 4.1: Descriptive Statistics

	TDEP	**DPT**	**INFL**	**GDP**	**UPLMT**
Mean	4852.666	10.68933	19.83597	21980.12	9.45
Median	247.6969	9.865	12.95	4010.875	6.55
Maximum	27288.83	23.99	76.8	127762.5	27.4
Minimum	2.9	2.75	0.2	21.48	1.6
Std. Dev.	8083.353	5.335493	17.68055	36168.73	7.2057
Skewness	1.526199	0.794085	1.612746	1.646817	0.86901
Kurtosis	3.873378	3.118969	4.765547	4.309995	2.70128
Jarque-Bera	18.47986	4.650138	24.78842	23.0342	5.70155
Probability	0.000097	0.097777	0.000004	0.00001	0.0578
Sum	213517.3	470.3304	872.7829	967125.5	415.8
Sum Sq. Dev.	2.81E+09	1224.102	13441.87	5.63E+10	2232.65
Observations	44	44	44	44	44

Source: Author's computation using Eviews 9

From Table 4.1, GDP has the largest mean of 21980.12 followed by TDEP which has a mean value of 4852.66. Inflation rate, deposit rate and unemployment rate have mean values of 19.83597, 10.68933 and 9.45 respectively. Also GDP, TDEP and INFL have the largest maximum and minimum values in that order. The GDP and TDEP still have the largest median value. It is pertinent to note that mean and median are measures of central tendency whereas standard deviation is a measure of dispersion from the mean. Skewness which is a measure of the degree of asymmetry of the frequency distribution shows that the variables skewed to the right. From the results of kurtosis, it is evident that the data used provide a platykurtic (flat) distribution. GDP and TDEP are the two variables with the highest standard deviation.

4.2 Correlation Matrix

Correlation matrix is usually prepared to ascertain the extent to which the variables used in the study correlated with one another. According to Lind, Marchal and Wathen (2010:528) a general rule on correlation is if the correlation between two independent variables is between -0.70 and 0.70 there is likely no problem using both of the independent variables.

Table 4.2: Correlation Matrix

	TDEP	DPT	INFL	GDP	UPLMT
TDEP	1				
DPT	-0.23110694	1			
INFL	-0.2678076	0.40065536	1		
GDP	0.990599629	-0.2365506	-0.2649197	1	
UPLMT	0.651253952	-0.1845971	-0.3712613	0.6468556	1

Source: Author's computation

From Table 4.2, it is obvious that none of the independent variables has a coefficient greater -0.70 or 0.70, therefore, all the variables used in the study are satisfactory.

4.3 Variance Inflation Factors (VIF)

Table 4.3 shows the results of VIF analysis. Also, Lind (2010) stated that if the coefficient of VIF is greater than 10 it is considered unsatisfactory because that is an indication that the independent variable should be removed from the analysis.

Table 4.3: Variance Inflation Factors (VIF)

Variable	VIF
C	NA
DPT	1.222416
INFL	1.337712
GDP	1.763514
UPLMT	1.863766

Source: Author's computation

From our analysis, none of our independent variables has a coefficient of more than 10 and as such, all the variables are considered suitable for the study.

4.4 Trend Analysis

In this study, graph was used to show the movement of the variables for the period covered by the study.

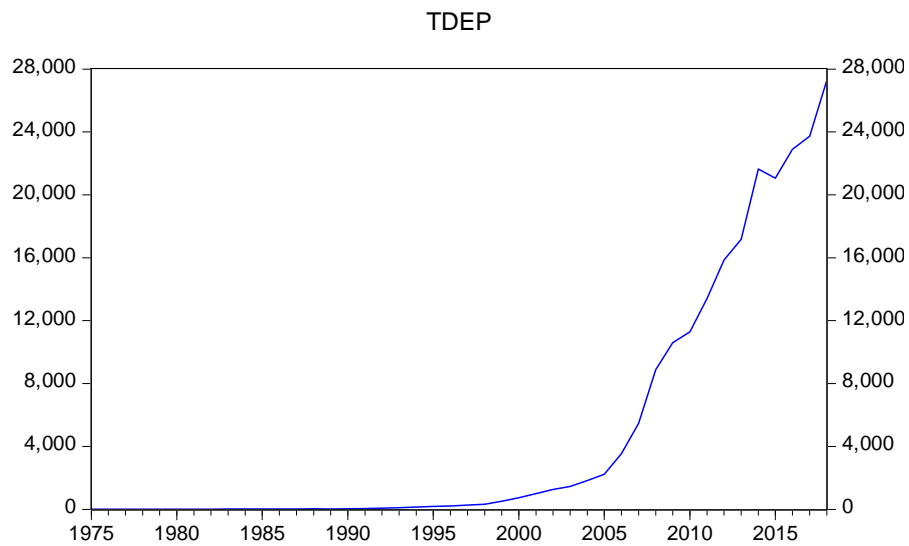**Graphical Trend of the Variables**

Figure 4.1: Graphical Movements in the Total Deposits (Dependent Variable)

From the unit root test results shown in Table 4.4, total deposits was stationary at first difference.
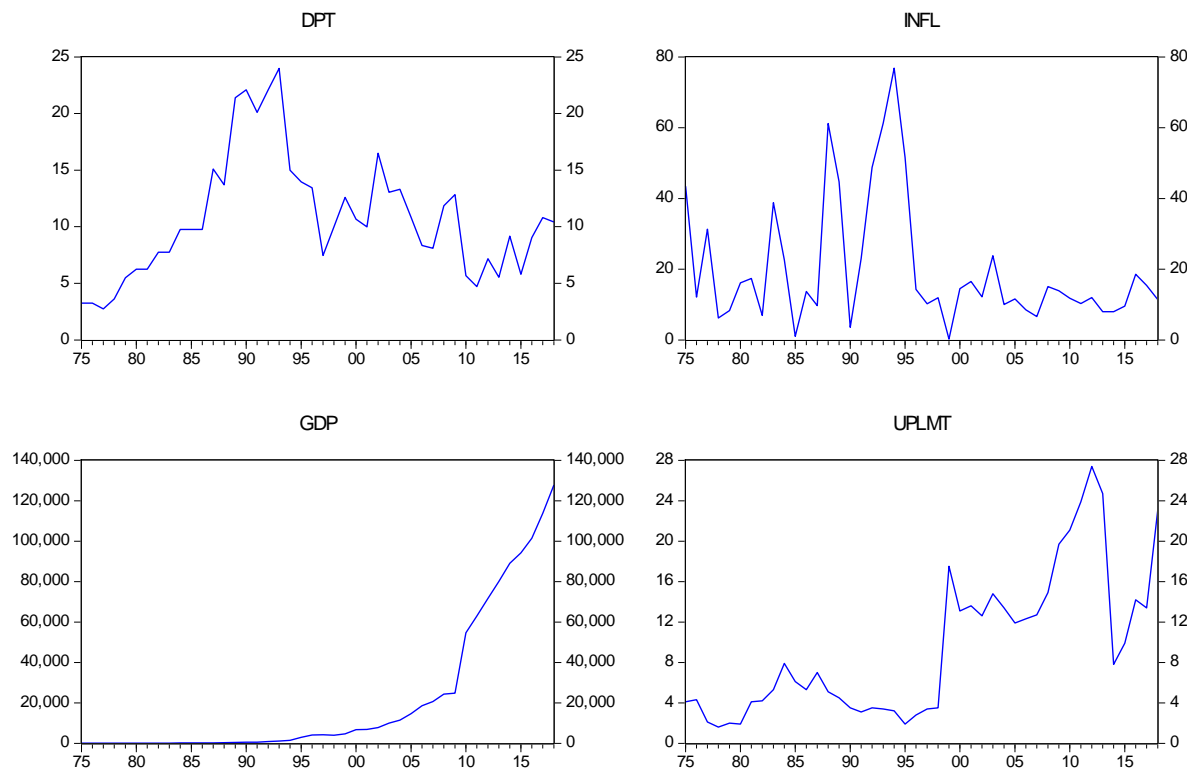

Figure 4.2: Graphs Showing Movements in the Independent Variables (DPT, INFL, GDP, UPLMT)

It is necessary to point out that all variables shown in Figure 4.1 and 4.2 remain as earlier defined. Also, based on unit root test results shown in Table 4.4, deposit rate, Gross Domestic

Product, Unemployment are integrated of order I(1), that is, at first difference while inflation rate was integrated of order I(0), that is at level.

4.5 **Unit Root Test**

Unit root test is usually conducted to ascertain the order of integration of the variables used in the study in order to guide the decision as to which cointegration technique should be used. In this study, Table 4.4 shows that TDEP, DPT, GDP and UPLMT were integrated of order I(1), that is, first difference while inflation rate was integrated of order I(0), that is, at level.

Table 4.4: Results of Unit Root Test Based on PHILLIPS-PERRON (PP)

Variable	PP	Critical Value @ Trend & Intercept		Order of Integration	P-value
		@1%	@5%		
TDEP	-6.321405	-4.192337	-3.520787	I(1)	0.0000
DPT	-7.658497	-4.192337	-3.520787	I(1)	0.0000
INFL	-3.953906	-4.186481	-3.518090	I(0)	0.0180
GDP	-5.660946	-4.192337	-3.520787	I(1)	0.0002
UPLMT	-6.255610	-4.192337	-3.520787	I(1)	0.0000

Source: Author's computation using Eviews 9

4.6 **ARDL Bounds Testing**

With the mixed level of integration exhibited by the unit root test results shown in Table 4.4, the Autoregressive Distributed Lags (ARDL) cointegration technique was considered suitable. This technique is called ARDL Bounds test. It is used where the variables are integrated of order I(0) and I(1) but not I(2).

Table 4.5: ARDL Bounds Test Results

ARDL Bounds Test

Test Statistic	Value	k
F-statistic	9.376511	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: Author's computation using Eviews 9

From Table 4.5, considering the level of significance of 5 per cent, the lower bound (I0) is 2.86 while the upper bound I(1) is 4.01. Since the F-statistic value of 9.376511 obtained in the bounds test analysis is higher than the lower and the upper bounds, it was concluded that there is long run relationship among the variables used in the study.

Table 4.6: ARDL Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DPT	-69.639659	210.993455	-0.330056	0.7433
INFL	20.993616	64.236690	0.326817	0.7458
GDP	0.286804	0.082274	3.485967	0.0013
UPLMT	476.867151	509.885741	0.935243	0.3561
C	-1723.610627	3114.707483	-0.553378	0.5835

Source: Author's computation using Eviews 9

From Table 4.6, the estimated equation for the study using the ARDL long run coefficients appears as follows;

TDEP = -1723.61 - 69.64DPT + 20.99INFL + 0.29 + 476.87UPLMT + Є ………. Equation 4.1

Equation 4.1 shows that deposit rate represented as DPT has a negative relationship with total deposits of Deposit Money Banks (TDEP). This negative relationship is not in line with the a priori expectation of the study. Normally, deposit rate is a price that attracts depositors to save with the banks or look for alternative sources of investment. Deposit rate interaction(s) is affected by the theory of demand and supply. A situation where deposit rate exhibits a negative relationship with total deposits suggest that depositors may prefer to hold cash for some other reasons other than deposit them in banks. This is in line with the Liquidity Preference theory developed by Keynes (1936). This finding is collaborated by Anthony (2012) and Ferrouhi (2017).

Contrary to the expectation of the study, INFL assumes a positive and statistically non-significant relationship with TDEP. This means that one per cent increase in inflation rate will lead to ₦20.99 billion increase in total deposits of Deposit Money Banks. During inflation, depositors are faced with uncertainty as to whether to bank or take to other investments sources. This uncertainty affects the volume of deposits mobilised by banks.

GDP assumes a positive and statistically significant relationship with TDEP. This is in line with the expectation of the study. A growing economy leads to growing businesses and growing businesses employ more people such that at business and individual levels, there would be enough cash and this consequently leads to increase in total banks' deposits. From the result, ₦ 1.00 billion increase in the nominal value of GDP will lead to ₦286.804 million increase in TDEP of DMBs.

It is surprising, rather, to observe that unemployment rate exhibits a positive and statistically non-significant relationship with total deposits of DMBs. This implies that one

percent increase in unemployment rate will lead to ₦476.87 billion increase in bank deposit. This means that as unemployment increases through retrenchments, unavailability of work and other sources, job losers/seekers engage in illegal activities such as kidnapping for ransom, pipeline vandalism, armed robbery, smuggling and even cybercrime, among other ventures that increase their liquidity status and consequently their deposit base in banks. Sometimes, some bankers who want to meet their deposit targets in order to gain promotion may ignore banks ethics and wrongly justify some deposits sources against the expectations of their employers. This could be the likely reasons increase in unemployment tends to increase bank deposits in Nigeria.

Table 4.7: Parsimonious Error Correction Model Results

Dependent Variable: D(TDEP)
Method: Least Squares
Date: 12/09/19   Time: 16:52

Sample (adjusted): 1978 2018
Included observations: 41 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	163.1501	163.4163	0.998371	0.3252
D(TDEP(-1))	0.903409	0.217224	4.158888	0.0002
D(DPT(-1))	-103.1721	43.41584	-2.376370	0.0233
D(INFL)	4.602088	8.041732	0.572276	0.5709
D(GDP)	-0.013570	0.034988	-0.387854	0.7005
D(UPLMT(-1))	60.51805	38.26646	1.581491	0.1230
D(ECM(-1))	-0.803755	0.220612	-3.643302	0.0009

R-squared	0.524141	Mean dependent var	665.4520
Adjusted R-squared	0.440165	S.D. dependent var	1142.152
S.E. of regression	854.5819	Akaike info criterion	16.49335
Sum squared resid	24830545	Schwarz criterion	16.78591
Log likelihood	-331.1137	Hannan-Quinn criter.	16.59989
F-statistic	6.241614	Durbin-Watson stat	1.864986
Prob(F-statistic)	0.000171		

Source: Author's computation using Eviews 9

Error Correction Mechanism (ECM) was used to establish the extent of short run adjustment that was required to difference off the disequilibrium in the short run. The results shown in Table 4.7 indicate that 80.38 per cent adjustment will take place in the short run. The speed of adjustment is very high as indicated by the p-value of 0.0009. Also, from the ECM results obtained, independent variables used in the study account for a total of 44 per cent of variations that occur in the dependent variable. Though the adjusted R-Squared of 44 percent appears to be weak, this suggests that there are other variables that are not included in this model that also influence the total deposits of DMBs. Besides, the Durbin-Watson statistic of 1.86

means that there is no case of autocorrelation in the model. An F-statistic of 6.24 and probability of F-statistic of 0.000171 indicate that the overall model is robust.

5.0 CONCLUSION AND RECOMMENDATIONS

Financial intermediation has to do with mobilising funds (savings) from surplus economic units which could be individuals, firms or government and making them available to the deficit units which equally could be individuals, firms or government, for investment, consumption and other productive activities. This study was considered necessary in order to examine the influence of some economic environment variables on financial intermediation in Nigeria.

Annual time series data obtained from CBN Statistical Bulletin for the period spanning 1975 and 2018 were used in the study. Ex post facto research design was adopted in the study. Findings from the study revealed that deposit rate relates negatively with TDEP whereas inflation rate, nominal GDP and unemployment rate exhibit a positive relationship with TDEP.

It is hereby recommended that government should reduce unemployment rate by providing avenues for work to unemployed citizens as this would reduce involvement in illegal activities and restiveness. Inflation targeting by government should be vigorously pursued as this would reduce uncertainty that affect deposit mobilisation negatively.

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OIL PRICE VOLATILITY AND STOCK MARKET PERFORMANCE: A THREE SECTOR OUTLOOK

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Abstract

This study examines the impact of Crude Oil Price Volatility (COPV) on the Nigerian Stock Exchange with respect to performance index of three identified sectors therein. The sectors are the Banking Sector Index (BSI), the Oil and Gas Sector Index (OGSI) and the Consumer Goods Sector Index (CGSI). The study period is from 2009M1 through 2019M11 using two ARCH family tests: GARCH (1, 1) and EGARCH (1, 1) to examine the transmission/leverage effect of COPV. The findings reveal that while BSI and OGSI are functions of COPV, CGSI do not reflect any ARCH effect. It was observed that BSI has the more leverage effect from COPV than the OGSI, meaning that the banking sector is more influenced by the fluctuations in crude oil prices than the oil and gas sector and the consumer goods sector. Good News (innovations) causes more volatility than the bad news in the BSI. It is therefore suggested that diversification of the economy should be embarked on by the government in order to protect the banking sector from possible danger of over-dependence on one risk factor (which the government cannot control).

Keywords: Crude Oil Price, ARCH, GARCH, EGARCH, Sector Index, Volatility.

1.   Introduction

In spite of the attempt in securing renewable energy, the essentiality of crude oil in the world of today cannot be ignored. (Hamma, Jarboui & Ghorbel, 2015). Indeed crude oil, both to the exporting and importing nations alike is a major source of trade which cannot be overemphasized (Nejad, Jahantigh & Rahbari, 2016). All economic sectors use one or more product(s) from crude oil: at family level, fuelling of cars, generators; at corporate level, dieseling of machineries and equipment; and government, for its daily businesses and as source of revenue. So even in the attempt of generating renewable energy, one or two products of crude oil is made us of. While Uwubanmwen and Omorokunwa (2015) see it as the live wire of the economy, Hathaway (2009) believes that absence of crude oil in the world will result into the collapse of world economic since all the major distribution system that allow economic transaction on a more than local basis would fail.

Considerable attention is been given to the dynamic nature of crude oil price (COP) changes and its volatility effect on different sector of the economy (Caporale, Ali & Spagnolo, 2015). This is because COP as a macroeconomic variable has the ability to transmit its volatility effect(s) on the other macroeconomic variables and the economic at large. Umoru, Ohiomu and Akpeke (2018) argue that crude oil plays a dominant role in Nigerian economy given its huge contribution to its revenue. Since the Nigeria economy relies so much on revenue from crude oil

sales, it is expected that fluctuation in prices of crude oil will affect the Nigerian economy. For example it was recorded in the CBN Annual report (2013, 2016) that oil revenue (gross) stood at N6.8billion, N2.6 billion , representing 69.8%, 48.0% of total federally-collected revenue in 2013and 2016 respectively.

Many a study has been done to evaluate the impact of COPV on the macroeconomic variables, stock exchanges and the economy at large. However in Nigeria, no study known has examined the impact of COPV on economic sectors as identified by the Nigerian Stock Exchange (NSE). In this study, attempt is made to investigate the impact of COPV on the NSE based on the sector indices. In this lite, the study aim at answering the research questions: To what extend do COPV affect Banking Sector Returns (BSR), Oil and Gas Sector Returns (OGSR) and Consumer Goods Sector Returns (CGSR)?

While the research objectives follow through from the questions above, the hypotheses are stated in their null form as follow.
$H0_1$: COPV do not impact significantly BSI
$H0_2$: COPV has no significant effect on OGSI
$H0_3$: COPV do no significantly impact CGSI.

The fact that the introduction of sector based performance indices started on the NSE in 2008 justifies the investigation into the possible transmission effects of COPV on the various economic sectors in Nigerian. This essentially will enable us see the (different) reactions of these sectors to COPV. The coverage period of 2009M1 through 2019M11 give credence to an effort to have an updated/current effect of COPV on the various sectors.

2.   **Literature Review**
The need to evaluate the reactions of various Nigerian economic sectors to COPV is informed by the Capital Asset Pricing Model (CAPM); which states that only one market risk affects the expected returns of an investment. Sharpe (1964) and Lintner (1965) modeled expected market returns as a function of one market risk. Crude oil price especially to a net oil-exporting nation can be very influential on the exporting nation economy. Degiannakis, Filis and Arora (2018) see oil price shock as a change in the price of oil due to an unanticipated change in oil market fundamentals (i.e. global supply or demand of oil). The change could either increase the price of crude or decrease same. Moreover, since crude oil dealing is a daily activity, some factors have been identified by various researchers to be the determinants of crude oil price per time. These factors as identified by Kilian (2008); Davig, Melek, Nie, Smith and Tüzemen (2015); Millington (2016); and Ogunmuyiwa (2017) include: demand shock, supply shock, speculative demand shock, contango level, financial speculations in oil futures market, natural disaster, and weather.
Youssef and Mokni (2019) examine the impact of oil price changes on both the oil-importing and the oil-exporting countries using DCC-FIGARCH. One of the findings is that in oil-importing nations, stock market returns response to oil price changes is more pronounced than for oil-exporting countries during periods of turmoil. Sathyanarayana, Harish and Gargesha (2018) examine the effect of crude price volatility (COPV) on Indian stock market. Applying the

GARCH (1, 1) model it was discovered that changes in crudes prices have a positive impact on Sensex Index.

Ojikutu, Onolemhemhen and Isehunwa (2017) between 1985 and 2014 examine the impact of COPV on the Nigeria Stock Market performance. With ECM method of analysis, it was observed that COPV do not directly affect the performance of the stock market. Hasanov, Bayramli and Al-Musehel (2018) used oil prices in their analysis of bank profitability. This was done to see the effect of oil price changes among other variables, on banks in Azerbaijan. It was however discovered that oil prices was positively related to banks profitability. The study was carried out using Panel Generalized Method of Moments. Ulusoy and Ozdurak (2018) examine the effect of COPV on some oil and gas companies in some selected economics (Russia, Canada, Norway, China, US, Japan) using the EGARCH model. It was discovered that changes in oil prices have a persistent volatility effect on oil and gas company stock returns. Also observed was the news impact of price changes which indicate that oil prices and stock prices have different reaction to bad and good news.

Soyemi, Akingunola and Ogebe (2017) examine the effect of oil price shock on stock returns of some energy firms in Nigeria. Using the three stages least squares (3SLS) on data from 2007 to 2014 the findings reveals that oil price shock impact company stock returns positively and also has an indirect effect on company stock shock through market returns. The direct impact however supersedes the indirect impact. Uwubanmwen and Omorokunwa (2015) examine oil price volatility and stock price volatility in Nigeria from 1990 to 2012. They made use of Error Correction Mechanism (ECM) and the Bi-variate GARCH model on quarterly data of the period to check if volatility in oil prices are transmitted to stock prices in Nigeria. With the variables such as oil price, exchange rates and stock prices it was discovered from their findings that oil price volatility do cause and stimulates the volatility of stock price in Nigeria.

Kang, Ratti and Vespignani (2016) decomposed the impact of oil price shocks on the U.S. stock market with U.S. and non-U.S. oil production. Using the structural VAR on Stock Returns, oil production, oil demand and oil supply, it was discovered that a direct U.S. oil supply shock has a positive impact on U.S. real stock returns. Oil demand and supply shocks are of comparable importance in explaining U.S. real stock returns when supply shocks from U.S. and non-U.S. oil production are identified. Ogunmuyiwa (2017) examined the causality between macroeconomic factors and firms returns in Nigeria observing 50 listed firms between 2007 and 2013 with the aid of Granger Causality Test. The variables of interest include money supply, interest and exchange rates as well as oil price for the explanatory variables while firm share price represent the response variable. The findings reveal that oil which is one of the variables considered granger cause stock returns significantly.

3. **Methodology**
This study models the volatility in crude oil price as it affect different economic sectors in Nigeria. In this regards, 2 ARCH family models are considered: GARCH (1, 1) and EGARCH. The need to consider possible asymmetric information in the price volatility of crude oil informs these models. The best model is chosen based on the SIC/AIC.
The period of the study covers 2009M1 to 2019M11. This period (monthly) is good enough to expose volatility clustering in the variables. The individual features of variables of interest (BSR,

OGSR, CGSR and COP) will examine in the descriptive statistics, correlation matrix and then be subjected to unit root test. The ARCH LM Test which is a prerequisite to perform any ARCH family test will be conducted to see if there is volatility clustering in the variables. The study employs models like the GARCH by Boll, and EGARCH by Nelson (1991) because they are appropriate models for examining volatility reactions.

Adopting Soyemi, Akingunola and Ogebe (2017) and Ulusoy and Ozdurak (2018) the functional form of the regression model are stated thus:

BSI = f(COPV)……………………………………………………………………………1a
OGSI = f(COPV)…………………………………………………………………………..1b
CGSI = f(COPV)…………………………………………………………………………..1c
Where:

BSI   =   Banking Sector Index; OGSI   =   Oil and Gas Sector Index
CGSI =   Consumer Goods Sector Index; COPV   =   Crude Oil Price Volatility

     a. GARCH (1, 1) Model: Engle (1982) and Bollerslev (1986) developed the generalized form of ARCH for reliable estimation of volatility and possible predictions. GARCH model is made up of conditional variance and conditional mean.

$$\sigma_t^2 = \omega_0 + \beta_1 \varepsilon_{t-1}^2 + \alpha_j \sigma_{t-1}^2$$

……………………………………………………………....2

Where σ is the conditional variance, $\omega > 0$, $\gamma \geq 0$ and $\sigma \geq 0$. Equation (3) shows that the conditional variance is explained by past volatility and the past variances, i.e the ARCH term and the GARCH term respectively. Where the summation of both the ARCH terms and GARCH terms tend to 1, the volatility shock of oil price will be more persistent. However the sum must be less than 1, i.e ω_0, β_1 and α_j are non-negatives and $\beta_1 + \alpha_j < 1$ in order to satisfy the covariance stationarity.

     b. EGARCH (1, 1): This model enables us to have the asymmetric effect of news. A standard GARCH, that is, GARCH (1, 1) requires as a must that all the estimated co-efficient of variables should be positive. This model by Nelson (1991) allows for negative co-efficient of variables.

$$\ln(\sigma_t^2) = \omega_0 + \alpha_1 \left(\frac{\varepsilon_{t-1}}{\sigma_{t-1}}\right) + \gamma_1 \left(\frac{\varepsilon_{t-1}}{\sigma_{t-1}}\right) + \beta_1 \ln(\sigma_{t-1}^2)……………………………………………….3$$

Where asymmetric effect of crude oil price volatility is present on stock market returns, then β_1 </> 0, which imply negative effect or positive effect respectively. Where $\beta_1 = 0$, then there is absence of asymmetric effect.

4   Empirical Analyses

4.1   Unit Root Test and ARCH Effect Test: Table 1 presents the results of both stationarity test and ARCH effect test. While the stationarity test allows us to I(1). From the output all the variables are free of unit root in their first difference, hence, passed the stationarity test.

The ARCH effect test mirrors volatility clustering and shows that LNCOP, LNBSI and LNOGSI all have ARCH effect at 5% significant levels. However the null hypothesis of ARCH effect is rejected for LNCGSI at 5% significant levels. Volatility clustering indicates that season of increased volatility is followed by season of increased volatility and season of decreased volatility is followed by seasons of decreased volatility. This gives credence to run the ARCH family models for both Banking sector (BSI) and Oil and Gas sector (OGSI) models only.

Table 1: TEST FOR STATIONARITY AND ARCH EFFECT

Variables	Series	Unit Root Tests		Remark	ARCH Effect
		ADF	**PP**		
LNCOP	*Level*	-1.60	-1.70	I(1)	0.0000*
	1st Diff	-9.16*	-9.17*		
LNBSI	*Level*	-2.63	-2.72	I(1)	0.0000*
	1st Diff	-10.67*	-10.81*		
LNOGSI	*Level*	-2.88	-2.88	I(1)	0.0000*
	1st Diff	-9.43*	-9.49*		
LNCGSI	*Level*	-6.62*	-6.98*	I(1)	0.9481
	1st Diff	-9.97*	-33.49*		

Authors' computation with Eviews 10, (2019)

4.3   GARCH (1, 1) and EGARCH (1, 1) Test: From Table 2 below, it is observed that while the ARCH term is not significant the GARCH is significant for banking sector model. However, the condition of non-negativity is violated by the ARCH term α with coefficient of -0.009345. This is however the motivation behind Nelson's (1991) introduction of Exponential GARCH. The EGARCH term, ϒ, of about 16% is however positively significant at the 5% levels. This means that good news (positive innovation) of crude oil price causes volatility more than the bad news (negative innovations). Also the persistent (β) value in EGARCH model of about 84% indicates that the positive effect of shock in oil price last long on the Banking sector. The SIC of EGARCH (1, 1) having the lower value shows that the EGARCH model is the better.

Table 2: GARCH (1, 1) and EGARCH (1, 1) for BSI and COPV

D(LNBSI)						
	GARCH			EGARCH		
Coefficients	Coefficient Factor	Standard Error	Prob.	Coefficient Factor	Standard Error	Prob.
D(LNCOP)	0.303064	0.109145	0.0055	0.323671	0.102276	0.0016
⍵	0.000201	0.000133	0.1325	-1.031505	0.47776	0.0308
α_1	-0.009345	0.024956	0.7081	-0.075595	0.070345	0.2825
β_1	0.84612	0.107595	0	0.837953	0.070139	0
ϒ	NA	NA	NA	0.160324	0.05934	0.0069
AIC		-3.671081			-3.69525	
SIC		-3.554311			-3.555125	

Authors' computation, (2019)

Table 3 presents both the GARCH and EGARCH models for Oil and Gas sector. In the GARCH (1, 1) model, both the ARCH term and the GARCH term are not significant however fulfill the condition of non-negativity and sum less than 1. The EGARCH term, ϒ, of about 13% is however not statistically significant at the 5% levels. This means that even though good news (positive innovation) of crude oil price causes volatility more than the bad news (negative innovations) it is not significant. Also the persistent (**β)** value in EGARCH model of about 82% indicates that the effect of shock in oil price last long on the Oil and Gas sector.

Choosing the better model out of the two (GARCH (1, 1) and EGARCH (1, 1)), we observe the SIC with lower value, and hence the GARCH (1, 1) is chosen. This means there is no asymmetric information from COPV to the OGSI in Nigerian and hence we stick to the GARCH (1, 1).

Table 3: GARCH (1, 1) and EGARCH (1, 1) for OGSI and COPV

D(LNOGSI)						
	GARCH			EGARCH		
Coefficients	Coefficient Factor	Standard Error	Prob.	Coefficient Factor	Standard Error	Prob.
D(LNCOP)	0.228732	0.104286	0.0283	0.222242	0.103183	0.0313
⍵	0.000847	0.000301	0.0049	-1.260977	0.581701	0.0302
α_1	0.284992	0.166779	0.0875	0.0332608	0.107793	0.7623
β_1	0.098089	0.272012	0.7184	0.816305	0.0862	0
ϒ	NA	NA	NA	0.125359	0.095203	0.1879
AIC		-3.712246			-3.684799	
SIC		-3.595476			-3.544675	

Authors' computation, (2019)

4.4   **Discussion of Findings**

Having dropped the CGSI model because of the absence of ARCH effect, we perform GARCH (1, 1) and EGARCH (1, 1) models for both BSI and OGSI. From the output of the GARCH (1,1) and EGARCH (1,1) analyses, it is observed that for BSI, the EGARCH (1,1) model is more suitable while for OGSI, GARCH (1,1) is more appropriate for interpretations. It is discovered that there is asymmetric effect of COPV on the banking sector where good news seems to be a greater cause of volatility than bad news. This means that the Nigeria banking sector performance is a function of good news in crude oil price than the bad news. That is banking sector stock respond to volatility in crude oil price. Having a positive leverage effect indicates that the Nigeria market is still not mature.

Similarly, it is discovered that OGSI is not a function of COPV. This means that the volatility in crude oil price do not have asymmetric effect on the oil and gas sector's stock in Nigeria. This means that there is no leverage effect on the performance of oil and gas sector in Nigeria as a result of volatility in crude oil price.

Giving that the two sectors (Banking, and Oil and Gas) react to crude oil price volatility differently, this uphold the findings of Degiannakis, Filis and Floros (2013) which argues that relationship between sector indices and oil prices are industry specific.

Equally, the result is consistent with Akomolafe and Danladi (2014) where they used Vector Error Correction Model to established the relationship between crude oil price and banking sector returns, while the other two sectors (Construction and Oil and Gas) examined are seen not a function of crude oil prices.

5   **Conclusion and Recommendations**

This study investigates the impact of crude oil price volatility on the Nigerian Stock Exchange while observing the performance indices of three (3) various sectors of the economy: the Banking sector index (BSI), the Oil and Gas sector index and the Consumer Goods sector index. The theoretical base of Capital Asset Pricing Model of one risk factor influence on returns was applied. The methods of estimation are the GARCH (1, 1) and EGARCH (1, 1). It was observed that of the three models, only BSI and OGSI models passed the ARCH effect test, and hence fit for ARCH family tests. The CGSI model do not pass the ARCH effect test, therefore cannot be examined under GARCH, EGARCH and any other ARCH family models.

From the estimations, GARCH (1, 1) model is preferable for the OGS model while the EGARCH (1, 1) is preferable for the BSI model considering their SIC values. While the coefficients for the OGSI GARCH model are not significant those of the BSI EGARCH are significant. This invariably implies that the Banking sector is prone to the effect of volatility in crude oil price than the Oil and Gas sector. Considering the asymmetric information passed, good news generates more volatility in banking sector than bad news (against the popular belief of otherwise). This findings is however consistent with that of Akinlo (2014) where it was observed that oil price has a temporary positive impact on stock market. In support of Hammami and Bouri (2018) where they observed that oil price shocks are mostly bad news to the developed economy but good news to the emerging economy. It can then be inferred that Nigeria being a net-exporter of crude oil has it as good news which tends to generate volatility especially in the Banking sector when price fluctuates.

Seeing that the federal government do not have absolute control on the crude oil price and hence on the amount being generated as revenue, it is therefore recommended that the nation's economic managers formulate economy diversification policies to ensure that the economy is not relying on a single risk factor. Relying mainly on revenue from crude oil (a risk factor) can be so detrimental to the Nigerian Financial System if things turn south, hence diversification of the economy is highly recommended.

In like manner, since COPV should ordinary reflect in the performance of oil and gas sector, it is therefore advised that there should be improvements in the regulations of oil and gas sectors to avoid any inefficiency (malfeasance or leakages) since government subsidize the sector heavily. Also the knowledge of the workings of capital market should be broadened to include not only buying stocks of viable firms but also engage in its trading. This will make the capital market more developed, more responsive and of world standard.

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COMMERCIAL BANK CREDIT AND ECONOMIC GROWTH IN NIGERIA

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Abstract
This study examined the impact of commercial bank credit on economic growth in Nigeria for period 1992-2018. In order to achieve the set objectives of the study, commercial bank credit to private sector (CPS), money supply (M_2), lending rate (LR) and credits to small and medium scale enterprises (CSME) were used as proxies for bank credit and the dependent variable was economic growth, measured by real Gross Domestic Product (GDP). Data was collected from CBN Statistical Bulletin 2018 was analysed using Ordinary Least Square (OLS) technique. Findings from the study revealed that commercial bank credit to small and medium scale enterprises has an inverse and significant relationship with real GDP while bank credit to private sector has a direct and significant relationship with GDP. The explanatory variables also showed a high predictive power to explain 98.06% of the variations in real GDP in Nigeria. It was concluded that bank credit has a significant relationship with economic growth in Nigeria. The study recommends that banks should be persuaded by relevant economic authorities to lend more to SMEs in Nigeria and the need to sustain the level of bank credit to private sector in order to support our continuing build up to stable economic growth.

Key Words: Bank Credit, Economic Growth, Money Supply, Lending Rate, Credits to Small
             and Medium Scale Enterprises and Real Gross Domestic Product.

Introduction

Since Nigeria got her independence in 1960, successive governments have implemented several national development plans and programmes aimed at boosting productivity and diversifying the economic base of the country. This economic agenda necessitated the intervention of the financial sector, especially the banking industry, through the provision of financial resources to industries for large scale production. The importance of financial intermediation through bank credit in a developing economy has been acknowledged by Schumpeter (1934) who argued that banking sector facilitates technological innovation through their intermediary role. Schumpeter (1934) emphasized on the efficient allocation of savings through identification and funding of entrepreneur as well as implementation of innovative production process that are the main tools in achieving real economic performance.

Thus, a well-developed financial system plays several roles to boost efficiency of inter-mediation, transaction and monitoring cost. It also enhances investments by identifying and funding good business opportunities, mobilizing savings, encourage trading, hedging and diversification of risk as well as facilitating exchange of goods and services (Adekunle and

Adedipe, 2013). This results in more efficient allocation of resources, accumulation of physical and human capital and faster technological progress which in turn leads to economic growth.

In Nigeria, various reforms have been introduced to make the financial sector more robust and liberal. These reforms have affected the level of financial development of the country and the relevance of financial system to the economy. The rapid globalization of financial market and increased level of integration of the Nigerian financial system compared to global system has also generated interest on the level of financial services required to guarantee steady economic growth and development. However, despite the improved level of financial sector deregulations and liberalization which has seen the stocks of Nigerian banks grow tremendously,access to formal financial services tothe private sector and small and medium enterprises (SMEs) hasremained discouraging. Access to finance, especially bank credits by small and medium scale enterprises and for productive investments in the private sector have been difficult due to several conditions such as collaterals and high interest rates.

Since the private sector and especially small and medium scale enterprises (SMEs) is seen as the gateway to economic stability, prosperity and growth as shown in countries like China, Japan, Brazil and others, the inability of this sector in accessing a sizeable portion of bank credit in Nigeria, has remained a challenge to achieving the objective of economic growth in the country. The crucial nature of this has made the Central Bank of Nigeria (CBN) to mandate all deposit money banks to maintain a loan to deposit ratio (LDR) of more than 60% in recent times. This underscores the substance attached to the role of bank credit as a catalyst for economic growth in Nigeria.

With this in mind, it is the objective of this paper to examine the relationship between financial development and growth as it applies to the Nigerian economy with a view to determining whether bank credits (credit to private sector and credit to small and medium scale enterprises) is a significant instrument for generating economic growth in Nigeria. Also examined is the role of other factors such as money supply and lending rate in the determination of the significance of bank credits in stimulating economic growth in Nigeria.

Concept of Bank Credit

Credit refers to the process of lending and borrowing of funds from financial able bodies such as banks, government, individuals and financial institution. It is also described as a means of obtaining resources at a certain period of time with an obligation to repay in accordance with terms and conditions attached to it.In creating credit, a bank has to know how much of its idle funds is available after satisfying requirements of the regulatory authorities like the Central Bank of Nigeria and Nigeria Deposit Insurance Corporation. In doing this, the regulatory authorities apply the reserve requirements, (cash reserve ratio and liquidity ratio) and other monetary policy tools such as Open Market Operations (OMO), asymmetric corridor around the Monetary Policy Rate (MPR) and stabilization securities in order to control the volume, size, cost and flow of bank credit.

Banks, usually grant credit after a rigorous process of credit administration. These are usually referred to as of lending and include character, capability or capacity, capital, cost, collateral and condition. Nzotta (2005) explained that most banks in Nigeria maintain stringent compliance to these cannons couple with high cost of loans (high lending rate), hence making it

difficult for some borrowers especially small and medium scale enterprises (SMEs) to access vital credit for growth and expansion.

Despite efforts aimed at ensuring increased level of lending to SMEs in the countrybanks in Nigeria have shown reluctance in providing the necessary assistance to raise entrepreneurial business, attributing this to the high level of risk associated with lending to small scale businesses. According to Nzotta (2005), the bankers committee in Nigeria agreed to set aside 10% of the profit before taxes (PBT) of each bank to finance entrepreneurship. However, these financial intermediaries still determine the rules for allocating funds to the real sector and even, play a significant role in determining the type of investment activities, the level of job creation and the distribution of income to the sector.

One of the main reasons for the controlled and low provision of bank credit to small and medium scale enterprises (SMEs) according to Adegbite(2009), is the high cost of administering such loans, the perceived high default rates and the rising cases of non-performing loans (NPLs) which is fast becoming a perennial problem in the banking industry in Nigeria. But Nzotta (2005) posits that this may not be a plausible reason except in the developing economy that lacks strong financial system. Other reasons advanced for the inadequate funding of small and medium scale enterprises is poor structural support of SMEs by the government. This discourages the banks to increase the level of credit to entrepreneurship ventures.

However, it must be pointed out that some policies and programmes have been enunciated to help increase access to finance by SMEs in the country. One of such policies is the mandatory directive by Central Bank of Nigeria (CBN) in recent times to banks, compelling them to increase their loan to deposit ratio (LDR) to 60% and a further 65% in a latest directive issued in October 2019. Failure to adhere to this, according to the regulatory authority will make the banks forfeit a sizeable amount of their deposits with the apex bank. Also, the activities of the government in providing special funds through the Central Bank of Nigeria (CBN), Bank of Agriculture (BOA) and Bank of Industry (BOI) constitute efforts at ensuring that funds are made available to small and medium scale enterprises (SMEs) and organized private sector for productive activities.

Bank Credit and Economic Growth

In the words of Nzotta and Okereke (2009), economic growth is the ability of an economy to increase its capability in the production of goods and services over a period of time. An economy that is growing is the one that is witnessing an increase in the production of goods and services for some consecutive years. The time horizon differs from country to country, but a growing economy is capable of recording a continuous increase in the production of goods and services for at least four years running.

Okafor (2005) posits that economic success of any nation in the long run is represented by the expansion of a country's potential Gross Domestic product (GDP) or national output. This expansion is made possible through increased level of production in the economy especially through the real sector. Bank credit to the real sector is aimed at expanding production in the economy. Thus the role of bank credit and growth of modern economies seems inseparable. Bencivenga and Smith (1991) explained that development of banks and efficient financial

intermediation contributes to economic growth by channeling savings to high productive activities and reduction of liquidity risks.

Shumpeter (1934), Goldsmith (1969) and Shaw (1973) strongly emphasized therole of financial intermediation in economic growth.Fry (1988) and Goldsmith (1969) agree on the ways banks can affect economic growth (through financial intermediation) as raising the volume of investment and by improving the volume and structure of savings especially in developing economies. Nwanyanwu (2010), Ojo (2010) and Ndebbio (2014) all assert that through the process of financial intermediation banks supplying bank credit influences economic growth.

Theoretical Framework

This research work is anchored on endogenous growth theory. Endogenous growth theory or new growth theory was developed in the 1980s by Romer, Lucas and Rebelo as a response to criticism of the neo-classical growth holds that policy measure can have impact on the long run growth rate of an economy (Nnanna, Eglama and Okolo, 2014). The growth model is one in which the long-run growth rate is determined by variables within the model, not a neo-classical growth model. Jhingan, (2006) explained that the endogenous growth model emphasized technical progress resulting from the rate of investment and the size of the capital stock of human capital.

Nnanna *et al* (2004) and Soludo, (2005) opine that the recent endogenous growth theory suggests that a strong banking system promote economic growth through bank credit and holds that policy measure can have an impact on the long runto growth rate of an economy. By this, banking system play a crucial role in channeling finance in the form bank credit facilities into investments by productive agents within the economy and thus act as a catalyst for economic growth. The main implication of this theory therefore, is that banking policies which embrace openness, competition, change and innovation will promote economic growth. Balogun (2007) suggests that openness of the banking system has a direct and indirect effect on economic growth through combination of intermediaries as both of these cause a lowering of cost of financing which in turn stimulates capital accumulation and economic growth.

Empirical Literature

The role of banks as an agent for economic growth within the economy has been examined by a myriad of studies. While some of the studies have concluded that a positive relationship exists between bank credits and economic growth, others have found otherwise.

Odufuye, (2017) examined bank credit and its impact on Nigeria's economic growth for the period of 24 years (1992-2015). The findings revealed that each of the explanatory variables which include bank credit to manufacturing, agriculture and commercial sector has insignificant impact on gross domestic product. Based on the f-statistic result, it was also discovered that the joint variables of bank credit have significant impact on gross domestic product for the period under review. The study concluded that bank credit if properly channeled is a catalyst for Nigerian economy growth.

Abdullahi and Adamu (2013) adopted autoregressive Distributed lad Bound Approach (ARDL) to examine the relationship between banks private sector credit and economic growth in Nigeria for the period of 37years (1974-2010). The study discovered that significant long-run

relationship exist between private sector credits and economic growth, but no significant casuality between them in either or both direction. Also, Tomola, Adebisi, and Olawale (2012) researched on the effect of bank credit on manufacturing output in Nigeria. Findings from the study revealed bank lending rates significantly affect manufacturing output in Nigeria.

Similarly, Abubakar and Gani (2013) investigated the long run relationship between financial development and economic growth in Nigeria for the period 1970-2010. The study used Johansen Vector Error Correction Model (VECM). The result from the study revealed that credit to private sector and interest rate spread exert significant negative influence on economic growth. Yakubu and Affoi (2014) conducted an analysis of commercial banks credit on economic growth in Nigeria. Findings from the study found that commercial bank credit has significant effect on economic growth in Nigeria.

Given the perceived inefficiencies of the financial system in Nigeria and the vitality of financial activities to economic growth, this study is aimed at re-examining the role of bank credits to small and medium scale enterprises (SMEs) and private sector on economic growth in Nigeria.

DATA AND METHODOLOGY

This study adopted ex-post facto design. The study adopted time series data from 1992 to 2018. The data used for this study was secondary data collated from Central Bank of Nigeria (CBN) Statistical Bulletin, 2018. Ordinary Least Square (OLS) multiple linear regression, unit root, cointegration and Granger causality techniques were used in the treatment of data. The variables employed are Gross Domestic Product (GDP) as proxy for economic growth, while bank credits to private sector (CPS), bank credit to small and medium scale enterprises (CSME), money supply (M_2) and lending rate (LR) served as the explanatory variables. The ordinary least square (OLS) estimation technique with the aid of statistical package for social sciences (SPSS) was used to analyze the economic relationship between bank credits and economic growth for the period of 19 years (2000-2018).

Research Hypothesis

The research hypotheses formulated and tested in this study is given as:

H_0: Credit to small and medium scale enterprises, credit to private sector, money supply and lending rate do not have significant effect on economic growth in Nigeria.

Model Specification

In order to achieve the objective of this study and to test the research hypothesis, the following model was formulated.

GDP= f (CSME, CPS, MS, INTR) -------------------------------- (equation 3.1)

GDP= β_0+β_1CSME + β_2CPS+ $\beta_3$$M_2$+ β_4LR+ u_1 --------------------- (equation 3.2)

Where:

GDP   = Real Gross Domestic Product

CSME   = Credits to Small and Medium Scale Enterprises
CPS   = Bank Credits to Private Sector
M_2 = Broad Money Supply
LR   = Lending Rate
β_0 = Regression constant term

$\beta_1, \beta_2, \beta_3, \beta_4$ = coefficient of explanatory variable
u_1 = error term
The a priori expectation in this study is given as follows:

$B_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$, and $\beta_4 > 0$.

ANALYSIS OF DATA, RESULTS AND DISCUSSION

At first, the time series properties of all the variables were ascertained to avoid regression results which are nonsensical, from the regression of two or more non-stationary time series data. This implies that the time series had to be detrended before any non-spurious regression analysis can be performed. The order of integration of each of the variables was recognized and a unit root test was conducted using Phillips-Perron (P-P) tests. Secondly, the Johanssen cointegration test was conducted to determine if the group of stationary series is contegrated or not. If cointegration is found, it implies that there exists a long run equilibrium relationship among some or all of the variables in the model. Thirdly serial correlation test using Breusch-Godfrey test was conducted to determine the presence or absence of autocorrelation. Fourthly, multiple linear regression analysis using Ordinary Least Square method (OLS) was conducted to determine the nature of the relationship between the variables and to test the study hypothesis. Finally, a pairwise Granger causality test was carried out to determine the direction of the causality relationship if any, between the variables.

4.1   Unit Root Analysis

The result of the Philips-Perron unit root at 5% is presented in Table 4.1.
Table 4.1: Philips-Perron Unit Test Result

Stationary at First Difference (Order of Integration = 1)	Stationary at Second Difference (Order of Integration = 2)
1. **Credit to Private Sector (CPS)** 2. **Credit to Small and Medium Scale Enterprises (CSME)** 3. **Lending Rate (LR)**	1. Real Gross Domestic Product (GDP) 2. Money Supply (M_2)

Source: Authors' Compilation (2019)

Table 4.1 showed that credit to private sector (CPS), Credit to Small and Medium Scale Enterprises (CSME) and lending rate (LR) were found stationary at first difference given that the adjusted Philips-Perron test statistic is greater than the critical t-statistic value and the probability

of the adjusted t-statistic is within the 5% acceptable region. At first difference, real GDP and money supply (M_2) were found to be non-stationary hence the further conduct of the unit root test at second difference. The result from the test showed that real GDP and money supply were stationary at that level of integration. This situation warranted the logarithmic transformation of both variables (GDP and M_2) in order to lessen the trend effect scale down the numbers and capture the changes in their time series in the application of Ordinary Least Squares (OLS).

Cointegration Test

The cointegration test result conducted using Johansen test is presented in Table 4.2

Table 4.2: Johansen Cointegration Test Result.

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.721204	76.73694	60.06141	0.0011
At most 1 *	0.554268	44.80509	40.17493	0.0159
At most 2 *	0.435078	24.60416	24.27596	0.0455
At most 3	0.289320	10.32747	12.32090	0.1055
At most 4	0.069066	1.789161	4.129906	0.2129

Trace test indicates 3 cointegratingeqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Authors' Computation (2019)

Table 4.2 showed that the result of the cointegration analysis indicates that at most two cointegrating equations exist in the model at 5% level of significance. This implies that there is the possibility of a sustained short-run equilibrium relationship among the variables real Gross Domestic Product (GDP), credit to private sector (CPS), credit to small and medium scale enterprise (CSME), money supply (M_2) and lending rate (LR) in the long-run.
Having established cointegration in the model, study estimated the ordinary least square (OLS) multiple linear regression result.

4.3   Test of Hypothesis

The multiple linear regression OLS result is presented in Table 4.3.

Table 4.3: Ordinary Least Square (OLS) Multiple Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.586388	0.201352	42.64369	0.0000
CSME	-4.52E-07	2.29E-07	-1.974892	0.0610
CPS	1.25E-05	4.47E-06	2.792632	0.0106
LOG(M_2)	0.225928	0.019551	11.55595	0.0000
LR	0.003632	0.004085	0.889145	0.3835
R-squared	0.983561	Mean dependent var	10.51277	
Adjusted R-squared	0.980573	S.D. dependent var	0.479368	
S.E. of regression	0.066815	Akaike info criterion	-2.408196	
Sum squared resid	0.098214	Schwarz criterion	-2.168227	
Log likelihood	37.51065	Hannan-Quinn criter.	-2.336841	
F-statistic	329.0803	Durbin-Watson stat	0.729605	
Prob(F-statistic)	0.000000			

Source: Authors' Computation (2019)

From the result in Table 4.3, the multiple regression model is presented as follows:

GDP= 8.59- 0.0000005CSME + 0.000013CPS+ 0.23M_2+ 0.004LR ------------   (equation 4.1)
        The above result showed that real Gross Domestic Product (GDP) will increase by an average of ₦8.5 billion if all the explanatory variables are held constant (i.e. CSME=CPS=M_2=LR=0). Likewise, a ₦1 million additional credit to small and medium scale enterprises (CSME) will decimate real GDP in Nigeria by ₦0.0000007 billion; a ₦1 billion extra credit to private sector (CPS) will boost real GDP in Nigeria by increase₦0.000013 billion: an extra ₦1 billion increase in money supply (M_2) will lead to an increase of ₦0.23 billion in real GDP in Nigeria and a 1% rise in lending rate (LR) will lead to a ₦0.003 billion growth in real GDP in Nigeria within the period under study. The inverse relationship between credit to small and medium scale enterprises (CSME) and real GDP is however significant, as is the direct relationship between credit to private sector (CPS), money supply (M_2) and real GDP. This is based on the absolute values of their respective t-statistics and probability values. However, money supply (M_2) showed the most statistically significant relationship with real GDP, followed by credit to private sector (CPS) and credit to small and medium scale enterprises (CSME) in that particular order. Though the Durbin-Watsin (DW) statistic value of 0.72 indicates the presence of positive autocorrelation in the data series, the regression results and the residuals are considered robust enough not to be considered spurious given that the data had undergone several pre-estimation test to establish suitability for multiple linear regression estimation.
        The Adjusted R^2 value of 0.9806 indicates a high predictive value of the explanatory variables to explain the variations in real GDP in Nigeria within the period covered in this study. The remaining 1.94% of the variations could be attributed to other macro-economic factors not

considered in the model. The computed F-statistic value of 329.08 indicates that the model has goodness of fit hence the model is said to be statistically significant. Based on this the null hypothesis as earlier stated will fail to hold and the alternative which states that credit to small and medium scale enterprises, credit to private sector, money supply and lending rate has significant relationship with real Gross Domestic Product in Nigeria is accepted.

Table 4.4: Serial Correlation Test and Granger Causality Test
        To establish the absence of serial correlation in the variables, Breusch-Godfrey Serial Correlation test was conducted. The result is presented in Table 4.5:
Table 4.5: Breusch-Godfrey Serial Correlation Test Result
Breusch-Godfrey Serial Correlation LM Test:

F-statistic	5.685605	Prob. F(2,20)	0.0111
Obs*R-squared	9.786765	Prob. Chi-Square(2)	0.0075

Source: Authors' Computation (2019)

        Residuals for each of our variable were subjected to anautocorrelation validity test and the results as shown in Table 4.5 revealed that there are no traits of serial autocorrelation in our model. This is desirable as the study proceeded with the final test Pairwise Granger Causality test to establish the direction of the causal relationship between the explanatory variables and real GDP. The result is given in Table 4.6.
Table 4.6: Pairwise Granger Causality Test Result

Pairwise Granger Causality Tests
Date: 10/16/19   Time: 07:19
Sample: 1981 2018
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
CSME does not Granger Cause GDP	25	0.19915	0.8210
GDP does not Granger Cause CSME		9.59761	0.0012
CPS does not Granger Cause GDP	36	3.45236	0.0443
GDP does not Granger Cause CPS		9.85412	0.0005
M_2 does not Granger Cause GDP	36	1.12413	0.3378
GDP does not Granger Cause M_2		6.44516	0.0046
LR does not Granger Cause GDP	36	0.16387	0.8496
GDP does not Granger Cause LR		1.50970	0.2368

Source: Authors' Computation (2019)

The result in Table 4.6 showed that a uni-directional causative relationship exists between credit to small and medium scale enterprises (CSME), money supply (M_2) and real GDP while a bi-directional relationship exists between credit to private sector (CPS) and real GDP in Nigeria between 1992 and 2018.

Discussion of Findings

The inverse relationship between credit to small and medium scale enterprises was contrary to the a priori of this study. However this finding may not be unrelated to the lukewarm nature of lending to small and medium scale enterprises (SMEs) in Nigeria. SMEs in Nigeria are starved of the needed bank credit due to stringent conditions attached to such. This minimizes their capacity to survive, grow, expand and contribute more to domestic output in Nigeria. The positive and significant relationship between credit to private sector and real Gross Domestic Product (GDP) is in consonance with the findings in Abdullahi and Adamu (2013) and Yakubu and Affoi (2014) whose studies both agreed that credit to private sector exerts a positive and significant influence on real GDP and thus on economic growth, thereby giving credence to the propositions of the endogenous growth model which agrees that bank credit has a significant effect on economic growth.

Conclusion

The fact that empirically, credit to private sector and credit to small and medium scale enterprises showed significant relationship with real GDP in Nigeria indicates that bank credits have significant effect on the real Gross Domestic Product. This affirms the relevance of the role of financial intermediation of banks in economic growth. As shown, this relationship is sustainable both in the short and long-run in a developing economy such as Nigeria's. Furthermore, the bi-directional causal relationship between credits to private sector firmly supports the propositions of the endogenous growth theory which asserts that bank credit can cause economic growth through accumulation of savings, credit creations and provision of various kinds of bank credit to various units in the economy for investments and other productive ventures.

Based on the findings, it is recommended that lending to small and medium scale enterprises in Nigeria should be improved so as to spur increased production in the economy and subsequently lead to economic growth. Also, based on the fact that interest rate does not have significant effect on economic growth, it is very expedient for government through its monetary authority, the Central Bank of Nigeria (CBN) to reduce lending rates.

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