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The Effects of Financial Intermediation on Bank Performance in Nigeria from 1980-2019

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Abstract:

The study empirically examines the effect of financial intermediation on bank performance in Nigeria from 1980-2019. A time series data from IMF Global financial development database and World Bank data base was used. A diagnostic analysis of test for stationarity was conducted to ensure that regression results were not spurious, using Augmented Dickey-Fuller (ADF) unit root test; the results indicate all the variables are stationary at 1(1) respectively. The ARDL result indicates that LROA has a negative and significant relationship with LROA; LFID has a positive but non-significant relationship with LROA; LFIE has a negative and significant relationship with LROA and LFII has positive and significant relationship with LROA respectively. The R^2 indicate the fitness of model and relationships with the explanatory variables. Furthermore, the result of Granger Causality test indicates that the relationship between financial intermediation and bank performance is Bidirectional. The study adopted IMF Global Financial Development index indicators on access, depth, efficiency and stability. The dependent and independent variables used for the study includes; bank performance proxy with return on asset (LROA) while, financial intermediation proxy with financial development index (LFDI), financial institutions access index (LFIA), financial institution depth index (LFID), financial institution efficiency index (LFIE), and financial institution index (LFII). While E-views econometric statistical package 10.0 was used for the data analysis. The study recommends among others, that the key players in the financial sector should ensure those policies towards improving access to financial services and its efficiency as a major driving force and sustainable economic development propeller bearing a life wire for the survival of the banking industry; as such both the financial and regulatory authorities must provide adequate score cards on the number of bank branches and outlets either in quarterly basis or yearly for proper management as to avoid excessive use of these policies to prevent economic distortions.

Keywords: Bank financial intermediation, bank performance, financial depth index, financial efficiency index, financial stability index, financial access index

1. Background Information

There is overwhelming evidence from different scholars indicating that banks assumed essential part in the economic development and growth process of a country. Basically, the major role of banks in an economy is to facilitate an efficient payments system and to serve as a conduit for the execution of financial policies (Donli, 2007).

Ron (2012) noted that primarily banks play financial intermediation roles by accepting deposits, making advances at variety of maturities either fixed or at variable rates and bring in cash through loan costs spread by charging for services provided. In other to achieve this, commercial banks in Nigeria have under gone a series of regulatory and financial innovations in areas of technology, efficiency, and stability in other to Deeping the financial sector since the introduction of structural adjustment programme (SAP) in 1980's to date. since then, the Nigeria banks has been consistently confronted with competition and rising expenses because of regulatory requirements, financial and technological innovations, bank distress and other challenges which have seriously affected bank performances in Nigeria. One of these reforms among

others includes banks consolidation which increased the minimum capital based, which is expected to empower Nigerian banks to offer services to the fragments of the general public that had stayed outside the inclusion of the current banking system.

Soludo (2004) stressed that banks that couldn't exclusively meet the recapitalization necessity ought to participate in merger and acquisition; moreover, recapitalization is viewed as the major significant segment of banking consolidation. This policy was in response to correct the intending crisis in the banking sector and subsequent resulting failures, were 89 banks in 2004 in Nigeria is portrayed primary and functional shortcoming of low capital base, predominance of few banks, bankruptcy and illiquidity, over reliance on public sector deposits and foreign exchange trading, poor asset quality, poor corporate governance and a system characterized by low public confidence. Although, there is great indications that banks as at that time had two things namely small size and unethical practices. Thus, the banks couldn't adequately uphold the real sector of the economy (Kunt, 2009 & Gunu, 2010). Hence, changes were predicated on the requirement for re-direction and repositioning of a current state of banks to accomplish a powerful and proficient state. Thus, the major essence of these reforms was to improve the bank financial system in terms of its depth, access, efficiency and stability in other explore its essential potentials in the economic development process.

In furtherance to the above statements, the bank's financial system development is expected to be a direction towards an aggressive competitive policy aimed at crowding out competitors using the most stringent, including not always legal, methods. The execution of this system is normally connected with a priority focus on the most cost-effective, and subsequently risky, monetary transactions. In recognition to the above facts (Havryliuk, 2017) agreed that profitability and asset base usually is the traditional measure used to summarize the performance of banks because it shows the achievement of its work and serves as one of the significant elements, attracting new investors and fortifying client confidence in the banking sector. Thus, following the study of (J.F.Sinkey, 1998), the study adopts return on assets (ROA) as the most significant indicator for analyzing the profitability of a bank in terms of its performance. This is because ROA stimulates the activities of force to enhance the bank's work, ensures cost reduction and increased competitiveness, gives the proper to replenish capital, and forms the basis for vital activity and growth of the bank's weighty role and expanded competitiveness and dividend payments to investors.

Furthermore, banking from the microeconomic perspective means business and making profit capacity for client's investors. While financial performance is an emotional measure of how well a bank can utilize resources from its essential method of business in other to produce incomes inform of returns on investments. Therefore, the performance of a bank using ROA can give a snapshot of its financial wellbeing as well as the works its management is doing in analyzing the outstanding loan portfolio, past due loans, new loans and deposits and so on.

Therefore, for any economic system to strive, the bank as one of financial intermediaries must assume a tremendous part in economic development process, because of its ability in broadening access to finance, to the poor and fewer developed countries, facilitating risk management by reducing their shortcoming to risk, and increasing investment and productivity that end in higher income generation as well as diminishes poverty and inequality. This intermediation process is achieved when financial resources is mobilized in the form of savings through bank and thereby channeling these resources in forms of credits to more productive uses for the purpose of investments; hence constituting one of the main functions of bank financial institutions in savings, fund mobilization and investment process. It is in this regard, that the World global financial development remarks that countries with better developed financial systems will in general develop quicker throughout broad time frames (World Bank, 2019).

Thus, in realizing the need for economic development in Nigeria, as a key factor for banking intermediation, the banks has consequently changed their narratives generally to reflects improved banking service operation, improved market competitions and made the important essentials for performance assessment and management on the market, profit earning pressure, the credit markets crisis, just mention but a few.

Despite the overwhelming vital role of bank financial intermediaries in the economic development of any nation, there exist some classical world pools of empirical evidence on the related subject area like economic growth and development, with very few studies having attentions on bank performance as the most lubricants for economic development in Nigeria. The current researchers among them includes but not limited to; Haron&Azmi (2006) , Nzotta&Okereke (2009), Nicholas (2010), Osuji&Chigbu (2012), Yusuf (2012), Vohra & Sehgal (2012), Basher (2013), Adusei&Afrane (2013), Okoye&Onyekachi (2013) Akoto&Nabieu (2014), Tonye&Andabai (2014), Sulaiman&Aluko (2015), Leyla&Aytan (2015), Eugene (2016) & Godwin (2017), none of them adopted the 2019 International Monetary Fund (IMF) Global financial development index indicator for financial intermediation in response to harmonize the issue of none data availability as different countries uses different levels of financial development indicators in measuring Access, Depth, Efficiency and Stability of a well-working financial sector.

Secondly, there has been a conflicting mixed reactions based on the results of previous research works on this subject area. While others argued that the relationship is both supply- lending and demand- driven (King & Levine, 1993; Nicholas, 2010; Song et al; 2010). Infact, the most dishearten's contrary view of (Lucas, 1988 & Muhammed et al; 2016). These mix reactions in the results may be traced to the fact that different scholars adopt different micro and macro-economic variables model and methodology for data analysis. Thus, given raise to research gap. Based on the above facts, this study is conducted using the 2019 IMF Global financial development index.

The dependent variable Bank performance will be proxied with Return on assets (ROA) while the independent variables financial intermediation will be proxied with financial development index (FDI), financial intuitions access index (FAI), financial institution depth index (FIDI), financial institution efficiency index (FIEI), and financial institution index (FII) and the data will be sourced purely from secondary source, including IMF, World Bank and CBN statistical data base

to fill the enormous gap in the literature on financial intermediation and bank performance in Nigeria using E-views 10.0 statistical package for econometric model.

1.1. Objective of the Study

The major objective of this study is to determine the effect of financial intermediation on bank performance in Nigeria.

Specifically, the study seeks among others to:

- To determine whether the financial institution access index has any effect bank on performance in Nigeria.
- To determine whether the level of financial institution depth index has any effect on bank performance in Nigeria.
- To determine whether the financial institution efficiency index has any effect on bank performance in Nigeria.

1.2. Hypothesis Testing

The hypotheses to be tested during this study are presented in their null form as:

- H_{01} : There is no significant relationship between the financial institution access index and bank performance in Nigeria.
- H_{02} : There is no significant relationship between financial institution depth index and bank performance in Nigeria.
- H_{03} : There is no significant relationship between financial institution efficiency index and bank performance in Nigeria.

1.3. Research Questions

In other to achieve the above objectives, the researcher raised the following questions below:

- Does the level of financial institution access index have any significant effect on bank performance in Nigeria?
- To what extents does the level of financial institution depth affects banks performance in Nigeria?
- To what extend does the financial institution efficiency index affects banks performance in Nigeria?

2. Review of Related Literature

Here two categories of literature which will include conceptual framework and theoretical framework. The conceptual framework will concern itself with the concepts of financial intermediation, and bank performance. While theoretical framework will examine the procedures and outcomes of previous related studies on the same subject area.

2.1. Conceptual Framework

2.1.1. Concepts of Financial Intermediation and Banking Perspective

The concept of banks as a financial institution can be traced to the neo-classical economic theory which assures equilibrium in every economy, meaning that market resources are available together with necessary information's at all times, making complete informed economic agents about market situations. Although, these types of condition rarely exist in basic fact. Hence the need to consider the external factors affecting the banking activities in order to allow the adequate external conditions banking financial performance evaluation may also exist.

According to Buriak& Anna (2014), he noted that there are external constraints of production approach, the concept of bank as a 'black box' does not allow a figure out the decision making regarding the election of inputs and output process by management in particular. Since the use of production approach among any, assumption concerning the banks activities is banking risk abstraction information management during borrowers monitoring is vital in banking process.

The financial intermediation approach allows taking into account the specific characteristics of the bank activities as financial intermediaries. This financial institution as an economic life' is aimed at studying the institution economic life. However, the intermediation process constitutes, four main processes regarding the applications of financial intermediaries to the banking theory.

- Transaction cost: this approach interprets the banks from the point of financial intermediary with the so aim of reducing transaction cost from the borrowers and lenders of financial assets leading to macroeconomic and microeconomic effects is getting profit by the bank subject to economics of scale during the activity productions.
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- Information owner: it requires collection and sales of information about potential leaders and investors with independent assets acquisition and allocation. Here the bank assets quality serves as an indicator of the performing information in the market by bank.
- Theory of delegated monitoring: To whom the investors delegates authority to monitoring the conditions of investments allocation by analyzing the worthiness of borrowers.
- The issue of liquidity: Here it ensures that the bank uses specific banking products to provide the demand for liquid assets by investors which could be in the form of demand deposit or the form of overdraft account for borrowers during the investment period.

2.2. Theoretical Framework

2.2.1. Theory of Financial Intermediation

The theory regarding financial intermediation has since been developed in the early 60s, but was first popularized in the works of Goldsmith (1969), McKinnon (1973) and Shaw (1973) who then sees financial markets as playing a pivotal role in the economic development of any country, however, they attributed the differences in economic growth across the countries to the quantity and quality of services rendered by the financial institutions.

Subsequently, this contention was interestingly, with the perspective on Robinson (1952) who stress that financial market sectors are basically handmaidens to domestic industries, and react inactively to different elements that produce cross-country differences in development. Robinson accepts that economic growth will prompt the extension of financial area.

2.3. The Information Asymmetry Theory

This theory beliefs that the Central themes in the bank/borrower relation are the screening and monitoring function of banks ex-ante generating the so-called problem of adverse selection; credit rationing, the moral hazard problem (Boot, 2000; Diamond & Rajan, 2001).

2.4. Agency Theory

The Agency Theory is of the view that when playing out the quantitative asset changes, the financial intermediaries work as a specialist to the providers of assets, they need to keep up with the liquidity and profitability status of the stakeholders. It is in these characteristics that financial intermediary is seen as an alliance that manages the dissemination of data Leland & Pyle (1977). Moreover, as per this hypothesis financial intermediaries are dynamic since market imperfections confine savers and investors from direct exchanging with one another ideally. The informational asymmetries between savers and investors are the most vital market imperfections. Hence, financial intermediaries like banks specifically, act as agents and as delegated monitors to bridge information gaps between ultimate savers and investors. This occurs because of the comparative informational advantage over ultimate savers and investors.

Notwithstanding, they likewise connect the maturity mismatch among savers and investors in order to facilitate payments between economic agents by providing a structure for repayment and clearing all exchanges. Obviously, they engage in asset qualitative transformation mechanism thus prompting regulation as a way to protect them for sustainability (Bert & Dick, 2003).

2.5. Theory of Banking

2.5.1. Structure Conduct Performance Theory

This hypothesis argued that market structure influences the bank conduct lead which in turn affects performance. They further contend that banks in high concentration market can possibly bring profits than firms in low concentration market as banks get the opportunity to get deposits at lower interest rates and allocate advances at higher rate because of the presence of monopolistic climate (Tregenna, 2009). Consequently, this hypothesis believed to be imperceptible which is estimated indirectly through market concentration, hence limiting the model.

2.6. Efficiency Theory

This hypothesis expresses that banks are more efficient than others when compared with others, obviously they acquire more profit. Although this theory has two distinct methodologies named as Scale efficiency hypothesis and X-efficiency. Consequently, they have high portion of the market share which prompts higher profit (Athanasoglou et al., 2006).

2.7. Balanced Portfolio Theory

This theory expresses those choices in regard to the policy influence the optimal presence of every resource in the investment of shareholder (Nzongang & Atemnkeng, 2006).

2.8. Empirical Review

Beck & Hesse (2006) studied the high cost of financial intermediation in Uganda on data set on the Uganda banking system from 1999-2005. The result uncovers that bank level characteristics like bank size, operating cost and composition of loan portfolio affects financial intermediation cost. Haron & Azmi (2006) researched the structural determinants of deposits level of commercial banks in Malaysia utilizing co-integration technique.

Hurlin & Venent (2008) utilized two stages least squares analytical techniques. An econometric pattern analysis was also conducted for the study. The outcomes demonstrate that financial deepening index is low in Nigeria throughout the long term. The investigation likewise revealed that the nine illustrative factors utilized, were valuable and had a factual relationship with financial development. Besides, just four (4) variables used for study, such as loaning rates, financial savings proportion, cheques/GDP proportion and the deposit money banks/GDP proportion had a positive and significant relationship with financial development. Anthony & Tajudeen (2010) exactly look at the long run and causal relationship between financial Deepening and economic growth in ten (10) sub-Saharan African nations. Nader (2010) empirically studied the determinants of bank performance utilizing pooled time-series and cross-section data. The current hypotheses and the greater part of the observational investigations center fundamentally around developing market sector, utilizing Tunisia, as contextual analysis since institutional changes have been effectively carried out in 1987. Turns from 1999--

2007. The results show that bank performance is most explained by expenses management, ownership structure and bank loans. Hassan et al. (2011) empirically studied the roles of financial development on the economic growth process of low and middle-income countries. Osuji & Chigbu (2012) empirically studied the effect of financial development variables on economic growth Nigeria. The variable utilized incorporates Gross domestic product (GDP), Money supply (M2) and Credit to private sector (CPS) and GDP for both financial development and economic growth. The study using econometric tools like Augmented Dickey Fuller (ADF) test, Granger Causality test, Co-integration and Error Correction Method (ECM) indicates that Money Supply (MS) and Credit to Private Sector (CPS) were positively significant to economic growth in Nigeria. Although the results of Granger and Johnsen test demonstrates that Money Supply and Credit to private Sector (CPS) are cointegrated with financial development in Nigeria within the study period and the Granger causality test indicates that all the explanatory variables Granger cause GDP and GDP Granger cause other variables in the study. Yusuf (2012) studied the impact of financial intermediation on the real sectors of Nigeria using data spanning from 1997-2008. The investigation utilizing secondary data uncovers that financial intermediation in Nigeria display wasteful and frail limit in the distribution of assets to fund the real sector. They stress that, the real sector of the Nigeria economy largely relies heavily on the banking sector to finance its activities. Furthermore, they conclude that the financial intermediaries like deposit money banks are important in financing the real sector. The variables used for the study are Nigerian real GDP (dependent variable) while deposit money Bank Assets (DMBS), credits to private sector (CPS), Aggregate liquidity liabilities (M2), Aggregate bank lending by sectorial distribution of loan and advances were used as independent variables. Haruna (2012) considered the determinants of cost of money related intermediation in Nigeria's Pre-solidified bank financial sector utilizing 13 banks cited on Nigerian Stock Exchange. The examination utilized board information regression models. The outcomes show that working cost and credit misfortune arrangement accounts more variety in commercial banks financial intermediation cost. This assessment doesn't consider the effects of financial intermediation on economic advancement utilizing interest rate margin, credit to private sector, lending rate and as independent variables in the country. Adequate deposit mobilization and careful lending behavior as the two most significant elements has been observed by Vohra & Sehgal (2012). Okoye & Onyekachi (2013) analyze the effects of lending rate and monetary policy rate on the financial performance of Banks in Nigeria. They saw that, lending rate and monetary policy rate both had a huge and positive outcome on the financial performance of Nigerian deposit money banks. The researchers have shown that loaning is evidently the driving force of the banking business, its organization which requires adequate deposit mobilization and cost decrease systems should thoroughly be sought after to accomplish profitability, monetary stability and economic development. The discoveries recommend that deposit mobilization is at the core of banks' lending activity and monetary accomplishment in addition to other things. Basher (2013) empirically studied the linkage between financial sector development, open markets, and economic development to know whether markets together with financial sector development influence economic growth in Nigeria. The examination utilized Granger causality test, Johansen cointegration test and vector error correction model. The results indicate that causality between open markets, financial sector development and growth in Nigeria is weak and insignificant; furthermore, such can't be utilized to gauge economic development in Nigeria. This assessment doesn't consider the effects of financial intermediation on economic advancement utilizing interest rate margin, credit to private sector, lending rate and as independent variables in the country. Adusei & Afrane (2013) empirically analyzed how financial intermediation identifies with economic advancement in 12 credit union (CU) nations using pannel GMM assessment strategies. The outcome proposes that financial intermediation have critical positive relationships with economic growth. Tonye & Andabai (2014) investigated the relationship between economic development and financial intermediation in Nigeria. The study utilized vector error correction model as an econometric tool for data analysis. The investigation discovered that there is long run relationship between financial intermediation and economic development. The examination assumed that about 89% of the varieties in economic development in Nigeria are explained by changes in financial intermediation factors. However, the results don't consider effects of financial intermediation on economic development using lending rate, credit to private sector, and interest margin as independent variables in the country study. Akoto & Nabieu (2014). Examines the extent to which banks in Ghana have performed financially using a secondary data from the headquarters of the eight biggest banks in Ghana spinning from 2004 to 2010. The study used a descriptive research methodology. It is seen that every one of the banks performed creditably well within the period under investigation, however the private banks performed better compared to the state-owned banks. Moreover, overall, banks that mobilized the most deposits were also the ones that recorded most loans and advance. Curiously, the investigation finds that banks that made the most credits and advances were not really those that made most profits. They prescribed that to remain profitable in the financial business in Ghana; the managers ought to not simply set up systems to mobilize deposits and make out advances and loans, rather they should additionally establishment techniques to proficiently manage cost. Sulaiman & Aluko (2015) experimentally analyzed the causality between monetary intermediation and financial improvement in Nigeria from 1990-2013. The aftereffect of the Toda-Yamamoto grander causality procedure recommended that causality is absent between financial intermediation and economic development. They want on to recommend better reforms by government to increase banks capacity to intermediate funds to the real sectors to enhance economic growth. Leyla & Aytan (2015) in their paper titled "Financial development and economic growth" utilized four variables on financial depth, access, efficiency and stability to investigate the impact of financial development and economic growth. The result indicates that the four variables of financial deployment used in the study differ depending on the levels of financial development with an invented S-Shape function. Eugene (2016) econometrically studied the relationship between financial intermediation and economic development in Nigeria Over the period 1981-2011 using the auto-regression distributed lag (ARDL) approach to co-integration analysis. The result indicates that the relationship between financial intermediaries and economic growth in Nigeria is insignificantly negative in long-run and significantly negative in short run. The implication of this study reveals that the oil-sector has the dominated role in the allocation of bank credit in Nigeria economy. Although this activity could be trace to the much dependency of the oil sector as the only sources of economic development without diversifying the economic activities as to provide more link between the financial sector and private

sector to absorb external and fiscal Shocks. Godwin (2017) analyzed the impact of human resources improvement on monetary intermediation in sub-Saharan African countries from 1980 to 2012 using panel data set from the World Bank and applying the Ordinary Least Square (OLS) econometric regression analysis. The results of the study uncover that financial intermediation does not any positive and significant impact on human development in sub-Saharan Africa within the period of this study using Human Development Index and financial intermediation as variables.

3. Model Specification

For the purpose of this study, the researcher designed a linear equation following a detailed review of other studies like Solow (1956); Beck et al., (2000); King and Levine (1993a) and specifically Olawumi et al, (2017) in other to employ ordinary least square and develop a model for the study to suit the current study; the effect of financial intermediation on bank performance in Nigeria from 1980-2018.

In our model, bank performance is proxy with Return on asset (ROA), depends on financial intermediation proxied with financial development index (FDI), financial intuitions access index (FIA), financial institution depth index (FID), financial institution efficiency index (FIE), and financial institution index (FII). Thus, the functional and parametric model will be in three (3) forms to capture all the variables for this study.

$$ROA_t = F(FDI, FIAI, FIDI, FIEI, FII) \dots \dots \dots 3.1$$

$$ROA_t = FDI + FIAI + FIDI + FIEI + FII + Z_t \dots \dots \dots 3.2$$

$$ROA_t = \beta_0 + \beta_1 FDI + \beta_2 FIAI + \beta_3 FIDI + \beta_4 FIEI + \beta_5 FII + Z_t \dots \dots \dots 3.3$$

TRANSFORMED LOGARITHM IN EQUATION 3.3 IN OTHER TO HAVE THE SAME FORM FOR A BETTER RESULT.

$$\text{Log}(ROA)_t = \beta_0 + \beta_1 \text{Log}(FDI) + \beta_2 \text{Log}(FIAI) + \beta_3 \text{Log}(FIDI) + \beta_4 \text{Log}(FIEI) + \beta_5 \text{Log}(FII) + Z_t \dots \dots \dots 3.4$$

Where:

ROA= Return on asset: Dependent variable

FDI= Financial intuitions development index

FIAI= financial intuitions access index

FIDI = financial institution depth index

FIEI= financial institution efficiency index

FII = financial institution index

Z_t = stochastic variables which cannot be quantified.

β_0 = Intercept

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

4. Data Analysis Techniques

Augmented Dickey-Fuller Unit Root Test					
Variable	ADF Test statistics	5% Critical Value	Order Of Integration	Probability Value	Summary
LFDI	-5.903470	-2.941145	1(1)	0.0000	Stationary
LFIA	-6.212504	-2.941145	1(1)	0.0000	Stationary
LFID	-4.967657	-2.951125	1(1)	0.0003	Stationary
LFIE	-5.718128	-2.945842	1(1)	0.0000	Stationary
LFII	-5.966106	-2.945842	1(1)	0.0000	Stationary
LROA	-13.94309	-2.941145	1(1)	0.0000	Stationary

Table 1: Augmented Dickey-Fullers

Sources: Author's computation from E-view 10.0

From Table 1 the Augmented Dickey-fuller unit root test (ADF) conducted uncovered that all the variables were stationary at order 1(1) differencing as prove with their likelihood estimations of 0.0000, 0.0000, 0.0003, 0.0000, 0.0000 and 0.0000 respectively.

$$H_0 = \alpha_{1i} = \alpha_{2i} = \alpha_{3i} \dots \dots \dots = \alpha_{10i} = 0 \quad H_A = \alpha_{1i} = \alpha_{2i} = \alpha_{3i} \dots \dots \dots = \alpha_{10i} \neq 0$$

Test Statistic	Value	Significance Level	I(0)= Lower Bound	I(1)=Upper Bound
F-statistic	6.218440	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Table 2: The ARDL Bounds Co-Integration Test

Asymptotic: N=1000.

Sources: Author's Computation from E-View 10.0

From the Eviews10.0 output results in Table 2 above, the calculated F-statistics is 6.218440. Since the value of calculated F-statistics is greater than the critical values at 5% level when compared and the calculated F-statistics lies above the upper level of the bound I (1), thus we rejected the null hypothesis indicating that there is co-integration among the variables.

Dependent Variable: D(LROA)				
Method: Least Squares				
Date: 08/20/21 Time: 16:50				
Sample (adjusted): 1982 2019				
Included Observations: 38 After Adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.054624	0.075273	0.725668	0.4735
D(LFDI(-1))	-2.145499	1.452594	-1.477013	0.1498
D(LFIA(-1))	-3.072115	1.030426	-2.981402	0.0055
D(LFID(-1))	0.293624	0.730544	0.401925	0.6905
D(LFIE(-1))	-5.602106	2.266208	-2.472017	0.0191
D(LFII(-1))	10.58681	2.807644	3.770708	0.0007
ECT(-1)	-1.219571	0.185110	-6.588351	0.0000
R-squared	0.681550	Mean dependent var		0.024113
Adjusted R-squared	0.619914	S.D. dependent var		0.743952
S.E. of regression	0.458655	Akaike info criterion		1.443783
Sum squared resid	6.521285	Schwarz criterion		1.745444
Log likelihood	-20.43189	Hannan-Quinn criter.		1.551112
F-statistic	11.05774	Durbin-Watson stat		2.188548
Prob(F-statistic)	0.000001			

Table 3: The Long Run ARDL Error Correction Model

Source: Sources: Author's Computation from E-View 10.0

From table 3 above, bank performance proxied with return on asset (LROA) has a negative relationship with LFDI. This finding is consistent with some economic theory. Because excessive financial development should be limited to some extent, because after which it turns into a drag on development, consequently hinders efficiency in productivity which may ploughed out banks of the economy hence affecting their performance (Cecchetti&Kharroubi 2012). This is further explained in the insignificant relationship. The implication of this result is that aggressive financial development without adequate care may lead to market imperfection of a new heaven hypothesis earlier advocated in finance and economic theories.

More so, there is a negative and significant relationship between financial institution access index (LFIA) with return on asset (LROA), this also confirms that, the required financial access need for economic development in Nigeria is not sufficient thus affecting the performance of banking industry. The implication is that the higher the financial access the more profitable the banking sector; thus, banks give out more loans as it forms the most essential aspect of their business activities in stimulating the economy hence bank performance. Again, the relationship between index of financial institutions depth (LFID) and return on assets (LROA) is positive and non-significant indicating that the level of financial Deeping needed to reduce poverty in Nigeria is not adequate; because it considers the size of banks, and other financial institutions, in a country together and compare them as a measure of economic output consequently resulting in bank performance. The results further indicate that the relationship between financial institution efficiency index (LFIE) and return on asset (LROA) is negative and significant. This also confirms that the efficiency of the financial institutions in Nigeria is not adequately to meet the demand for economic development, because of its ability to assist with the development of small and medium sized enterprises (SMEs) by furnishing them with access to fund. SMEs are regularly labor intensive and make a larger number of jobs when compared with huge firms. They assume a significant part in economic development especially in developing economics like Nigeria. It additionally involves having strong policies for regulation and supervision of all the important entities subsequently resulting in bank performance. The table further indicates that the relationships between the financial institutions index (LFII) and return on asset (LROA) are both positive and significant as such, one would infer that the financial system over the years have changed its narratives towards the improvements of financial sectors in terms of its size, liquidity level, access, efficiency and stability in other ensure sustained economic developments in Nigeria thus bank performance. The implication here remains that a well-developed financial system has a greater propensity to spur economic development because of its ability in providing access to finance, efficiency and stability to the economic agents thereby resulting in poverty reduction, consequently bank performance.

The R^2 value of 68% indicates that the model is adequate and liable both as predictive and in making informed decisions. The model, in compliance with the scope of the study, tries to find the relationship between financial intermediation and bank performance in Nigeria using the international monetary fund index for financial intermediation and return on asset as proxies. All the independent variables affect bank performance in the long run (as depicted by the significant F-Statistics), but some of the relationship is insignificant to explain the trend in LROA as depicted by their respective insignificant probabilities at 5% level of significance. This Suffice to conclude that some the macroeconomic variables proxied in this study do not significantly explain bank performance in Nigeria.

Pairwise Granger Causality Tests			
Date: 08/20/21 Time: 16:11			
Sample: 1980 2019			
Lags: 4			
Null Hypothesis:	Obs	F-Statistic	Prob.
LFDI does not Granger Cause LROA	36	0.77056	0.5538
LROA does not Granger Cause LFDI		0.51045	0.7285
LFIA does not Granger Cause LROA	36	0.32648	0.8577
LROA does not Granger Cause LFIA		0.56933	0.6871
LFID does not Granger Cause LROA	36	1.22281	0.3244
LROA does not Granger Cause LFID		0.28560	0.8847
LFIE does not Granger Cause LROA	36	1.87707	0.1434
LROA does not Granger Cause LFIE		1.60364	0.2021
LFII does not Granger Cause LROA	36	0.66429	0.6223
LROA does not Granger Cause LFII		1.27008	0.3061
LFIA does not Granger Cause LFDI	36	1.58861	0.2059
LFDI does not Granger Cause LFIA		2.09743	0.1089
LFID does not Granger Cause LFDI	36	0.36309	0.8327
LFDI does not Granger Cause LFID		2.46858	0.0687
LFIE does not Granger Cause LFDI	36	0.79477	0.5390
LFDI does not Granger Cause LFIE		1.46857	0.2393
LFII does not Granger Cause LFDI	36	1.92960	0.1343
LFDI does not Granger Cause LFII		2.45563	0.0698
LFID does not Granger Cause LFIA	36	0.18371	0.9449
LFIA does not Granger Cause LFID		3.28153	0.0258
LFIE does not Granger Cause LFIA	36	0.72105	0.5851
LFIA does not Granger Cause LFIE		1.79112	0.1598
LFII does not Granger Cause LFIA	36	0.94666	0.4523
LFIA does not Granger Cause LFII		1.21775	0.3264
LFIE does not Granger Cause LFID	36	0.98271	0.4335
LFID does not Granger Cause LFIE		1.25321	0.3125
LFII does not Granger Cause LFID	36	1.33323	0.2831
LFID does not Granger Cause LFII		0.55950	0.6940
LFII does not Granger Cause LFIE	36	1.36374	0.2726
LFIE does not Granger Cause LFII		0.78777	0.5432

Table 4: The Pairwise Granger Causality Test
Sources: Author's Computation from E-View 10.0

From table 4 the results of the pairwise granger Causalitytest conducted with maximum lag of four on the first difference of the log transformation of the variables shows that causality runs Bi-directional from LFIA to LFID with no reverse and the other way round. This implies that the results have a serious effect on bank performance as such financial development exert serious effects on bank performance in Nigeria.

Finally, this approach was used to see whether 'X' causes 'Y' and how much of the current 'Y' can be explained by the past values of 'Y' and then to see whether adding lagged values of 'X' can improve the explanation according to (Engle and Granger, 1987).

5. Conclusion

The result of Augmented Dickey- Fuller unit root test revealed that all the dependent and independents variables used in this study were stationery at order 1(1). This indicates that the properties of time series data were reliable according to Engle and Granger (1987).

The result of the ARDL OLS error correction model after establishing the ECT reveals that some of the variables are negative and non- significant, while others indicate negative and significant and positive and significant. Secondly, the joint variations of the predicting variables explained about 68% of the bank performance, which is validated with the F-statistics value of 11.05774 and the probability value of 0.000001 indicating that the explanatory variables are jointly significant with financial development with (t -values -1.477013, -2.981402, 0.401925, -2.472017, 3.0770708) and (p - values 0.1498, 0.0055, 0.6905, 0.0191, 0.0007) respectively; Thus this results agrees with some related studies like (Cecchetti and Kharroubi,2012) and Godwin (2017).

Finally, the result of pairwise granger Causality indicates a Bi-directional from LFIA to LFID with no reverse.

6. Recommendation

Government policies on the financial system aiming at addressing the depth and development of the financial system should be pursued with vigor and total monitoring and efficiently managed as to avoid overstretching the financial system which may lead to underperformance. Again, the key players in the financial sector should ensure those policies towards improving access to financial service and its efficiency as a major driving force and sustainable economic development propeller bearing a life wire for the survival of the banking industry. Finally, both the financial and

regulatory authorities must provide adequate score card on the number of bank branches and outlets needed in the rural and urban centres either in quarterly basis or yearly for proper management as to avoid excessive use of these policies to prevent economic distortions.

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