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BANK BASED VERSUS STOCK MARKET-BASED DEVELOPMENT IN NIGERIA

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Abstract. This study examines the relative effectiveness of bank-based and market-based financial development on the economic growth of Nigeria with data from 1989 to 2018 using the Auto-Regressive Distributive Lag (ARDL) estimation technique. The study found that bank-based financial development exerts positive and significant influence on Nigeria's economic performance while stock market-based, rather than contributing positively to the economic prosperity, was found to have an insignificant negative effect. Using GDP per capita growth for sensitivity analysis also showed a somewhat similar result. From this finding, the study concludes that bank-based financial development drives growth in Nigeria more than market-based. The study therefore recommends intensive financial literacy and inclusion campaign to create awareness and bolster public confidence in the stock market and the financial sector.

1. Introduction

The significance of a country's financial sector is one that cannot be overemphasized as it is the powerhouse of its economy. Given this position, the financial sector is a major driver of productivity and growth via its role of financial intermediation and capital formation in any economy (Oladele and Makwe, 2018). There are different phases of development in an economy and these phases are influenced by various factors. The question of why the phases occurs and the variables responsible for these phases are major research focus in economic growth studies (Hsueh, Hu, & Tu, 2013). Theoretically, and based on some other empirical evidence, financial sector development is one of the major factors that influence these phases and it also improves the efficiency of the economy (Levine, 1997). However, study by Hassana, Sanchezb, & Yuc, (2011) reveals that real sector variables such as trade balance and government expenditure are the major factors that also influence the phases of economic growth. Oluyemi (1995) emphasized that the financial sector of an economy is the engine house that powers its growth and rapid transformation without which no significant growth and development can occur. Aside its role of financial intermediation and capital formation, the financial sector also serves as the fulcrum for the implementation of monetary policy. King and Levine (1993) established that the financial sector, via its role of financial intermediation, significantly predicts the long run economic growth, rate of capital formation as well as the level of productivity of an economy.

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As a result of its importance to economic growth and development, the nexus between the financial sector and economic development has gained a large attention across various countries over time. There have been conflicting results on this relationship from empirical analysis thus giving rise to various schools of thought. One school of thought argues that there is a positive and long-term relationship between the financial sector and economic growth (Schumpeter, 1911; Patrick, 1966; Mckinnon, 1973; Shaw, 1973; Odedokun, 1996 and Graff, 1999). This view, known as the supply-leading hypothesis, was led by Schumpeter (1911) who argued that the long-run economic growth of a country is largely dependent on its financial sector. Contrary to this view, some other studies are in support of a negative relationship between financial sector and economic growth (Buffie, 1984). A second school of thought proposed by Robinson (1952) posits that the development of the financial sector is propagated by the economic growth of a country. This view is also known as the demand-led hypothesis and several findings from studies have lent credence to this view (Adeyeye, et al. 2015 and Singh, 1999). This school of thought believes that the development of the real sector is more important than that of the financial sector because the real sector is the bedrock of economic growth. They argued further that, the development in the real sector which translates into economic growth is what engenders the development of the financial sector. Contrary to these views, there exists another school of thought which believes that there is no causal relationship between economic growth and financial development and that whatever hypothesis that might have been developed are results of historical coincidences (see Lucas, 1988 and Stern, 1989).

The financial sector of any economy comprised mainly of the banking sector, the stock market and insurance companies. In Nigeria, the financial sector has largely been powered by the banking system with recent developments emerging in the stock market. As a result, the banking system has been the dominant channel of financial intermediation, capital formation and most especially the implementation of monetary policy. With the economy hitting rock-bottom recession accompanied by high rate of inflation, rapid increase in public debt and failing fiscal policies; the government's use of monetary policy tools must be such that would help boost the economy. Also, in the face of occasional and unpredictable global fall in crude oil prices, which often affects the Nigerian government's revenue projection and compels the government to borrow to augment tax revenue shortfalls, it is crucial to pay attention to the growth and development of the small-medium scale enterprises whose development hinges largely on the activities of the financial market.

Although, there have been studies on the relationship between financial sector and economic growth, most of these studies have only considered a part of the financial sector while ignoring the others. The banking sector is majorly known for its role of financial intermediation and capital formation via accumulation of savings and disbursement of funds from surplus ends to individuals and businesses while the stock market helps in the mobilization and efficient channeling of funds through the sales of shares and equities. There has been a long discourse among the economists as regards the impact of the banking sector vis-à-vis the stock market development on economic growth. While some studies (Hoshi, et al. 1990 and Puatwoe and Piabuo, 2017) have focused on the impact of the banking sector on economic growth and development, neglecting the role of the stock market, Schumpeter (1911), King and Levine (1993) among others have examined the role of the stock market on economic growth paying little or no attention to the role of the banking system (Akinlo and Akinlo, 2009; Popoola, et al. 2017; Bernard and Austin, 2011). Nyasha and Odhiambo (2017) and Odhiambo (2011) have used both bank-based and market-based proxies to examine the impact of financial sector on economic growth and development. No doubt, many of these studies have focused on examining the combined impact of both banks and stock market on economic growth and not their specific significance. Also, some of the previous studies have employed cross-sectional data in their analysis which might not have addressed country-specific issues (Casselli, et al. 1996; Akinlo and Akinlo, 2009). In a bid to provide an empirical evidence on the relative impact of the banking system and stock market on economic growth in Nigeria, this study adopts the Auto-Regressive Distributive Lag

(ARDL) approach, using principal component analysis to incorporate the various proxies of both bank-based and market-based financial development, to uniquely investigate the relative effect of both on Nigeria's economic growth.

Following this introductory section, Section two reviews the literature while Section three presents the data description and sources, methodology and model specification. Section four provides the empirical findings and study limitations while Section five concludes and recommend.

2. Literature Review

The financial sector consists largely of bank-based and market-based components among others. The bank-based component is mainly dominated by banks while the market-based component is dominated by the stock market. An economy where financial intermediaries have predominance of the financial market is said to be a "bank-based financial system". However, if the system is driven more by the stock market than by banks, it is believed to be a "market-based financial system" (Demirguc-Kunt and Levine, 2001). The respective impact of each system on economic growth has been widely researched with some studies supporting "bank-based system" while others have rooted for "market-based system". In supporting bank-based system, Hoshi, et al. (1990) showed that bank-based financial system induces economic growth more effectively as a result of how it promotes long-term investment in real sector. Also, Pollin (1995) revealed that "bank-based system" is a more effective means of transmitting monetary policies than "market-based system". However, while it is believed that the market-based system is extremely reactive to stock market prices, Allen's (1999) finding showed that when it comes to gathering and processing information about a new product or production process, the bank system may not be effective.

In Nigeria, several studies have been conducted to examine the impact of the bank systems on economic growth. Garba and Yakubu (2015) reviewed the roles of financial institution in the economic growth of Nigeria and found that commercial banks played a significant role of financial intermediation. However, the impact of this financial intermediation on economic growth is hindered by some challenges like corruption and political instabilities. To confirm this claim, Shittu (2012) examined the role of financial intermediation on economic growth in Nigeria using error correction model and found that financial intermediation significantly affects the economy of Nigeria. Yakubu and Affoi (2014) used the ordinary least square (OLS) method to investigate the significance of commercial banks' credit on economic growth in Nigeria. The study found out that commercial banks' credit has a significant effect on the economic growth of Nigeria and recommended that policies be developed towards its sustenance and maintenance. Although there seems to be a general consensus that "bank-based financial systems" have a significant effect on the economic growth of a nation, there has been a disagreement as to whether this effect is positive or negative. While the findings of Hoshi, et al. (1990); Ahmed and Ansari (1998), Awojobi (2013) and Oludele, et al. (2015) have shown the existence of a positive relationship between bank-based financial development and economic growth, the findings of Bolbola and Fatheldina, (2005) contrasted this position and showed that the relationship between bank-based system and economic growth is negative.

While some studies have rooted for bank-based financial system, other studies have showed that market-based financial system is the way to go. Levine (2004) believed that as the economy develops, there will be need for a regulated and supervised environment that supports the development and advancement of market-based activities; else the economy will witness a recessed growth. Several studies have supported this view in their quest to assess the impact of market-based financial development on economic growth. As in the case of bank-based system, some studies revealed a positive relationship between market-based system development and economic growth while some other studies showed a negative relationship. Demirguo-Kunt and Levine (1993) investigated how the capital market, most especially the stock market, can influence the growth of an economy and they found a positive and significant relationship between

some market-based indicators and economic growth. Osinubi and Amaghionyeodiwe (2003) examined the relationship between stock market development and economic growth in Nigeria with the OLS estimation technique. The study found a positive and significant relationship between stock market development and economic growth in Nigeria and recommended that policies be directed towards the development and growth of the Nigerian Stock market. Also, Abu (2009) used error correction model to examine whether stock market development causes economic growth in Nigeria. The study found that the development of market-based indicator (market capitalization to GDP ratio) brings about economic growth and recommended that obstacles to stock market development, such as tax and other legal barriers, be eliminated.

Contrary to studies that believed market-based development has a positive and significant effect on the economic growth, some other studies believe that financial market are insignificant to the growth of any economy and are just unnecessary sources of corporate finance (Mayer, 1988). Supporting this claim, Popoola, et al. (2017) investigated the short and long run as well as causal relationship between stock market and economic growth in Nigeria using the OLS method and Pairwise granger causality test. The OLS result showed that there is a negative but significant short run relationship between all share index and economic growth while the Johansen cointegration test established a long run relationship between them. However, the granger causality test shows that there is no causality between these variables.

Aside the individual impact of bank-based or market-based system on the economy, studies have also been conducted to examine the general impact of financial sector development on economic growth. Madichie, et al (2014) investigated this for Nigeria using the Johansen cointegration, Granger causality test and OLS estimation technique. The study found that there exists a negative long-run relationship between financial sector development and economic growth but a positive short-run relationship. This implies that, in the short run, the finance-led growth hypothesis is valid in Nigeria. While the result showed that financial sector development is caused by economic growth in Nigeria thus lending credence to the demand-led growth hypothesis, it encouraged government to support the microfinance sector in order to boost investment and drive economic growth in Nigeria. Unlike Madichie, et al, (2014) who found a uni-directional causal relationship between financial sector development and economic growth, Adelakun (2010) found a bi-directional causality between the two variables. Also using the OLS methodology, the study found that financial sector development has a positive impact on economic growth in Nigeria. Therefore, the authors recommended that government should use financial instrument diversification as a means of financial development and by extension, economic growth in Nigeria.

Contrary to Madichie, et al. (2014) findings on Nigeria that supported the demand-leading growth hypothesis, Hsueh, et al. (2013) examined the causality between financial development and economic growth in Asia. Using a panel of ten Asian countries between 1980 and 2007, the study found a direct causal relationship between financial development and economic growth which is more sensitive to the financial development indicators. However, the result showed that in the Asian countries, financial development leads to economic growth, thus supporting the supply-led hypothesis. Similar study by Hassana, et al. (2011) for low and middle-income countries found a positive relationship between financial sector development and economic growth. The study also showed the existence of a bi-directional causality between financial sector development and economic growth for most of the countries reviewed which supports both the demand-led and supply-led hypothesis. For some of the countries however, the study found a uni-directional causality from economic growth to financial development.

Lawal, et al. (2016) used an ARDL bound testing approach to examine the relationship between economic growth, financial sector development and the real sector in Nigeria, using trade openness as a proxy for the real sector. The result showed that, while there is cointegration among the variables of interest, the relationship between financial sector development and economic growth is negative. However, trade openness has a positive impact on the economic growth of the country. With these findings, the study recommended the development of both

the financial and real sectors by the government in other to boost economic growth. Similar study for Nigeria by Adeniyi, et al. (2015) corroborated this result as they found that financial development has a negative effect on economic growth in Nigeria. However, when they factored-in a threshold effect into the model, the result was a reversal of the initial result. The result showed that with the threshold effect, financial sector development has a positive effect on economic growth in Nigeria. Taking a step further to investigate the effectiveness of financial policy reforms on the economic growth, the researchers found that the coefficient of the pre and post reform era are not much differentiated implying a low efficacy of the financial sector reforms on the economy. Iheanacho's (2016) result from ARDL approach to cointegration analysis to determine the impact of financial intermediary development on economic growth in Nigeria also showed a negative relationship between financial sector development and economic growth. Not only did the study found a similar result with that of other oil producing countries but also highlighted on the dominance of oil and the lack of diversity in Nigeria's economic system.

From the reviewed literature, it is discovered that majority of the studies, especially in Nigeria, focused on the independent effect of either the bank-based or market-based system on economic growth. None of these studies have examined the nexus between these two systems and their relative impact on economic growth. It is against this backdrop that this study aims at examining the nexus between bank-based and stock market-based development in Nigeria so as to espouse their relative impact on economic growth.

3. Data and Methodology

3.1. **Data sources and description.** Using annual secondary data from the CBN statistical bulletin and the World Bank World Development Indicators (WDI), the study covers the period of 1989 to 2018 due to availability of data.

Table 1: Summary description of study variables

Variables	Description	Source(s)
Gross Domestic Product (GDP)	This serves as proxy for economic performance.	CBN statistical bulletin (2019)
GDP per capita	This is adopted as an alternative measure of economic performance for sensitivity analysis.	WDI (2019)
Bank-Based Financial Development (BBFD)	This is constructed using two bank-based development variables – M2 to nominal GDP ratio and domestic credit to private sector to nominal GDP ratio.	Principal component analysis
Market-Based Financial Development (MBFD)	This is constructed from three market-based financial development series. These are: stock market capitalization which measure market size, total value of stock traded which reflects the liquidity level in an economy and the turnover ratio which measures trading relative to stock market size.	Principal component analysis
Saving (SAVG)	This measures the economy's total saving.	WDI (2019)
Investment (INVEST)	This measures the total investment in the economy.	WDI (2019)
Trade openness (TOP)	This is computed by dividing aggregate import and export by the GDP for the same period.	WDI (2019)

These data include the annual growth rate of Gross Domestic Product (GDP) which proxies economic performance, the growth of GDP per capita for sensitivity analysis as an alternative for economic performance, Bank-based financial development (BBFD) which is constructed

using two bank-based development variables – M2 to nominal GDP ratio and domestic credit to private sector to nominal GDP ratio. While M2 to nominal GDP ratio measures the size of the financial intermediary in Nigeria (Calderon and Liu, 2003), domestic credit to private sector to nominal GDP ratio measures the size of credit provided by financial intermediaries to private sectors in the economy. The two variables are adopted to form BBFD index because Ang and McKibbin (2007) argued that either of M2 or private sector credit alone are not sufficient measures of financial development, hence this study computes an index using the two variables to constitute BBFD. The Market-based financial development (MBFD) variable is constructed from three market based financial development series such as stock market capitalization which measures market size, total value of stock traded which reflects the liquidity level in an economy and the turnover ratio which measures trading relative to stock market size. Both BBFD and MBFD are constructed using the principal component analysis framework. Other variables in the model include saving (SAVG), investment (INVEST) and trade openness (TOP). These variables were included as control variables in the model. Their importance to growth is well documented in the traditional growth theory of Solow (1956) and Lucas (1988). Apriori, these control variables are expected to have positive effect on growth.

3.2. **Methodology.** This paper adopts the Auto-Regressive Distributive Lag (ARDL) estimation technique. The technique was developed by Pesaran and Shin (1999) and adjudged efficient in capturing relationships among variables of different order of integration, that is, estimating a model with a mixture of $I(0)$ and $I(1)$ variables. It has the advantages of being just a single-equation model, making it simple to interpret and implement, also, different variables can be assigned different lag length and they enter the model (Pesaran, et al., 2001). Because of its ability to accommodate and estimate variables of different order of integration (i.e. mixture of $I(0)$ and $I(1)$), it can estimate efficiently both short-run and long-run relationships in a given model. The ARDL as specified by Pesaran, et al., (2001) is presented below, using two variables x and y:

$$y_t = \sum_{k=1}^{p} \gamma_k y_{t-1} + \sum_{j=0}^{q} \varphi_j x_{t-j} + \varepsilon_t \tag{1}$$

Re-specifying the model to capture short-run and long-run form, we have:

$$\triangle y_t = \alpha_1 y_{t-1} + \alpha_2 x_{t-1} + \sum_{k=1}^{p-1} \gamma_k \Delta y_{t-k} + \sum_{j=0}^{q-1} \varphi_j \triangle x_{t-j} + \varepsilon_t \tag{2}$$

$$\triangle y_t = \alpha_1 v_{t-1} + \sum_{k=1}^{p-1} \gamma_k \Delta y_{t-k} + \sum_{j=0}^{q-1} \varphi_j \triangle x_{t-j} + \varepsilon_t \tag{3}$$

Where, $v_{t-1} = y_{t-1} + \left(\frac{\alpha_2}{\alpha_1}\right) x_{t-1}$. This is based on the assumption that in the long-run, $y_t = y_{t-1}$ and $x_t = x_{t-1}$.

Equation 2 shows the decomposition of a simple ARDL model into short and long-run components. α_1 and α_2 captures the long-run effect, γ_k, and φ_j, captures the long-run effect of the explanatory variable on the explained variable. Equation 3 captures the reduced form of equation 2.

3.3 Model specification

Adopting the model of Ram (1999) and Kargbo and Adamu (2009) to achieve the study objectives study, the model is specified in equation (4) as follows:

$$GDPG_t = \alpha_0 + \alpha_1 BBFD_t + \alpha_2 MBFD_t + \alpha_3 INVEST_t + \alpha_4 TOP_t + \alpha_5 SAVG_t + \mu_t \tag{4}$$

where GDPG = annual growth rate of GDP, BBFD = bank-based financial development, MBFD = market-based financial development, INVEST = investment, TOP = trade openness and SAVG = saving.

4. Result Presentation and Discussion

4.1. **Descriptive statistics.** GDP grew by an average of 4.5 percent within the period of study having a maximum growth of 15 percent and minimum of -2.04 percent. This shows that, on the average, the economy has experienced a reasonable level of growth within the period under review. Also, the GDP per capita grew by an average of 1.9 percent, having a minimum and maximum growth of -4.5 percent and 12.5 percent respectively. The BBFD index gave a negative average that is less than one, having a maximum index of 1.37 and minimum of -1.88. These shows that the bank-based financial index has not been impressive over the years. In like manner, the MBFD index shows a positive average less than one, with maximum and minimum indices of 1.72 and -0.95 respectively. The average savings accrued over the years is about fifty billion, which constitutes about 34.78 percent of GDP within the period. The investment figure averages about forty-one billion naira within the period, leaving a saving-investment gap of about fourteen billion. For trade openness, an average of 0.45 is accounted for within the period. Given this low volume of total trade to GDP, it could be inferred that the degree of trade openness in low in Nigeria.

Table 2: Descriptive statistics

Statistics	GDPG	GDPPCG	BBFD	MBF	SAVINGS	INVEST	TOP
Mean	4.537206	1.876446	-4.67E-08	3.33E-09	5.50E+10	4.09E+10	0.448282
Median	4.823564	2.222482	0.240739	-0.51898	3.52E+10	2.98E+10	0.428456
Maximum	15.32916	12.45747	1.374208	1.715205	1.47E+11	8.57E+10	0.688491
Minimum	-2.03512	-4.45708	-1.88087	-0.95234	1.26E+10	1.23E+10	0.311246
Std. Dev.	3.992478	3.874813	1	1.000006	3.80E+10	2.21E+10	0.098942
Skewness	0.432427	0.458965	-0.80503	0.542891	0.751003	0.373616	1.034246
Kurtosis	3.300286	3.373239	2.479592	1.666701	2.40894	1.655993	3.557461
Jarque-Bera	1.047679	1.22738	3.578928	3.695761	3.148157	2.857358	5.73678
Probability	0.592242	0.54135	0.16705	0.157571	0.207198	0.239625	0.05679
Sum	136.1162	56.29339	-1.40E-06	1.00E-07	1.59E+12	1.18E+12	13.44846
Sum Sq. Dev.	462.2565	435.4111	29	29.00037	4.05E+22	1.37E+22	0.283896
Observations	30	30	30	30	30	30	30

4.2. **Stationarity Test.** Table 3 presents the stationarity test result of the series used in the study. It shows the variables are stationary of mixed order I(0) and I(1).

Table 3: Unit root test

	ADF		PP		
Variables	Levels	First difference	Levels	First difference	I(d)
BBFD	-2.239	-3.804***	-1.811	-3.576***	I(1)
MBFD	-2.986	-5.573***	-2.758	-11.606***	I(1)
log(TOP)	-2.635	-6.217***	-2.614	-6.765***	I(1)
log(SAVG)	-4.335***		-6.563***		I(0)
log(INVEST)	-1.787	-5.533***	-1.843	-6.616***	I(1)
GDPPCG	-3.377*		-3.377*		I(0)
GDPG	-3.355**		-3.355**		I(0)
***, **, * represent significant levels at 1%, 5% and 10%.					

Variables BBFD, MBFD, TOP, and INVEST are not stationary at levels but at first difference. It shows these variables are susceptible to change. SAVG, GDPG and GDPPCG are shown to exhibit long run tendencies as they do not contain unit root and are stationary. This

mixed order of stationarity necessitates the conduct of bounds test to establish the existence, or otherwise, of a long run relationship among the series.

4.3. **Principal Component Analysis for BBFD.** Table 4 shows the principal components of bank-based financial development (BBFD) indicator, comprising of money supply to GDP ratio (m2gdp) and private sector credit to GDP ratio (pscgdp). The result shows that m2gdp accounts for 80 percent of the total variance of the index, while pscgdp accounted for the remaining 20 percent of the variance. This shows m2gdp and pscgdp are strong components of bank-based financial index

Table 4: Principal components for Bank-based financial development indicator

Principal Components	Eigenvalues	Proportion (%)	Cumulative (%)
m2gdp	1.592	0.796	0.796
pscgdp	0.408	0.204	1.000

4.4. **Principal Component Analysis for MBFD.** Table 5 also reveals the principal components of market-based financial development (MBFD) indicator, comprising of market capitalization to GDP ratio (mktcapgdp), stock traded to GDP ratio (stktradedgdp) and stock turnover to gdp ratio (stockturnover). The result shows that stockturnover contributes the least to the index, accounting for only four percent of the total variance while mktcapgdp and stktradedgdp respectively accounted for 80 percent and 16 percent of the total variances of the index.

Table 5: Principal components for Market-based financial development indicator

Principal Components	Eigenvalues	Proportion (%)	Cumulative (%)
mktcapgdp	2.389	0.796	0.796
stktradedgdp	0.491	0.164	0.960
stockturnover	0.121	0.040	1.000

4.5. **Bounds Test.** Table 6 contains the bounds test result which confirms the existence of long run relationship in the model. If the F-statistics falls below the lower bound (I0 bound), then we accept the null hypothesis of no long-run relationship in the model. However, if the F-statistics falls between the lower bound (I0 bound), and upper bound (I1 bound), the relationship is unclear. But, if it exceeds the upper bound, then a long run relationship exists. From the result in Table 6, a long run relationship exists in the model even at 2.5% significant level.

Table 6: Bounds test

ARDL Bounds Test		
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	k
F-statistic	4.217935	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

4.6. **Auto-Regressive Distributed Lag (ARDL) Model.** Table 7 presents the regression result which shows the comparative effect of bank-based and market-based financial development on the economic performance of Nigeria. It shows that bank-based financial development exerts positive and significant effect on Nigeria's economic performance in the short and long-run, such that, an increase in bank-based financial development will result in an improvement in output growth in the economy. Both in the short and long run, a percentage point improvement in BBFD implicitly increases national output growth by about 3.1 and 3.6 percent respectively. Unlike the findings of Nyasha and Odhiambo (2017), the market-based financial

development in Nigeria presents an insignificant effect on national output growth in both short and long-run. This finding conforms with established financial architecture theory which says that, market-based financial development tends to drive growth more in a developed economy than bank-based while bank-based financial development tends to drive growth more in a growing economy with less-developed financial system than market-based. The relative effectiveness of bank-based over market-based financial development in Nigeria is therefore not surprising with the level of development in the financial system and the underdeveloped nature of the Nigerian economy as alluded by Ogujiuba and Obiechina (2010). While trade openness and saving shows no significant effect on GDP growth in both short and long-run, investment exerts a positive and significant influence on national output growth such that a percentage point increase in investment results in a larger percentage (21.63) and (13.05) increase in GDP growth both in the short and long run respectively. This relationship is expected except that the extent to which changes in investment influences income depends on the multiplier level. In this case, the investment multiplier tends to be high for Nigeria. The CointEq(-1) shows that, for any disequilibrium in the model, about 87 percent of such disequilibrium is corrected each year, hence, it takes roughly a year and few months for the model to revert back to equilibrium.

Table 7: Dependent variable: GDP growth				
ARDL Cointegrating and Long Run Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MBFD)	1.033	2.045	0.505	0.620
D(BBFD)	3.078**	1.086	2.835	0.011
DLOG(SAVINGS)	-4.015	3.715	-1.081	0.293
DLOG(TOP)	-7.212*	4.220	-1.709	0.104
DLOG(INVEST)	21.635***	6.542	3.307	0.004
CointEq(-1)	-0.865***	0.220	-3.931	0.001
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MBFD	-2.080	2.338	-0.890	0.385
BBFD	3.560**	1.535	2.319	0.032
LOG(SAVINGS)	-4.644	4.165	-1.115	0.279
LOG(TOP)	-8.341	6.005	-1.389	0.181
LOG(INVEST)	13.058*	6.247	2.090	0.050
C	-206.490**	85.825	-2.406	0.027
***, **, * represent significant levels at 1%, 5% and 10%.				

4.7. **Sensitivity Analysis.** Table 8 shows the sensitivity analysis of the study where another proxy, GDP per capita, is employed to measure economic performance and see how BBFD and MBFD affects it. The result shows that it has almost the same effect as using GDP as proxy for economic performance. This clearly proves the reliability of the relationships in the model.

Table 8: Dependent variable: GDP per capita growth				
ARDL Cointegrating And Long Run Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MBFD)	0.995	1.996	0.499	0.624
D(BBFD)	2.980**	1.059	2.814	0.011
DLOG(SAVINGS)	-3.938	3.626	-1.086	0.291
DLOG(TOP)	-6.984*	4.125	-1.693	0.107
DLOG(INVEST)	21.042***	6.383	3.296	0.004
CointEq(-1)	-0.864***	0.220	-3.926	0.001
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MBFD	-2.040	2.282	-0.894	0.383
BBFD	3.448**	1.498	2.303	0.033
LOG(SAVINGS)	-4.556	4.066	-1.121	0.276
LOG(TOP)	-8.081	5.868	-1.377	0.185
LOG(INVEST)	12.641*	6.098	2.073	0.052
C	-200.946**	83.787	-2.398	0.027
***, **, * represent significant levels at 1%, 5% and 10%.				

4.8. **Post estimation test.** Auto correlation test. Tables 9 and 10 presents the autocorrelation and heteroscedasticity test results.

Table 9: Serial correlation test			
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.865	Prob. F(2,17)	0.439
Obs*R-squared	2.585	Prob. Chi-Square(2)	0.275

Here, the null hypothesis of no autocorrelation and no heteroscedasticity in the model is accepted judging by the probability values of more than 0.05.

Table 10: Heteroscedasticity test			
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.930	Prob. F(8,19)	0.515
Obs*R-squared	7.877	Prob. Chi-Square(8)	0.446
Scaled explained SS	7.582	Prob. Chi-Square(8)	0.475

4.9. **Limitations of the study.** As with many other scientific researches, this study suffers some limitations. One major limitation is the problem of insufficient data especially as it relates to stock market. Though the ARDL (efficient in analyzing short span data) used may have addressed the data insufficiency problem, the result may have been different with longer period data. Also, it is most likely that more beautiful result would have been obtained if high frequency data (quarterly, monthly or weekly) were available for all the variables used in this study as expected from studies of this nature.

5. Summary, Conclusion and Recommendation

The study examined the relative effectiveness of bank-based and market-based financial development on economic performance in Nigeria from 1989 to 2018. It adopted the ARDL method of estimation after confirming the existence of a long run relationship in the model through the bound test results. It is found that bank-based financial development exerts a positive and significant influence on the economic performance of Nigeria both in the short and long-run, while the effect of market-based financial development was insignificant on economic performance. Market-based financial development, instead of contributing positively and significantly to the economic prosperity of the country was found to have a positive but insignificant effect in the short-run, while it has a negative but insignificant effect in the long-run. Sensitivity analysis

conducted using GDP per capita growth to replace GDP growth in the model produced similar result. This result corroborates the financial architecture theory that bank-based financial development tends to drive economic performance more in developing economies than market-based. It is on this finding that the study concludes that bank-based financial development drives growth and economic performance in Nigeria more than the market-based financial development. This observed abysmal performance of market-based financial development in the Nigerian economy therefore calls for urgent attention for improvement in the sector.

To improve on the poor performance of market-based financial development and complement the efforts of bank-based financial development in Nigeria, the following policy recommendations are suggested:

That the government should vigorously embark on public sensitization about financial literacy and financial inclusion to create financial awareness and bolster public confidence.

That the government and the responsible agents should foster adequate collaboration between the regulators and the stakeholders.

That the financial policy architecture be restructured and reformed to harness all the potentials in the financial sector for Nigeria to improve on its growth prospects.

Finally, that policymakers should introduce business-friendly policies and environment that will encourage and attract more inflow of foreign direct investment and reduce the bottlenecks in business registration and operation in Nigeria.

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