Causal Link Between Financial Developments, Financial Inclusion And Economic Growth In Nigeria

Kabiru Kamalu, Wan Hakimah Binti Wan Ibrahim, Ali Umar Ahmad, Umar Aliyu Mustapha

Abstract: The aim of this study is to examine the causal linkages between financial development, financial inclusion, trade openness, foreign direct investment and economic growth in Nigeria from 1970 to 2018. Moreover, this study employed Ng Perron, Zivot Andrew unit root test; Gregory and Hansen cointegration test; and Non-Granger causality Toda and Yamamoto test. However, the results revealed that all the variables were stationary and cointegrated in the long run. Similarly, the result showed one-way causal relationship from financial inclusion to economic growth, and two-way causal relationship between financial development and economic growth. However, there is no causal relationship between trade openness and economic growth. Therefore, the study concludes that financial development and financial inclusion is an important determinant of economic growth. Thus, the impact on growth is even more pronounced when more people have access to formal financial services. Hence, access to affordable and appropriate formal financial products and services for all especially poor and disadvantaged members of society should be provided, and policies to encourage credits to private sector should be given due consideration in order to achieve more growth in Nigeria.

Index Terms: Gregory and Hansen cointegration test, Ng Perron, Zivot Andrew; and Non-Granger causality Toda and Yamamoto test. Financial development, financial inclusion

1 Introduction

Achieving inclusive growth and sustainable development has remained one of the core macroeconomic objectives of all economies irrespective of the level of development. The relationship between financial development and growth has since remained topical issue in the finance literature and the debate continue, till today scholars have not been able to reach consensus on the nature and direction of causality between growth and finance [1]. The point of contention is whether financial development of a country determines its level of growth or it is the level of growth that determined the financial development. Similarly, conventional wisdom holds that output growth in an economy cannot be possible without the combined role of investment and human capital which are made possible through increasing access to financial products and services [2]. Recently, advocacy about eliminating credit barriers affecting business of new firms and small scale businesses and reducing constraints of accessing financing so that industrial output will be increase. Thus, a more developed financial system encourage investment by identifying and financing good business opportunities, promoting capital formation, enables trading of various financial assets, diversification of risk, and facilitates the exchange of goods and services, hence growth and development [3], [4]. However, in a developing economy such as Nigeria, financial sector development mostly goes hand in hand with structural and institutional transformation and the sector generally have long been recognized to play a crucial role in economic growth and development.

- *Kabiru Kamaluab aFaculty of Business and Management Science, Universiti Sultan Zainal Abidin, Malaysia.*
- *Al-Qalam University Katsina, Nigeria E-mail: kamalu.kabiru@ymail.com*
- *Wan Hakimah Binti Wan Ibrahim. Corresponding Author E-mail: wanhakimah@unisza.edu.my*
- *Ali Umar Ahmad. aliumarah@unisza.edu.my*
- *Umar Aliyu Mustapha. umaraliyu2011@gmail.com*

Therefore, Nigerian economy considered as one of the potential emerging markets in Africa, with big market sizes and opportunities for investment in the booming financial market as well as the growing real sector. Nevertheless, Nigerian financial sector have a long history of government intervention in setting interest rate, high reserve requirement and quantitative restrictions which is known as financial repression [5], [6] especially around the era of Indigenization policy in 1972 which left large stake of the financial system in the hand of federal and States Government. In 1986, the Nigerian government embarked on a Structural Adjustment Program (SAP), in order to correct the economic ills of the financials system [7]. Thus, there are a number of financial reforms programs carried out in different time period in order to improve growth and development of the financial sector, with the objective of consolidating the real sector growth. The early stage of the reform was between 1986 to1993 which saw the deregulation of the sector to allow for more private sector participation in the country. The second was between1993-1998 as a result of the deep financial distress, which led to re-regulation of the sector for standardization and best practice. And the third reform in the sector was in 1999 which led to the adoption of universal Banking and the return of financial Liberalization of the Nigerian financial sector. While the fourth was in 2004 for consolidating the banking sector, which increases the banks capitalizations by almost 439.4 percent .The fifth one was 2010 to date which was considered as crusade to save the almost collapsing financial sector rooted from global financial crisis of 2007 [8]. However, financial sector development in Nigeria is also bedeviled with problems related with fiscal and monetary policies coordination and harmonization which affect the performance of all sectors in the economy. The higher cost of doing business, higher interest rate and difficulties of accessing funds discouraged investments and lower the level of progress in the financial sector [4]. Hence, the financial sector of the Nigerian economy is believe to be under performing in various aspects, especially in mobilizing surplus funds and channeling it to the real sector, providing long term financing to promising projects and small and medium enterprises [3]. Nevertheless, finance sometime is associated with crisis, credit crunch, and recession; rather

than as an engine of growth and development [9]. The overall macroeconomic objective of every Country is to increase and sustained its economic growth and development. In spite of all the reforms in the financial sector of the Nigerian economy and the growth and development of the Nigerian financial system; the financial intermediaries are not doing enough in financing the real sector of the economy adequately. Moreover, big corporation and government dominated the money and capital market, while new and medium enterprises may find it difficult to access the market, which can make it possible for them to expand their business operations so that more growth and development can be achieve in the economy. However, most of the opportunities in the Nigerian capital market are not enjoyed by many Nigerians, as foreigners dominated the market; many Nigerians are skeptical about the market due to inadequate information coupled with lower investment culture. Thus, the market is bedeviled with high volatility as foreigners tend to react to every little shock in the market and the economy, consequently affects the overall capital market development in Nigeria [3], [5]. Recently, efforts are being made to study the causes of financial exclusion and devise strategies to ensure that "unbaked" poor and disadvantaged people and societies are included into the formal financial. The global financial index report (2017) presented reasons why adults are excluded from the formal financial system worldwide, among the reasons cited, lack of income top the list; nearly two third of the global adults without bank account cited lack of enough income to use bank as the main reason and 20% cited it as their only reason. Other reasons include those that said they do not need a bank account (30%) with only 3% having it as only reason; opening bank account too expensive (26%), one of the family members already have a bank account (26%), the banks are too far away (22%) and religious reason was the least cited globally which was only (6%) but more cited in Muslims dominated countries. Moreover, almost half of the adults without bank account live in just seven countries of the world (around 44%) with China having the largest number (13%), followed by India(11%), Pakistan (6%), Indonesia (6%), Nigeria(4%) and Mexico (3%), while the rest of the world reside the 56% of world "unbanked" adults [10], [11] Nevertheless, the impact of financial development on economic growth and development was established in the literature; cross-country studies like in McKinnon (1973), Pagano (I990), Demetriades and Law (2006); [12] established that the development of financial system of country have significant positive impact on economic growth through mobilization of savings and efficient allocation of capital for productive investments; Innovation and technological progress which increases the level of productivity, employment opportunities and reduction in the level of poverty. Hence, under-developed financial system may hampers economic growth, and increase inequality in income distributions. However, even though there are literatures on the topic for Nigeria like [3]–[5], [7], [13] there are lot to explore in terms of causal link, variables and methodology so that a clear picture of the issue will be critically analyzed. However, some studies argued that the impact depends on the level of financial development of the country like in [14] which suggest a threshold for finance to growth hypothesis and others found that the level of growth determines financial deepening in an economy. In contrast, other studies found negative impact of financial development on growth [15] Therefore, this study determined the causal link between financial development, financial inclusion, trade openness, FDI and economic growth in Nigeria. The study is important because Nigeria is among the top seven countries in the world that have highest number of adults (15+) without formal bank account. More also, the country has a very fragile financial sector with promising potentials which undergoes series of reforms after reforms since mid-1980s to date and still a lot need to be done so that the sector will achieve its potentials. Thus, the debate on the causality between finance and growth is still on going without reaching universal conclusion on whether the causality runs from finance-growth or vice versa in Nigeria, therefore, the study dig more on the causality when there is financial inclusion, trade openness and FDI. The study contributed to the literature as it employed Nd Perron and Zivot Andrew unit root tests; Gregory and Hansen Cointegration test; Non-Granger Todo and Yamamota causality test. In addition the study will be among the few that used the index of financial development on Nigerian economy. Interestingly, the study is also among the few that construct index of financial inclusion for Nigeria and use the interaction term between financial development and financial inclusion.

2 The Literature Review

Theoretical literatures on Finance-growth nexus have been explained using the two notable hypotheses of finance-growth hypothesis and growth-finance hypothesis. Schumpeter was the first person to hypothesize that finance is very important in determining the growth of the real sector of any economy in 1911. He argued that ,banks mobilized and channel funds efficiently, which provide credit to the private investors with which they financed investment in physical capital, adopt new production technology, increasing innovations which lead to increase in productivity and GDP growth [16]. Most of the studies in this topic supported the idea of finance-growth hypothesis, developed by Schumpeter (1911) analyze and formalized by McKinnon (1973) and Shaw (1973) popularized by Fry (1988) and Pagano (1993). More also McKinnon (1973) goes further to highlight the importance of financial liberalization and investment, as financial repression hinder economic growth [8] However, Robinson (1952) conversely argued that the hypothesis should run from growth to finance, known as Growth-finance hypothesis. According to this hypothesis increase in GDP growth lead to increase demand of financial services, which lead to the expansion of financial intermediation and innovation in the financial sector, hence the creation of well-developed financial system [5]. Nevertheless, recent development is that researchers including those at World Bank and IMF believe that the finance-growth hypothesis should be Nonlinear. This hypothesis means that some level of financial development is good for an economy. They believe that there should be a threshold point of financial development beyond which further financial development will have a negative effect on economic growth. In other word, finance-growth relationship has an inverted U-shape relationship, nonlinear in nature, with threshold point [17]. However, cross country evidences confirmed the finance to growth nexus and found that there is statistical significant relationship between finance and economic growth like [12] that used GMM to estimate finance-growth hypothesis with financial openness while [18] used similar method but found mixed results in different countries, where he found positive coefficient in Taiwan and negative in Korea. In a single country study [16] found that, using Co-integration and causality test

found that financial liberalization through the removal of financial repressions policies stimulate financial development and financial depth also positively related with financial development. In a paper title: Does too much finance harm growth? With data from 87 countries [17] found that financial development is important to economic growth up to a certain level ”threshold” beyond that may lead to an adverse effect on growth. This finding provides evidence that more finance is not necessarily good for growth, an optimal level of finance is more crucial in determining economic growth. Moreover, [19] in his paper financial development and economic growth in Nigeria found that there is unidirectional relationship between finance and growth when using private credit as a proxy of financial development and bi directional when domestic credit were used. In the same line [8] using multiple regression analysis model adopted from Howell (1995) found that there is positive and statistical significant relationship between credit to private sector, liquid liabilities and real sector in Nigeria. [20] found that liquid liabilities and trade openness have positive and statistically significant impact on growth in Nigeria. Similarly, [5] found that there is long run positive significant relationship between indicators of financial development and economic growth in Nigeria. More also, [2] also validated finance to growth nexus in the short run in Nigeria using Johansen cointegration test while found to be negative in the long run. However, studies in the literature established that financial inclusion is an important determinant of inclusive growth. In their study, [21] found that financial inclusion and mobile telephony found to decrease the level of poverty and increase household consumption which increases the level of output in an economy. However, many empirical evidences confirmed that financial inclusion have statistically and positively significant effect on economic growth [22]–[25]. Moreover, financial development FDI inflows and trade openness found to positively determine entrepreneurship development [26]. Similarly, [27] found that trade openness, financial development, FDI and economic growth are cointegrated in European economy. They also found stressed that, when the level of FDI into Euro zone increases the level of economic activity and propelled the economy. Therefore this paper examined the causal effect of financial development, financial development, FDI, trade openness and economic growth in Nigeria. Most studies reviewed examined this causality without including financial inclusion variable. This study included financial inclusion index to see how it will change the direction of causality between financial development, FDI, trade openness and economic growth in Nigeria.

3 The Methods and Data

This section presents the methodology for evaluating the causal link between financial development, financial inclusion, trade openness, FDI and Economic growth in Nigeria from 1980 to 2017. The methods employed are the second generation unit root tests by Ng and Perron, Zivot Andrew unit root tests, Gregory and Hansen cointegration test and Non Granger causality Toda and Yamamota test. The study used data from World Bank and IMF databases from 1980 to 2017.

3.1 Unit Root Tests

However, the importance of unit root tests especially in time series research is acknowledged in literatures which include among others eliminating incidence of spurious regression. Nonetheless, unit root test is among the area with heated debates in econometrics. Ng and Perron (2001) used GLS method to create more efficient version of modified Philips and Perron test (1996). Ng and Perron (2001) established that this test will outperform all other unit root tests available, because it is based on long run variance and spectral density at frequency zero that contained corrected heteroskedasticity and autocorrelated standard errors. Moreover, Ng-Perron proposed four tests namely MZ_a, MZ_b, MSB and MPT which they believe are the same and equivalent in all aspect of size and power. Therefore, whichever test one used will represent the other three [28]. Hence, this paper reported MPT test where d^1_t with drift and trend using kernel based estimators. Additionally, the test can point to the exact period where the break occurred in the series. Zivot and Andrews (1993) modified and transformed Perron’s test which was based on exogenously determined structural break date to an unconditional unit root test in which break date is estimated. Thus, Zivot Andrews test was premised on a single break in the trend and intercept of the time series data. This test detects the break date at a point where ADF unit root test is at minimum, based on the most significant t-test of an intercept [29]

3.2 Cointegration Test

In econometric analysis, cointegration test is very important tool to determine whether there is long run relationship between two or more variables included in an equation. Numerous cointegration tests that capture presence of structural break in a time series were introduced, among them Gregory Hansen cointegration test. Our study employed Gregory and Hansen (1996) which is one of popular methods to test for cointegrating vectors in our included variables. This test is an improvement upon the notable Engle Granger test for cointegration and Gregory Hansen believed that the test is superior as it addressed the problem of testing cointegration relationship in the presence of possible break in the series. The Gregory Hansen method involved a procedure of determining unknown single break endogenously using residual-based techniques, with the null of no cointegration vectors [30], [31].

The Gregory Hansen model is specified as follows: without break

$$y_t = \mu + \beta t + \alpha' y2t + \varepsilon_t \qquad t = 1 \dots, n \qquad (1)$$

Where $y2_t$ is both I(0) and I(1)

For level, trend and regime with structural breaks

$$y_t = \mu_1 + \mu_2 \varphi_{1t} + \beta_{1t} + \beta_{2t} \varphi_{1t} + \alpha_1^T y_{2t} + \alpha_2^T y_{2t} \varphi_t + e_t \qquad (2)$$
$$t = 1 \dots, n$$

Where μ1, α1 and β1 are the intercept, trend and slope coefficient respectively which is prior to regime shift μ2, α2 and β2 represent the changes after the structural break.

3.3 Causality Test

Toda and Yamamoto (1995) developed a non-Granger causality test based on augmented VAR model with $k+d_{max}$ where k is the optimal time lag and d maximum integrated

order of the variable in VAR model system of equations. This test uses modified Wald test in Seemingly Unrelated Regression model (SURE). The traditional causality testing developed by Engle Granger (1987) have tendency to produce spurious regressions results especially on integrated variables function with time lag, hence it may lead to wrong conclusion. Moreover, Johansen and Juselius (1990) proposed to be alternative causality based on VAR model were believed to be cumbersome procedure [32]. Therefore, this study employed the Toda Yamamoto (1995) non-Granger causality test to test causality effect between financial development, financial inclusion, FDI, Trade openness and Economic growth using data from Nigeria. Nonetheless, the study performed descriptive statistics, correlation analysis, stability test, lag selection process among others on included variables.

3.4 The Data

The variables used in this study are financial development, financial inclusion, trade openness, FDI and economic growth. This study employed the use financial development index constructed by IMF to proxy financial development. The index is constructed using nine indices that include depth, access and efficiency both from financial institution angle and financial market. Moreover, financial inclusion is proxied by financial inclusion index constructed using principal component analysis, with four variable that include: ATM per 100,000 people, commercial Bank branches per 100,000 people, Depositors with commercial banks per 1000 people and borrowers from commercial banks per 1000 people. The financial inclusion data was sourced from world development indicators (WDI) database. Similarly, trade openness variable was proxied by import-export data divided by GDP at current USD multiplied by 100. Also FDI variable were proxied by FDI inflows and economic growth proxied by real GDP growth.

4 Results and Discussion

This section present the results of the study which include descriptive statistics, correlation matrix, unit roots test, cointegration test and causality test. Table 1 presents descriptive statistics and correlation matrix. Our variables in this study are Real GDP growth (RGDP), Financial Inclusion Index (FII), Financial Development Index (FINDEX), Trade Openness (TOP), and Foreign Direct Investment (FDI). Based on descriptive statistics, the kurtosis values are within the range of 0 to 3, only RGDP and TOP are above the range, thus, the variables are within normality. The correlation matrix showed that none of the variable has more than 70% explanatory power, which means the model is well specified and fit. Thus, in table 2 lag selection criteria was presented which shows that the selected lag in this study is 1, which is statistically significant in both AIC and SC criteria. Therefore, the study used a single lag in our estimation. However, in table 3 the results from unit root tests were presented. First we performed Ng Perron (2001) which shows that all our variables achieved stationarity at level and first difference only RGDP found not significant at level. Secondly, we did Zivot Andrew (1993) test where all variables not significant at level but were stationary at first difference. Thus, the results indicate that our variables are combination of I(0) and I (1).

Table 1: *Descriptive statistics*

	RGDP	FII	FINDEX	TOP	FDI
Mean	0.095046	-0.177979	0.219569	2.38E-29	1.712860
Median	0.085801	-0.123948	0.215012	3.02E-41	1.658475
Maximum	0.382477	2.655685	0.290754	4.52E-28	2.930908
Minimum	-0.008794	-1.607552	0.177779	4.41E-69	0.634336
Standard deviation	0.090006	1.343789	0.030784	1.04E-28	0.641456
Skewness	1.720389	0.577900	0.564487	4.006932	0.183254
Kurtosis	6.456528	2.225775	2.778020	17.05552	2.359898

Table 2: *Correlation Matrix*

Correlation Probability	RGDP	FII	FINDEX	TOP	FDI
RGDP	1.000				
FII	0.2868** (0.0012)	1.000			
FINDEX	0.3515 (0.7588)	0.5017** (0.0286)	1.000		
TOP	0.0188 (0.9107)	0.1457 (0.5518)	0.4595 (0.7224)	1.000	
FDI	0.6150 (0.0917)	-0.5213** (0.0221)	-0.3196 (0.0852)	0.5593 (0.7233)	1.000

Table 2: *Lag Selection Criteria*

Lag	LagL	LR	FPE	AIC	SC	HQ
0	1160.333	NA	122e-62	-128.3703	-128.1230	-128.3362
1	1200.680	53.79692*	2.54e-63*	-130.0756*	-128.5916	-129.8710

Table 3: *Unit Root Test*

	Ng Perron Test (MPT)		Zivot Andrew Test			
Variables	Level	First difference	Level	Break	First difference	Break
FII	203.338** (5.480)	25.801** (5.480)	-4.1639 (0.1078)	1988	-9.618471* (0.0100)	1995
RGDP	3.608 (5.480)	38.399** (5.480)	-0.8000 (0.9900)	2006	-5.344314* (0.0100)	2015
FINDEX	18.577** (5.480)	64.529** (5.480)	-4.6778** (0.0263)	2006	-5.714825* (0.0100)	2007
FDI	10.202** (5.480)	197.575** (5.480)	-20.9073* (0.0100)	1984	-23.47151* (0.0100)	2000
TOP	8.609** (5.480)	469.369** (5.480)	-171.6932* (0.0100)	2011	-122.5909* (0.0100)	2011

Note: *The values at the top are Chi square coefficient, while the values in the parenthesis are P-values *, **, and *** represent 1% and 5% respectively*

Table 4: *Gregory Hansen Cointegration Test*

Level (max Lag 3)			
	Test Statistics	Break Date	Critical values (1%)
ADF	-7.96*	1987	-5.77
Trend (max Lag 3)			
ADF	-8.27*	1987	-6.05
Regime (max Lag 3)			
ADF	-8.58*	1988	-5.97

However, in table 4 the result from Gregory Hansen cointegration test with structural brake were presented. This is the test for structural break for cointegrating vectors among the included variables. The test was carried out at level, trend and regime, where the result confirmed the existence of long run cointegration among financial development, financial inclusion, trade openness, FDI and economic growth in Nigeria. The study reported the result of ADF using maximum lag 3, which is considered to have minimum SIC. The result shows that cointegration is statistically significant at 1% level of significance in level and trend, which confirmed to be 1987 while, the regime is significant in 1988 also at 1% level of significance. Interestingly, this period 1987 to 1988 as identified by Gregory Hansen cointegration test, was the aftermath of Structural Adjustment Program (SAP) introduced in 1986, by World Bank and IMF with certain conditions for economic reforms centered on liberalization. Nevertheless, table 5 present the result from Non-Granger causality test by Toda and Yamamota (1993). The result shows that the causality runs from financial inclusion to economic growth which is statistically significant at 5% level and bi-directional causality between financial development indexes (FINDEX) and real GDP growth (RGDP). No causality was detected between trade openness (TOP) and real GDP growth (RGDP) as well as financial inclusion index (FII), causal link was found to run from TOP to FINDEX. Moreover, the result indicate causal link that runs from FDI to RGDP at 1% level of significance. Also found that FDI causes financial development at 5%. Another important finding was that there is causal link from FII to FINDEX at 5% level of significance

Table 5: *Non- Granger Causality Test*

	Independent Variables				
Dependent Variables	RGDP	FII	FINDEX	TOP	FDI
RGDP	–	4.7712 (0.0213)**	3.7905** (0.0479)	0.0194 (0.8892)	5.1386* (0.096)
FII	0.3069 (0.5796)	–	0.1575 (0.6915)	0.0010 (0.9738)	0.4490 (0.5028)
FINDEX	5.9388* (0.0017)	3.1776** (0.0403)	–	3.8521** (0.0497)	5.0095** (0.0213)
TOP	0.0053 (0.9415)	0.0002 (0.9881)	1.1783 (0.2777)	–	0.0431 (0.8354)
FDI	0.0750 (0.7841)	0.1449 (0.7034)	0.0374 (0.8465)	2.3640 (01242)	–

Note: *The values at the top are Chi square coefficient, while the values in the parenthesis are P-values *, **, and *** represent 1%, 5% and 10% respectively.*

5 CONCLUSION AND RECOMMENDATION

This study evaluate the causal link between financial development, financial inclusion, FDI, trade openness and economic growth in Nigeria using Ng Perron unit roots and Zivot Andrew unit root test with structural break; Gregory and Hansen cointegration test; Non-Granger causality by Toda and Yamamota test. However, the results revealed that all the variables were stationary and cointegrated in the long run. Similarly, the result showed one-way causal relationship from financial inclusion to economic growth, and two-way causal relationship between financial development and economic growth. However, there is no causal relationship between trade openness and economic growth. These results are indications that financial development and economic growth determine each other. And also access to financial services increase the level of output and contribute toward achieving higher growth in the economy. More also, FDI were found to cause real GDP growth in Nigerian economy. Importantly, financial inclusion found to determine financial development, which confirmed the assertion that, more access to financial services increases the level of intermediation and overall development of the formal financial sector. Therefore, the study concludes that financial development and financial inclusion is an important determinant of economic growth. Thus, the impact is even more pronounced when more people have access to formal financial services. Hence, access to affordable formal financial products and services for all especially poor and disadvantaged members of society should be provided, and credits to private sector also has to be encouraged in order to achieve more growth in Nigeria. Lastly, inward FDI should be attracted by the Nigerian government as such have causal effect on growth of the economy.

References

[1] T. O. Ayinde, O. Ganiyu, and Yinusa, “Financial Development and Inclusive Growth in Nigeria: A Threshold Analysis,” Acta Univ. Danubius. Œconomica, vol. 12, no. 05, pp. 1–21, 2016.

[2] Madichie, A. Maduka, C. Oguanobi, and C. Ekesiobi, “‘Financial Development and Economic Growth in NIgeria: A Reconsideration of Empirical Evidence’.,” J. Econ. Sustain. Dev., vol. 5, no. 28, pp. 199–208, 2014.

[3] O. B. Grace, “Financial Development and Economic Growth Nexus in Nigeria: Further Evidence from Long-run Estimates,” Acta Univ. Danubius. Œconomica, vol. 13, no. 03, pp. 1–8, 2018.

[4] F. O. Ogwumike and A. A. Salisu, “Financial Development and Economic Growth in Africa,” J. African Bus., vol. 18, no. 3, pp. 320–339, 2017.

[5] T. M. Ibrahim and M. I. Shuaibu, “Financial Development : A Fillip or Impediment to Nigeria ’ s Economic Growth,” vol. 3, no. 2, pp. 305–318, 2013.

[6] Philip Arestis and Panicos Demetriades, “Arestis Demetriades F Lib.pdf,” East. Econ. J., vol. 25, no. 04, 1999.

[7] A. Yusuf, “Financial Development and Economic Growth in Nigeria,” Int. J. Manag. Sci., vol. 03, no. September 2011, pp. 47–55, 2014.

[8] A. Mamman and A. H. Yusuf, “Impact of private sector credit on the real sector of Nigeria,” Int. J. Bus. Soc. Res., vol. 3, no. 5, pp. 105–116, 2013.

[9] G. Estrada, D. Park, and A. Ramayandi, “ADB Economics Working Paper Series Financial Development and Economic Growth in Developing Asia,” no. 233, 2010.

[10] Global Findex, The Little Data Book on Financial Inclusion. 2018.

[11] Global Findex, “Measuring Financial Inclusion and the Fintech Revolution,” 2017.

[12] B. H. Baltagi, P. O. Demetriades, and S. H. Law, “Financial development and openness: Evidence from panel data,” J. Dev. Econ., vol. 89, no. 2, pp. 285–296, Jul. 2009.

[13] F. O. O. and A. A. Salisu, “FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH IN NIGERIA ,” J. Monet. Econ. Integr., vol. 12, no. 02, 2015.

[14] F. Rioja and N. Valev, “Finance and the sources of growth at various stages of economic development,” Econ. Inq., vol. 42, no. 1, pp. 127–140, 2004.

[15] K. Mhadhbi, “Financial Development and Economic Growth : A Dynamic Panel Data Analysis,” vol. 2, no. 2, pp. 48–58, 2014.

[16] J. B. Ang and W. J. McKibbin, “Financial liberalization, financial sector development and growth: Evidence from Malaysia,” J. Dev. Econ., vol. 84, no. 1, pp. 215–233, Sep. 2007.

[17] S. H. Law and N. Singh, “Does too much finance harm economic growth?,” J. Bank. Financ., vol. 41, pp. 36–44, Apr. 2014.

[18] W.-C. Liu and C.-M. Hsu, “The role of financial development in economic growth: The experiences of Taiwan, Korea, and Japan,” J. Asian Econ., vol. 17, no. 4, pp. 667–690, Oct. 2006.

[19] U. B. Ndako, “financial development and economic growth: evidence from Nigeria,” Appl. Financ. Econ., vol. 22, no. 15, pp. 1259–1273, Aug. 2012.

[20] N. Pelesai, P. D. Okumoko, and T. Pearce, “Financial Development and Economic Growth in Nigeria,” Eur. J. Bus. Manag., vol. 5, no. 19, pp. 69–82, 2013.

[21] J. Y. Abor, M. Amidu, and H. Issahaku, “Mobile Telephony, Financial Inclusion and Inclusive Growth,” J. African Bus., vol. 19, no. 00, pp. 430–453, 2018.

[22] J. H. Kim, “A study on the effect of financial inclusion on the relationship between income inequality and economic growth,” Emerg. Mark. Financ. Trade, vol. 52, no. February, pp. 498–512, 2016.

[23] H. T. Williams, A. J. Adegoke, and A. Dare, “Role of Financial Inclusion in Economic Growth and Poverty,” Intern. J. Res. Econ. Soc. Sci., vol. 7, no. November, pp. 265–271, 2017.

[24] D. W. Kim, J. S. Yu, and M. K. Hassan, “Financial inclusion and economic growth in OIC countries,” Res. Int. Bus. Financ., vol. 43, pp. 1–14, 2018.

[25] D. Sharma, “Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy,” J. Financ. Econ. Policy, vol. 8, pp. 13–36, 2016.

[26] Y. Bayar, M. D. Gavriletea, and Z. Ucar, “Financial sector development, openness, and entrepreneurship: Panel regression analysis,” Sustain., vol. 10, no. 10, pp. 1–11, 2018.

[27] R. P. Pradhan, M. B. Arvin, J. H. Hall, and M. Nair, “Trade openness, foreign direct investment, and finance-growth nexus in the Eurozone countries,” J. Int. Trade Econ. Dev., vol. 26, no. 3, pp. 336–360, 2017.

[28] M. I. Malik and Atiq-ur-Rehman, “Choice of Spectral Density Estimator in Ng-Perron Test: A Comparative Analysis,” Int. Econom. Rev., vol. 07, no. 02, pp. 51–63,

2015.
[29] I. Nilsson, “Unit Root Tests and Structural Breaks in the Swedish Electricity Price Swedish Electricity Price ”,” 2009.
[30] A. Sadeghi and G.Ramakrishna, “AN EMPIRICAL ANALYSIS OF IMPORTS OF IRAN : A GREGORY-HANSEN METHOD OF COINTEGRATION,” Int. J. Bus. Manag. Econ. Res., vol. 5, no. 2, pp. 28–43, 2014.
[31] S. Ibrahim, “East Asian Financial Integration : A Cointegration Test Allowing for Structural Break and the Role of Regional Institutions,” Int. J. Econ. Manag., vol. 3, no. 1, pp. 184–203, 2009.
[32] C. Dritsaki, “Toda-Yamamoto Causality Test between Inflation and Nominal Interest Rates : Evidence from Three Countries of Europe,” Int. J. Econ. Financ., vol. 7, no. 6, pp. 120–129, 2017.