THE FINANCIAL INCLUSIVENESS AND INSTITUTIONAL QUALITY IN NIGERIA

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Abstract

The study examines the role of institutional quality on financial inclusion and broad-based productive growth variables employing the Bounds testing approach to co-integration and error correction model within an autoregressive distributed lag (ARDL) framework based on annual secondary time series data from 1998 to 2017.The results of the analysis showed that institutional quality had an overall significant effect on financial inclusion in Nigeria. While all the explanatory variables were found to exert a positive statistically significant effects on finance-inclusive growth link in Nigeria both in the short-run and the long-run, contrary to a-priori theoretical expectation, technology choice index was positively signed.This shows that while the effects of institutional quality could vary widely in an economy, institutional quality appears to be the dominant driving force behind both the broad-based financial systems and productive employment growth. We therefore recommend that institutional improvement beyond the present liberal democratic threshold is much needed to leverage on new technologies by providing innovative banking infrastructure that would effectively expand both physical and digital accesses to finance, and thereby comprehensively integrating millions of Nigerians into productive activities for optimal value-chain finance-growth inclusiveness. Moreover, given her resource human capital base, the adoption of an appropriate development strategy would help a great deal for lifting millions out of poverty, and sizably bridging the inequality gaps. These would address the protracted tripartite socio-economic problems of poverty, inequality and unemployment in line with Lin's growth identification and facilitation hypothesis.

***Keywords:*Financial Inclusion, Development Strategy, Productive Employment, Inclusive Growth, Institutional Quality**
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Introduction

The concept of financial development is fundamental to human capital development and inclusive growth for all economies, and this seems even more critical for developing countries where the financial sector has not been fully developed. While building inclusive financial systems has increasingly become an important objective for policy-makers around the world, financial inclusion, which is the core driver of sustainable economic growth, remains its prime goal and is, therefore, attracting attention of the contemporary international development concerns. Underscoring the fact of positive linkage between inclusive finance and economic development, Sahar Nasr (2014) of the World Bank Group asserted the renewed concerted efforts were being geared towards the formulation and implementation of improved strategies to financially include the unbanked populace for a sustainable broad-based productive employment growth in many developing and emerging economies.

Financial inclusion characterized as the provision of a broad range of high quality financial services, such as savings, credits, insurance, remittances, pensions and other banking/payment services to all bankable households and enterprises at affordable costs, is not an end in itself. Instead, it is only a contingent means to an end, whereby the goal in mind is actually growth with inclusiveness (Demirguc-Gunt&Klapper, 2012). This embraces all initiatives that make formal financial services available, accessible and affordable to all, including the vulnerable and marginalized segments of the society. Its operation is in two folds viz; to enable and empower. By enabling, it ensures that people have the tools to manage and save their money using services such as bank accounts. Whereas, its empowerment equips people with the skills and knowledge so as to make the right financial decisions. Financial exclusion, on the other hand, would mean the inability of the disadvantaged to access formal financial services due to a range of obstacles. These may include long distance to access point, low financial literacy and trust in the financial sector, cumbersome documentation requirements and high cost of financial services, low income and poor financial discipline, among others.

In the literature, the recognition of the lack of financial inclusion retarding development can be traced back to Bagehot (1873), Lewis (1955), Gurley & Shaw (1955) and King & Levine, (1993a & b) who highlight the importance

of formal financial institutions (Banks) in stimulating overall economic activities. More recently, this was consecutively reechoed by world leaders at the United Nations Sustainable Development Summits (2005) and (2015) where vital functions were ascribed to an inclusive financial sector and institutional quality concern, generally termed 'good governance' for the attainment of Millennium Development Goals (MDGs) by the year 2015 and Sustainable Development Goals (SDGs) by the year 2030, respectively.

It is worthwhile to note that these recently adopted worldwide development goals (MDGs and SDGs) had placed institutional quality of the state at the heart of achieving the 'new growth path' of finance-growth inclusiveness. Hence, the long standing 'war' against the ravaging tripartite socio-economic problems of pervasive poverty, huge inequality gaps and worrisome jobless growth especially in most resource-rich developing nations can be successfully fought and won given the state's embedded autonomy and its resilience in terms of capacity and character (Ghatak, 2003; Stiglitz, 2016).Thus, the state institution has always become the only viable agent that has an uncompromised vested interest in ensuring a growth with inclusiveness, creating equitable economic opportunities along with equal access to them by all, particularly those hitherto financially excluded (i.e the poor and the vulnerable households in society) from the growth process.

Notwithstanding an irrefutable research establishing the links between financial development and economic growth in many advanced and Organization for Economic Co-operations and Development (OECD) economies with over 85 per cent as against 42 per cent of the population in most resource-rich but institutional quality-deficit developing countries having access to formal financial services (EFInA, 2018).Meanwhile, it is generally believed that growth inclusiveness would address the tripartite socio-economic problems of poverty, inequality and unemployment which are a direct consequence of financial exclusion and deprivation or marginalization. Meanwhile, attaining such a covetous participatory and benefit-sharing growth process, can largely be determined only by the levels of financial services in terms of availability, accessibility and usage. Otherwise, the most desirable inclusive growth and development in any economy will at best remain elusive without these vital components of financial inclusion (Tella, 2012).

Consequently, the most challenging trend in the world today still remains the need for a broad-based access to finance for productive employment growth and sustainable development. Thus, the concept of inclusive finance becomes critical in effectively tackling the tripartite socio-economic problems of poverty, inequality and unemployment which commonly associated with most low-income sub-Sahara African countries as in other developing economies of the world. Meanwhile, in spite of massive drop in number of the unbanked from 2.5 billion in 2011 to 2 billion in2014, the Global Findex-IMF Financial Access Survey (2017) shows that about 1.7 billion adults around the world still donot have access to formal financial services, and about 75% of poor people were unbanked. However, extending finance access to the vulnerable and marginalized individuals is the first building-block to build a better life for a broad-based segment of society. Access to formal financial services through formal account ownership can enable individuals as well as firms to smooth consumption, manage risks, and invest in education, health and enterprises (World Bank Group, 2019).Thus, at the core of global socio-economic challenges is the need to enhance society'saccess to productive opportunities, particularly the extremely poor's and the vulnerable groups'.

Despite the decades of financial sector liberalizations for 'inclusion', and the 'improved' institutions of political governance in Nigeria, several questions still remain unanswered, or even rather unasked, on the quality of institutional causes of financial inclusion for growth inclusiveness across countries. Namely, what have been the nature and trends of institutional quality, financial inclusion and inclusive growth in Nigeria? How has the quality of institution affected financial inclusion in Nigeria? And to what extent has institutional quality impacted on the link between financial inclusion and a broad-based productive employment growth? Studying therefore the link between a broad-based financial system and institutional quality in resource-rich and labour-abundant developing countries like Nigeria would help a great deal in proffering the tripple-win solution to the aforementioned mounting tripartite socio-economic problems.

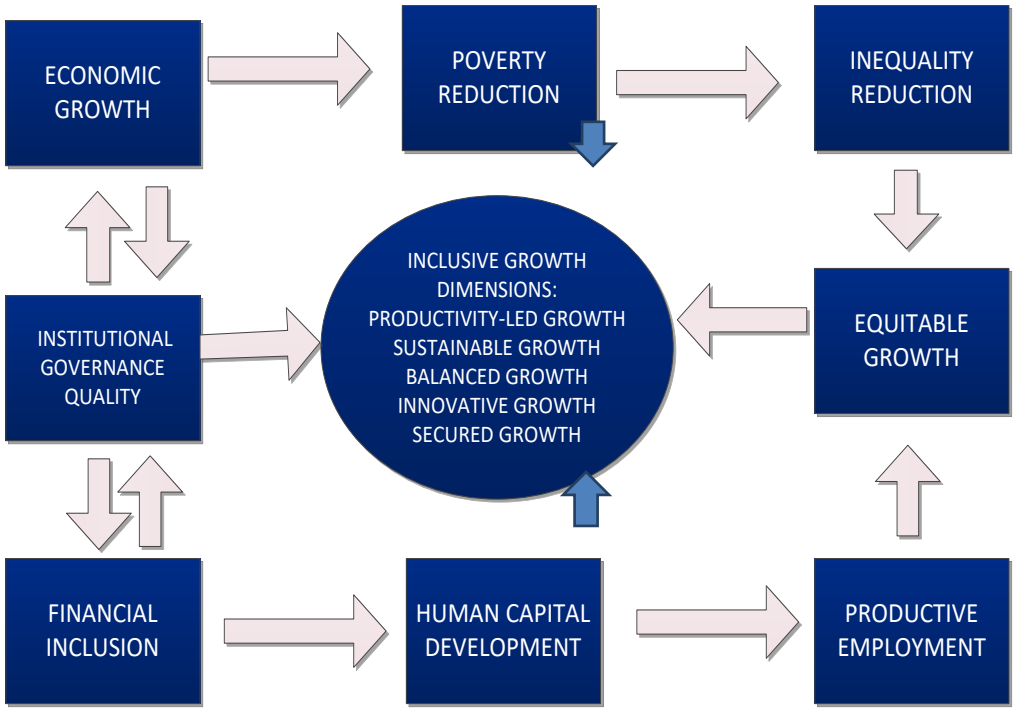
The study is organized as follows: Following the introduction, section 2 reviews the literature on the dynamic link between financial inclusion and inclusive growth as an analytical outcome of institutional quality. Section 3 specifies the base-line model for the achievement of the study's stated

objectives. While Section 4 analyses and discusses the findings, some concluding remarks and policy implications are provided in section 5.

Literature Review

Conceptual Literature

Figure 1 provides the conceptual framework which provides a diagrammatic interpretation of the linkages between the key drivers of inclusive growth in a country. Inevitably, this is a simplification of a more complex relationship between institutional quality and economic development. Nonetheless, it highlights a partial set of relationships upon which this study is premised. The three linkages mostly focused on are: quality institutions of governance to financial inclusion; leading to human capital development and productive employment; andthen to poverty and income inequality reductions, and consequently to the attainment of all inclusive growth dimensions.



Source: Adapted from Vellala, Madala&Chhtopadhyay, (2014)

Figure 1: Conceptual Framework for Inclusive Growth.

Notably, formal financial services everywhere are aberrations to providing substantial amounts of longer-term finance, because their deposits primarily are of a short term nature. Under circumstances of gross imperfections of the formal financial markets in many developing countries, deep government interventions would essentially be needed for the development of financial institutions which specialize in longer-term and inclusive finance as in the cases of Indonesia and Pakistan. In other words, given the resilience of the state institution in terms of capacity and character, governments could create favorable conditions for the emergence for long-term inclusive finance. Moreover, in the context of financial services with strong commercial banking systems, efforts to encourage a sustained broad-based access to formal financial services have also met with convincing success stories in countries like Hong Kong, Malaysia, Bangladesh, Singapore, Brazil, and Mexico, (Vandemoortele*et al.* 2013).

In particular, Nigeria, though endowed with both human and natural resources, spanning across all the six geopolitical zones, the country is still among the poorest nations in the world. After over 60 years of independence and 20 years of uninterrupted democratic rule, coupled with her highly lofty policies and programmes, the nation is yet to register any inclusive growth. The supposedly impressive average economic growth of about 7.0% during 2001 to 2014, the growth was neither inclusive. Whereas, the country continues still facing a high incidence of poverty and worsened inequality gaps, as well as the inordinately rising unemployment rates coupled with the high degree of social deprivation and exclusion. A very grim picture of the trilemma was poignantly painted by the United Kingdom Prime Minister, Mrs Theresa May (2018) noted that, in spite of a resurgent economy, 87 million Nigerian still lived on less than $1.90 per day, making it home to more very poor people than any other nation in the world. Furthermore, unemployment has been on increase consistently, with the rate estimated to be 11.9% in 2005, 12.8% in 2008 rose to 19.7 % in 2009, 23.9% in 2011, and to as high as 27.4%, 29.2%, and 32.3% for 2012, 2015 and 2017, respectively (EFInA, 2018).

Empirical Review

Investigating the role of “something else” (institutions) besidesfactor accumulation, Easterly and Levine (2002) in the Working Paper Series of

Central Bank of Chile found that TFP residual accounts for most of the cross-country and cross-time variation ingrowth. This observation is less consistent with the simple earliest traditional growth models that featurediminishing returns, factor accumulation, some fixed factor of production, and constant returns to scale. The study found thatnational policies have strong link with long-run economic growth rates, and all factorsof production flow to the richest areas, because of high "A" rather than high "K". Thus, the study in a way is relevant to the present study as it suggests 'something' more crucial to explaining sustainable inclusive growth.

Osman & Nabi (2007) employ a bivariate Granger causality tests to investigate the relationship between institutional environment and the banking-growth nexus for the MENA countries. They developed an endogenous model where the institutional environment is captured the judicial system efficiency and the easiness of informal trade. Their findings show that an improvement of the institutional environment: (1) increases the causality direction from banking to economic growth through a reduction of defaulting loan; (2) reduces the interest rate spread; and also shows a bi-directional causality: (1) banking development drives growth in countries with more developed institutional environment; (2) causality runs from economic growth to banking and indicates that a more developed economy have a more developed banking system.

Demirguc-Kunt*et al* (2008) reviews research on access and barriers to finance, using household and firm-level data from previous research, whilst Beck, Demirguc-Kunt and Peria (2006a) empirically investigate barriers to access, using information from 193 banks in 58 countries to develop indicators of physical access, affordability and eligibility barriers to savings, debt and payment services. Both studies note that the main barriers include geographical distance as well as lack of adequate documentation and high fees and minimum account balance. The duo observes that there are limitations of opportunity where potential investments with good prospects are denied finance because of lack of a collateral or network. Meanwhile, the finding has policy implication for the government to strive toward achieving a broad-based financial access.

Taking a closer look at two critical issues of governance and institutional quality measurement and direction of causality between institutional development and economic development in the developing Asian countries, Zhuang, de Dios and Lagman-Marrtin (2010) examine the role of governance and institutions. Applying a simple classification framework under the widely used world governance indicators (WGIs), the authors found that the Asian economies with government effectiveness, regulatory quality, and rule of law scored above the global means and grew faster on average during the period 1998-2008, than those economies below the global means. In effect, their findings are consistent with Levy and Fukuyama (2010) that, improving governance in these three dimensions could be used as potential entry points of development strategies for many other developing economies in the region and elsewhere.

In another study, Tella (2012) examines the challenges and prospects of financing inclusive growth in Nigeria. The author reviews the literature on theoretical constructs of economic growth and development models, including inclusive growth model (various growth models from the classical to the endogenous and inclusive growth). He discovers that while a number of emerging countries (e.g Malaysia, Singapore, Bangladesh, Mexico, and the BRICS'countries with the exception of Russia) could link their development plans to specific theories and models which provides avenue for measurement and evaluations, the Nigerian growth and development programmes since independence are hardly based explicitly on a model. However, he concludes that, the route to sustainable development is financial inclusive growth; and an important policy organ like the Central Bank of Nigeria can direct and re-direct the nation's vision towards inclusive growth that has assisted many developing and emerging countries to overcome the issues of chronic poverty in recent times.

Vandemoortele*et al.* (2013) examines the experiences of four of the BRICS'countries (Brazil, China, India and South Africa). They identify four key factors shaping the countries' patterns of growth: people having access to assets; investment in productive activities; social transfers; and a political economic context where inclusion is a priority. They aver that though these economies can be lauded for their stellar economic growth and resilience through the 2008-2009 financial crises, but scratching beneath the surface it is

evident that not all the people in these countries have benefited equally from growth. Only Brazil found to have managed to reduce both poverty and income inequality, in some cases significantly. This case study argues that the three key factors underpinning per capita growth rates and the country's fall in income inequality are; economic stability; expansion of social protection and social services; and institutional reforms that could guarantee such a growth and development.

It is worth noting that Lin and Chang (2014) recognized that, given the structures of many resource-rich developing nations, trapped in tripartite socio-economic problems of poverty, inequality and joblessness, socio-structural decisions cannot then be clearly assessed in an institutional vacuum. Hence in this paper, we interacted both institutional and macro-structural variables. Guided by the work done on the financial development-inclusive growth link and the belief that an effective state institution must underlie inclusive finance-growth relationship, this paper examines what effects quality institutions of governance have on providing broad-based financial services, including the extremely poor and the most vulnerable in society.

In another study, Camara*et al* (2014) assess a quantitative approach to the determinants of financial inclusion in Perubased on micro-data from surveys. Significant correlations are used to identify thosesocio-economic characteristics that may affect financial inclusion (or exclusion) of householdsand enterprises. The results show that the traditionally more vulnerable groups(women, individuals living in rural areas and young people) are those with the greatestdifficulties in accessing the formal financial system. The study discovers that forenterprises, formality and education stand out as significant factors for financial inclusion. They, therefore, suggest that identification of the individual characteristics would affect financial inclusion and thereby providing usefulempirical evidence for designing policies that promote more inclusive financial systems. The study has relevance to the present study as it gives insight into the problem which the present study sets out to solve.

Similarly, Owusu and Odhiambo (2014) investigate the impact of financial liberalisation policies on sustainable economic growth (GDP index calculated by using Principal Component Analysis (PCA) in Nigeria between 1969 and

2008. The study employs the Autoregressive Distributed Lag (ARDL)-Bounds testing approach and the unrestricted error-correction model (UECM) to co-integration analysis, as popularised by Pesaran, Shin and Smith (2001) to establish the long-run relationship between the relevant time series variables. The empirical results show that the impact of financial liberalization policies on economic growth in Nigeria is positive and statistically significant; both in the short run and in the long run. The study, therefore, recommends that appropriate financial liberalization policies should be pursued in Nigeria in order to foster economic growth. However,the study cautions against the use of the laissez-faire approach to financial reforms, considering the fact that financial market is prone to market failures,

Fadun (2014) examines financial inclusion as a tool for alleviating poverty and redistributing income in developing countries, with special reference to Nigeria. The study, in view of the financial inclusion efforts at the global level, highlights the various financial inclusion strategies developed in Nigeria to decrease the number of Nigerians that are excluded from financial services. Considering the low levels of financial penetration and deepening in developing countries, including Nigeria, financial exclusion still remains an area of great concern, as the study reveal that 39.2 million adult Nigerians representing 46.3% of the adult population of 84.7 million were financially excluded in 2012**.** Further analysis also show that 54.4% of the excluded populations were women, 73.8% were aged less than 45 years, 34% had no formal education, and 80.4% reside in rural areas. The findings indicate that financial inclusion constitutes important tool for alleviating poverty and redistribution of income in developing countries, particularly in Nigeria.

A study by the World Economic Forum (*WEF,* 2015) reveals that access to financial services through formal accounts can enable individuals to have a smooth consumption, manage risk, and invest in education, health and productive activities. Similarly, the World Bank in 2017 noted that there was a strong correlation between account penetration of various countries and their Gross Domestic Product (GDP) per capita. However, while the Nigerian financial services sector is not only heavily dominated by the mainstream financial institutions (DMBs), they are fairly developed and a key employer of labour as well. Thus, the geographical pervasiveness of these banks and their share of total credits to the productive sectors as institutional and functional

vehicle for economic transformation of any country can hardly be over-reemphasized.

Similarly, Obioma and Dada (2015) examine implications of financial inclusion for inclusive growth in Nigeria using a 3SLS estimation technique and a small open economy macro model that links financial inclusion and inclusive growth. The estimation results indicated that financial inclusion, among other variables such as past levels of per capita income; government spending and inflation are significant in explaining inclusive growth in Nigeria. However, since economic growth is never a guarantee for the desirable sustainable inclusive growth, which beyond creating an enabling environment, the catalytic role of a developmental state can hardly be overemphasized. This analysis brings to fore the need to widen the scope of financial inclusion; particularly efforts that can improve access to finance thereby making growth more inclusive in Nigeria.

In another study, Ikhide (2015) reviews some authors' work in the field of finance and growth debate for Africa datingback 30 years. He observes that though most of the literature supports thelink between finance and growth, but the robustness of theevidence seems to have waned mainly in response tofinancial instability occasioned by financial liberalization and excessive credit growth. However, the author stresses that while financial depth mayno longer be strongly correlated with economic growth,the crucial role that access tofinance could play in promoting financial developmentand bootstrapping economic growth in Africa can hardly be over-emphasized. Inparticular, the study thus stresses the role of properly designed microfinance institutions inenhancing access to finance by individuals and MSMEs which would helppromote economic growth and reduce poverty in Africa.

Drawing on an extensive literature, Alemu (2016) uses secondary data to analyze the trends in financial inclusion and to assess the performance and stability of the financial sector in Ethiopian economy. The study notes that despite huge progress of average annual real GDP growth rate of 11 per cent rate between 2003/04 and 2012/13, financial inclusion is still very low owing mainly to physical access and finance constraints caused by the unfavourable financial regulations issued by the NBE, and unreliable and unsustainable source of funds for Developmental Bank of Ethiopia (DBE). The other major

problem is the lack/limited use of technology and innovation in financial service delivery. The capacity of domestic savings in financing the development effort of the country is weak.

Ayinde and Yinusa (2016) carried out a threshold analysis employing the quantile regression technique to investigate the relationship between financial development and inclusive growth in Nigeria for the period 1980-2013. The findings show that the impact of financial development on inclusive growth depends on the measure of the former up to the threshold level of 90^{th} percentile and not beyond; and the direction of causality between financial development and inclusive growth was reversed. Moreover, financial inclusion rather than financial deepening was equally found to positively impact on inclusive growth. However, the study observes that the government intervention poses a detrimental effect on private financial development activities during the period.

Another study on balancing inclusive growth with financial stability in the Nigerian economy, Ajakaiye and Tella (2016) investigate the effects of the existing regulations on the structure of the financial system and specifically on the banking sector in Nigeria. The study notes the existence of foreign banks but with insignificant share of their funds in total assets and liabilities of the banks in Nigeria. In order to promote financial stability and inclusive growth in Nigeria, the authors therefore suggest that effective regulatory framework and policy consistency, financial inclusion initiatives as well as manpower development must be continuously strengthened and sustained.

In a recent biennial survey report on access to financial services in Nigeria, the EFInA (2018) reveals certain economic and financial 'divides' across the six geo-political zones. The results of the Survey indicate that while the financially excluded population grew by 14.9%, from 34.9 million in 2012 to 40.1 million (41.6%) in 2016, the banked population went up by 1.4% in 2018, driven by transaction products. This was due to increase in the number of people who saved with the DMBs given their financial capacity to withstand any economic crisis as well as ability to maintain their customers' acquisition drives at the expense of other formal channels like microfinance banks (MFBs) or insurance (CBN, 2010). Thus, the contribution of MFBs in Nigeria

to formal financial inclusion has been on decrease with adult users reducing by 30.8% between 2012 and 2016.

In the most recent Nigerian systematic diagnostic study by the World Bank Group (2019), about 1.7 billion adults were reported as unbanked, globally. That is, the number of adults population that are without an account at a financial institution or through a mobile money provider. Whereas, owning a bank account is widely popular with the high-income economies, largely, all the unbanked adults live in the developing world, with nearly half live in just seven developing countries namely, Bangladesh, China, India, Indonesia, Mexico, Pakistan and Nigeria.

Notably, studies that have addressed the issues of linkage between financial inclusion and inclusive growth were found to suffer from a number of empirical problems. One major impediment which deserves a special attention is inability to see financial inclusion and inclusive growth as an analytical outcome of institutional quality. Moreover, the failure to acknowledgethe impossibility of 'an inherently exclusive market' as the best inclusive growth strategy; and the supposed evidence showing the superiority of the liberalized financial sector with too much reliance on cross-sectional econometric studies known usually to suffer from defectively contextual concepts and samples heterogeneity. Thus, in effect, no generalizations or testable hypotheses can be drawn from such a handful studies about the impact of institutional quality on financial inclusion and inclusive growth in a resource-rich developing country like Nigeria.

Against these backdrops, this study assesses the effect of institutional quality on the link between financial inclusion and inclusive growth as measured by real GDP per person employed in Nigeria during the period 1998-2017. The study employed the recent Auto-regressive Distributed Lag (ARDL) bounds testing to co-integration technique. Our variables of interest are the constructed composite financial inclusion index (IFI) to measure financial inclusion's three dimensions of availability, accessibility and usage of formal financial services; and real GDP per person employed (RGDPE) as proxy for inclusive growth. Other variables employed are the standardized worldwide composite governance indicators of state institutional effectiveness (GEFe) due to Kaufumann, Kraay and Mastruzzi (2010); the constructed technology

choice index (TCI) as the value-added to labour ratio in manufacturing over the total value-added to aggregate labour force ratio, to measure development strategy. The composite human development index (HDI) for capturing absolute poverty incidence (POV) and the components of income inequality (GINI), literacy rate (LIT) and life expectancy rate (LEX) was also included.

Stylized Facts about Financial Inclusion Spread in Nigeria

The biennially demand-side survey Report of the Enhancing Financial Innovation and Access (EFInA) (2018) reveals that the divergence in the level of financial inclusion across the six geopolitical zones in Nigeria is quite astonishing. For, instance, North East and North West zones with the lowest levels of financial access and inclusion averaged 29 and 30 per cents respectively during the 2010-2016 survey period. Access to formal financial services and inclusion is however relatively noticed to be most progressed in the southern parts of the country with South East and South West respectively averaged 63 and 67 per cents over the survey period. Also, the EFInA Survey consistently discloses that Nigeria lags behind some of its peer African countries withregards to the provision of financial services. This poses serious challenges to nation's inclusive economic growth and sustainable development. For instance, in Table 1, in 2016 and 2018, only about 49% respectively – roughly 47 million and 49 million outof an adult population of - 96.4 million and 99.6 were served by formal financial services, compared to 80% in South Africa and 68% in Namibia (EFInA, 2018).

Table 1Financial inclusion in Nigeria (2008-2018)

	Percentage (%)					***Total Number (Million)***				
	2008	**2010**	**2014**	**2016**	**2018**	**2008**	**2010**	**2014**	**2016**	**2018**
Adult Population	100	100	100	100	100	86.6	84.7	92.6	96.4	99.6
Financially Served	52.5	53.7	60.5	58.4	63.2	41.2	45.5	55.6	56.3	63.0
Financially Excluded	47.5	46.3	39.9	41.6	36.8	45.4	39.2	36.9	40.1	36.6
Formally Served (Included)	23.6	36.3	49.0	48.6	48.6	20.3	30.7	45.4	46.9	48.4
Informally	23.9	17.4	11.9	9.8	14.6	20.7	14.7	10.2	9.4	14.6

Excluded										
Banked	21.1	30.0	36.3	38.3	39.7	18.3	25.4	30.1	36.9	39.5
Formal Other Institutions	2.5	6.3	12.3	10.3	9.0	2.2	5.3	6.7	10.0	8.9

Source: EFInA Access to Financial Services in Nigeria, 2008, 2010, 2014, 2016 & 2018 Surveys.

Meanwhile, between 2008 and 2010, the percentage of "completely excluded" fell from 48%to 46%, while those served by the "informal sector" fell from 24% to 17% (EFInA, 2016). Similarly, "formal other" doubled from 3% to 6% and "formally banked" rose from21% to 36% and 39% in 2008, 2014 and 2018 respectively (EFInA, 2018).

The EFInA's latest survey reports reveals certain economic and financial 'divides' across the six geo-political zones. While financial inclusion is expectedly found to be most progressed in the urban areas, especially in thesouthern parts of the country (see Table 2), the Northern Nigeria is still particularly disadvantaged as 55% and 62% of adults in the North East and North West zones respectively are excluded fromfinancial services as against 19% and 29% for South-west and South-east respectively in 2018. Ratesof formal inclusion range from 78% in the South West Region to only 24% in the North WestRegion. 'Informally included' are more in the North Central region, where 23% and 14% of the adults respectively have access to only informal services in 2010 and 2016.

Table 2 Financial inclusion in Nigeria by geopolitical Zones

Zone	*Formally Banked (%)*			*Formal Other (%)*			*Informally Served (%)*			*Financially Excluded (%)*				*Total (%)*
	2010	**2014**	**2016**	**2010**	**2014**	**2016**	**2010**	**2014**	**2016**	**2010**	**2014**	**2016**	**2018**	
North West	13	35	24	6	5	6	13	4	6	68	56	70	62	100
North Central	27	49	48	6	7	13	23	11	14	44	33	39	31	100
South West	42	63	78	7	8	4	18	7	5	33	25	18	19	100
North East	15	26	25	6	3	13	11	2	14	68	68	62	55	100
South East	41	63	59	6	6	13	21	5	13	32	25	28	29	100
South-South	39	52	55	6	8	12	19	7	14	36	29	33	23	100

Source: EFInA Access to Financial Services in Nigeria, 2010, 2014, 2016 & 2018 Surveys.

Several empirical studies have established a positive correlation between financial development and long-run economic growth (Osman&Nabi, 2007; Demirguc-Kunt*et al* (2008; Demirguc-kunt&Klapper, 2012; Tella, 2012; Fadun, 2014;Owusu&Odhiambo; 2014; CBN, 2015; Ikhide (2015; EFInA, 2018, Olanrewaju, et al. 2019; World Bank, 2019) among others. These studies, however, caution that the transmission mechanism vary from one country to another. Essentially, the financial access and inclusion literature highlights the financing gap through empirical investigations, and stresses the need for flexibility in financial arrangements as well as shift in focus towards promoting productive employment opportunities through innovative entrepreneurial activities capable of stimulating sustainable productivity growth across all sectors of the economy.

The first round of the Nigerian Manufacturing Enterprise Survey (NMES) carried out by UNIDO (2004) to collect both contemporaneous and retrospective data on the performance of Nigerian manufacturing sector, reveal that about 81% of the manufacturing firms admitted facing finance-access constraints; the majority of these firms were deterred from applying for bank

loans due to high interest rates and inadequate collateral; banks were not interested in advancing long-term loans due to high incidence of non-performing loans (NPLs). In a similar study of the Wave-I-Survey carried out also in 2001, 47% of the Nigerian manufacturing firms placed access to finance among the top three problems (finance, power supply, and infrastructure) confronting them. However, access to finance is most often cited productivity constraint confronting both micro-small and medium enterprises (MSMEs) and rural economic agent (households).

Method of Study

The model is rooted in Tobin (1955)'s dynamic aggregative production function. It encompasses both the Coase (2000)'s neo-institutionalism and Lin (2004)'s New Structural Economic theories in which political capability for resources mobilisationand monetary factors are explicitly engendered in the growth process. In its foundational form, the augmented Tobin (1955)'s dynamic aggregative production function is specified as follows:

$$Y_t = (1-T)A_t K_t^{\alpha_1} H_t^{\alpha_2} L_t^{\alpha_3} g \qquad (1)$$

where$Y$ is output. T refers to the preferred technology choice: with strong institutions, the value of technology choice is less than zero, but with weak institution, its value is greater than zero. A is the efficiency parameter or level of technical progress meant to augment physical capital (K) such as machinery, building and finance; human capital, both skilled (H) and unskilledlabour (L), and $\alpha_1 + \alpha_2 + \alpha_3 = 1$ exhibiting the standard assumption of constant return to scale. $g$represents a vector of the country's institutional capital comprising of the worldwide six dimensions of governance indicators such as rule of law, voice and accountability, government effectiveness, political stability, regulatory quality and levels of corruption. In addition to capacities and capabilities of the state to determine development strategy in developing countries, financial inclusion can be affected by other factors. Factors related to financial policy are those included in the model. Thus, the econometric equation of financial inclusion function is expressed by the semi-logged empirical model, linking institutional-led productive employment growth to financial inclusion equation (2):

$$IFI_t = \alpha + \gamma IFI_{t-1} + \beta_1 \ln RGDPE_{t-1} + \beta_2 GEFe_t + \beta_3 TCI_t + \beta_4 HDI + \varepsilon_t \quad (2)$$

From equation(2), index of financial inclusion was a constructed composite indicator of the three financial inclusion dimensions (availability, accessibility and usage) of formal financial services. Inclusive growth was measured by the real GDP per person employed (*RGDPE*); As a proxy for institutional quality, *GEFe*denotes the standardized worldwide composite governance indicator average; *TCI* as a measure for preferred development strategy; *HDI* was used as a composite human development indicator capturing poverty, inequality, education and health care; and other interacted variables. The annual secondary time series data on *RGDPE, IFI, TCI, HDI* and *GEFe* were obtained from the publications and official websites of Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), IMF's International Financial Statistics (IFS), World Development Indicators (WDIs) and the Worldwide Governance Indicators (WGIs). Data were analysed using Autoregressive Distributed Lag (ARDL) Bounds test to co-integration approach with inferences drawn at 5% level of significance.

The estimable ARDL Bounds testing formulation to co-integration which integrates the short-run dynamics with the long-run without losing any long-run information is specified as follows:

$$\begin{aligned}\Delta \boldsymbol{IFI_t} = {} & \boldsymbol{\beta_0} + \sum_{\mathbf{h=1}}^{\boldsymbol{p}} \boldsymbol{\beta_{1h}} \Delta \boldsymbol{IFI_{t-h}} + \sum_{\boldsymbol{i=0}}^{\boldsymbol{q}} \boldsymbol{\beta_{2i}} \Delta lnRGDPE_{t-i} + \sum_{\boldsymbol{j=0}}^{\boldsymbol{r}} \boldsymbol{\beta_{3j}} \Delta \boldsymbol{HDI_{t-j}} \\ & + \sum_{\boldsymbol{k=0}}^{\boldsymbol{s}} \boldsymbol{\beta_{4k}} \Delta \boldsymbol{TCI_{t-k}} + \sum_{\boldsymbol{l=0}}^{\boldsymbol{T}} \boldsymbol{\beta_{5l}} \Delta (\boldsymbol{HDI} * \boldsymbol{GEFe})_{t-l} + \sum_{\boldsymbol{n=0}}^{\boldsymbol{u}} \boldsymbol{\beta_{6m}} (\Delta \boldsymbol{TCI} * \boldsymbol{GEFe})_{t-m} \\ & + \sum_{\boldsymbol{n=0}}^{\boldsymbol{v}} \boldsymbol{\beta_{7m}} (\Delta \boldsymbol{lnRGDPE} * \boldsymbol{GEFe})_{t-\mathbf{n}} + \boldsymbol{\alpha_1 IFI_{t-1}} + \boldsymbol{\alpha_2 lnRGDPE_{t-1}} \\ & + \boldsymbol{\alpha_3 TCI_{t-1}} + \boldsymbol{\alpha_4} (\boldsymbol{HDI} * \boldsymbol{GEFe})_{t-1} + \boldsymbol{\alpha_5} (\boldsymbol{TCI} * \boldsymbol{GEFe})_{t-1} \\ & + \boldsymbol{\alpha_6} (\boldsymbol{lnRGDPE} * \boldsymbol{GEFe})_{t-1} \\ & + \boldsymbol{\varepsilon_{2t}} \end{aligned} \quad (3)$$

Results and Discussion

A summary of descriptive statistics of the data used in the estimation is presented in Table 4.1 (see Appendix a). The mean of the variables indicate that the variables exhibit remarkable disparity with respect to their sizes. This implies that estimating the model using the data at levels may lead to spurious outcomes. The standard deviation shows that *IFI*, *HDI* and *TCI* significantly depart from the mean, suggesting that some of the series lack mean reversion property and may therefore require differencing to make it stationary. Also, a quick look at skewness and kurtosis in the Table shows that all the variables in the series have normal distribution falling within the threshold of -3 to +3recommended. This is confirmed by the statistics of Jarque-Bera with the P-value greater than 5%.

The results of the pair-wise correlation matrix presented Table 4.2 (see Appendix b) exposes that there exists a relatively positive and strong relationship between our dependent variable (index of financial inclusion- *IFI*) and the measure of inclusive growth measure (*LNRGDPE*); human development index (*HDI*) and preferred development strategy index (*TCI*), recording 0.67; 0.57 and 0.47 respectively. This is relatively low when compared with, for instance, the 0.68 positive correlation recorded by human development indicator (*HDI*) and proxy for inclusive growth (*LNRGDPE*); suggesting the likelihood of having positive impact on financial inclusiveness. Negative correlation coefficients however were observed for all the interacted variables (i.e*HDIGEFe*, *TCIGEFe* and *IFIGEFe*).

Unit Root Tests

The study equally deployed conventional unit root tests such as Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) techniques to test for the presence of unit root in the series. Table 4.3 shows that all the series with the exceptions of index of financial inclusion (*IFI*) and technology choice index (*TCI*), were found to be non-stationary at level with constant and time trends. This shows that the variables *LNRGDPE*, *GEFe*, *HDI*GEFe* and *IFI*GEFe* were stationary at first difference. However, none of the variables is integrated at *I*(2). Therefore, since the data does not contain *I*(2) series, it lend support to the use of ARDL bounds testing approach to co-integration.

Table 4.3: Unit Root Tests (Augumented Dickey Fuller (ADF) and Philips-Perron (PP)

Variables/Tests	***t-statistics***	***Critical Value***	***t-statistics***	***Critical Value***	***Order of Integration***
	Levels		***First Difference***		
ADF Test					
IFI	-3.35988	3.74039	-3.3672	-3.0522	I(1)
LNRGDPE	-2.7966	3.6736	-4.7982**	-3.6908	I(1)
TCI	-5.0377**	-3.8753	-5.8491*	-3.1754	I(0)
HDI	-0. 183993	3.029970	-5.220258	-3.040391	I(1)
TCIGEFe	-2.2221	-3.6908	-4.9752**	-3.7105	I(1)
HDIGEFe	-2.6112	-3.83151	-5.95467*	-3.857386	I(1)
IFIGEFe	-1.6729	-3.6908	-3.8433*	-3.0522	I(1)
PP Test					
IFI	-3.4373	-3.54039	-3.3766	3.2978	I(1)
LNRGDPE	-2.7966	-3.6736	-4.8848**	-3.6908	I(1)
TCI	-1.4678	-4.6679	-2.0946	-1.9628	I(0)
HDI	0.103517	-3.029970	-5.288034	-3.040391	I(1)
TCIGEFe	-2.0175	-3.6908	-4.9752**	-3.7104	I(1)
HDIGEFe	-2.8151	-3.6908	-5.1956**	-3.7105	I(1)
IFIGEFe	-1.6729	-3.6908	-3.9091*	-3.7105	I(1)

Note: The asterisk (*, **,*) denote the rejection of the unit root hypothesis at the1%,5% and 10% significance levels respectively.**

Source: Authors, 2020

Essentially, the null hypothesis for the presence of unit root at levels was rejected for all the variables with the exception of technology choice index (*TCI*) and the indicator of financial inclusion (*IFI*), suggesting that all the series were integrated but after differencing them.

Co-integration Test Result

In order to establish the existence of a long-run equilibrium relationship among the variables, the co-integration test applied in this study was the Autoregressive Distributed Lag (ARDL) Bounds testing to co-integration procedure proposed by Pesaran*et al.,* (2001). This approach has certain

econometric advantages in comparison to other co-integration procedures (Engel & Granger, 1987; Johansen 1988; Johansen &Juselius, 1990). One, the approach is applicable regardless of whether the underlying regressors are stationary at *I*(0) or *I*(1) or a mixture of both. Moreover, unlike most of these traditional co-integration procedures which are valid for large sample, the approach is not only suitable for small sample size study, but it provides unbiased estimates of the long-run model and valid *t*-statistics even when some of the regressors are endogenous (Pesaran*et al.,* (2001). While the lag order of the variables is given in the second column of the Table 4.4 below, the Bounds test results are reported in the lower segment of the same Table. The calculated *F*-statistics (6.6309) in the ARDL regressions was found to exceed the upper Bounds critical values of 3.23, 3.61 and 4.43 for significance levels of 10%, 5% and 1%. This implies that the null hypothesis of no co-integration can be rejected at the three conventional significance levels. In other words, there exists a long-run relationship among the series. Thus, inclusive growth indicator (*RGDPE*), index of financial inclusion (*IFI*), proxy for the country's resource endowment and development strategy (*TCI*) and the interacted variables of both institutional quality (*HDIGEFe*) and human development index and technology choice index (*TCIGEFe*)as well as financial-institutional interacted variable (*IFIGEFe*), are co-integrated or co-moving in Nigeria over the period of 1998 to 2017.

Table 4.4: Results of the Bounds Co-integration Test

Bounds testing to Cointegration			**Diagnostic tests**	
Estimated Models	**Optimal lag length**	***F*-statistics**	**R^2**	**Adj-R^2**
Ifi=f(lnrgdpe,tcigefe, hdigefe,lnrgdpegefe,hdi,tci)	1, 1, 1, 1, 1,1,1	6.6309*	0.945	0.921
Significant Level		**Critical Values**		
		Lower bounds (I(0)	**Upper bounds I(1)**	
1%		**3.15**	**4.43**	
5%		**2.45**	**3.61**	
10%		**2.12**	**3.23**	

Note: *, and *** represent significance at 1, 5 and 10% level respectively.**

Source: Authors' Computation,2020

From the results of the ARDL co-integration test, the null hypothesis of no long-run equilibrating relationship is strongly rejected as the calculated Wald *F*-statistics (5.31610 and 5.11203) in the ARDL regressions were respectively found to exceed the upper Bounds critical values at the three conventional significance levels. The evidence that there exists a long-run relationship among the variables suggests the estimation of the autoregressive distributed lag (ARDL) bounds testing approach to co-integration framework for specifically achieving the stated objective.

Results of Institutional Quality and Finance-led Inclusive Growth using Autoregressive Distributed Lag Model

The result disclosed an evidence to support the literature that indicator of financial inclusion and institutional quality factor are positively related to inclusive growth. This suggests that an improved institutional quality would bring about a rise in real GDP per person employed via broad-based financial inclusiveness in Nigeria. The results of the estimated co-integrated vectors are presented in Table 4.3.This finding also implies that improvement of social infrastructure services such as health and education would generate substantial productive employment capabilities.

Table 4.5: Short Run and Long Run Autoregressive Distributed Lag Models

Short-Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNRGDPE)	-2.81572	9.595659	-0.29344	0.7883
D(HDIGEFE)	-9.78829	1.994042	-4.90877	0.0162
D(TCIGEFE)	8.887457	1.699102	5.23068	0.0136
D(IFIGEFE)	-1.01537	0.037064	-27.3951	0.0001
D(HDI)	-11.6254	2.275948	-5.10793	0.0145
D(TCI)	10.44341	2.014266	5.184722	0.0139
ECM(-1)	-1.99125	0.406377	-4.90001	0.0163

Long-Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNRGDPE	-3.88275	3.094061	-1.2549	0.2984
HDIGEFE	-4.84652	0.919071	-5.27328	0.0133
TCIGEFE	4.70842	0.789239	5.965772	0.0094
IFIGEFE	-0.93245	0.019767	-47.172	0.0000
HDI	-4.83762	1.010753	-4.78616	0.0173
TCI	5.245003	0.904019	5.801872	0.0102
C	-30.0418	13.78902	-2.17867	0.1175

Source: Authors' Computation, 2020

Thus,

IFI = 30.0 + 3.9LNRGDPE – 4.9HDIGEFE + 4.7TCIGEFE – 0.9IFIGEFE – 4.8HDI + 5.3TCI
(4.1)(0.30) (0.01) (0.01) (0.00) (0.02) (0.01)

From the estimated long-run equation 4.1, all determinants excluding the inclusive growth measure (*RGDPE*) were all significant at the 5 per cent level. It can be inferred that the preferred development strategy (*TCI*) and its interaction with political institutional factor (*TCIGEFe*) had a positive statistically significant effect on financial inclusiveness in Nigeria, indicative of inappropriate adoption of development strategy over the period investigated. On the other hand, the interacted human development-institutional variable (*HDIGEFe*) had a negative statistically significant effect on financial inclusiveness also both in short- and long-run, implying deteriorated socio-economic life of Nigerians over time. Such that a 1.0 per cent improvement in institutional quality could deepen financial inclusiveness by 4.7 per cent. Contrary to expectation however, a 1.0 per cent change in the preferred development strategy index would only dampen the level of financial inclusiveness in Nigeria by 5.3 per cent in the long-run.

One of the major findings which stands out from the analysis was that institutional quality and its interactions with other control variables are predictors of a broad-based financial inclusiveness Indeed, institutional-financial composite index is the most significant of all the variables with the institutional factor reinforcing its positive effect on widespread inclusive

finance. Another fascinating outcome from the study was the inverse relationship between the measure of inclusive growth and the explained variable (*IFI*)) indicator. Surprisingly, however, it was observed that contrary to the a-*p*riori expectation, the structural variable (*TCI*) at level and at the interacted form, was found to be positively and statistically significant, thus revealing the failure of successive Nigerian governments to adopt appropriate development strategy in converting the nation's huge potentialities into realities of transformative development over the years.

It is worthwhile to note that the main difference between this study and that of Easterly and Levine (2002) or Levy and Fukuyann (2010) or Stiglitz (2016) or Ajakaiye and Tella (2016) is that, we use a contextualized and homogenous country-specific sample data to reflect the country's peculiarities in terms of structure of its resource endowments. In addition, however, the results are supportive of the previous studies (Lin, 2009; Lin & Chang, 2014; Siddique, 2016, Mabasa&Mqolomba, 2016) who had earlier explored cross-country regressions, and found that most developing economies characteristically have adopted inappropriate development strategies despite their resources endowments (Comparative Advantage Defying). Although, the results slightly differ from these studies because they failed to test in any detail whether technology choice and the interaction of institutional quality and financial inclusion variables have effects on inclusive growth.

Therefore, in general consonance with the theoretical a-*p*riori expectation, institutional quality was found to be a major determinant of inclusive growth having a positive impact on human capital development as well as formal financial services (availability and usage of banking services) during the period investigated. The dominant plausible explanation for these findings could partly be attributed to the transition to democratic governance since 1998. While the interaction of institutional factors with financial inclusion (*IFIGEFe*) was found to have a strong statistically significant effect on financial inclusiveness, but the interaction of governance variable with human development indicator (*HDIGEFe*) was found to have a negative statistically significant impact on the dependent variable.

Post Estimation Test.

Stability Test

A diagnostic test for parameter stability was conducted and the result is presented in Figure 4.1 and Table 4.6, respectively. All the parameters of the model satisfied the stabilitycondition which further confirms the stationarity properties of the model. Since the autoregressive (AR) process was found to be stable i.e all the five roots of the characteristic AR polynomial have absolute value less than one and lie inside the unit circle, it implies that the impact of shocks in the variables would diminish over time and the parameter estimates would produce stable dynamics for the inclusive growth model.

The study also adopted the techniques of cumulative sum (CUSUM) and cumulative sum of squares proposed by Borenszte*in et al.* (1998) and earlier used by Pesaran and Pesaran (1997), Mohsen *et al* (2002) and Suleman (2005) to test the stability of the long-run co-efficients.The equation parameters are said to be stable if the whole sum of recursive errors lies within the two critical lines. Figures 4.1a and 4.1b show that the parameters of the analysed equation are relatively stable, since the recursive errors lie within the two critical lines of CUSUM and CUSUMSQ tests.

It can be seen from the Figures that the plot of CUSUM and CUSUMSQ stay within the critical 5 per cent bounds to confirm the long-run relationships among the variables and thus shows the stability of coefficients.

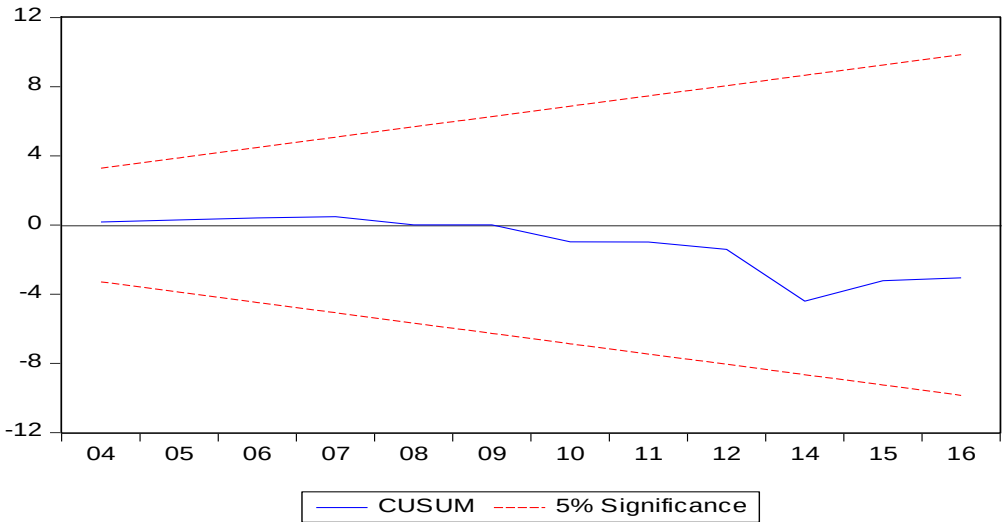


Figure 4. 1a: Cumulative Sum (CUSUM) of Recursive Residual Test

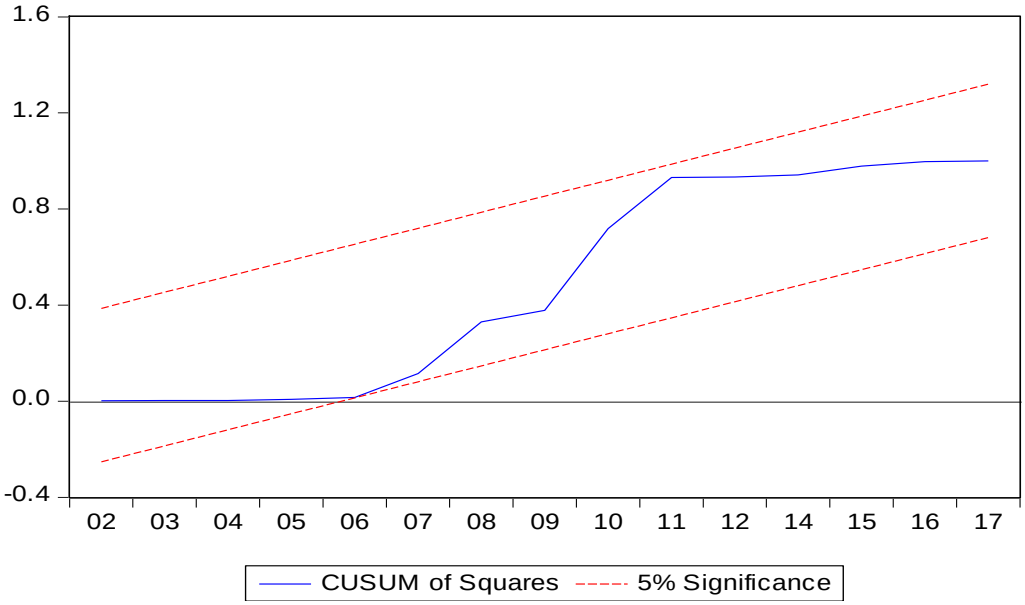


Figure 4.1b: Cumulative Sum of Square (CUSUMSQ) Residual Test

Diagnostic Tests for Residuals

From the results of the diagnostic tests conducted and reported in the appendix B, the Breusch- Godfrey Langrange Multiplier (LM) test for all the augmented VAR models did not reject the null hypothesis which stated that 'there is no

serial correlation'. This indicated that the error terms were not serially correlated at the 95% confidence intervals. Similarly, the results of the heteroscedasticity tests (with no cross terms) did not reject the null hypothesis of 'homoscedasticity'. This implied that the error terms had constant variance, as the disturbances certified the equal variance assumption. Similarly, the Ramsey RESET test did not reject the null hypothesis of 'no misspecification in all the estimated equations, confirming that the error correction models were free of specification errors.

Table 4.6: Diagnostic Tests

Test	*F*-statistic	Probability
X^2 SERIAL	**0.4228**	**0.5338**
X^2 ARCH	**0.4730**	**0.5014**
X^2HARVEY	**1.9249**	**0.1744**
X^2RAMSEY	**0.3128**	**0.6058**
NORMALITY TEST		**0.9450**

Note: *X^2 Serial* is for serial correlation. *X^2 ARCH*isforautorgressive conditional heteroscedasticity. *X^2 WHITE* is for white heteroscedasticity and *X^2 RAMSEY* for Ramsey Reset test.

These results indicated that the short-run models passed all the relevant diagnostic tests, since there could be no suspicion of multicolinearity among the variables when the functional forms of the models were well specified and the disturbances had equal variances. Moreover, the problem of endogeneity was largely unexpected when the error terms were serially uncorrelated, with the regressors being the lagged values.

Summary, Conclusion and Policy Implications

The growing recognition of the linkage between financial inclusion and quality institutions of governance for long-term inclusive growth and development especially in the developing world spurred this paper's analysis of the effect of institutional-led financial inclusion on broad-based productive employment growth. Accordingly, lifting millions of people out of poverty and bridging the gaps of inequality still remain one of the most empowering

idea in the world history. Consequently,examining the institutional-context effects of an inclusive financial system on inclusive growth in Nigeria became imperative. The study therefore considered a time dimension coinciding with both the post-financial liberalization regimes and the preparations towards ushering in of democratic governance. The model estimated by the ARDL Bound testing to co-integration highlights three main results. One, analysis shows that all the explanatory variables were found to exert a positive statistically significant effects on finance-inclusive growth link in Nigeria both in the short-run and the long-run. Two, institutional quality had an overall significant effect on financial inclusion for the period investigated. Three,contrary to a-priori theoretical expectation, technology choice index was positively signed indicative of inappropriate adoption of comparative-advantage defying (CAD) as opposed to comparative-advantage conforming (CAC) development strategy.

The implications of this is that while the effects of the state institution could vary widely in an economy, institutional quality appears to be the dominant driving force behind both the broad-based financial systems and productive employment growth. Our findings from the analysis suggest that radical improvement in the area of building credible institutional capacities beyond the present democratic threshold will be much needed to anchor and coordinate innovative and deepening of financial inclusion policies; leveraging on new technologies such as mobile channels, digital financial services, as well as expanding financial inclusion database, in order to achieve the CBN (2019)'s targeted 95% financial inclusion in 2024. Hence, a policy prescription that emerges from this study is the need for a stronger and better enabling environment for which the financial services providers could effectively address the constraints for increasing both access and usage of financial services in Nigeria. This implies that for a given quality of institution, building inclusively innovative financial systems and implementing of various initiatives in the NFIS would stimulate economic growth, jobs creation and poverty reduction at the macro level, resulting in further deepening financial inclusion of a broader segment of the society which ultimately would improve living standards of the citizenry.

However, the desired improvement in institutional quality may unlikely result in an automatic broad-based productive employment growth without the vital

component of an inclusive financial sector, real sector's effectiveness in credit evaluation, public sector surveillance, stringent accounting standards and auditing practices, as well as a sound legal and regulatory frameworks; all which are the essentials of the state institutional leadership to guarantee sustainable inclusive growth and development. Accordingly, therefore, in order to achieve a longer term inclusive growth which can only be viewed as depending on inclusive digital financial services, such as Mobile Money and Digital Financial Services (DFS); technical efficiency, and strong institutional governance, both the private and public must double their efforts to reduce further financial exclusion rate to 20% and 5% by 2020 and 2024 respectively.

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APPENDIX

Appendix a

Table 4.1: Descriptive Statistics of the Variables

	IFI	LNRGDPE	HDIGEFE	IFIGEFE	TCIGEFE	HDI	TCI
Mean	37.02400	-0.12	-54.60	-41.78	-64.49	48.76500	57.70500
Median	44.51000	-0.18	-54.86	-50.30	-63.74	48.15000	56.45000
Maximum	92.93000	0.297880	-46.40	0.000000	-52.70	53.20000	74.70000
Minimum	0.000000	-0.50	-61.83	-108.73	-85.16	44.30000	46.50000
Std. Dev.	24.87975	0.280633	4.201612	27.82212	8.536942	2.715506	7.778613
Skewness	0.269095	0.124973	0.488625	-0.32	-0.68	0.389551	0.408909
Kurtosis	2.721579	1.513366	2.467842	3.041582	2.924634	1.882445	2.247396
Jarque-Bera	0.305972	1.893794	1.031839	0.348678	1.549290	1.546609	1.029364
Probability	0.858142	0.387943	0.596951	0.840012	0.460867	0.461486	0.597691
Sum	740.4800	-2.37	-1,092.07	-835.51	-1,289.82	975.3000	1154.100
Sum Sq. Dev.	11761.03	1.496345	335.4173	14707.33	1384.708	140.1055	1149.630
Observations	20	20	20	20	20	20	20

Authors' calculation from E-views

Appendix b

Table 4.2: Pair-wise Correlation Matrix

Covariance Analysis: Ordinary

Date: 10/26/20 Time: 11:10

Sample: 1998 2017

Included observations: 20

Correlation	IFI	LNRGDPE	HDIGEFE	TCIGEFE	IFIGEFE	HDI	TCI
IFI	1.00						
LNRGDPE	0.67	1.00					
HDIGEFE	-0.54	-0.67	1.00				
TCIGEFE	-0.55	-0.36	0.42	1.00			
IFIGEFE	-1.00	-0.65	0.47	0.55	1.00		
HDI	0.57	0.68	-0.55	-0.38	-0.53	1.00	
TCI	0.47	0.35	-0.08	-0.89	-0.43	0.46	1.00

Authors' calculation from E-views