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FINANCIAL OPENNESS (A Dejure and Defacto measure) AND ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

Economic theory says that financial openness should foster economic growth. In view of this study, this study examined the impact of financial openness on economic growth in Nigeria using annual data for the period 1981 to 2023. The use of the Autoregressive Distributed Lag (ARDL) bounds testing approach was used. The study made use of De jure and the De facto as a measure of financial openness and other variables like Foreign Direct Investment, Gross Fixed Capita Formation, Real Interest Rate, Real Effective Exchange Change Rate as the independent variables while Real Gross Domestic Product was employed as the dependent variable. The result of the study show that a 10 per cent increase in financial openness De Jure measure will lead to a 0.16 percent increase in real gross domestic product (RGDP). Also, the value of the coefficients of (0.006583) implies that an increase in balance of payment by 10 per cent will result to an increase in real gross domestic product by 0.07 per cent. The study found out that the variables of financial openness variables are both positively and negatively signed but statistically significant. The study concluded that changes in financial openness affect economic growth. The study shows that a positive relationship exists between market capitalization, De jure financial openness, and economic growth. Based on the results obtained, the study recommended that effective policies should be put in place to control the interest and exchange rate. This is vital because management of financial openness and all international capital flows that will contribute positively to the growth of the economy can only be accomplished by a stable interest and exchange rate. The study further recommend that banks should be encouraged to extend more credit to private sector. But there is a serious need for discipline and discretion in credit allocation by the banks.

INTRODUCTION

Developing countries attach great importance to financial openness in the pursuit of their economic objective. By mobilizing savings, facilitating payments for foreign traded goods and services and promoting efficient allocation of resources, the financial sector is seen as playing a critical role in facilitating economic growth.

In recent decades, economists have debated the relationship between financial openness and economic growth. Nigeria is essentially an open economy, with international trade accounting for a sizable portion of total output. (Mike and Okojie 2012).

Financial openness and trade are important drivers of economic growth.

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Trade promotes efficient resource allocation, enables a country to realize economies of scale, facilitates knowledge diffusion, promotes advancement in technology, and fosters international and domestic market competition; leading to production processes optimization and new product development (Masoud & Khalid; 2017).

The seminal works of McKinnon (1973) and Shaw (1973) sparked off modern discussion on financial openness. They both argued that financial liberalisation was required to address the problems caused by developing countries' repressive financial policies. While this policy prescription initially generated some controversy, many developing countries have adjusted their policies in the prescribed direction in recent years. In the light of this, several countries, including developing and emerging economies have witnessed some dramatic domestic financial/ capital account liberalization in the past three decades. The opening of world economies and quest for greater integration also gave impetus for financial liberalization.

Although, based on models of competitive and efficient markets, economic theory tells us that financial openness should foster economic growth and development; empirical works such as Cuadros, Orts and Alguacl (2001) Olomola (1998) have not found concrete evidence for the existence of such a link. While some countries have benefited from financial openness others have not enjoyed higher economic growth. Some have experienced crises and recessions in the years following financial openness (Fratzscher and Bussiere, 2004). Furthermore, the global financial crisis of 2007 to 2008 was triggered by, among other things, insufficient financial market regulation (Bumann, et al, 2012). In their own view, Andersen and Tarp (2003) equally argued that financial openness in combination with a weak regulatory structure may have strong adverse effects on growth.

The literature on financial openness and economic growth is replete with controversy regarding the direction of causality in their relationship. Financial openness is frequently presented as beneficial for the economy or vice versa. However, regarding the direction and magnitude, there is a controversy on the relationship (Aslanoğlu and Deniz, 2012). In line with financial liberalization, a high level of capital tends to flow in the economies that are attractive for the investors. Financial openness may easily lead to some alterations in the domestic system especially when external conditions and effects that flow with liberalization are not properly checked. The impact of the financial openness on economic growth in the context of the Nigeria has not been extensively studied. It is against this backdrop that this study is intended to find out if financial openness can cause an increase in economic growth in Nigeria.

One of the policies adopted in Nigeria to enhance growth is the International Monetary Fund (IMF) Structural Adjustment Program (SAP) in 1986. The main objective of the SAP was to restructure and diversify the productive base of the economy. In addition, the program was also designed to create and enhance a realistic and sustainable exchange rate system, tariff reform, liberalization, commercialization and privatization of public enterprises.

During the era of deregulation of the financial system, interest rates fluctuated greatly and the Naira depreciated continuously. This unusual volatility in interest and exchange rates severely constrained the banks' ability to supply credit. For instance, the gap between the lending and savings deposit rates began to rise since 1994 and reached a high point of 17 per cent in 1998. Similarly, exchange rate depreciated significantly from 21.9 per cent in 1994 to 81.2 per cent in 1995 and hovered around 85.6 per cent in 1998 (CBN, 2000). Subsequently, it became obvious that banks could no longer afford to offer the growing interest rates and borrowers could no longer repay the loans with the high interest rates. This culminated in a steady build-up of non-performing loans and advances, diminished supply of credit, capital erosion and above all liquidity crises in the banking industry (CBN, 2000).

The high rates of inflation aggravated the situation by making real interest rates to become negative. At that period, people preferred to invest their surplus funds in tangible goods than keeping their money in bank (Abang & Omang; 2023). This eventually created a process of dis-intermediation with depositors having preference for inflation hedges. The cumulative impacts of these distortions on the economy seemed enormous. Although real gross domestic product (GDP) growth rate was still positive in 1993 (during the era of chronic banking crisis), the growth of per capita has been negative or at best very low at 2.3 per cent.

Despite the efforts being put in place by the government to open the financial system, it has not had meaningful effect on the economic growth of the Nation. Between 1970 and 1980, foreign capital to GDP ratio (a measure of financial openness) was 2.25 per cent, 4.22 per cent between 1990 and 2000, and 4.26 per cent between 2001 and 2012 (Ubi and Udah; 2014), between 2015 and 2022, it recorded 5.2 per cent (CBN; 2021). Within the same period GDP recorded 15,860.91 million naira with an average of 20,892.98 million Naira between 1990 and 2000, 42,442.16 million naira between 2001 and 2012 and 69,826.02 million Naira between 2015 and 2022 (CBN; 2022). This according to scholars like Okwara (2010), Ndiyo and Ebong (2004) is unacceptable and cannot trigger economic growth of any country. Given all the ambiguities about the outcomes of financial openness and its effects on economic growth, this study tends to proffer answer to the following pertinent question: What is the impact of financial openness on economic growth in Nigeria?

LITERATURE REVIEW

1.1 Conceptual literature

2.1.1 Concept of financial openness

In a broad sense, financial openness is referred to the openness of the financial market of a country to other countries. It allows people to trade and carry out various financial transactions in its domestic market. At the same time, it allows residents and domestic institutions participate in the transactions in international financial markets. Bekaert and Harvey (1995) posited that financial openness includes seven elements: capital account openness, stock market openness, national fund issuance, bank reformation, privatization, capital flow and Foreign Direct Investment (FDI). This study shall make use of the De facto and De jure in measuring financial openness. This is because it captures the total capital flow as a ratio of GDP.

Concept of economic growth

Economic growth could be said to comprise three components; capital accumulation, growth in population and eventual growth in the labor force and technological progress. Capital accumulation results when some proposition of personal income is saved and invested in order to augment future output and income. Capital accumulation involves a trade-off between present and Future consumption, giving up a little now so that more can be had latter. Population growth, and the associated increase in the labor force, has traditionally been considered a positive factor in stimulating economic growth. A larger labor force means more productive workers, and a large overall population increases the potential size of domestic markets. Technological progress results from new and improved ways of accomplishing traditional tasks. Technological progress could be neutral, labor-saving or capital-saving

According to Ivic (2015), economic growth includes changes in material production that occurs withing a short period of time say one year. In economic theory, the concept of economic growth implies an annual increase of material production expressed in value, the rate of growth of GDP or national income. In this study, economic growth is considered to increase in the volume of production in a country, or an increase in gross domestic product as the main quantitative indicators of production for a period of one year. Real gross domestic product (RGDP) shall be use as a measure of economic growth.

Nexus between financial openness and economic growth

Several studies have assessed the impact of financial openness on savings, investment and growth in the economy both from theoretical, analytical and empirical point of view. Fasanya and Olayemi (2020) in their study stated that financial openness is theoretically known to be an important driver of economic growth; the emergence of new industries, the availability of money in circulation and how it affects prices, extent of international trade in the countries among others are necessities that any economy cannot survive without. Their paper examines the impact of financial openness on economic growth in Nigeria for the period of 1981–2013 using the autoregressive distributed lag bounds testing approach. The study reveals strong relationship between the indicators of financial liberalization and economic growth in Nigeria. They added that very high levels of financial openness generally erode the growth-promoting role of financial development.

Orji, Ogbuabor and Orji (2016), in their study investigated the impact of financial openness on economic growth in Nigeria using quarterly data from 1986-2011.

For empirical analysis, the study used two measures of financial openness: de facto (total capital flow) variables following Aizenman and Noy (2009) and de jure (Chin-Ito Index) based on Chinn and Ito (2012). The study applies the Autoregressive Distributed Lag Model based on unrestricted error correction model (ARDLUECM), to address the core objective of the work. The results show positive impact of financial openness on economic growth in Nigeria both in the short run and in the long run. Interestingly, the de facto and de jure measures of financial openness is found to have similar degrees of impact on Economic Growth in the short run and long run respectively. The paper recommended that government should continue to reform the domestic financial system while removing barriers to capital account transactions.

Okpara (2010) studied the effect of financial openness on macroeconomic variables, employing three alternative test, namely parametric paired sample statistic t test, nonparametric Wilcoxon signed rank test to treat for macroeconomic variable sensitivity to financial liberalization and the discriminating analysis to determine the direction of the variables in response to financial liberalization. The findings of the study led to the conclusion that though financial liberalization has a positive effect on economic growth, its effect on savings was limited. Thus, the author inferred that increased saving might not necessarily be the ultimate aim of the policy.

The work of Shahnoushi, Ebadi, Daneshvar, Shokri and Motallebi (2008) uses data from 1961 to 2004 in Iran to test for the presence or absence of long-run causality relationship between financial openness (which the study uses financial development as proxy) and economic growth, using Augmented Dickey Fuller (ADF) test for number of cointegration, and Granger causality test for determining short- and long-run relationship. Their result found no mutual relationship between financial development and economic growth. They therefore concluded that financial development is not an effective factor in economic growth.

Fratzscher and Bussierre (2004) analyse the financial openness-growth nexus for a set of 45 developed countries and emerging market economies: 11 OECD, 12 Asian, 8 Latin American, 9 European Union (EU) countries, plus Bulgaria, Romania, Russia, South Africa and Turkey from 1980 to 2002. They conclude that the acceleration of growth immediately after liberalisation is found to be often driven by an investment boom and a surge in portfolio and debt inflows. By contrast, the quality of domestic institutions, the size of FDI inflows and the sequencing of the liberalisation process are found to be important driving forces for growth in the medium to longer term.

In another study, Klein and Olivei, (2001) analyse the impact of financial openness on growth and financial depth for a cross-section of countries over the period 1986-1995. Applying the ARDL method, they found that countries with open capital accounts experienced a larger increase in financial depth than countries with closed capital account, and through that channel, higher rates of economic growth occur. Using a cross section of countries, this study considers average growth of per capita income for five non-overlapping five-year periods between 1966 and 1989. Their sample includes 61 countries, although, with 181 observations in one set of regressions and 238 in another, not every country appears in each of the five sub periods. Their results do not support the hypothesis that capital account liberalization promotes economic growth.

The study by Quinn (1997) was one of the first studies to identify a positive relationship between financial openness and growth. Quinn's empirical estimates found that the change in his measure of restrictions on capital account liberalization has a strongly significant effect on the growth in real GDP per capita in a cross section of 58 countries over the period 1960- 1989.

TABLE Measures of financial openness based on regulatory system and indirect quantification method

S/N	Proposer/author	Indicators
1.	Quinn (1997)	Quinn index, △ Quinn
2.	Montiel and Reinhart (1998)	Montiel-Reinhart index
3.	Bekaert (1995)	Measure the financial openness by overseas security market profit
4.	Bekaert (1995), Ahearne and Griever	Measure intensity of capital flow control by IFCI index and IFCG index
5.	Klein and Olivei (2001)	Klein-Olivei index (measure capital account openness)
6.	Bekaert (1995), Bekaert and Harvey (1995), Levine and Zervos (1998), Henry (2000)	Structure financial openness index by timing financial openness and key event
7.	Feldstein and Horioka (1980)	Saving ratio-investment ratio measurement of the extent and scope of capital flow across border
8.	Kraay (1998), Lane, Milesi and Ferretti (2002), Ediso (2002)	Measure financial openness by actual capital flow index
9.	Edwards and Khan (1985), Harque, Montiel (1990), Reisen, Yeches (1993)	Measure capital account openness based on interest rate spread
10.	Edwards (2001)	NUYCO from the Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER), CAPOEN index
11.	Chinn and Ito (2008)	KAPOEN Chinn-Ito index (measures the extent of openness or restrictions in cross-border financial transactions)
12.	Johnson and Tamirisa (1998) and Brune and Guisinger (2006)	Financial openness index
13	International Monetary Fund (IMF, 1973)	Ratio of Foreign Direct Investment to Gross Domestic Product (FDI/GDP)

Source: Yu (2011) and author's computation (2024)

METHODOLOGY

The study employ the ex-post facto research design with descriptive and analytical methods in its research design. The descriptive method shall use descriptive tools such as simple tables in analysing trends in foreign trade, financial openness and economic growth in Nigeria. The analytical method shall use various econometric methods in estimating the relevant equations under the framework of multiple regression modelling. This design shall be used to establish the fundamental relationship between the dependent variable and the independent variables.

The study test for the unit root and co-integration relationship among the variables. The unit root was would be tested using the Augmented Dickey-Fuller (ADF). In estimating the long run equilibrium and short run dynamics among the variables, the Error Correction Model (ECM) shall be employed pending the outcome of the stationarity test.

Data and sources

The relevant data for this study shall be obtained from secondary sources, mainly Central Bank of Nigeria (CBN) Statistical bulletin (Various years), National Bureau of Statistics (NBS) various years, The Federal Ministry of Finance (FMF), National Planning Commission (NPC), publications of the International Monetary Fund (IMF) and the World Bank (IBRD), and other relevant journals and publications. These are the recognized and reliable sources of published data that are valid for information.

Model specification

This study was anchored on the neoclassical growth theory which states that an economic model of growth outlines how a steady economic growth rate results when three economic forces come into play: labor, capital, and technology. This study shall examine a modified version of the growth model used by Ozdemir and Erbil (2008) where the growth rate of real GDP per capita is

regressed on other financial sector indicators and other macroeconomic variables. Here, following Ozdemir and Erbil (2008) we employ two different measures of financial openness. The first category refers to the de facto measure of financial openness. This measure is price-based. Following Aizenman (2004 and 2008) and Aizenman and Noy (2009), the de facto measure of financial openness can be used as a variable to measure the actual observed outcomes of the enforcement of existing regulations on financial flows.

The second category is the de jure measure of financial liberalization. De jure measures are quality based measures which concentrate on events such as changing regulations and the response of the monetary authorities to financial flows.

Equation (1) below shows the growth rate as a linear function of its determinants and channels through which financial openness affects growth (A, γ, S).

$$g_t = A_t \gamma_t^{\alpha} S_t^{\beta} \quad (1)$$

Where;

g = Output

A = Total factor productivity or efficiency parameter

γ = Stock of capital

S = Labour force

α = output elasticity of capital

β = output elasticity of labour

Equation (1) distinguishes three channels γ, s and A (improvement in financial intermediation, savings, efficiency of capital stock), through which financial openness policies could influence economic growth. Others who have used similar models include Fowowe (2002) and Owusu (2012). But we differ by including the De jure (FODJ) variable using the Chinn-Ito Index and by adding institutional (Governance) Index and the De facto (FODF) index. The use of both measures of financial openness is to identify which of the measures has more effects on economic growth. While institutional quality is added so as to account for the peculiar political/ institutional environment upon which this research is based.

The financial openness (De facto and De jure) and growth equation

RGDP = f(CPS, RINT, HL, MKTCAP, FODF, FODJ, REER, IQI) (2)

Where:

RGDP = Real Gross Domestic Product in millions of Naira representing output

CPS = Credit to private sector in dollars

RINT = Real interest rate measured in per centage

HL = Human Labour measured by labour force

MKTCAP = Market capitilisation measured by the stock value of stock traded to GDP in Billion Naira

FODF =Financial openness De facto measure, measured by total capital flow as a ratio of GDP. This measure is the sum of inflows and outflows of foreign direct investment, equity investment, debt securities, financial derivative and other investment.

FODJ = Financial openness De Jure measure, measured by a country's degree of capital account openness

REER = Real Effective Exchange rate measured in per centage

From equation (2) above, credit to the private sector is included in the model because it captures the improvements in the banking sector. Interest rate is included in the model for the study because openness of interest rate according to McKinnon-Shaw hypothesis, leads to increase in savings then increase in investments and ultimately leading to increase in economic growth. Using a simple aggregate production function framework, Montiel (1995) shows that interest rate liberalisation can alter the economic growth rate through three main channels: (i) increase in investment resulting from the increase in savings rate; (ii) improvement in the efficiency of capital stock and (iii) improvement in the financial intermediation.

To improve the efficiency of capital requires human effort and this has been captured by including capital stock (K) and a labour factor (L). This is because the endogenous growth theory posits that human capital is one of the main sources of economic growth, especially in the developing countries.

Human Labour (HML) and especially trained labour, is expected to enhance productivity by giving incentives for innovation (Owusu, 2012).

Thus equation (2) is as depicted in a more explicit and log linear or econometric form can be expressed as:

$$\ln RGDP_t=\beta_0 + \beta_1 \ln(CPS)_t + \beta_2(RINT)_t + \beta_3 \ln MKTCAP_t + \beta_4 FODF_t + \beta_5 FODJ_t + \beta_6 REER_t + \varepsilon_t \quad (3)$$

Where:

β_0, β_1, β_2, β_3, β_4, β_5 and β_6 are parameters to be estimated

t = time dimension

ln = Log

ε= Stochastic error term

Log-linearization reduces the computational complexity of macroeconomic models and allows the simultaneous computation of the equations.

RESULTS AND DISCUSSION

Presentation and Analysis of Descriptive Data

These statistics were employed to quantitatively summarize characteristics of a collection of information about the data used in this study. This study used measures such as maximum and minimum values, skewness, kurtosis, mean, median, and Jarque- Bera test. The maximum value is used to identify the largest data value in a time series. It is used to identify a possible outlier or data entry error. Minimum value on the other hand was used to identify the smallest value in the data set. The kurtosis value indicates how the peak and tails of a distribution differ from the normal distribution. In other words, kurtosis measures the "tailedness" of probability distribution of real random variable. The kurtosis of any standard normal distribution is 3, thus, higher kurtosis values indicate a higher, sharper peak and means more of the variability is due to few extreme differences from the mean, rather than a lot of modest difference from the mean and vice versa. On the other hand, skewness describes asymmetry from normal distribution in a set of data. It can either be negative or positive, depending on whether data points are skewed to the right and positive or left and negative of the data average. In this section, the descriptive statistic result was used to get a first impression on the extent to which financial openness and other variables might have influenced in the economic growth.

Table 1: Descriptive statistics

	CPS	FODF	FODJ	INF	MKTCAP	REER	RGDP	RINT
Mean	23311.76	29.32758	-1.057237	18.47366	6253.232	171.5341	35149.25	11.17785
Median	2160.725	31.89587	-0.851700	12.00000	472.3000	100.8600	23688.28	10.10833
Maximum	117873.8	53.27796	-0.650800	72.81000	38589.58	622.6340	72322.18	23.24167
Minimum	27.30270	9.135846	-1.924200	4.670000	5.000000	49.78000	13779.26	5.388750
Std. Dev.	34913.34	12.20954	0.495851	16.11184	9303.872	160.2151	20812.04	3.913605
Skewness	1.320833	-0.271168	-0.868924	1.890856	1.561120	1.764415	0.652130	0.912874
Kurtosis	3.371146	1.963840	2.191406	5.697878	4.976664	4.698650	1.825465	3.844246
Jarque-Bera	12.15675	2.336584	6.276312	36.86565	23.32829	26.20251	5.262738	6.911236
Probability	0.002292	0.310897	0.043363	0.000000	0.000009	0.000002	0.071980	0.031568
Sum	955782.1	1202.431	-43.34670	757.4200	256382.5	7032.898	1441119.	458.2917
Sum Sq. Dev.	4.88E+10	5962.915	9.834734	10383.65	3.46E+09	1026755.	1.73E+10	612.6521
Observations	43	43	43	43	43	43	43	43

Source: Author's computation using Eviews 10 (2024)

In table 1 we present the descriptive statistics. The reason for this is to find the statistical properties of the various variables under study. As can be seen, on the average, real gross domestic product (RGDP) stood at 35149.25 billion naira over the period of study. Having a maximum and minimum values of 72322.18 and 13779.26 billion naira respectively. For financial openness which is been measured by FODF and FODJ, statistics as presented in table 3 shows the value of 29.32758 and -1.057237 respectively. The highest mean value was that of human labour (HL) with a value of 42505434 while financial openness De-jure measurement (FODJ) recorded the lowest mean with a value of -1.0572. The analysis was also fortified by the values of the skewness and kurtosis of all the variables involved in the models. The skewness is a measure of the symmetry of the histogram while the kurtosis is a measure of the tail shape of the histogram. The bench mark for symmetrical distribution i.e. for the skewness is how close the variable is to zero. An analysis of skewedness of the distribution shows that CPS, INF, MKTCAP, REER, RGDP and RINT are all positively skewed while BOP, FODF, FODJ is negatively skewed.

4.2 Presentation and Analysis of Econometric Data Unit Root Test Result

To achieve objective of this study, stationarity status of the financial openness-economic growth equation were determined. Stationarity test was conducted to be sure that variables employed are not integrated of order I(2), to avoid spurious results (Ovat, Abang, Okoi & Ndem; 2022). The f-statistic provided by Pesaran, Smith and Shin (2001) will break down if variables are order I(2). The reason is that ARDL bounds testing technique presume variables are order I(0), I(1) or mixture of both. Stationarity test was done using Augmented Dickey-Fuller (ADF) with constant (intercept) and trend. Results obtained are represented in table 2. The unit roots results presented in table 2 reveal that variables are stationary at different levels and therefore the cointegration test of Engel-Granger (1987), Johansen (1988) and Johansen- Juselieus (1990) cannot be used to test for long run relationship between the variables, since these tests demand that the variables must be stationary at the same levels.

Table 2: Unit root test result using Augmented Dickey-Fuller (ADF) and Phillips-Perron tests

Variables	ADF			Phillips-Perron		
	Level	1st Difference	Order of Integration	Level	1st Difference	Order of Integration
RDGP	0.132424	-2.531464	I(1)	1.358597	2.796295	I(1)
CPS	1.460999	-4.211868	I(1)	6.788921	-	I(0)
RINT	-0.349081	-3.887516	I(1)	-0.423197	-8.064613	I(1)
REER	-3.048145	-	I(0)	-3.192246	-	I(0)
INF	-1.361322	-6.821962	I(1)	-2.640475	-	I(0)
FODJ	-0.941954	-5.816266	I(1)	-0.930011	-5.803136	I(1)
FODF	-0.563300	-7.281570	I(1)	-0.503273	-7.284186	I(1)
MKTCAP	3.742923	-	I(0)	5.230317	-	I(0)

ADF test critical test values. Phillip-Peron test critical values

Level:	1st Difference:	Level:	1st Difference:
At 5% = -2.938987	5% = -2.938987	At 5% = -2.925169	5% = -2.926622
10% = -2.607932	10% = -2.607932	10% = -2.600658	10% = -2.601424

Source: Author's computation using Eviews 10. (2024)

Correlation Matrix

Having established the absence of unit roots in the variables, the study went further to find out the relationship between endogenous variable (RGDP) and exogenous variables (CPS, RINT, REER, INF, FODJ, FODF and MKTCAP) and also between the independent variables themselves. The correlation matrix result is presented in table 3 below. In specific term, the result indicates that all the variables that enter the model are positive and are correlated.

Table 3: Correlation matrix

	CPS	FODF	FODJ	INF	MKTCAP	REER	RGDP	RINT
CPS	1.000000							
FODF	-0.063086	1.000000						
FODJ	0.547653	-0.016180	1.000000					
INF	-0.233578	-0.129443	-0.506268	1.000000				
MKTCAP	0.966307	-0.030617	0.554585	-0.241383	1.000000			
REER	-0.262288	-0.636914	-0.142738	-0.083114	-0.269946	1.000000		
RGDP	0.666573	0.172621	0.651421	-0.317953	0.457227	-0.427862	1.000000	
RINT	-0.351926	0.271646	-0.479938	0.401108	-0.347358	-0.529307	-0.335563	1.000000

Source: Author's computation using Eviews 10. (2024)

Bounds test (co-integration test)

Having established the correlation among the variables, the study proceeded to ascertain if the variables are co-integrated or to test if there is any existence of long run relationship among the variables using ARDL bounds testing procedure. Table 4 reported the ARDL bounds test result. As seen from the result in table 4, the calculated F-statistics with the value of 4.140878 is greater than the upper bound critical bound value and lower bound critical bound value at all level of significance.

Table 4: Cointegration result

ARDL Bounds Test		
Test Statistic	Value	K
F-statistic	4.140878	6
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	1.99	2.94
5%	2.27	3.28
2.5%	2.55	3.61
1%	2.88	3.99

LOWER BOUND @ 5% = 2.27
UPPER BOUND @ 5% = 3.28

Source: Author's computation using E-views 10 (2024)

Granger Causality test

The result of the Granger causality obtained as presented in the table 5, shows that there is bi-directional causality running from the measures of financial openness to economic growth and vice versa. Thus, the null hypothesis that financial openness does not Granger cause economic growth, was rejected. This implies that financial openness thus Granger causes economic growth.

Table 5: Granger causality result

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision
FODF does not Granger Cause RGDP	42	3.10878	0.0416	Reject
RGDP does not Granger Cause FODF		3.40315	0.0297	Reject
FODJ does not Granger Cause RGDP	42	4.35246	0.0104	Reject
RGDP does not Granger Cause FODJ		3.36665	0.0286	Reject
FODJ does not Granger Cause FODF	42	3.13367	0.0337	Reject
FODF does not Granger Cause FODJ		4.49145	0.0160	Reject

Source: Author's computation, using E-views 10 (2024)

Lag length selection criteria

Before the estimation of the result, the lag length selection test was carried out. The intention of the test is to however seek to know the optimal lag length with which the variables specified in the model will be lagged. This was carried out putting to series of criteria such as the sequential modified LR test statistic, final prediction error, Akaike information criterion, Schwarz information criterion and Hannan-Quinn information criterion.

It was discovered from the result as depicted in table 6 shows that the Hannan-Quinn information criterion (HQ) shows a one lag length, while the sequential modified LR test statistics shows two lag length. Final prediction error (FPE), the Akaike information criterion (AIC) and the Schwarz information criterion (SC) shows three lag length. For this study, the Schwarz information criterion with three lag length was used. This is because the Schwarz information criterion is said to be more superior and gives a better result than the other criterion with lower or similar lag length

TABLE 6: Var lag length selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-653.3734	NA	3.17e+08	33.76274	33.97601	33.83926
1	-471.3046	308.1164	101809.2	25.70793	26.98759	26.16706*
2	-438.9461	46.46350*	74590.06	25.33057	27.67662	26.17231
3	-407.0334	37.64055	62524.84*	24.97607*	28.38851*	26.20043

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Source: Author's computation using E-views 10 (2024)

Long-run and Error Correction estimates of financial openness and economic growth equation

The long run results of the financial openness and economic growth is reported in table 7. From the result and in contradiction with theoretical expectation, a negative relationship exists between credit to private sector (CPS) and real gross domestic product (RGDP) in Nigeria. The value of the coefficients of (-0.057915) implies that an increase in credit to private sector by one per cent will result to a decrease in real gross domestic product by 0.06 per cent. There exists a negative relationship between real interest rate (RINT) and real gross domestic product (RGDP). This is not consistent with theoretical expectation. Thus, a one per cent increase in real interest rate will lead to a 0.035 per cent decrease in real gross domestic product. However, a one percent increase in market capitalization (MKTCAP) will lead to a 0.12 per cent increase in real gross domestic product. This is consistent with theoretical expectation.

According to the result, financial openness De facto measure (FODF) has a negative but statistically significance relationship with real gross domestic product (RGDP). The result shows that a one per cent increase in financial openness De facto measure (FODF) will lead to a 0.028 per cent decrease in real gross domestic product (RGDP) ceteris paribus. This result does not support theoretical expectation. Financial openness De Jure measure, measured by Chinn-Ito index (FODJ) has a positive but not significant relationship with real gross domestic product (RGDP). The result shows that a one per cent increase in financial openness De Jure measure will lead to a 0.016 percent increase in real gross domestic product (RGDP). This is consistent with theoretical expectation. Real effective exchange rate (REER) has a negative but statistically significant relationship with real gross domestic product (RGDP).

The magnitude of the coefficients shows that a one per cent increase in real effective exchange rate will lead to a one per cent decrease in teal gross domestic product by 0.003 per cent. This is also consistent with theoretical expectation.

Table 7: Long run ARDL analysis of financial openness and economic growth

Dependent variable: LRGDP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LCPS	-0.057915	0.298487	-0.194028	0.8538
RINT	-0.035189	0.031577	-1.114411	0.3158
LMKTCAP	0.122663	0.288004	0.425906	0.6879
FODF	-0.027642	0.011050	-2.501542	0.0544
FODJ	0.015569	0.384412	0.040500	0.9693
REER	-0.003459	0.001204	-2.872033	0.0349
C	11.98789	1.202744	9.967118	0.0002

Source: Author's computation using E-views 10 (2024)

The short run results of financial openness and economic growth equation is reported in table 8. The one and two period lag of real gross domestic product was both negative and positive and where both statistically significant with a coefficient of -0.487 and 0.448 per cent respectively. Hence a one per cent increase in the one and second period lag of real gross domestic product (RGDP) will lead to a 0.487 per cent decrease and 0.447 per cent increase respectively in real gross domestic product. The relationship between credit to private sector (CPS) and real gross domestic product (RGDP) in the short run is negative in both the current period and the second period lag while the first period lag was positive. They are however statistically significant. Hence a one percent increase in credit to private sector will lead to a 0.21 percent decrease in real gross domestic product and 0.091 per cent increase after the first lag and again decrease by 0.087 per cent decrease in real gross domestic after the second lag.

The relationship between real interest rate (RINT) and real gross domestic product (RGDP) in the short run is positive both in the current, after first, second and third period lags. All are statistically significant. Hence a one per cent increase in real interest rate (RINT) will lead to a 0.0073, 0.017, 0.018 and 0.016 per cent increase in real gross domestic product (RGDP) during the current, first, second and third lag period. Similarly, the relationship between market capitalization (MKTCAP) and real gross domestic product (RGDP) is positive and statistically significant both at the current, after first, second and third period lags.

The result shows that a one per cent increase in market capitalization during the current, after first, second and third period lags will lead to a one per cent increase in real gross domestic product (RGDP) by 0.0109, 0.187, 0.184 and 0.0800 per cent respectively.

The result also reveals that there exists a positive and statistically significant relationship in the current and second lag period between financial openness De facto measure (FODF) and real gross domestic product (RGDP). A one percent increase in financial openness De facto measure (FODF) will lead to a 0.010 and 0.003 per cent increase in real gross domestic product respectively. While a negative relationship exists between financial openness De facto measure (FODF) and real gross domestic product (RGDP) after the first and third lag period. Thus, a one percent increase in financial openness De facto measure (FODF) in the first and third period lag will lead to a decrease in 0.00007 and 0.002 percent in real gross domestic product. The result suggests that the current real effective exchange rate (REER) have an impact on real gross domestic product (RGDP). It is positive in the current period but negative after the first, second and third period lag. It is not statistically significant in the current period, but it became statistically significant after the first, second and third period lag. The result shows that a one per cent increase in real effective exchange rate in the current period will lead to an increase in real gross domestic product (RGDP) by 0.0004 percent and also a decrease in real gross domestic product by 0.00059, 0.0006, 0.00063 per cent in the first, second and third period lag.

This is inconsistent with theoretical expectations. The error correction mechanism (ECM) has the correct sign and size. The ECM coefficient of -0.351078 indicates that it takes about 35 percent for the short run disequilibrium to adjust to the long run equilibrium within the year. The t-statistics of -8.916550 showed that the error correction term is statistically significant at five per cent level of significance. R-squared value of 0.961571 and the value of R-squared adjusted of 0.884714 indicates that about 96 per cent of total variation in the RGDP is explained by credit to private sector (CPS), real interest rate (RINT), market capitalization (MKTCAP), financial openness De facto measure (FODF), financial openness De Jure measure (FODJ) and real effective exchange rate (REER) and only four per cent was unexplained which may be accounted for by other factors not included in the model. The Durbin Watson (D-W) statistics of 2.75 indicates no autocorrelation in the model. Therefore, the results can be used for forecasting and economic simulation.

Table 8: Error correction estimates

Dependent variable: D(LRGDP)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LRGDP(-1))	-0.487438	0.129343	-3.768569	0.0130
D(LRGDP(-2))	0.446718	0.084738	5.271761	0.0033
D(LCPS)	-0.208547	0.029841	-6.988517	0.0009
D(LCPS(-1))	0.091612	0.025141	3.644235	0.0148
D(LCPS(-2))	-0.087137	0.022693	-3.842746	0.0121
D(RINT)	0.007344	0.001429	5.137892	0.0037
D(RINT(-1))	0.017316	0.002120	8.167388	0.0004
D(RINT(-2))	0.018430	0.002387	7.722053	0.0006
D(RINT(-3))	0.016881	0.002371	7.119372	0.0008
D(LMKTCAP)	0.108987	0.013559	8.038133	0.0005
D(LMKTCAP(-1))	0.186842	0.021065	8.869869	0.0003
D(LMKTCAP(-2))	0.184240	0.022521	8.180794	0.0004
D(LMKTCAP(-3))	0.079620	0.014598	5.454261	0.0028
D(FODF)	0.010471	0.001237	8.461579	0.0004
D(FODF(-1))	-7.33E-05	0.000462	-0.158608	0.8802
D(FODF(-2))	0.002681	0.000595	4.505710	0.0064
D(FODF(-3))	-0.002138	0.000464	-4.604910	0.0058
D(FODJ)	0.129529	0.019193	6.748768	0.0011
D(FODJ(-1))	-0.014321	0.013538	-1.057851	0.3385
D(FODJ(-2))	0.159578	0.018027	8.852317	0.0003
D(REER)	4.17E-05	5.36E-05	0.778689	0.4714
D(REER(-1))	-0.000594	9.83E-05	-6.040141	0.0018
D(REER(-2))	-0.000599	7.21E-05	-8.315219	0.0004
D(REER(-3))	-0.000635	6.58E-05	-9.660424	0.0002
CointEq(-1)*	-0.351078	0.042374	-8.916550	0.0003

R-squared	0.961571	Mean dependent var	0.044672
Adjusted R-squared	0.884714	S.D. dependent var	0.036274
S.E. of regression	0.012316	Akaike info criterion	-5.730432
Sum squared resid	0.001820	Schwarz criterion	-4.641974
Log likelihood	131.0130	Hannan-Quinn criter.	-5.346700
Durbin-Watson stat	2.018402		

* p-value incompatible with t-Bounds distribution.

Source: Author's computation using E-views 10 (2024)

Post-estimation diagnostic tests

Diagnostic Test for financial openness and economic growth equation

Heteroskedasticity Test, LM Test and Q Test

To ascertain the adequacy of the estimated equation, several diagnostic tests were conducted. The Ramsey RESET test was employed to check the condition of stability of the estimated model. Normality tests such as the Breusch-Godfrey serial correlation Lagrange Multiplier (LM) test and the autoregressive conditional heteroskedasticity (ARCH) test were employed to check the existence of the normality or adequacy of the estimated model.

The results of the tests are summarized in Table 9. The Ramsey RESET test statistic of 1.543982 with its high probability value of 0.1362 showed that the estimated equation is stable. The Breusch-Godfrey serial correlation LM test statistic of 0.781764 with its high probability value of 0.4681 showed that there is no problem of autocorrelation in the model. This indicates that the residuals terms are independent and hence there is no autocorrelation in the estimated equation. This is also confirmed by the fact that the Chi-square probability value of 0.8660 is higher than the 5 per cent level of significance. Meanwhile, the Breusch-Pagan-Godfrey Heteroskedasticity test value of 1.56843 with its high probability of 0.0805 showed that there is no problem of heteroskedasticity and hence the disturbance terms are normally distributed. This is thus confirmed by the fact that the probability value of the observed Chi-squared is 0.8660 is greater than the 5 per cent level of significance. In addition, the autoregressive conditional heteroskedasticity (ARCH) test value 1.968697 with its high probability 0.1694 and the observed R-squared Chi-square probability value 0.1604 are higher than the 5 per cent level of significance shows that there is no problem of autocorrelation and heteroskedasticity

Similarly, the Q-statistics as shown in table 10 showed that the series is white noise, and hence there is no auto-correlation among the residual terms in the model as the probability values are all higher than 5 percent significance level. This also means that the value of the residual in one particular period was independent or unrelated to the value of the residual terms in another period. That also implied that the co-variation between the residuals was zero. The conclusion from the various test conducted showed that the estimated equation is adequate and well-behaved.

TABLE 9: Diagnostic test financial openness and economic growth equation

Test Statistic	Value (prob.)		
Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.781764	Prob. F (2,22)	0.9198
Obs. R-squared	2.406568	Prob. Chi-Square(2)	0.8660
Breusch-Pagan-Godfrey Heteroskedasticity Test			
F-statistic	1.56843	Prob. F(13,24)	0.0805
Obs. R-squared	21.53812	Prob. Chi-Square(13)	0.3991
Autoregressive conditional heteroskedasticity (ARCH)			
F-statistic	1.968697	Prob. F(1,35)	0.1694
Obs. R-squared	1.970364	Prob. Chi-Square(13)	0.1604
Ramsey RESET Test			
F-statistic	2.383879		0.1362

Source: Author's computation using E-views 10 (2023)

TABLE 10Q-Statistic Test for financial openness and economic growth equation

	AC	PAC	Q-Stat	Prob*
1	0.047	0.047	0.0895	0.765
2	-0.034	-0.036	0.1370	0.934
3	-0.225	-0.223	2.3431	0.504
4	-0.204	-0.196	4.2060	0.379
5	-0.020	-0.028	4.2238	0.518
6	-0.034	-0.104	4.2772	0.639
7	0.270	0.198	7.8445	0.347
8	0.105	0.056	8.3984	0.396
9	0.017	0.000	8.4136	0.493
10	-0.246	-0.193	11.694	0.306
11	-0.119	-0.011	12.493	0.328
12	-0.048	-0.039	12.626	0.397
13	0.025	-0.022	12.664	0.474
14	0.056	-0.090	12.865	0.537
15	-0.078	-0.177	13.270	0.581
16	0.062	-0.002	13.540	0.633

Source: Author's computation using E-views 10 (2024)

Stability Test for financial openness and economic growth equation

The Cumulative Sum (CUSUM) and Cumulative Sum of Squares (CUSUMSQ) tests was applied so as to examine the stability of the parameter after the ECM models was estimated. Figure 1 and 2 shows that both the CUSUM and CUSUMSQ statistics falls within the critical bound of ± five percent level of significance. This plot indicates that the coefficients of the results been estimated are stable in the long run during the period 1981 to 2023 and that there exists a long run relationship between financial openness and economic growth in Nigeria. This thus implies that the coefficients are changing gradually.

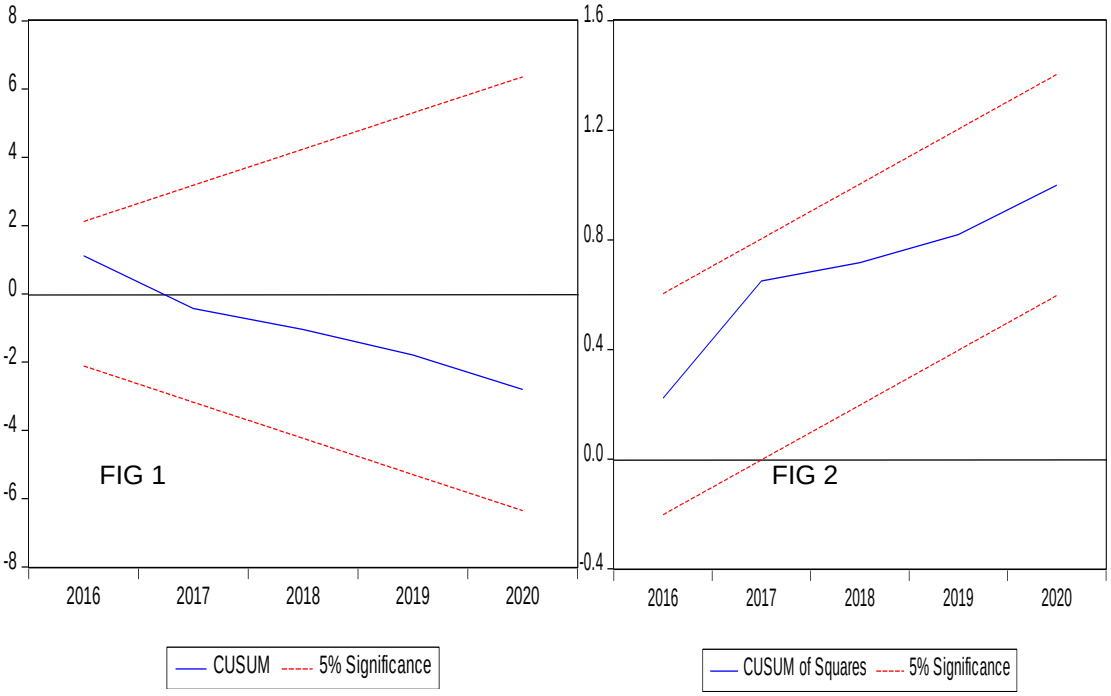

FIG. 1: CUSUM test of financial openness and economic growth
FIG. 2: CUSUM OF Squares test of financial openness and economic growth
Source: Author's computation using E-views 10 (2024)

DISCUSSION OF RESULT

On the nexus between financial openness and economic growth in Nigeria there exists a bidirectional causal relationship. This supports the finding of Hanh (2010). This evidence of bidirectional causality between financial openness and economic growth suggests that financial openness is necessary for enhancing economic growth. It was also found that a negative relationship exists between financial openness variables such as credit to private sector, real interest rate, de facto financial openness and real effective exchange rate. This implies that these variables do not promote economic growth in Nigeria in the long run.

However, the relationship between market capitalization, de jure financial openness was positive in the long run thereby influencing economic growth in Nigeria. Nevertheless, our results suggest greater impact in the long run than in the short run. As it were, one may deduce from the estimated models that de facto and de jure measurements of financial openness have similar relationship with economic growth in the short run and long run respectively.

Furthermore, from the results it can be seen that financial openness in Nigeria have impacted positively more on economic growth through market capitalization and negatively through private sector credit, with the two being statistically insignificant in the long run and statistically significant in the short run. Thus, there is significant evidence that financial openness generally made positive contributions to economic growth within the period under review.

Nonetheless, an unexpected finding from the result is the negative sign of credit to private sector. This supports the finding of Ayadi et al (2013) which indicates that credit to the private sector is negatively associated with growth. This confirms deficiencies in credit allocation in Nigeria and also suggests weak financial regulation and supervision. This result calls for serious caution on the side of domestic financial sector managers to ensure that credit is targeted at those sectors that are growth-enhancing. Generally, our finding agrees to the fact that market capitalization, real effective exchange rate, real interest rate have made different degrees of impact on the Nigerian Economy.

The results also support the findings of Ghatak (1997) in the Sri Lankan context as he explored and found in a similar study, a positive impact of financial openness on economic growth of Sri Lanka for the duration of 1950 to 1987. Furthermore, the findings of this study partly agree with those of Odhiambo (2009) that financial openness which results from interest rate reforms did not cause investment and economic growth in South Africa in the short run but in the long run.

On the nexus between financial openness and foreign trade we equally find that financial openness and foreign trade in Nigeria have a bidirectional causal relationship. This evidence of bidirectional causality between financial openness and foreign trade suggests that financial openness is necessary for enhancing trade. In turn, foreign trade seems to be an important condition for financial openness to take place and also thrive in Nigeria. These findings are in consonance with the views of Ahmed and Suardy (2009) and Chowdhury (2005). It was also found that a negative relationship exist between financial openness variables such as inflation, real interest rate, real effective exchange rate, de jure financial openness and foreign trade. This implies that these variables do not promote foreign trade in Nigeria in the long run. However, the relationship between human capital was positive in the long run thereby influencing foreign trade in Nigeria. Furthermore, the results suggest greater impact in the short run than in the long run.

Summary, Conclusion and Policy Recommendation

The study explored the relationship between financial openness and economic growth in Nigeria. The study applied the augmented Dickey-fuller (ADF) test, the Phillip-Peron test, Autoregressive Distributed Lag (ARDL) bounds approach, Granger Causality test and the Error Correction Model (ECM) regression analysis technique. The broad objective of the study of the study was to determine the impact of financial openness on economic growth in Nigeria.

A time series data that spanned a period of forty years, from 1981 to 2023 was utilized.

The error correction model is correctly signed for all the equations and statistically significant. The granger causality test shows that there is a causal relationship between macroeconomic policy variables and economic diversification.

The effects of financial openness was tested and the results showed that they have significant effects on economic growth in Nigeria thus leading to the rejection of the null hypotheses earlier proposed that financial openness does not have any effect on economic growth in Nigeria and the acceptance of the alternative that it does have significant effects on economic growth. The study shows that in the short run, a positive relationship exists between market capitalization, De jure financial openness, and economic growth in Nigeria.

The result of the analysis keen on the relationship between financial openness implies that financial openness has a positive effect on economic growth. A possible justification for the positive relationship could be as a result of government efforts and policies directed towards increase in credit to private sector, increase in market capitalization, maintenance of a stable exchange rate and interest rate. The study therefore, concluded that financial openness (De facto) play significant roles in the economic growth of Nigeria. Based on the findings of the study, and in line with the findings of the study, the recommendation is made to boost the economic growth of the Nigerian economy: Banks should be encouraged to extend more credit to private sector. But there is a serious need for discipline and discretion in credit allocation by the banks informed by the misplacement and misappropriation of such allocation

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