

## **FINANCIAL OPENNESS AND GROWTH IN NIGERIA: EMPIRICAL EVIDENCE FROM DEFACTO AND DE JURE APPROACH**

Anthony Orji\*, Jonathan E. Ogbuabor\* and  
Onyinye I. Anthony-Orji\*

**Abstract:** *This study investigates the impact of financial openness on economic growth in Nigeria using quarterly data from 1986-2011. For empirical analysis, it uses 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 results also reveal that credit to the private sector is negatively associated with growth, indicating that there are problems with credit allocation and utilization in the country which could have been occasioned by weak regulation/supervision and non-adherence to prudential guidelines in the financial system. The study also finds that real interest rate has a positive relationship with economic growth. The results support the McKinnon-Shaw hypothesis, that is, in the long run interest rate liberalisation will ultimately lead to increased economic growth. Again, the paper finds the institutional quality variable contributing negatively and positively to growth in the short run and long run respectively. From this work, our knowledge of the various measurement issues associated with financial openness has been enhanced and we can conclude that both measures are potent and robust for the Nigerian economy. Thus, the paper recommends that government should continue to reform the domestic financial system while removing barriers to capital account transactions. And this should be done with every sense of objectivity, economic management dexterity and in line with global best practices. Furthermore, the country's institutional quality should be comprehensively reviewed and upgraded. Strong emphasis should be placed on deepening the country's democracy, reforming the governance and electoral systems, and reorganizing the socio/political structures of the country. Respect for the rule of law should be given priority by the leaders and the led. This is because according to our finding, poor governance, which is exemplified by corruption and lack of respect for the rule of law are detrimental to*

---

\* Department of Economics, University of Nigeria, Nsukka, Nigeria, E-mail: [anthony.orji@unn.edu.ng](mailto:anthony.orji@unn.edu.ng); [jonathan.ogbuabor@unn.edu.ng](mailto:jonathan.ogbuabor@unn.edu.ng); [onyinye.anthony-orji@unn.edu.ng](mailto:onyinye.anthony-orji@unn.edu.ng)

*growth. However, if these anomalies are corrected, then sound financial openness policies and improved institutional quality will impact positively on growth in the long run.*

**Key Words:** *Financial Openness, Growth, De facto, De Jure, Nigeria*

**JEL Classification:** *B26; E44; F65; G15; G20; F41; O16*

## 1. INTRODUCTION

Contemporary literature on economic development is replete with discussions on financial openness and macroeconomic outcomes. This was sparked off by the seminal works of McKinnon (1973) and Shaw (1973) which attributed financial repression as the cause of the unsatisfactory growth performance of developing countries. Both McKinnon and Shaw advocated that financial liberalization was needed to remedy the problems caused by the financial repressive policies of developing countries. 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 and liberalization of the economies of both developing countries and emerging economies. This is also in line with the “Washington Consensus”, which advocated for liberalization of inflows, competitive exchange rate, interest rate liberalization, trade liberalization, privatization, and deregulation of economic activities (Williamson, 1989; Lal, 2012).

Although, based on models of competitive and efficient markets, economic theory tells us that financial openness should foster economic growth and development; empirical works so far have not found indubitable evidence for the existence of such a link. While some countries have benefited from financial liberalization, others have not enjoyed higher economic growth. Some have even experienced some crises and recessions in the years following liberalization (Fratzscher and Bussiere, 2004). Examples of this abound: Chile and Argentina in the early 1980s experienced the negative effects of financial liberalisation. Mexico had their own negative experience between 1994 and 1995 and the Asian financial crisis equally affected many Asian Countries between 1997 and 1998, to name just a few. Also the global financial crisis of 2007–08 was triggered by, among other things, insufficient financial market regulation (Bumann, *et al.*, 2012). In their own view, Andersen and Tarp (2003) equally argue that financial liberalisation in combination with a weak regulatory structure may have strong adverse effects on growth.

The counter-argument to those underlining the benefits of openness based on the efficient-market has been to stress the presence of market distortions that may lead to welfare-reducing effects of financial openness. Such market distortions can take various forms, such as asymmetric information and hidden action (Stiglitz, 1998) or be related to political economy factors (Bhagwati, 1998).

Following the global wind of liberalization, it is a common knowledge that Nigeria implemented her Structural Adjustment Programme (SAP) in 1986. Before this period, interest rates in Nigeria were generally fixed by the Central bank of Nigeria with periodic adjustments depending on the government's sectoral priorities (Agu, 1988; Uchendu, 1993). With the implementation of the SAP, which focused on trade liberalization, the need for financial liberalization was also realized. The steps that were taken in this regard were interest rate deregulation, introduction of an auction market for treasury bills, identification of insolvent banks for restructuring, introduction of more stringent prudential guidelines for banks, increase in banks' minimum capital requirement and upgrading and standardization of accounting procedures (Agu *et al.*, 2014; Orji, *et al.* 2014). However, all of these measures were not implemented simultaneously. Interest rate deregulation was the first step in 1986. Thereafter, the policy makers embarked on other major efforts of financial liberalization. Legal reserve requirements were relaxed, credit controls were removed, and the capital account was liberalized, among other measures.

The proponents of liberalization suggest that it is ideal for an economy. Honohan (2000) argues that the process of financial liberalization is expected to increase the variability of interest rates with its associated distributional consequences. The overall effect is to induce competition within the financial services industry and in the entire economy, however, the experience of several countries in the 1980s and 1990s indicate otherwise. For example Chile experienced some banking problems right after deregulating the financial sector. Caprio and Kliengebiel (1995) also argue that many banking systems experienced different problems after liberalization. Bakeart *et al* (2005) suggest that in developing countries, financial liberalization may not yield intended benefits because of the strength of domestic institutions and other factors. Demircukunt and Detragiache (1998) conclude that the benefits of financial liberalization should be weighed against the increased potential for fragility.

Another key issue here is the question of how to measure financial openness. Two broad approaches can be found in the literature: one based on measuring *de jure* openness and the other measuring *de facto* openness {(Raddatz, (2007); Fratcher and Bussierre, (2004); Lane and Millessi-Ferreti 2005; Edison *et al* 2002b and Kray (1998)}. *De jure* openness is often proxied by the removal of restrictions to capital account transactions as published in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAR). For the *de facto* openness measures, different studies have used different capital flow variables. Each of these measurements when adopted for cross-country regressions have their pitfalls respectively. Thus, these problems call for country-specific regressions. Also despite the efforts to promote the ideals of domestic financial market cum capital account openness in Nigeria through competitive market framework, there is still the fundamental challenge of understanding its real impact on the growth of economy. Thus, macroeconomic outcomes resulting from financial openness in Nigeria is still largely unexplored. Hence, further empirical investigation is needed to unravel the impact of financial

openness policies on economic growth in Nigeria using the de facto and de jure approaches. That is the objective of this paper. The rest of the paper is structured as follows: section two reviews the literature, while section three provides the methodology for analysis. The empirical results are presented in section four and section five concludes the paper.

## **2.1. Empirical Literature**

### **2.1.1. Financial Openness and Growth**

Despite intensive research devoted to this issue, the literature on the effects of financial openness on growth has produced conflicting, and sometimes, contradictory results (Eichengreen, 2001, Mishkin, 2007).

Building on the work of Schumpeter (1911), financial liberalization as advocated by McKinnon (1973) and Shaw (1973) is a deliberate attempt by developing countries to move away from financial repression. The models of McKinnon (1973) and Shaw (1973) introduce financial development as a process and strategy to achieve faster economic growth. They find that liberalization from restrictions such as interest rate ceilings, high reserve requirements, and selective credit programme, facilitates economic development. In addition, they argue that positive real interest rates lead to more efficient credit allocation which provides an additional impact on growth.

Quinn (1997) was one of the first studies to identify a positive relationship between capital account liberalization and growth. Quinn's empirical estimates find 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 his cross section of 58 countries over the period 1960- 1989.

Studies by French and Poterba (1991), Tesar and Werner (1995), Baxter and Jermann (1997) and Lewis (1999), argue that financial account openness stimulates capital accumulation, productivity growth and economic growth by relaxing financial constraints through greater access to external capital, by promoting more disciplined macroeconomic policies under international pressure, enhancing production specialization through risk-sharing and increasing the functioning of domestic financial systems through the importation of financial services and intensification of competition.

Klein and Olivei (1999) in a study of a cross section of 82 industrial and non-industrial nations find a positive effect of capital account liberalization on growth among industrial countries, but they do not find evidence that capital account liberalization promotes growth in non-industrial countries. This significant result seems to be because of the presence of the OECD countries in the sample. Klein and Olivei show that capital account liberalization significantly affects the change in financial depth in a sample consisting of 20 OECD countries but not in a sample of the non-OECD countries, nor in a narrower non-OECD sample of 18 Latin American countries known to have had a relatively high incidence of capital account liberalizations. They

also estimate a growth model that includes the change in financial depth as regressor and find that financial development is a significant determinant of growth per capita. They conclude that the beneficial effects of capital account liberalization, at least with respect to promoting financial depth, are achieved only in an environment where there is a constellation of other institutions that can usefully support the changes brought about by the free flow of capital. Billiu (2000) also finds that capital account liberalization spurs growth by promoting financial development.

Henry (2004) argues that if a developing country opens its stock market to foreign investors, aggregate dividend yield falls by 240 basis points, growth rate of output increases by an average of 1.1 percentage points per year, and the growth rate output per worker rises by 2.3 percentage points per year. Also, Bekaert, et al (2005) show that foreign investors pressure local institutions to adhere to international standards in order to improve local corporate governance and reduce the division between internal and external finance.

Loyayza and Ranciere (2006) provide the summary of the relationship between financial liberalization and economic growth. Their modern growth model reveals that the financial sector impacts capital accumulation as well as the rate of technological development. Serven (2002) also observes that financial openness grants markets dominant role in setting financial asset prices and returns, allocating credit, and developing a wider array of financial instruments and intermediaries.

Fratzscher and Bussiere (2004) analyse the 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.

Chinn and Itoh (2006) investigate whether financial openness leads to financial development over the period 1980 to 2000 in 108 countries, including 30 Sub Saharan African (SSA) countries as part of a broader set of developing or emerging countries. After controlling for legal institutions, they find that a higher level of financial openness directly promotes the development of equity markets and indirectly through its interaction with legal and institutional development; however, the latter effect requires a certain threshold of institutional development. Their results are more relevant to emerging economies than developing countries since they focused on equity markets. Nonetheless, their study seems to support the argument that an argument legal and institutional infrastructure is necessary for financial liberalization to be effective. They also find that trade openness is a precondition for capital account liberalization and the development of the banking system is required for equity market development.

Omoke (2010) in his own study concludes that in a period of financial liberalization, trade openness and financial development have causal impact on economic growth. Others who find similar results that financial development is important for economic growth are, Gallego and Loayza (2002), Soukhakian (2005), and Okpara (2010).

O'Donnell (2001) and Chanda (2005) also consider the possibility of differing the effects of capital account openness across countries. O'Donnell in this study examines the impact of capital account openness using both IMF rule-based measures and quantitative-based measure of financial openness. Using a standard set up, they find that the rule-based measure tends to be too coarse an indicator of the degree of capital account liberalization, as it does not take into account the nature of different types of controls. However, using the quantitative measure, he finds that capital account openness does seem to speed up economic growth. However, like other researchers, he finds that the benefits are not equal.

In another study, Klein and Olivei, (2001) analyse the impact of capital account liberalization on growth and financial depth for a cross-section of countries over the period 1986-1995. 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 occurs. Also, Chinn and Ito (2005) do find a positive effect of financial openness on domestic financial development if the institutional quality in the country is of a sufficiently high level.

On the other hand, some studies such as that of Eichengreen and Leblang, (2003) find a negative relationship between financial openness and growth, while Grilli and Milesi-Ferretti, (1995), find that financial openness does not affect growth. 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 growth.

Following the financial crises in Asia, Russia and Latin America in the 1990s, some authors have argued that capital account liberalization does not generate efficiency. Instead, liberalization invites speculative hot money flows and increases the likelihood of financial crises with no discernable positive effects on investments, output or any other real variable with non-trivial welfare implications (Bhagwati, 1998; Stiglitz, 2002)

Rodrik (1998) questioned the effect of capital account liberalization on growth. In a sample that includes almost 100 countries, developing as well as developed, he finds no significant effect of capital account liberalization, as measured by *Share*, on the percentage change in real income per capita over the period 1975 to 1989 in growth regressions that also include initial per capita income, initial secondary-school enrollment rate, an index of the quality of governmental institutions, and regional dummy variables. Likewise, he finds no relationship between capital account

liberalization and investment-to-income, or between capital account liberalization and inflation.

Chanda (2001) suggests that the impact of capital account openness on economic growth may vary with the level of ethnic and linguistic heterogeneity in the society, a proxy for the number of interest groups. In particular he finds that capital controls lead to greater inefficiencies and lower growth among countries with a high degree of ethnic and linguistic heterogeneity.

Edison, *et al.* (2002) also finds little evidence of a relationship between capital account liberalization and growth. Using a variety of econometric techniques and methodologies (i.e two cross-sectional ones based on OLS and IV and one based on a dynamic panel data model using GMM) and a new data set focusing on quantitative measures rather than rule-based measures, they find that financial integration does not accelerate economic growth per se, even when controlling for particular economic, financial, institutional, and policy characteristics. They do, however, find that international financial integration is positively associated with real per capita GDP, educational attainment, banking sector development, stock market development, the law-and-order tradition of the country, and government integrity (low levels of government corruption).

Aizenman (2004) apply a two-step FGLS procedure for a panel of developing and OECD countries for the years 1982-1998 using annual observations. He finds that de-facto financial openness depends positively on lagged trade openness, and GDP/Capita. The budget surplus to GDP ratio is occasionally significant and always negative for developing countries, but positive and significant for the OECD countries. Including the corruption variable in his regressions also yields negative and significant coefficients in almost all the iterations of the model he examined, confirming Wei's (2000) insight.

Klein and Olivei (2008) however, argue that the lack of a positive growth effect of financial openness in developing countries is due to a missing effect of financial openness on financial development for these countries.

### 3. METHODOLOGY

#### 3.1. Theoretical Framework

The endogenous growth theory was constructed from the shortcomings of the neoclassical model of economic growth, with Arrow (1962), Romer (1986) and Lucas (1988) being the key contributors. In neo-classical growth models, the long run rate of growth is exogenously determined by either the savings rate (as in the Harrod-Domar model) or the rate of technical progress (as in the Solow Model). However, the source of the savings rate and the rate of technological progress cannot be explained (Ghatak and Siddiki, 1999). Endogenous growth models attempt to explain a greater proportion of observed growth as well as why different countries experience different growth rates. They generally use the neoclassical model but allow the production function to

exhibit increasing returns to scale, focus on externalities and assume that technological change, although important, is not necessary to explain long-run growth.

In trying to resolve the contending issues surrounding the neo-classical model, the endogenous growth theorists construct macro-economic models out of micro-economic foundations. Thus, households are assumed to maximize their utilities, subject to some budget constraints, while firms maximize profits. In this sense, the most important aspect is usually attributed to innovation (the invention of new technologies) and the human capital. The engine for growth can be as simple as a constant return to scale production function (the AK model) or more complicated set ups with spill-over effects (spill-overs are positive externalities, benefits that are attributed to costs from other firms). For instance, Pagano (1993) uses an endogenous growth model which incorporates human capital (L) in his study of financial markets, liberalization and growth. This is because financial liberalisation leads to increase in the quality of human capital by financing education to less endowed households in the society as Gregorio (1996) explains.

The endogenous growth theory holds the view that human capital is one of the main sources of economic growth and development. This is a very important argument in the developing countries due to the abundance of labour. The model put forward by Pagano (1993) predicts that financial liberalization and openness will lead to increase in: (a) saving and investment; (b) the proportion of saving that goes to investment and (c) the efficiency of investment as a result of improvement competition as well as availability of information regarding the investment projects.

Using an AK version of endogenous growth model Pagano (1993) postulates that the three factors aforementioned in turn increase the rate of economic growth. The extended model predicts that there is an additional efficiency gain caused by the accumulation of human capital as a result of financial liberalisation. To explain the model, assume that aggregate output is a linear function of aggregate capital stock.

$$Y_t = AK_t \quad (3.1)$$

where  $Y_t$  is aggregate output,  $K_t$  is the aggregate capital stock and  $t$  is time. This production function represents a competitive economy with the presence of externality or spill-over effects (Ghatak and Siddiki, 1999). Each firm faces constant returns to scale, but the economy as a whole shows increasing returns to scale with respect to  $K_t$ .

Furthermore, suppose that the population is constant and the economy produces a single commodity which can either be consumed or be invested. Also, assume that the rate of amortisation of capital stock is zero and gross investment is:

$$\begin{aligned} I_t &= K_{t+1} - K_t \\ K_{t+1} &= I_t + K_t \end{aligned} \quad (3.2)$$

This is assumed to be a closed economy with only one-sector and no government. If we assume that financial intermediaries channel a proportion  $\phi$  of saving,  $S_t$  to



investment,  $I_t$  (i.e. a proportion  $(1 - \phi)$  of saving is lost through the process of intermediation and does not go directly to investments. On the basis of this, the capital / money market equilibrium condition can be expressed as:

$$\psi S_t = I_t \quad (3.3)$$

Using equations (3.1) and (3.2), the growth rate ( $g$ ) at time  $t+1$  can be written as:

$$\begin{aligned} g_{t+1} &= (Y_{t+1} - Y_t) / Y_t = (AK_{t+1} - AK_t) / AK_t = K_{t+1} / K_t - 1 \\ g_{t+1} &= (I_t + K_t) / K_t - 1 = I_t / K_t = AI_t / AK_t \end{aligned} \quad (3.4)$$

where  $g_{t+1}$  is the growth rate of output at time  $t+1$  and the steady state is defined as :

$K_t = K_{t+1} = K$ ;  $Y_t = Y_{t+1} = Y$ ;  $g_t = g_{t+1} = g$ . Substituting equation (3.3) into equation (3.4) the steady state growth rate ( $g$ ) can be written as follows:

$$g = A (I/Y) = A\psi s \quad (3.5)$$

where  $s$  is  $S/Y$ . Taking the logarithms of equation (3.5), it can be expressed as:

$$\ln g = \ln A + \ln \psi + \ln s \quad (3.6)$$

Equation (3.6) shows the growth rate as a linear function of its determinants and channels through which financial liberalization policies affects growth ( $A, \psi, s$ .) Our empirical model is therefore based on this relationship.

### 3.2. The Models

#### 1. Modeling the Impact of Financial Openness on Economic Growth

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.

#### *Growth Regression Model with De facto and De Jure Financial Openness Measures*

Equation (3.6) distinguishes three channels:  $\phi$ ,  $s$  and "A" (Improvement in financial intermediation, Savings, efficiency of capital stock), through which financial liberalisation policies could influence economic growth. Using endogenous growth theory, this study examines 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 variables. 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. Thus, accounting for the peculiar political/ institutional environment upon which this research is based.

Expanding Equation (3.6) and adding other relevant variables of interest we have:

The De facto Financial Openness and Growth Equation

$$LYPC = \alpha_0 + \alpha_1 LPSC + \alpha_2 RINTR + \alpha_3 HML + \alpha_4 LMKTCAP + \alpha_5 FODF + \alpha_6 REXCR + \alpha_7 INST + \mu \quad (3.7a)$$

The De jure Financial Openness and Growth Equation

$$LYPC = \alpha_0 + \alpha_1 LPSC + \alpha_2 RINTR + \alpha_3 HML + \alpha_4 LMKTCAP + \alpha_5 FODJ + \alpha_6 REXCR + \alpha_7 INST + \mu \quad (3.7b)$$

where:

$\alpha_1 . \dots . \alpha_n$  = Parameter estimates

L = Natural log operator

$\mu$  = Error term

The above growth equation also has the following variables:

LYPC= Real GDP per capita growth rate (proxy for economic growth) following Edison (2002), Alfaro *et al.* (2004), Bekaert *et al.* (2005), Coricelli *et al.* (2008), Odhiambo (2009) and Owusu (2012).

PSC=Credit to the private sector

This captures the improvements in the banking sector. It is expected that improvements in financial intermediation will affect economic growth positively (Levine 2008)

RINTR= Real Interest Rate

Liberalisation 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.

HML= Human Labour (Proxied by Secondary school enrolment rate)

To improve the efficiency of capital requires human effort and this has been captured by including capital stock (K) and a labour factor (L) in equations (3.6 and

3.7a&b). 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). The measure for labour is proxied by the secondary enrolment rates, which is defined as the ratio of the number of enrolment at secondary schools to the total population (Shabhaz *et al.*, 2008).

MKTCAP= Market Capitalization

This represents the total market capitalization of All Shares traded on the floor of the Nigerian Capital Market within the period under review. Capital Market Liberalization has been emphasized in the literature as one of the core areas of financial liberalization. Thus, we expect a positive relationship between capital market liberalization and growth. Beck *et al.* (2000) in their study outline three key stock market indicators in measuring size, activity, and efficiency. The ratio of stock market capitalization to GDP (MC) measures the size of the stock market because it aggregates the value of all listed shares traded in the stock market. They emphasize that one can assume that the size of the stock market is positively correlated with the ability to mobilise capital and to diversify risk. To measure stock market liquidity/activity and efficiency, they also used the value of stock traded to GDP variable (VT) and Turnover Ratio (TR) respectively.

FODJ= De jure Financial Openness measured by Chinn-Ito Index. We use this index because of its wide acceptability and it is available for a long period (up to 1970-2011) for over 182 countries of the world including Nigeria. As earlier stated, the construction of the Chinn-Ito index is based on the first principle component of four binary variables in IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREARER) and it takes higher values for more open financial regimes. These four variables are defined as follows: *K1* is the variable that indicates the presence of multiple exchange rates; *K2* is the variable that indicates restrictions on current account transactions; *K3* is the variable that indicates the restrictions on capital account transactions; and *K4* is the variable that indicates requirements of the surrender of export proceeds<sup>2</sup>.

FODF = Financial Openness de facto measures. Here we use total capital flow as a ratio of GDP to capture our degree of de facto Financial Openness. The sum of FDI, portfolio investments and other investments make up the capital flows, (Aizenman and Noy, 2009). According to the World Bank, "Gross private capital flows are the sum of the absolute values of direct, portfolio, and other investment inflows and outflows recorded in the balance of payments financial account, excluding changes in the assets and liabilities of monetary authorities and general government".

In line with the endogenous theory, we also expect a positive relationship since this variable also captures capital stock/ effects of external investment inflows (Sanchez-Robles and Bengoa-Calvo, 2002).

REXCR=Real Exchange Rate. We expect a negative relationship with growth since a rise in foreign currency against the local currency affects foreign exchange demand which equally affects capital imports and exports, investments and growth ultimately. Ozdemir and Erbil (2008)

INST= Institutional Quality Index (Proxy for Governance)

This variable helps us to measure the socio-political environment in which this study is based. We measured this Index based on the data collected by the World Bank and other relevant bodies like Political Risk Group for different countries including Nigeria. We expect sound governance which is exemplified by respect for the rule of law to contribute positively to economic growth.

### THE AUTO REGRESSIVE DISTRIBUTED LAG (ARDL) MODEL

The Auto Regressive Distributed Lag (ARDL) Model which uses a bounds test approach based on unrestricted error correction model (UECM) was employed here to measure the impact of Financial Openness on Economic Growth and to test for a long run relationship among the relevant variables. This model was developed by Pesaran and Pesaran (1997) and used by Pesaran, *et al.* (2001); Masron (2009); Owusu (2012), among others. The main advantage of this approach lies in the fact that it can be applied irrespective of whether the variables are I (0) or I (1). This approach also allows for the model to take a sufficient number lags to capture the data generating process in a general-to-specific modelling framework. Although, a dynamic error correction model (ECM) can be derived from ARDL through a simple linear transformation, Banerjee *et al.*, (1998) and Pesaran *et al.*, (2001), have introduced bound testing as an alternative to test for the existence of cointegration among the variables. The bounds test procedure is merely based on an estimate of unrestricted error correction model (UECM) using ordinary least squares estimator. Tang (2003) argues that the UECM is a simple re-parameterization of a general ARDL model. Also following Shrestha and Chowdhury (2007), to illustrate the ARDL modelling approach, the unrestricted error correction model of equation (3.7a&b) respectively is:

$$\begin{aligned} \Delta LYPC_t = & \alpha_0 + \delta_1 LYPC_{t-i} + \delta_2 LPSC_{t-i} + \delta_3 RINTR_{t-i} + \delta_4 HML_{t-i} + \delta_5 LMKTCAP_{t-i} + \delta_6 FODF_{t-i} \\ & + \delta_7 EXCR_{t-i} + \delta_8 INST_{t-i} + \sum_{i=1}^p \alpha_i \Delta LYPC_{t-i} + \sum_{i=0}^q \beta_j \Delta LPSC_{t-j} + \sum_{i=0}^q \gamma_l \Delta RINTR_{t-l} \\ & + \sum_{i=0}^q m_j \Delta HML_{t-j} + \sum_{i=0}^q \xi_k \Delta LMKTCAP_{t-k} + \sum_{i=0}^q \phi_n \Delta FODF_{t-n} + \sum_{i=0}^q \phi_\tau \Delta REXCR_{t-\tau} \\ & + \sum_{i=0}^q \Omega_z \Delta INST_{t-z} + \omega \dots (3.8 a) \end{aligned}$$

$$\begin{aligned}
\Delta LYPC_t = & \alpha_0 + \delta_1 LYPC_{t-i} + \delta_2 LPSC_{t-i} + \delta_3 RINTR_{t-i} + \delta_4 HML_{t-i} + \delta_5 LMKTCAP_{t-i} + \delta_6 FODJ_{t-i} \\
& + \delta_7 EXCR_{t-i} + \delta_8 INST_{t-i} + \sum_{i=1}^p \alpha_i \Delta LYPC_{t-i} + \sum_{i=0}^q \beta_j \Delta LPSC_{t-j} + \sum_{i=0}^q \gamma_i \Delta RINTR_{t-i} \\
& + \sum_{i=0}^q m_j \Delta HML_{t-j} + \sum_{i=0}^q \xi_k \Delta LMKTCAP_{t-k} + \sum_{i=0}^q \varphi_m \Delta FODJ_{t-m} + \sum_{i=0}^q \phi_\tau \Delta REXCR_{t-\tau} \\
& + \sum_{i=0}^q \Omega_z \Delta INST_{t-z} + \acute{\omega} \dots (3.8b)
\end{aligned}$$

The terms with the summation signs in equations (3.8a&b) represent the Error Correction Model (ECM) dynamics and the coefficients  $\delta_i$  are the long run multipliers corresponding to long run relationship (Poon, 2010).  $\delta_0$  and  $\acute{\omega}$  represent the constant and the white noise respectively.  $\Delta$  is the first difference operator while  $p$  and  $q$  are the lag length for the UECM. We conduct an F-test for a joint significance by using ordinary least square (OLS) technique. As stated earlier, the ARDL-UECM process will indeed enable us test the existence of long run relationships for the model above.

#### 4. PRESENTATION AND ANALYSIS OF RESULTS

In this section, we present the empirical results and analysis based on the specified models. As discussed earlier, before we go ahead with the ARDL bounds testing, we shall first of all test for the stationarity of all the variables that are going to be used in the analysis to ensure their order of integration. That is, whether they are of order I (0) or I (1) stationary.

##### 4.1. Unit Root Tests

###### *Unit root tests and the order of integration*

Tables 4.1 presents the summary of the unit root test results for the series in levels and in first differences. The ADF lag length was selected automatically by Akaike Information Criteria (AIC). The result indicate that apart from Log(PSC), HML and REXCR which is integrated of order zero, all other variables were non-stationary since their absolute value of ADF statistic exceeded the critical value only at first difference. Furthermore, the results in Table 4.1 indicate that most of the variables become stationary at first difference and this enabled the use of the error correction model in the autoregressive framework.

The results of the stationarity tests show that most of the variables are non-stationary at level. These results are shown in Table 4.1 above. Having established the vector of variables of concern, the order of integration and stationarity of all the series was conducted using the Augmented Dickey-Fuller (ADF) principal of establishing

**Table 4.1**  
**Summary of ADF Unit root test results of the series**

<i>Variable</i>	<i>Mackinnon Critical Values</i>	<i>Level ADF Test Stat</i>	<i>1<sup>st</sup> Difference ADF Test Stat</i>	<i>Order of Integration</i>
Log(YPC)	-2.601	1.723	-3.286*	I(1)
YPC	-3.600	-3.514	4.595*	I(1)
Log (FODF)	-3.452	-3.220	-6.973*	I(1)
FODF	-3.222	-2.084	4.223*	I(1)
FODJ	-3.451	-2.352	-3.603*	I(1)
Log(PSC)	-3.286	-3.505*		I(0)
Log(MKTCAP)	-2.601	2.087	-3.946*	I(1)
HML	-3.150	-3.465*		I(0)
RINTR	-3.452	-3.192	-5.123*	I(1)
REXCR	-2.891	-3.604*		I(0)
INST	-2.600	0.544	-3.728*	I(1)

*Note:* \* indicates significant at 5%, probability levels

*Source:* Computed by the Author

unit root. The ADF test was conducted on variables in order to determine their stationary nature and those found non stationary were differenced to get rid of the stochastic trend, a phenomenon associated with time series data.

#### 4.2. Bounds test

To select the appropriate lag length for the first differenced variables, we adopted a general-to-specific approach using an Unrestricted Vector Autoregressive means of Schwarz Bayesian Criterion (SBC). The result however, shows a maximum of 2 lag lengths. As argued by Pesaran and Pesaran (1997), variables 'in first difference are of no direct interest' to the bounds cointegration test. Hence, any result that supports cointegration in at least one lag structure provides evidence for the existence of a long-run relationship. The calculated F-statistic together with the critical bounds values are also reported. The ARDL bounds test is based on the assumption that the variables are I(0) or I(1) as shown above in the unit root table.

We chose a maximum lag order of 2 for the conditional ARDL vector error correction model by using the Akaike Information Criteria (AIC). The calculated F-statistics are reported in Table 4.2 when each variable is considered as a dependent variable (normalized) in the ARDL regressions. From these results, it is clear that there is a long run relationship amongst the variables when Log(YPC) is the dependent variable because its F-statistic (4.60) is higher than the upper-bound critical value (3.50) at the 5% level. This implies that the null hypothesis of no cointegration among the variables is rejected.

**Table 4.2**  
Bound test for the estimation with De facto Financial Openness Variable

<i>Dependent Variable</i>	<i>F- Statistics</i>	<i>Decision</i>
Log(YPC)	4.60	Co-integration
Log(FODF)	5.25	Co-integration
Log(PSC)	4.97	Co-integration
Log(MKTCAP)	6.85	Co-integration
HML	3.06	No Co-integration
RINTR	5.94	Co-integration
REXCR	3.90	Co-integration
INST	1.55	No Co-integration

**Table 4.3**  
Bound test for the estimation with De Jure Financial Openness Variable

<i>Dependent Variable</i>	<i>F- Statistics</i>	<i>Decision</i>
Log(YPC)	4.55	Co-integration
FODJ	3.99	Co-integration
Log(PSC)	2.09	No co-integration
Log(MKTCAP)	4.38	Co-integration
HML	3.93	Co-integrated
RINTR	8.63	Co-integration
REXCR	3.91	Co-integration
INST	1.29	No co-integration

Critical values;

The value of our F-statistic is 4.50 and 4.55, and we have  $(k + 1) = 8$  variables (YPC, FODF/FODJ, PSC, MKTCAP, HML, RINTR, REXCR, and INST) in our model. So, when we go to the Bounds Test tables of critical values, we have  $k = 7$ .

### Critical Values

Table CI (iii) on p.300 of Pesaran et al. (2001) is the relevant table for us to use here. We haven't constrained the intercept of our model, and there is no linear trend term included in the ECM. The lower and upper bounds for the F-test statistic at the 5% significance level is [2.32, 3.50], i.e.  $I(0) = 2.32$  and  $I(1) = 3.50$ . As the value of our F-statistic exceeds the upper bound at the 5% significance level, we can conclude that there is evidence of a long-run relationship between the two time-series (at this level of significance or greater).

### 4.3. Estimation Results

The ARDL results above depicts the following process; Long-run (1, 1, 1, 1, 1, 1, 1, 1) and Short-run (1, 2, 0, 0, 0, 0, 1, 0, 1). However, it is important to note that the long run elasticities or coefficients can then be generated from the ARDL-UECM by using the estimated coefficients of the one lagged independent variables, multiplied by a negative sign, and divided by the estimated coefficient of the one lagged dependent variable

**Table 4.4**  
**The ARDL Model for the De facto Financial Openness (Long-run)**

<i>Dependent Variable Log (YPC)</i>				
<i>Variables</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>T-statistics</i>	<i>Probability</i>
Constant	-0.46292	0.1874	-2.47	0.016
Log(YPC(-1))	-0.11487	0.0256	-4.47	0.000
Log(FODF(-1))	.030031	0.0129	2.32	0.023
Log(PSC(-1))	-0.04457	0.0196	-2.27	0.026
Log(MKTCAP(-1))	0.08475	0.0220	3.85	0.000
HML(-1)	0.00241	0.0024	0.98	0.331
RINTR(-1)	0.00081	0.00055	1.45	0.152
REXCR(-1)	-0.00077	0.0002	-3.75	0.000
INST(-1)	0.00836	0.0099	0.84	0.402
<b>Short-run</b>				
D(Log(YPC(-1)))	0.25674	0.1035	2.48	0.015
D(Log(YPC(-2)))	0.15798	0.0907	1.74	0.086
D(Log(FODF))	0.022213	0.0217	1.02	0.312
D(Log(PSC))	-0.052936	0.1010	-5.24	0.000
D(Log(MKTCAP))	0.08320	0.0363	2.29	0.025
D(HML)	0.02664	0.0096	2.76	0.007
D(RINTR(-1))	-0.00058	0.00078	-0.74	0.459
D(REXCR)	-0.00092	0.00047	-1.93	0.057
D(INST(-1))	-0.04186	0.0377	-1.11	0.271
	R-squared = 0.6453			
	Adj R-Squared = 0.5674			
	F-Statistics = 8.29		F-prob = 0.0000	
<b>Results of diagnostic tests</b>				
	<i>X<sup>2</sup> Statistics</i>		<i>Probability</i>	
Breusch-Godfrey LM test for autocorrelation	0.607		0.4357	
White Heteroskedasticity	2.96		0.0851	
Ramsey RESET Test	3.32		0.0739	

(Bardsen, 1989 and Tang, 2003). The short run coefficients are then derived from the estimated coefficient of the first differenced variable in ARDL-UECM models (Poon, 2010). We applied these methods in calculating the long run and short impact for the de facto and de jure estimated results. However, the ECM results showing the short run dynamics for the parsimonious ARDL models are presented in tables 4.5 and 4.7 respectively.

Thus, from table 4.4, we see that the long-run multiplier between Log (YPC) and Log (FODF) is  $-(0.030031 / -0.11487) = 0.26$ . In the long run, an increase of 1 percent in Log (FODF) will lead to an increase of 0.26 percent in Log (YPC). In addition, the long-run multiplier between Log(YPC) and Log(PSC) is  $-(-0.04457 / -0.11487) = -0.38$ ,



implying that in the long run, an increase of 1 percent in Log(PSC) will lead to a decrease of 0.38 percent in Log (YPC). The long-run multiplier between Log (YPC) and Log (MKTCAP) is  $-(0.08475 / -0.11487) = 0.73$ . This means that in the long run, an increase of 1 percent in Log (MKTCAP) will lead to an increase of 0.73 percent in Log (YPC). The long-run multiplier between Log (YPC) and RINTR is  $-(0.00081 / -0.11487) = 0.007$ . This means that in the long run, an increase of 1 percent in RINTR will lead to an increase of 0.007 percent in Log (YPC). And the long-run multiplier between Log (YPC) and REXCR is  $-(0.00077 / -0.11487) = -0.006$ . Thus, in the long run, an increase of 1 unit in REXCR will lead to a decrease of 0.006 percent in Log (YPC). Also the long-run multiplier between Log (YPC) and INST is  $-(0.00836 / -0.11487) = 0.07$ .

The short run and long run results reported in Table 4.4 clearly show that the de facto financial openness (FODF) has a positive short run and long run impact on the economic growth (YPC) in Nigeria. The coefficient of de facto financial openness is positive, as expected, as well as statistically insignificant and significant in the short run and long run respectively. This suggests that 1% increase in defacto financial openness leads to an increase of 0.02% in economic growth in the short run and 0.26% in economic growth in the long run. This supports previous studies such as Fratzscher and Bussierre (2004), Coricelli et al (2008), Loyayza and Ranciere (2006) to mention a few which found long run relationship between economic growth and de facto financial openness. However, those who found contrasting results include; Rodrick (1998), Eichengreen and Leblang, (2003), Klein and Olivei (2008) among others.

Other variables included in the model such as, Market Capitalization (MKTCAP) and Human Labour (HML), are also statistically significant and positively related to Economic growth in Nigeria. Real interest rate is also found to have a positive relationship with economic growth. Although this is not very significant but the results support the McKinnon-Shaw hypothesis, i.e. in the long run interest rate liberalisation will ultimately lead to rapid economic growth.

It is also observed that the coefficient of credit to the private sector (PSC) has a negative sign both in the short run and long run. This is contrary to expectation. However, this corroborates Obamuyi (2009) which finds a negative relationship between private sector credit and economic growth. The study attributes this finding to the fact that private sector credits are mainly used by some borrowers to buy and sell instead of investing it into productive activities. Again, it has also been discovered that many bank managers simply issue loans to their cronies and family members who use the funds for other purposes rather than investing them productively. The coefficient may suggest that 1% increase in the volume of credit to the private sector leads to a reduction of 0.05% and 0.38% in economic growth in the short run and long run respectively.

Our institutional quality variable which represents governance and rule of law also shows some interesting results. In the short run it reveals a negative relationship with economic growth but in the long run we see a positive relationship between the

two variables. Thus, in the short run 1% change in the quality of institution will lead to 0.04% reduction in economic growth. While in the long run, 1% change in the quality of institutions will affect economic growth positively by 0.07%. This result attests to the fact that the present style of governance among the leaders has serious negative impact on the growth of the Nigeria. This is exemplified by the fact that the principle of rule of law is not respected, corruption has been enthroned in several leadership quarters, and there is no internal democracy even among the political parties. When the quality of governance and institution is weak, it simply translates to corruption, embezzlement of state funds meant for infrastructural development, and several other anti -socio/economic outcomes. This finding supports the study of Gupta, et al (2001), Tanzi and Davoodi (1997) among others.

In order to get the parsimonious model, we estimated the model by OLS,constructed the residuals series, and then fitted a regular (restricted) ECM:

**Table 4.5**  
**Parsimonious ARDL-ECM for de facto financial openness**

<i>Dependent Variable D(Log(YPC))</i>				
<i>Variables</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>T-statistics</i>	<i>Probability</i>
Constant	0.01716	0.0072	2.37	0.020
D(Log(YPC(-1)))	1.03055	0.1470	7.01	0.000
D(Log(YPC(-2)))	-0.17376	0.0992	-1.75	0.084
D(Log(FODF))	0.03096	0.0188	1.64	0.105
D(Log(PSC))	-0.36393	0.0801	-4.54	0.000
D(Log(MKTCAP))	0.10294	0.0311	3.30	0.001
D(HML)	0.02424	0.0074	3.27	0.002
ECM <sub>t-1</sub>	-0.90778	0.1766	-5.14	0.000
	R-Squared = 0.5617		Adj. R-squared = 0.5287	
	F-Statistics = 17.03		F-prob. = 0.0000	

<i>Results of diagnostic tests</i>		
	<i>X<sup>2</sup> Statistics</i>	<i>Probability</i>
Breusch-Godfrey LM test for autocorrelation	2.690	0.1010
White Heteroskedasticity	6.97	0.8083
Ramsey RESET Test	3.89	0.8083

From table 4.5, we notice that the coefficient of the error-correction term (ECM<sub>t-1</sub>) is negative and very significant. This is what we would expect if there is co-integration and long run relationship between economic growth (log (YPC)) and other regressors. The magnitude of this coefficient implies that nearly 91% of any disequilibrium between log (YPC) and other variables is corrected within one period (one quarter). The ECM results also show that a change in de facto financial openness (FODF) is associated with a positive change in economic growth (Log (RGDP)). Also, the coefficient of D (Log (MKTCAP)) shows that a change in the stock market capitalization is positively

associated with change in economic growth and it is statistically significant at 5% level. Furthermore, the coefficient of the change in the Human Labour (D (HML)) is positive and statistically significant at 5% level. However, the coefficient of D (Log (PSC)) is negative and statistically significant. This coefficient may suggest that the bulk of the credit extended to the private sector by the banks and other financial institutions goes into mostly buying and selling of imported finished consumer goods rather than production for domestic consumption in the real economy and export to the outside world.

**Table 4.6**  
**The ARDL model for the De jure Financial Openness (Long-run)**

<i>Dependent Variable Log(YPC)</i>				
<i>Variables</i>	<i>Coefficient</i>	<i>Std.Error</i>	<i>T-statistics</i>	<i>Probability</i>
Constant	.0148587	0.0873	0.17	0.869
Log(YPC(-1))	-0.10509	0.0250	-4.19	0.000
FODJ(-1)	0.02805	0.0117	2.38	0.019
Log(PSC(-1))	-0.03035	0.0199	-1.53	0.131
Log(MKTCAP(-1))	0.08263	0.0216	3.82	0.000
HML(-1)	0.00069	0.0026	0.27	0.790
RINTR(-1)	0.00006	0.0004	0.15	0.884
REXCR(-1)	-0.00049	0.0002	-2.31	0.024
INST(-1)	0.00357	0.0096	0.37	0.712
<b>Short-run</b>				
D(Log(YPC(-1)))	0.23126	0.0985	2.35	0.021
D(Log(YPC(-2)))	0.12609	0.0869	1.45	0.150
D(FODJ)	0.02641	0.0489	0.54	0.591
D(Log(PSC))	-0.056525	0.0971	-5.82	0.000
D(Log(MKTCAP))	0.07409	0.0366	2.02	0.047
D(HML)	0.03196	0.0097	3.27	0.002
D(RINTR(-1))	-0.00029	0.0007	-0.39	0.701
D(REXCR)	-0.00049	0.0005	-0.98	0.328
D(INST(-1))	-0.08324	0.0300	-2.77	0.007
	R-squared = 0.6348			
	Adj R-Squared = 0.5600			
	F-Statistics = 8.49		F-prob. = 0.0000	

Results of diagnostic tests

	<i>X<sup>2</sup> Statistics</i>	<i>Probability</i>
Breusch-Godfrey LM test for autocorrelation	2.044	0.1528
White Heteroskedasticity	3.81	0.0509
Ramsey RESET Test	2.93	0.3084

The ARDL-UECM results above depicts the following process; Long-run (1, 1, 1, 1, 1, 1, 1, 1) and Short-run (1, 2, 0, 0, 0, 1, 0, 0). Again, following our initial calculations for our de facto results in table 4.4, we can also see from table 4.6, that the long-run multiplier between Log(YPC) and (FODJ) is - (0.02805/ -0.1051) = 0.26. In the long

run, an increase of 1 unit in FODJ will lead to an increase of 0.26 percent in Log(YPC). In addition, the long-run multiplier between Log(YPC) and Log(PSC) is  $-( -0.03035 / -0.1051) = -0.28$ , implying that in the long run, an increase of 1 percent in Log(PSC) will lead to a decrease of 0.28 percent in Log(YPC). Furthermore, the long-run multiplier between Log(YPC) and Log(MKTCAP) is  $-( 0.08263 / -0.1051) = 0.78$ . This means that in the long run, an increase of 1 percent in Log(MKTCAP) will lead to an increase of 0.78 percent in Log(YPC). And in the long-run multiplier between Log(YPC) and REXCR is  $-( -0.0005 / -0.1051) = 0.004$ . In the long run, an increase of 1 unit in REXCR will lead to a decrease of 0.004 percent in Log(YPC).

The short run and long run results reported in Table 4.6 equally show that the de jure financial openness (FODJ) has a positive short run and long run impact on the economic growth (YPC) in Nigeria. The coefficient of de jure financial openness is positive, as expected, as well as statistically insignificant and significant in the short run and long run respectively. The result equally suggests that 1% increase in de jure financial openness leads to an increase of 0.02% in economic growth in the short run and 0.26% in economic growth in the long run. This supports previous studies such as Quinn (1997), Bekaert et al (2005), Chinn and Ito (2005 and 2006) to mention a few which found long run relationship between economic growth and de jure financial openness. However, Ozdemir and Erbil (2008) found a negative impact of de jure financial openness measure on growth.

Other variables included in the model such as, Market Capitalization (MKTCAP) and Human Labour (HML), also have positive relation with Economic growth in Nigeria and statistically significant in Nigeria.

However, it is also observed here that the coefficient of credit to the private sector (PSC) has a negative sign both in the short run and long run. This is contrary to expectation. But this has confirmed that high interest rate and excessive government borrowing are making private credit inefficient and detrimental to growth; and that public expenditure is crowding out private sector investment. This also reveals the problem of huge non-performing loans, and corporate governance deficiencies of some lending banks, supporting the finding of Abubakar and Gani (2013) and Nkoro and Uko (2013).

In order to get the parsimonious model, we estimated the model by OLS, constructed the residuals series, and then fitted a regular (restricted) ECM:

From table 4.7, we also notice that the coefficient of the error-correction term ( $ECM_{t-1}$ ) is negative and very significant. This is what we should expect if there is cointegration between log(YPC) and other regressors. The magnitude of this coefficient implies that nearly 90% of any disequilibrium between log(YPC) and other variables is corrected within one period (one quarter). The ECM results also show that a change in de jure financial openness (FODJ) is associated with a positive change in economic growth (Log(RGDP)). Also, the coefficient of D(Log(MKTCAP)) shows that a change in the stock market capitalization is positively associated with change in economic

**Table 4.7**  
**Parsimonious ARDL-ECM for de jure financial openness**

Variables	Dependent Variable $D(\text{Log}(\text{YPC}))$			
	Coefficient	Std. Error	T-statistics	Probability
Constant	0.01924	0.0073	2.61	0.011
D(Log(YPC(-1)))	1.20877	0.2028	5.96	0.000
D(Log(YPC(-2)))	-0.28793	0.1165	-2.47	0.015
D(FODJ)	0.05619	0.0445	1.26	0.209
D(Log(PSC))	-0.40684	0.0797	-5.10	0.000
D(Log(MKTCAP))	0.07527	0.0333	2.26	0.026
D(HML)	0.02057	0.0074	2.75	0.007
D(RINTR(-1))	0.00028	0.0007	0.37	0.712
D(REXCR)	-0.00025	0.0003	-0.68	0.496
D(INST)	0.06375	0.0292	2.18	0.032
ECM <sub>t-1</sub>	-0.8905	0.2109	-4.22	0.000
	R-Squared = 0.5814		Adj. R-squared = 0.5349	
	F-Statistics = 12.50		F-prob. = 0.0000	

growth and it is statistically significant at 5% level. Furthermore, the coefficient of the change in the Human Labour (D (HML)) is positive and statistically significant at 5% level. However, the coefficient of D (Log (PSC)) is negative and statistically significant. This coefficient may suggest that the bulk of the credit extended to the private sector by the banks and other financial institutions goes into mostly buying and selling of imported finished consumer goods rather than production for domestic consumption in the real economy and export to the outside world. Some of the credits also end up in the pockets of the cronies of the bank managers who neither use the loans for productive purposes nor service the loans as at when due. Thus, we have the perennial problem of bad loans that have become detrimental to the banking system's ability to purposefully finance private sector investments.

**Table 4.8**  
**Results of diagnostic tests**

	$X^2$ Statistics	Probability
Breusch-Godfrey LM test for autocorrelation	2.501	0.1137
White Heteroskedasticity	4.24	0.0395
Ramsey RESET Test	5.58	0.1015

#### 4.4. Further Interpretation and Explanations of Model Parameters

##### 4.4.1. The long run model for economic growth and de facto financial openness (ARDL-UECM)

Using a log model, the effects of financial openness on economic growth was modeled and results were presented in Table 4.4. Observations made from the table indicate that from the long run part of the ARDL-UECM, private sector credit and exchange rate affect economic growth negatively while de facto financial openness indicator

(FODF), market capitalization, interest rate, institutional quality and human labour impacted positively on economic growth.

Further analysis of results of Table 4.4 indicate that, the positive association of financial openness and GDP with market capitalization imply that size of the stock market dominated by money lending organisations like banks, finance companies, insurance companies, micro-finance institutions and other money suppliers boost economic growth. The capital base of these financial institutions is also a key determinant of financial openness. This also implies that the financial openness policies put in place as directed by the IMF in 1980's have been favourable in increasing the level of economic activities at the stock market, hence leading to an increase in market capitalization.

Also from the model, interest rate is found to have a positive relationship with economic growth, but this effect was found to be statistically insignificant in the long run. This result is expected since interest rate is supposed to have a positive relationship with savings which is a key driver of economic growth. This finding however, agrees partly with Perera's case of financial liberalisation where he found that interest rate and real gross domestic product impacted positively on money demand while financial liberalization had negatively impacted on both M1 and M2 in a study of impact of financial liberalization on money demand and economic growth in Sri lank (Perera, 2005).

The results above further indicate that financial openness positively affects economic growth while private sector credit negatively affects economic growth. This agrees with the findings of Odhiambo (2009) in a similar study carried out on South Africa.

#### ***4.4.2. The long run model for economic growth and de jure financial openness (the ARDL-UECM)***

Also using a log model, the effects of de jure financial sector openness on economic growth was modeled and results were presented in Table 4.6. Results from the long-run part of the model indicate that de jure financial openness indicator (FODJ), market capitalization, real interest rate and human labour impacted positively on economic growth, while private sector credit, real exchange rate and institutional qualities affect economic growth negatively.

The results here clearly show that de jure financial openness, market capitalization and real interest rate affect economic growth positively while private sector credit negatively affects economic growth. The implications of these result outcomes have been discussed above. The model also shows that about 64 percent variation in real gross domestic product is explained by the covariates here considered. This is significant as indicated by its F-statistic of 8.49 and its probability of 0.00.

#### 4.5. Interpretation of the Error Correction Models and Results for economic growth and de facto financial openness

##### 4.5.1. The short run dynamics and de facto financial openness

The short run dynamic model was estimated by the restricted ARDL ECM procedure. The levels of the UECM ARDL model was estimated by OLS where the residuals series was constructed, we then fitted a *regular* (restricted) ECM. The maximum lag was established by the minimum AIC which minimizes the standard errors. The estimated OLS error correction terms measured the transitory deviations from the steady state equilibrium value of each variable present in the long run relationship. The coefficient of the error correction term in this case measures the speed of adjustment from the short run to the long run equilibrium.

Parsimonious Restricted ARDL-ECM (1, 2, 0, 0, 0, 0)

Dependent Variable D(Log(YPC))				
Variables	Coefficient	Std.Error	T-statistics	Probability
Constant	0.01716	0.0072	2.37	0.020
D(Log(YPC(-1)))	1.03055	0.1470	7.01	0.000
D(Log(YPC(-2)))	-0.17376	0.0992	-1.75	0.084
D(Log(FODF))	0.03096	0.0188	1.64	0.105
D(Log(PSC))	-0.36393	0.0801	-4.54	0.000
D(Log(MKTCAP))	0.10294	0.0311	3.30	0.001
D(HML)	0.02424	0.0074	3.27	0.002
ECM <sub>t-1</sub>	-0.90778	0.1766	-5.14	0.000
	R-Squared = 0.5617		Adj. R-squared = 0.5287	
	F-Statistics = 17.03		F-prob. = 0.0000	

Results from the table above suggest that the current value of financial openness has a positive impact on economic growth (although it is not significant). But the first lag of GDP per capita, current value of private sector credit, market capitalization and human labour significantly affect economic growth, although the second lag of GDP per capita is insignificant. All variables are here considered significant at 5 percent level. The coefficient of ECM<sub>t-1</sub> (-0.908) is significantly different from zero and bears the right sign thus validating the existence of cointegration in the system. Thus, it indicates that when an external shock disturbs the equilibrium condition of economic growth, about 91 percent of it is absorbed within one period (i.e one quarter in this study).

In view of the table above and as regards significance of the model, the F-statistic and its probability justify that it is highly significant and thus reliable. The model explains about 56 percent of the overall variations in the dependent variable.

Moreover, as earlier stated, the current values of financial openness were found here to be rightly signed. This result implies that the effect of financial openness on economic growth is positive.

Real interest rate was found to have had a positive impact on economic growth in the long run though this diverts from the short run effect. The empirical evidence from the long run analysis are therefore in line with the findings of the Shrestha and Chowdhury (2007), Ghatak (1997) Odhiambo (2009b) and Odhiambo (2009c) which found the positive effects of interest rate liberalisation and argue that interest rates liberalisation leads to more savings, which ultimately leads to increase in investment and economic growth.

### The Procession to Parsimonious Model

It is important to note that the table and result above represent that of the parsimonious model. The reduction process eliminated most of the insignificant variables without losing valuable information. The regression results show that the goodness of fit in both models is satisfactory. The F-statistics with its probability values of 0.000 indicate that, overall, the models are significant. These results imply the rejection of the null hypotheses that all the right hand side variables except the constant terms have zero parameter coefficients. The Breusch-Godfrey LM test for autocorrelation of 0.10 does not point to any serious autocorrelation problems.

**4.5.2 The short run dynamics of Economic Growth and de jure financial openness**  
The short run dynamics of economic growth show how the effects in the long run function of economic growth adjusts period after period. The coefficient of the error correction term shows the magnitude of this adjustment as presented in the table below.

Parsimonious Restricted ARDL-ECM (2, 1, 0, 0, 0, 1, 0, 0)

<i>Dependent Variable D(Log(YPC))</i>				
<i>Variables</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>T-statistics</i>	<i>Probability</i>
Constant	0.01924	0.0073	2.61	0.011
D(Log(YPC(-1)))	1.20877	0.2028	5.96	0.000
D(Log(YPC(-2)))	-0.28793	0.1165	-2.47	0.015
D(FODJ(-1))	0.05619	0.0445	1.26	0.209
D(Log(PSC))	-0.40684	0.0797	-5.10	0.000
D(Log(MKTCAP))	0.07527	0.0333	2.26	0.026
D(HML)	0.02057	0.0074	2.75	0.007
D(RINTR(-1))	0.00028	0.0007	0.37	0.712
D(REXCR)	-0.00025	0.0003	-0.68	0.496
D(INST)	0.06375	0.0292	2.18	0.032
ECM <sub>t-1</sub>	-0.8905	0.2109	-4.22	0.000
	R-Squared = 0.5814		Adj. R-squared = 0.5349	
	F-Statistics = 12.50		F-prob. = 0.0000	

Source: Computed by the Author

Analysis made with reference to the above table indicate that past values of real GDP affect current values up to the second lag with significant values, while a one period lag of financial openness affects current values of real GDP positively (though



insignificant). Other covariates such as private sector credit, market capitalization, human labour and institutional qualities affect economic growth with significant values and varying magnitudes as can be seen from the table. Of great importance is the coefficient of the error correction term here marked  $ECM_{t-1}$ . As seen from above two cases it bears the correct sign and it shows a very high adjustment towards attainment of equilibrium condition. It validates the fact that cointegration exists between the variables in the model and more so that if there is an exogenous effect that disturbs the equilibrium level of the economy, about 90% is attuned in the first period.

The model explains about 58 percent variations in the model and it is highly significant as indicated by the F-statistic. The Breusch-Godfrey LM test for autocorrelation indicates no evidence of serial correlation in the residuals.

Further analysis made from the table indicates that financial openness is positive both in the short run and long run. In the long run financial openness is significantly related to economic growth but is insignificant in the short run. These findings are in line with the findings of Bwire (2007) that financial openness proxied by financial development (FD) had significant positive effect on economic growth since the liberalisation of the financial sector, using data from Bank of Uganda. Moreover, the findings are in line with the findings of Mckinnon's (1973) model and the financial deepening approach by Edward Shaw (1973), where financial liberalisation acts as a catalyst to growth through investment in high yielding projects resulting in an increase in real income. With both de facto and de jure financial openness variables being positive and significant in the long-run based on their ARDL-UECM results, the results indicate that financial openness is a beneficial policy. This could be attributed to its ability to increase the financial base of the economy and increase productive capital inflows.

#### **4.6. ARDL-UECM and Short-run ARDL-ECM model diagnostic tests**

Here, the emphasis is on testing the presence or absence of serial correlation in the residuals generated from the models, Ramsey model specification test, heteroskedasticity test and stability test.

##### **4.6.1. Tests for serial correlation of residuals**

The serial correlation tests of the residuals were based on the Breusch-Godfrey LM test for autocorrelation. All the estimated models have their second order tests below them. Results from the second order tests indicate no evidence of serial correlation in all the models.

##### **4.6.2. Ramsey reset test**

All the estimated models indicate no evidence of omitted variable problem in all the results. Thus they passed the model specification test.

#### 4.6.3. White Heteroskedasticity test

Also, most of our estimated models passed the white heteroskedasticity test in all the results.

#### 4.6.4. Stability Tests

The stability of the long-run coefficient is tested by the short-run dynamics. Once the ECM models of de jure and de facto financial openness equation have been estimated, the cumulative sum of recursive residuals (CUSUM) tests are applied to assess the parameter stability (Pesaran and Pesaran, 1997). The Graph below depicts the results for CUSUM tests. The results indicate the absence of any instability of the coefficients because the plots of the CUSUM statistic fall inside the critical bands of the 5% confidence interval of parameter stability.

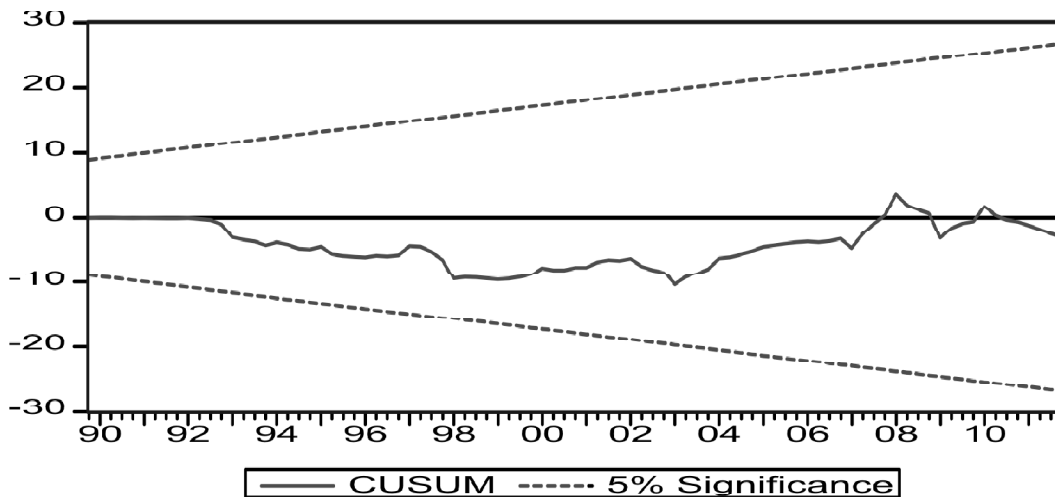


Figure 1: Cumulative Sum of Recursive Residuals (CUSUM) Test

### 5.1. POLICY RECOMMENDATIONS AND CONCLUSION

1. The first significant policy implication arising out of the empirical finding in the study is that both the de facto and de jure measures of financial openness are equally robust and significantly positively related to economic growth in Nigeria. Thus, policy makers or researchers who wish to investigate long run or short run impact in the future could adopt either the de facto measure of openness or the de jure measure of financial openness. This is because according to our model results, the de facto and de jure financial openness measures showed similar impact in the long run and short run respectively.
2. From this work, our knowledge of the various measurement issues associated with financial openness has been enhanced and we have identified that both

measures are potent and robust for the Nigerian economy. Thus, we recommend that government should continue to remove barriers to capital account transactions with every sense of objectivity, economic management dexterity and in line with global best practices. Again, as earlier stated while justifying this study, an important question requires policy-makers to decide, given that legal barriers have been removed, how best to manage capital flows. Suffice it to note that countries such as China, India and South Korea, are pointed out as poster child of success from openness. However, when compared with some European countries, as well as many other developing countries like Nigeria, these countries exhibit a much less "open" economy, measured either with trade and/or financial openness indicators. Their high growth performance is more associated with a "managed openness" policy, than a rush for "more openness" per se. In this light, having seen the benefits of financial openness to the growth of the economy, the Nigerian Economic managers should adopt the best economic management policies to guide international capital flows and also ensure that the maximum benefits of such flows accrue to the country. In other words, we recommend that the government and policy makers should adopt international best practices and policies in guiding domestic financial system reforms and international capital flows in order to ensure the maximum benefits of such policies to the economy.

3. Banks should be encouraged to extend more credit to the private sector. But there is a serious need for discipline and discretion in credit allocation by the banks. Giving loans to friends and cronies without serious certified profitable business ideas should be discouraged. Again the government and financial sector players should educate the business community and other loan seekers on the need to invest such credits in productive business ventures that will contribute to rapid economic growth in the long run. To achieve this laudable goal, there is need to develop and empower the relevant institutions. According to Prasad and Rajan (2008) "a successful implementation of financial policy depends on the level of institutional and economic development before the policy is implemented". Ultimately, there is need to adopt value re-orientation approach by the private sector towards banks' borrowing and target investment in productive activities of the economy in order to elicit economic growth (Orji, 2012).
4. As shown by our results, the liberalisation of interest rates is needed for generating higher savings and investment in Nigeria. As it were, savings and investment can be facilitated by maintaining higher real interest rates (Agu et al, 2014). Furthermore, monetary authorities and policy makers should allow the market to determine the interest rates, but relevant policies must be put in place to guard the market determined interest rates by setting objective margins for it. Again, sound policies should be evolved to improve the efficiency of financial intermediaries while putting inflationary pressures under control. This will ensure that lending and deposit rates put under desirable levels. Depositors can

be motivated to deposit more by increasing the deposit rates while investors can be encouraged to use financial intermediaries by lowering the lending rates. This is envisaged to improve the effect of financial sector development on economic growth through real interest rate channel.

5. The government should enhance human capital development by developing the education sector. Having seen from our empirical analysis that the quality of Human labour and capital contributes to growth, policy makers should evolve sound education policies that will help in enhancing the capacity of our teeming youths to contribute positively to the growth process of the nation. Quality education with sufficient funding should be emphasized at all levels of government. 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 educated sound minds. In this regard, we strongly advocate a sustainable progressive increase in budgetary allocation to the education sector to 26% in Nigeria by the year 2020 and beyond.
6. Also, policy makers and monetary authorities should ensure that capital markets in Nigeria are strategically developed and repositioned such that they are incorporated and integrated into the financial system and the economy as a whole. The results indicate that the level of market capitalization in Nigeria is positively related to growth. Thus, there is need to continue the drive towards maximising the economic growth potentials of the Nigerian Stock Markets by adequately ensuring that they keep providing funds to investors for long term investment, business and development projects. As noted by Adjasi and Biekpe (2006), the efficiency and productivity effects of stock market on economic growth are strong and positive when stock markets are liquid and active. The recent political impasse between the Securities and Exchange Commission (SEC) and the National Assembly in Nigeria whereby the SEC is being starved of budgetary funds for their statutory operations should be highly discouraged.
7. The country's institutional quality should be comprehensively reviewed and upgraded. Strong emphasis should be made on deepening the country's democracy, reforming the governance and electoral systems and reorganizing the socio/political structures in the country. Respect for the rule of law should be given priority by the leaders and the led. All avenues through which corruption is encouraged in the system should be discontinued and if anybody is found guilty of any corrupt practice, the person should be made to face the full wrath of the law. This is because according to our finding, poor governance, which is exemplified by corruption and lack of respect for the rule of law are detrimental to growth. However, if these anomalies are corrected, improved institutional quality will impact positively on growth in the long run. To ensure compliance and achieve maximum result, the judiciary and various anti-corruption agencies should be properly funded and given full independence to function properly.

This will enable them to deal with cases of corruption and other governance issues decisively no matter whose ox is gored.

## **5.2. Conclusion**

This paper focuses on the impact of financial openness on economic growth in Nigeria. It uses two measures of financial openness: de jure (Chin-Ito Index) based on Chinn and Ito (2012) and de facto capital flows variables which are the sum of FDI, portfolio flows and other investments following Aizenman (2004, 2008) and Aizenman and Noy (2009), for empirical analysis.

For the regression analysis, we use bank and stock market data, international capital flow variables and institutional variables, among others. These include Real GDP per capita, Credit to the private sector, Real Interest Rate, Human Labour, Market Capitalization, Real Exchange Rate, and Institutional Quality Index. The study applies the Autoregressive Distributed Lag Model based on unrestricted error correction model (ARDL-UECM) to address its objective.

The results show positive impact of financial openness on economic growth in Nigeria both in the short run and in the long run. Specifically we find that 1% increase in de facto financial openness leads to an increase of 0.02% in economic growth in the short run and 0.26% in economic growth in the long run. The results equally show that 1% increase in de jure financial openness leads to an increase of 0.02% in economic growth in the short run and 0.26% in economic growth in the long run. The results also reveal that credit to the private sector is negatively associated with growth, indicating that there are problems with credit allocation and utilization in the country which could be occasioned by weak regulation/supervision and non-adherence to prudential guidelines in the financial system. We also find that real interest rate has a positive relationship with economic growth. Although this is not very significant but the results support the McKinnon-Shaw hypothesis, i.e. in the long run interest rate liberalisation will ultimately lead to rapid economic growth. Human Labour (HML), is also statistically significant and positively related to Economic growth in Nigeria. On the stock market side, the results show that market capitalization impacts positively and significantly on economic growth. Our institutional quality variable which represents governance and rule of law also shows some interesting results. In the short run it has a negative relationship with economic growth but in the long run we see a positive relationship between the two variables. This result attests to the fact that the present style of governance among the leaders has serious negative impact on the growth of the Nigerian Economy. This is exemplified by the fact that the principle of rule of law is not respected, corruption has been enthroned in several leadership quarters, and there is no internal democracy even among the political parties. When the quality of governance and institution is weak, it simply translates to corruption, embezzlement of state funds meant for infrastructural development, and several other anti -socio/economic outcomes.

### Note

1. For more detailed discussion on the construction of the Chinn-Ito Index see Chinn and Ito (2012). We justify the use of this index owing to its wide acceptability and availability.

### References

- Agu, C.C, Orji, A. And Eigbiremolen G. (2014), "Financial Liberalization, Interest Rate Structure and Savings Mobilization: The Nigerian Experience" *International Journal of Current Research* 6 (1), January, 2014.
- Agu, C.C. (1988), "Interest Rate Policy in Nigeria: An Attendant Distortion" *Savings and Investment Journal*, 12 (1).
- Aizenman, J. and Noy, I. (2009), "Endogenous Financial and Trade Openness". *Review of Development Economics*, 13: 175-189.
- Aizenman, J. and Noy, I. (2004), "Endogenous Financial Openness: Efficiency and Political Economy Considerations", *NBER Working Paper No. W10144*.
- Aizenman, J., (2008), "On the hidden links between financial and trade opening," *Journal of International Money and Finance, Elsevier*, 27(3): 372-386.
- Alfaro, L., Chanda, A., Kalemli-Ozcan, A., and Sayek, S. (2004), "FDI and Economic Growth: the Role of Local Financial Markets," *Journal of International Economics* 64: 89-112.
- Banerjee A. (1993), "Co-integration, Error Correction, and the Econometric Analysis of Non-Stationary Data". *Oxford, Oxford University Press*.
- Bardsen, G. (1989), Estimation of Long-Run Coefficients in Error Correction Models, *Oxford Bulletin of Economics and Statistics*, 51: 345-350.
- Baxter, M and Jermann, U.J (1997), "The International Diversification Puzzle is worsethanyouthink." *The American Economic Review*, 87(1): 170-180.
- Bekaert G., Harvey, C.R. and Lundblad, C. (2006), "Growth Volatility and financial liberalization," *Journal of International Money and Finance*, 25: 370-403.
- Bekaert G., Harvey, C.R. and Lundblad, C. (2005), "Does Financial Liberalization spur Growth", *Journal of Financial Economics* 77(1):3-55.
- Bhagwati, J. (1998), "The Capital Myth: The difference between Trade in Widgets and Trade in Dollars" *Foreign Affairs*, (77): 7-12.
- Caprio, G. and Klingebiel, F (1995), "Bank Insolvencies: Cross Country Experience", *World Bank Working Papers No. 1620*.
- Central Bank of Nigeria (2012) Statistical Bulletin.
- Central Bank of Nigeria (2010) Statistical Bulletin.
- Central Bank of Nigeria (2005) Statistical Bulletin.
- Central Bank of Nigeria (2004) Statistical Bulletin.
- Chanda, A. (2005), "The Influence of Capital Controls on Long Run Growth: Where and How Much?" *Journal of Development*, 77 (2): 441-466.
- Chanda, A. (2001), "The Influence of Capital Controls on Long Run Growth: Where and How Much?" *Brown University, Mimeo*.

- Chinn, M.D. and Ito, H. (2012), "Notes on the Chinn-Ito Financial Openness Index 2010 Update" *NBER Working Papers*.
- Chinn, M.D and Ito, H. (2006), "What Matters for Financial Development? Capital Controls, Institutions, and Interactions," *Journal of Development Economics* 81 (1); 163-192.
- Chinn, M.D and H. (2002), Capital account liberalization, institutions and financial development: Cross country evidence." *NBER Working Paper No. 8967*.
- Chowdhury, A., and Mavrotas, G. (2006), FDI and Growth: What Causes What? *World economy*, 29(1), 9-19.
- Coricelli, F., Jazbec, B., Masten, I., (2008), "Sources and Obstacles for Growth in Transition Economies; the Role of Credit", *festschrift in Honour of G.Calvo, MIT Press*.
- Edison, H.J; Levine, R. I and Slok, T. (2002), "International Financial Integration and Economic Growth," *Journal of International Money and Finance*, 21 (60): 749-776.
- Eichengreen, B. and Leblang, D. (2003), "Capital Account Liberalization and Growth: Was Mr. Mahathir right"? *International Journal of Finance and Economics* (8):20 -224.
- Fratzcher, M and Bussiere, M (2004), "Financial Openness and Growth: Short- Run Gain, Long-Run Pain? *European Central Bank Working Paper Series No. 348*.
- French, K.R and Poterba J.M (1991), "Investor Diversification and International Equity Markets" *NBER Working Paper no 3609*.
- Gallego, F and Loayza (2002), "The Golden Period for Growth in Chile- Explanations and Forecast." *Journal of Economics Chilena*, 5:37-67.
- Gupta, R. and Komen, K. (2008), "Time Aggregation and the Contradictions with Causal Relationships: Can Economic Theory Come to the Rescue?" *University of Pretoria Department of Economics Working Paper Series 2008-02 February 2008*.
- Honohan, P. (2000), "How Interest Rates Changed Under Financial Liberalization- a Cross Country Review," *Policy Research Working Series* 2313.
- Lal, D (2012), "Is the Washington Consensus Dead?" *Cato Journal*, 32 (3): 493-512.
- Masron, T.A (2009), "Macroeconomic Synchronization and Foreign Direct Investment Inflow into ASEAN: Evidence from Malaysia's Experiences" *International Business Research*, 20 (3): 11-46.
- Mishkin, F.S (2006), "The Next Great Globalization: How Disadvantaged Nations can Harness their Financial System to Get Rich" *Princeton, NJ: Princeton University Press*.
- Nigeria Bureau of Statistics Report 2012.
- Odhiambo, N. M (2009), "Interest Rate Liberalisation, Financial Deepening and Economic Growth in South Africa": *Ninth Annual IBER & TLC Conference Proceedings 2009*.
- Odhiambo, N.M. (2009b), "Interest Rate Reforms, Financial Deepening And Economic Development In Kenya: An Empirical Investigation", *The Journal of Developing Areas*, 43 (1): 295-313.
- Odhiambo, N.M. (2009c), "Interest rate liberalization and Economic Growth in Zambia: A Dynamic linkage", *African Development Review*, 21(3): 541-557.
- O'Donnell, B. (2001), "Financial Openness and Economic Performance", (unpublished cross-country research work, Dublin, Ireland: Trinity College).

- Omoke (2010), "The Causal Relationship among Financial Development, Trade Openness and Economic Growth in Nigeria". *International Journal of Economics and Finance*, 2(2): 1-15.
- Orji, A, Eighbiremolen, G and Ogbuabor, J.E. (2014), "Financial Liberalization and Private Investment: Further Evidence from Nigerian Data", *Review of Economics & Finance* 4 (2): 77-86.
- Orji, A., Onyia A.M and Ani, E.G (2013), "Calming the Tide: Private Investment and Macroeconomic Uncertainty in Nigeria" *Asian Journal of Empirical Research*, 2013, 3(5):633-653.
- Orji, A. (2012), "Bank Savings and Bank Credits in Nigeria: Determinants and Impact on Economic Growth". *International Journal of Economics and Financial Issues*, 2 (3): 357-372.
- Owusu, E.I (2012), "Financial Liberalization and Economic Growth in ECOWAS Countries": *An Unpublished PHD Research Work*.
- Pagano, M. (1993), "Financial Market and Growth: An Overview", *European Economic Review*, 37 (1993):613 – 622.
- Pesaran, M.H, Shin, Y and Smith, R.J (2001), "Bounds Testing Approaches to the Analysis of Level Relationships", *Journal of Applied Econometrics* 16 (3): 289-326.
- Pesaran, M.H and Pesaran, B. (1997), *Working with Microfit 4.0: Interactive Econometric Analysis*. Oxford, Oxford University Press.
- Pesaran, M.H, Shin, Y and Smith, R.J (1996), "Testing the Existence of Long Run Relationship" *DAE Working Paper Series No.9622, Department of Economics, University of Cambridge*.
- Pesaran, M.H and Shin, Y (1995), "Autoregressive Distributed Lag Modelling Approach to Co-integration Analysis". *DAE Working Paper Series No.9514, Department of Economics, University of Cambridge*.
- Poon, W.C (2010), "A Monetary Policy Rule: The Augmented Monetary Conditions Index for Philippines Using UECM and Bounds Tests", *Discussion Paper 04/10, Monash University, Department of Economics*.
- Prasad, E., Rajan, R. and Subramanian, A. (2007), "Foreign Capital and Economic Growth" *Brooking Papers on Economic Activity*, 2007 (1): 153-209.
- Prasad, E., Rogoff, K., Wei, S.J and Kose, M.A. (2003), "The Effects of Financial Globalization on Developing Countries: Some Empirical Evidence. *IMF Occasional Paper No.220. Washington, D.C.*
- Quinn, D.P and Toyoda, A.M (2007), "Ideology and Voter Sentiment as Determinants of Financial Globalization." *American Journal of Political Science* 51: 344-363.
- Quinn, D. (1997), "The Correlates of Change in International Financial Regulation", *American Political Science Review* 91(3): 531-551.
- Quinn, D. and Inlan, C. (1997), "The Origins of Financial Openness: A Study of Current and Capital Account Liberalization", *American Journal of Political Science* 41(3): 771-813.
- Raddatz, C., (2007), "Liquidity needs and vulnerability to Financial Underdevelopment", *Journal of Financial Economics* 80 (3): 677-722
- Rodrick D. (1998), "Who Needs Capital Account Convertibility?" in Stanley Fisher, et al., *Should the IMF Pursue Capital Account Convertibility? Essays in International Finance*, No 207, *International Finance Section, Department of Economics, Princeton University, Princeton N.J.*



- Serven, L. and Schmidt-Hebbel, K. (2002), "Financial Liberalization, Saving and Growth" Paper Presented at the Banco de Mexico Conference on Macroeconomic Stability, Financial and Economic Development", Mexico, DF, Nov. 12-13.
- Shaw, E.S, (1973), "Financial Deepening in Economic Growth" New York: Oxford University Press.
- Shrestha, M.B and Chowdury, K (2007), "Testing Financial Liberalization Hypothesis with ARDL modelling approach", *Applied Financial Economics* 17(18): 1529-1540.
- Solow, R. M (1956), "A Contribution to the Theory of Economic Growth" *Quarterly Journal of Economics* 70 (1):65-94.
- Stiglitz, J.E (2002), *Globalization's Discontents*. New York: W.W Norton and Company.
- Stiglitz, J.E (1998), "Towards a New International Economic Architecture: Principles and Policies." *Presented at the European Investment Bank, Fiesole Italy, October, 15th*.
- Tang, T. C. (2003), "Japanese aggregate import demand function: Reassessment from the 'bound' testing approach. *Japan and the World Economy*. 15 (4): 419-436.
- Tesar, L.L and Werner, I. M (1995), "Home Bias and High Turnover" *Journal of International Money and Finance*. 14 (4): 467-492.
- Uchendu, O.A. (1993), "Interest Rate Policy in Savings and Investment in Nigeria" *CBN Economic and Financial Review* 31:13-25.
- Williamson, J. (1989), "What Washington Means by Policy Reform" In J.Williamson (ed.) *Latin American Re-adjustment: How Much Has Happened?* Washington: Institute for International Economics.
- World Bank Development Indicators 2012.