Do the dynamics of financial development spur economic growth in Nigeria's contemporal growth struggle? A fact beyond the figures

Abdulkadir Abdulrashid Rafindadi & Zarinah Yusof

Quality & Quantity
International Journal of Methodology

ISSN 0033-5177
Volume 49
Number 1

Qual Quant (2015) 49:365-384
DOI 10.1007/s11135-014-9991-0

Springer

Qual Quant (2015) 49:365–384
DOI 10.1007/s11135-014-9991-0

Do the dynamics of financial development spur economic growth in Nigeria's contemporal growth struggle? A fact beyond the figures

Abdulkadir Abdulrashid Rafindadi · Zarinah Yusof

Published online: 28 January 2014

Abstract This paper investigates whether long-run economic growth can be fostered by the impact of financial development in Nigeria, and what could be the empirical explanations for the factors attributable to the continued backwardness of the Nigerian economy in the current millennium? Is the relationship between financial development and economic growth monotonic? To ensure this, we measure the short run and long run Impact of Financial Development on Economic Growth from 1980 to 2011. The "U" and the ARDL bounds testing approach to cointegration were applied. The findings of the study established that financial development and population are the only variables that have contributory impacts in fostering economic growth in both the long-run and short-run in Nigeria. While, M3, bank asset, fixed capital formation, trade and private sectors have insignificant contribution to GDP and are the impediments to Nigeria's growth dilemma. In another dimension the research established that, the relationship between FD–GDP is monotonic suggesting that too much finance does not prevail in the Nigerian economy. By policy implication the country will be facing prolonged macroeconomic volatility due to the absence of strong exogenous risk cushioning effects, chaotic and unfavourable investment climate, unemployment and persistent exchange rate instability. Eventually these factors could lead to output failure, deterioration in reserve holding that could translate in to currency crisis and an eventual financial crisis. We recommend the pursuance of synergistic monetary policy model that will not only ensure a sustainable and improved value of the local currency but should also create its foreign demand among others.

Keywords *U* test · ARDL bound test · Economic shock · Economic growth

A. A. Rafindadi (✉)· Z. Yusof
Department of Economics, Faculty of Economics and Administration,
University of Malaya, Kuala Lumpur, Malaysia
e-mail: aarafindadi@yahoo.com

1 Introduction

The competitive strategies of any country towards attaining a viable and realistic economic growth, absolutely requires financial strength, and sufficient quantities of capital assets. This was the establishment of multiplicities of economic growth literature centuries ago. A viable, efficient and effective financial system enhance a realistic economic growth or otherwise the whole rationale will be blurred and could lead to spillage of serial economic adversities that will culminates in to degrees of inefficiencies thereby, impeding already existing plans despite huge commitment. Stiglitz (1998) argued that the financial sector is the crux, the heart and life wire, which fuels economic growth to the expected echelon. He continued to insist that less developed financial system spills adverse effects to the entire of a nation's economic system and makes the economy crisis prone. The author concluded with the assertion that, the financial development of any nation is the brain and master plan of its economic success. The primary role of any financial system is for it to mobilise scarce financial resource from saving avenues to future investment avenues. The efficient and effective implementation of this role translates into a significant contribution towards facilitating economic growth.

It is an undeniable fact that both technological and financial innovations have a direct link on economic growth since substantial technological innovations require large investments that are financed by banks, finance and insurance companies. Despite this sound argument, it is nostalgic to recall that the financial system in Nigeria was heavily underdeveloped and highly regulated during the 1970th and 1980th. For instance, interest rates and imposed credit ceilings were common, similarly, bank ownership and management were seriously manipulated by the government this is with a view to making it easy for the government to secure the financial resources at a reduced rate and control the operational and managerial capabilities of the banking institutions. As a result of this, it was very difficult for the financial institutions to mobilise, transform, and efficiently discharge their intermediationary role for the attraction of sufficient deposit that will assist in the private sector entrepreneurial innovation and other capital investment prospects. McKinnon (1973) and Shaw (1973) argued that the result of undeveloped financial system in any country ultimately stifles economic growth. They termed this state of affair as "financial repression" and strongly advocated for the liberalisation of the financial sector so as to make it a catalyst in the growth process of an economic system.

With the support of international institutions like the World Bank and the International Monetary Fund, in 1986 Nigeria started liberalising the financial sector of the economy through privatization and commercialisation with a view to making their financial sector more efficient. This has been going on and on, with the most recent and exciting one in 2010. In that period, the banking institution received a significant boost as a result of the massive restructuring it undergone. In contrast to this, Hye and Wizarat (2013) established that, full financial liberalisation particularly from a developing economy will adversely affect the growth prospects of a country by making the economy more vulnerable to shocks. The authors further urged that countries that pursue full financial liberalisation policies should consistently monitor their financial systems to check its menaces and institute policy actions that will enable the palatability of the liberalisation prospects to go in line with the economic growth and stability of the country. It is in line with this that this paper owes its terrain to investigate the current position of the Nigerian economic growth dilemma and to measure whether long-run economic growth as a result of the recent banking and financial sector restructuring in Nigeria has yielded any meaningful impact on the economic growth prospects of the country? If so, what are the possible explanations for the attributable impacts of financial development on economic growth to the country? Depending on the later finding, the study

will again proceed to investigate empirically whether the relationship between FD and Growth in those periods are monotonic or not?

Following the introductions in Sect. 1, Sect. 2 of the paper will provide an overview of theoretical and empirical review of the literature. Section 3 will be on the conceptual framework of the study and Sect. 4 will be a section that will discuss the data, methodology and model specification. Section 5 will be the results and discussions, and in Sect. 6 the paper will conclude and make some recommendations to policy implications.

2 An over view of theoretical and empirical review

Multiplicities of arguments ensued decades ago on the burgeoning literature regarding the causal link between financial development and economic growth. Pioneering researchers like Bagehot (1873) and Schumpeter (1912) emphasized that the financial sector is the strongest pillar for motivating economic growth on condition that it is free from vices that could be fraught to its malfunctioning. These pioneering authors emphatically asserted that an effective and efficient financial system should have the voluntary wherewithal of mobilizing savings, allocating resource, pooling risks, induce liquidity, and reducing transaction costs for them to function effectively and attain the required target. In another development, Shahbaz et al. (2013) argued that an increase in domestic savings cause the fall in poverty. The authors further established that the causal link between financial development and economic growth starts from saving and savings is an ardent prelude that aid in depleting the level of poverty in an economy.

Similar to the assertions put forward by pioneering researchers, modern researchers like Goldsmith (1969), Hicks (1969), McKinnon (1973), King and Levine (1993), Khan and Senhadji (2000), Pagano and Volpin (2001), Christopoulos and Tsionas (2004), Shan (2005), Khan et al. (2005), Jalil et al. (2008), Shahbaz et al. (2010a), and Shahbaz (2009a) conclusively pointed out that sufficient empirical evidence has supported that in the long run, an efficient and well performing banking/financial system will be an embodiment of capital accumulation, which will in turn promotes economic efficiency and support sustainable economic growth. Following to these arguments, four leading hypotheses that constitute the cardinal linking point between financial development and economic growth were developed, for instance the supply-leading hypothesis commonly known as the "finance-led growth hypothesis" and the demand-following hypothesis or the "growth-lead finance hypothesis" were among the early hypothetical development on the literature linking financial development and economic growth, then followed by the feedback or 'bidirectional causality hypothesis". The fourth and the final was the independent hypothesis (see, for example, Al-Yousif 2002; Majid 2007).

In the demand leading hypothesis as pointed out by Patrick (1966) the author argue that finance can lead to economic growth through what he termed as the "supply-leading" hypothesis; and equally that economic growth can also stimulate financial development which he also, termed as the "demand following" hypothesis. The outcome to the wisdom behind these two hypotheses has continued to produce myriads of inconclusive research findings particularly on the direction of causality between financial development and economic growth. For instance, the study by King and Levine (1993) indicates that financial development does have a positive impact on economic growth; however, certain conditions must exist to enable the efficient working and capacitation of the system of financial development to the fulcrum of unleashing the potentials of economic growth in a country. In his assertion, Levine (2004, p. 6) pointed out that:

> Financial development involves improvements in the (i) production of ex ante information about possible investments, (ii) monitoring of investments and implementation of corporate governance, (iii) trading, diversification, and management of risk, (iv) mobilization and pooling of savings, and (v) exchange of goods and services.

The author insist that the factors (i)–(v) impact on the decisions of savings, investment and economic growth particularly in developing countries and could also serves as a good "predictor of long-run growth over the next 10 to 30 years" (p. 719). In line with this argument, comes the third hypothesis commonly known as the "feedback hypothesis" which concentrated more on the causal relationship between financial development and the buoyant level of economic activities. The assertion of the hypothesis gave a convincing argument that a well developed financial system has the capabilities, strength and wherewithal of spurring as well as promoting significant economic expansion. The hypothesis continued to address the question of how could this be attained, Schumpeter (1912) pointed out that this can occur through technological changes, product and services innovation. The trio factors will in turn, create high demand on the financial arrangements and services. Levine (1997) expatiated on the assertion put forward by Schumpeter, by pointing out that as the banking institutions effectively respond to the wide change in demand, and then these changes will in turn stimulate a high economic performance. Luintel and Khan (1999) were in support of this hypothesis that both financial development and economic growth are positively interdependent, and their relationship could lead to feedback causality.

In another perspective which further compound on the reasoning of financial development being a strong factor that piques economic growth is the McKinnon–Shaw school of thought which proposed the hypotheses that in developing continents if government pursued a policy of quantitative restrictions on the banking system (such as interest rate ceiling, high reserve requirement and direct credit programs) it is inevitable that this action will constrict monetary dilation, and this will in turn dampen the magnitude of savings, productivity and investment which will in both the long and short run form formidable elements that will impede on the planning process towards attaining realistic economic growth target. Equally in support of this hypothesis is the endogenous growth model which maintained a concrete point of view that financial development has a positive effect on economic growth (Greenwood and Jovanovic 1990).

In contrast to all the views pointed above, Robinson (1952) argued that finance does not have the potency to exert a causal impact on growth rather; financial development follows economic growth due largely from the consistent rise in the demand for financial services. The author continued to point out that typically, financial institutions are a mere reflection of the growth of the economic activity, as a result of this market operators will have a demand for financial services to justify the significant rise in entrepreneurial activities they are undertaking and nothing more but that. These arguments were in line with the assertions of the fourth hypothesis. The "independent hypothesis" as it is commonly known. The Independent hypotheses in its version of arguments underscored the fact that financial development and economic growth are not causally related. According to its postulator Lucas (1988 Nobel Laureate winner in economics) argued that "economists badly overstress the role of financial factors in economic growth". In support of this argument was Stern (1989) who did not consider the role of finance in the economic growth process in his investigation of the factors leading to economic growth. Similar instances also occurred in the case of Meier and Seers (1984) and more recently, Ram (1999, p. 172) where the author concluded that "…the predominant correlation between financial development and economic growth is negligible or weakly negative". He continued to point out that, judging from the way economists across

the Atlantic are treating the topic, it is imperative at this time to point out unequivocally that neither theoretical nor empirical consensus has yet been achieved.

Similar in line to this opinion are Rousseau and Wachtel (2005, p. 2) where they aptly summarized: "while American authors (e.g., Levine and ourselves) often exhibit unbounded enthusiasm about the strength of the relationship, Europeans (Arestis, Demetriades and Temple, among others) are much more cautious and give more emphasis to the variability of the effects and the lack of robustness in some studies". Empirical support for this line of thought can also be found in some recent studies of Demetriades and Hussein (1996); Ireland (1994) and Arestis and Demetriades (1997) the authors unanimously pointed out that the pattern of causality between financial development and economic growth varies with respect to individual continent due largely from the inherent variations of economic structures established by each continent and these are driven by the cogency or otherwise of key and sounding financial policies which may otherwise, not be the same among countries as in the case of the natural resources incongruence among nations.

Pursuant to the claim put forward by Arestis and Demetriades (1997) the study of the relationship between financial development and economic growth using individual country arises due to the weakness inherent in the study of cross sectional data research specifically with the ravaging nature of the financial crisis. Researchers continued to insist that a cross-sectional method of estimating financial development and economic growth are based on averages of sample countries which hid some key potential of the respective variables. Against this backdrop, study in time series data became indispensable in order to curtail the repercussion inherent in cross sectional data studies, and provide greater advantage that will easily reflect and capture the prevailing economic conditions of a nation (Bell and Rousseau 2001; Arestis and Demetriades 1997). Moreover, Chandavarkar (1992, p. 134) also argues that the relationship between finance and growth "merits systematic testing on a country wide basis over sufficiently long periods". Notwithstanding these facts, arguments still exist on the direction of causality in the study of financial development and economic growth using time series data.

From the foregoing evidence, this study will like to contribute to the extant literature of financial development and economic growth by taking note of the earlier shortcomings and making a contribution in the following ways:

1. By determining the monotonic and or non monotonic relationship between financial development and economic growth. This is done in the case of Nigeria using the latest methodology of Sasabuchi–Lind–Mehlum (SLM) test. The test will enable us to explore whether the marginal impact of FD is positive at a certain point and after the point where FD no longer contributes to boosting economic growth or may have a negative outcome as a result of shocks.
2. Similar to the first point, this study applies new data set with a longer period of observation (1980–2011) and also conducted immediately after the 2007/2009 financial crisis which led to the recent and massive radical banking reform and transformation in Nigeria. This will enable us to see the impacts of the change if it could affect the direction of the theoretical and empirical findings put forward by renown authorities.
3. This study applies the long-run structural modeling of Pesaran and Shin (2002) which uses the ARDL bound testing to cointegration; this allows us to use modern economic theories to investigate the long-run relationship between financial development and other determinants of growth. It will equally help to correct for Johansen (1988, 1992) and other conventional cointegration tests which are theoretical in nature; particularly as they

impose restrictions arbitrarily based on the scale of data rather than the use of feasible econometric tools and theory.

4. Moreover, this study follows the Ang and McKibbin (2007) in generating a single indicator of financial development through applying principal component analysis (PCA). This is expected to yield more robust findings in contrast to the old fashioned VAR analysis.

3 Conceptual framework

This study relies heavily on the Solow growth model and we try to link how the concerned variables of this study constitute the main determinant of spurring GDP growth. The Solow (1956) growth model, starts by showing how Y $= F(K, AL)$. Where $hboxY$ = GDP, K = capital (financial development and fixed capital formation are regarded the proxy of capital) and L = labor (replaced by population). Following Romer (2006), it is assumed that labor of African Countries is referred to as effective labour (AL) since due to the trade liberalisation the modern technologies become readily available. Note that, initial level of capital, labor and knowledge are taken as given. Romer (2006) further assumes that labor and knowledge grow at constant rates:

$$\dot{L}(t) = nL(t), \quad \text{and} \quad \dot{A}(t) = \dot{g}A(t)$$

$$\text{Where } \dot{L}(t) = \frac{dL(t)}{d(t)} \quad \text{and} \quad \dot{A}(t) = \frac{dA(t)}{d(t)}$$

That means labor and technology grow at n and g rate respectively the author continued to assert that output is divided between consumption and investment. The fraction of output devoted to investment, s, is exogenous and constant. One unit of output devoted to investment yields one unit of new capital. In addition, existing capital depreciates at the rate δ. Thus $\dot{K}(t) = sY(t) - \delta K(t)$ With this we can be able to derived the output from per unit of labour by dividing AL

$$\frac{Y}{AL} = F\left(\frac{K}{AL}, \frac{AL}{AL}\right) = F\left(\frac{K}{AL}, 1\right)$$

Here $\frac{Y}{AL}$ = Output per unit of effective labor, $\frac{K}{AL}$ = capital per unit of effective labor

$$\text{Define } k = \frac{K}{AL}, \quad y = \frac{Y}{AL}, \quad \text{and} \quad f(k) = F(k, 1).$$

The whole equation can be rewritten as $y = f(k)$, it means that output per unit of effective labor is a function of capital per unit of effective labor. This function surely demonstrates that when a lobar consume zero amount of capital then total production will be zero [f(0) $= 0$]. Since $F(K, AL)$ equals $ALf\left(\frac{K}{AL}\right)$, it follows that the marginal product of capital, $\frac{\partial F(K,AL)}{\partial K}$ equals $ALf'\left(\frac{K}{AL}\right)\left(\frac{1}{AL}\right)$, which is just $f'(k)$. Thus, the model assumes that $f'(k) > 0$ and $f''(k) < 0$ which refers that marginal product of capital is positive but that it declines as capital labor ratio passes a certain point. In contrast to the marginal product of capital, the labor productivity rises with a rise of K/L ratio. In the case of LDCs, the labor consumes less capital hence the marginal product of capital is higher than labor. Moreover, the problem aggravates as K/AL decrease over time due to the inclusion of more labor, technology and depreciation of exiting capital. From this theoretical analysis, it can be shown by dynamics of k = K/AL as the economy grows over time; hence it will be easy to focus on the capital stock per unit of effective labor, k, than unadjusted capital stock. Through chain rule, it can be explained that:

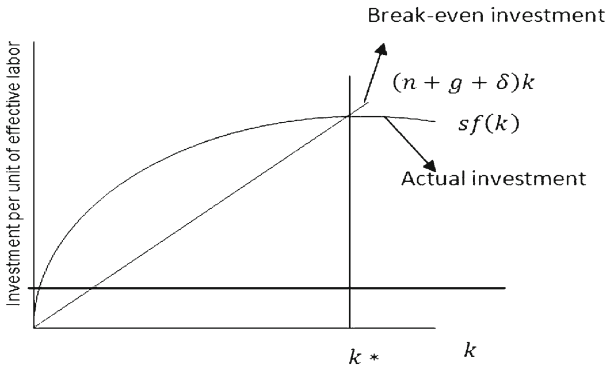

Fig. 1 Actual and break-even investment

$$\dot{k} = \frac{\dot{K}(t)}{A(t)L(t)} - \frac{K(t)}{[A(t)L(t)]^2}\left[A(t)\dot{L}(t) + L(t)\dot{A}(t)\right]$$

$$= \frac{\dot{K}(t)}{A(t)L(t)} - \frac{K(t)}{A(t)L(t)}\frac{\dot{L}(t)}{L(t)} - \frac{K(t)}{A(t)L(t)}\frac{\dot{A}(t)}{A(t)}$$

$$\dot{k}(t) = \frac{sY(t) - \delta K(t)}{A(t)L(t)} - k(t)n - k(t)g$$

$$= s\frac{Y(t)}{A(t)\,L(t)} - \delta k(t) - nk(t) - gk(t)$$

Finally, the model will be

$$\dot{k}(t) = sf\,(k(t)) - (n + g + \delta)k(t)$$

Hence for ensuring a steady growth (n + g + δ) amount of capital has to be invested. We do believe that in the LDC's if capital labor ratio happens to be below the point k*, then the ratio will be falling due to depreciation of exiting capital and inclusion of new effective labor. Diagrammatically the above propositions can be explained in Fig. 1.

The vertical axis of the diagram is a representation of total investment per unit of efficient labor that needs to be committed in a country to produce a given steady state of output. The horizontal axis, on the other hand, represents total capital per unit of effective labor (K/AL) employed. At this juncture, it should be noted that sf(k) is the representation of total actual investment that accrues as a result of the unit of labor and capital employed, i.e., f(k), while the fraction of that output that is invested is s. Then, $(n + g + \delta)k$ will yield a break-even point of the investment required. As a result of this, it represents the expected level of investment that must be committed in order to ensure k remains at the steady state. With respect to this analysis and in order to keep K from depreciating, consistent capital replacement must be ensured, particularly in Africa; this is in line with the theory of creative destruction. Similarly, where the quantity of labor is accelerating due to population growth, in this case sufficient investment must further be committed to keeping the capital stock (K) constant. This may not, however, be enough to keep the capital stock per unit of effective labor (k) constant. In another related development, Hye and Wizarat (2013) argued that labor and capital are positively associated with economic growth meaning that economic growth in developing countries can only be attained with significant rise in skilled labour force that are technologically sound and innovatively up to date. In addition to the above, Wurgler (2000) modeled how financial development could help in enhancing the allocative possibilities of investment in a bid to promote economic growth:

$$\delta s_t = f(FD_t) = a_0 + \alpha_1 (FD_t) + \mu_t \ldots\ldots 1$$
$$g_{\vartheta t} = f(FD_t) = \beta_0 + \beta_1 (FD_t) + \eta_t \ldots\ldots 2$$

thus

$$g_y = f(FD_t) = \lambda_0 + \lambda_1 (FD_t) + \varepsilon_t \ldots\ldots 3$$

where g_y is growth in per capita: $\lambda_0 = a_0 + \beta_0$; $\lambda_1 = a_1 + \beta_1$; FD is financial sector development and ε_t is the error term with the usual properties.

4 Methodology, data description and model specification

This study employs annual time series data of the selected macroeconomics indicators of Nigeria from 1980 to 2011. All the series was obtained from the world development indicator (WDI). The variable of interest include Gross Domestic Product per capita (GDP) as dependent variable, Trade openness (TRD), gross fixed capital formation (FCF), total population (POP), and financial development (FD) as independent variable. However, this study has taken the following series as proxies of financial development, (i) the ratio of liquid liabilities to the nominal GDP [M3], (ii) the ratio of credit to the private sector to nominal GDP [PRIVATE] and (iii) the ratio of commercial bank assets divided by commercial bank plus central bank assets [BASSET]. In order to unveil the individual effect of each financial development indicator, this study takes all the individual financial development indicators. Moreover, this study follows the Ang and McKibbin (2007) in generating a single indicator of financial development through applying PCA. It would be justified by mainly two reasons. Firstly, to address the multicollinearity problem as this is very likely being present, due to the high correlation among the financial development series. Secondly, still today the most renowned researchers did not come into a general consensus about the accurate and appropriate measures of financial development. Hence this study takes very relevant proxies of financial deepening to measure the gross impact on growth. The converted single indicator of financial development is denoted by FD.

The traditional approaches used are mainly aimed at exploring the cointegration relation among respective variables, as most research in the field has used Engle and Granger and Johansen. These two approaches have some severe limitations. First, Engle and Granger can only be applied to bivariate tests; as a result, this approach does not consider more than two variables at a time. Second, the Johansen test is only applicable to variables of the same order of integration. Also, Johansen is very sensitive to the selection of the optimal number of lags (Gonzalo 1994). Bearing these criticisms in mind, this study applies the ARDL bounds-test technique of Pesaran et al. (2001). This technique has the following key important characteristics. First, after selecting the optimum lag, a cointegration relationship can be estimated using the OLS technique. Second, it furnishes the long- and short-run relationship coefficients simultaneously. Third, in contrast to the Engle–Granger and Johansen methods, this test provides consistent results even in an existing mix order of I(0) or I(1) or a mutually integrated order of variables. This test procedure will not, however, be applicable if an I(2) series exists in the model. Fourth, notwithstanding the incidence of an endogeneity problem, the ARDL model provides unbiased coefficients of explanatory variables along with valid t statistics. In addition, the ARDL model corrects omitted lag variable bias sufficiently Inder (1993). Finally, this test is remarkably efficient and consistent when dealing with small and finite sample sizes.

4.1 Model specification

Following Ang and McKibbin (2007), Khan et al. (2005), and Fosu and Magnus (2006), the ARDL version of the vector error correction model (VECM) can be specified as:

Model 1: Equation (1a)

$$\begin{aligned}\Delta \ln GDP = {} & \beta_0 + \beta_1 \ln GDP_{t-1} + \beta_2 \ln FCF_{t-1} + \beta_3 POP_{t-1} + \beta_4 TRADE_{t-1} \\ & + \beta_5 \ln FD_{t-1} + \sum_{i}^{p} \gamma_i \Delta \ln GDP_{t-1} \\ & + \sum_{1}^{q} \varphi_1 \Delta \ln FCF_{t-1} + \sum_{m}^{q} \varphi_1 \Delta POP_{t-m} \\ & + \sum_{r}^{q} \psi_1 \Delta TRADE_{t-r} + \sum_{n}^{q} \eta_m \Delta FD_{t-n} + \varepsilon_t \end{aligned} \tag{1a}$$

Model 2: Equation (1b)

$$\begin{aligned}\Delta \ln GDP = {} & \beta_0 + \beta_1 \ln GDP_{t-1} + \beta_2 \ln FCF_{t-1} + \beta_3 \ln POP_{t-1} + \beta_4 \ln M3_{t-1} \\ & + \beta_5 \ln PRIVATE_{t-1} + \beta_6 \ln BASSET_{t-1} \\ & + \sum_{i}^{p} \gamma_i \Delta \ln GDP_{t-1} + \sum_{j}^{q} \delta_j \Delta \ln FCF_{t-j} + \sum_{1}^{q} \varphi_1 \Delta POP_{t-1} \\ & + \sum_{m}^{q} \eta_m \Delta \ln M3_{t-m} + \sum_{n}^{q} \theta_n \Delta \ln PRIVATE_{t-1} \\ & + \sum_{p}^{q} \vartheta_p \Delta \ln BASSET_{t-m} + \varepsilon_t \end{aligned} \tag{1b}$$

4.2 Estimation procedure

We begin the estimation of Eq. (1) using the OLS approach and then proceed to conduct the Wald test or F test for joint significance of the coefficients of lagged variables. This will enable us to examine the existence of a long-run relationship among the variables. The null hypothesis is (H_0): $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$, which means that there is no cointegration among the variables. The alternative hypothesis is (H_a): $\beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0$. Then, the calculated F statistic is evaluated with the critical value (upper and lower bound) given by Pesaran et al. (2001). If the F statistic is above the upper critical value, the null hypothesis of no cointegration is rejected as this indicates that a long-run relationship exists among the variables. Conversely, if the F statistic is smaller than the lower critical value, the null hypothesis cannot be rejected, thus implying that there is no cointegration among the variables. If the F statistic lies between the lower and upper critical values, however, the test is inconclusive. In the second step, after establishing a cointegration relationship among the variables, the long-run coefficient of the ARDL model can be estimated:

$$\ln GDP = \beta_0 + \sum_{j=1}^{q1} \gamma_i \ln GDP_{t-1} + \sum_{j=0}^{q2} \tau_j \ln FCF_{t-j} + \sum_{j=0}^{q3} \varphi_j \ln POP_{t-1} + \sum_{j=0}^{q4} \psi_j \ln TRADE_{t-j} + \sum_{j=0}^{q5} \eta_m \ln FD_{t-1} + \varepsilon_t \quad (2a)$$

$$\ln GDP = \beta_0 + \sum_{i=1}^{p} \gamma_i \ln GDP_{t-1} + \sum_{j=0}^{q1} \psi_j \ln TRADE_{t-j} + \sum_{k=0}^{q2} \delta_j \ln FCF_{t-k} + \sum_{l=0}^{q3} \varphi_1 \ln POP_{t-1} + \sum_{m=0}^{q4} \eta_m \ln M3_{t-m} + \sum_{n=0}^{q5} \tau_n \Delta \ln PRIVATE_{t-1} + \sum_{s=0}^{q6} \omega_s \ln BASSET_{t-s} + \varepsilon_t \quad (2b)$$

In this process, we use Schwarz Information Criterion (SIC) for selecting the appropriate lag length of the ARDL model for all the variables under study. Finally, we use the error correction model (ECM) (Eqs. 3a, 3b) to estimate short-run dynamics:

Equation (3a)

$$\Delta \ln GDP = \beta_0 + \sum_{i=1}^{p} \gamma_i \Delta \ln GDP_{t-1} + \sum_{j=0}^{q} \tau_j \Delta \ln FCF_{t-j} + \sum_{l=0}^{q} \varphi_l \Delta \ln POP_{t-l} + \sum_{n=0}^{q} \psi_j \Delta \ln TRADE_{t-J} + \sum_{m=0}^{q} \eta_m \Delta \ln FD_{t-m} + \vartheta emc_{t-1} + \varepsilon_t \quad (3a)$$

Equation (3b)

$$\Delta \ln GDP = \beta_0 + \sum_{i=1}^{q} \gamma_i \Delta \ln GDP_{t-1} + \sum_{j=0}^{q} \tau_j \Delta \ln TRADE_{t-j} + \sum_{k=0}^{q} \delta_k \Delta \ln FCF_{t-k} + \sum_{l=0}^{q} \varphi_l \Delta \ln POP_{t-l} + \sum_{m=0}^{q} \eta_m \Delta \ln M3_{t-m} + \sum_{n=0}^{q} \theta_n \Delta \ln PRIVATE_{t-1} + \sum_{p=0}^{q} \vartheta_s \Delta \ln BASSET_{t-m} + \vartheta emc_{t-1} + \varepsilon_t \quad (3b)$$

4.3 CUSUM and CUSUMSQ (stability test)

We performed two tests of stability on the long-run coefficients together with the short-run dynamics, following the suggestion by Pesaran et al. (2001), to check the stability of short- and long-run parameters of the selected ARDL model by using the cumulative sum

Table 1 DF-GLS unit root test

Variables	DF GLS	
	In level I(0) intercept and trend	First difference I(1) intercept and trend
LGDP	−0.225	−4.043***
LFCF	−1.627	−1.450**
LPOP	−2.449**	−1.132**
TRADE	−1.434	−6.611***
M3	−2.180**	−5.640***
PRIVATE	−0.702	−3.982***
BASSET	0.153	−6.681***

The rejection of the null at *** 1 % (** 5 %) significance level. Results obtained from EViews 7

Table 2 VAR model for lag order selection criteria

Endogenous variables: LGDP LPOP LFCF TRADE PRIVATE M3 BASSET

Lag	LogL	LR	FPE	AIC	SC	HQ
0	87.57060	NA	9.11e−12	−5.556593	−5.226556	−5.453230
1	264.8563	256.7585	1.45e−15	−14.40388	−11.76358	−13.57697
2	327.6374	60.61632	1.10e−15	−15.35431	−10.40375	−13.80385
3	548.3051	106.5292**	9.72e−20**	−27.19346**	−19.93264**	−24.91946**

of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ) tests.

5 Results and discussion

Prior to the testing of cointegration, the study applies Dickey–Fuller GLS test. As can be seen from Table 1, population (LPOP), and M3 are I (0) and stationary at 5 percent significant level respectively whereas LGDP, LFCF, TRADE, PRIVATE and BASSET are I (1) and are stationary after the first difference. Hence, the result of unit root demonstrates that ARDL model is exceedingly appropriate in analysing the data rather than the Johansen cointegration model. All variables are in logs except TRD, M3, PRIVATE and BASSET due to negative numbers in the series The DF-GLS statistic is compared to the critical values from the simulated MacKinnon table in ERS (1996, Table 1, p. 825)

5.1 Cointegration test

Before estimating the cointegration approach the study conducts VAR Model for selecting the optimum lag order. Based on Schwarz–Bayesian Criterion (SC), this model enabled us to know that lag 3 is the optimum lag for the models (Table 2).

After selecting the optimum lag order, we proceed to estimated Eqs. 1a and 1b using the OLS approach. We then proceed to conducted Wald test for measuring the join effect of all regressors. The calculated F statistics for the cointegration test is displayed in Table 3, and 4 were both of the tables confirm the existence of cointegration relations in both of the model. Through normalization process, the study also found that there is cointegration at 5 %

Table 3 Results from bounds test: for model: I GDP = F (POP, TRD, FCF, FD)

Dep. Var.	SIC Lag	*F* statistic	Probability	Outcome
F_{GDP} (GDPC|POP, TRD, FCF, FD)	3	3.359**	0.023	Cointegration
F_{POP} (POP|GDPC, TRD, FCF, FD)	3	0.328	0.890	No cointegration
F_{TRD} (TRD|GDPC, POP, FCF, FD)	3	1.4345	0.255	No cointegration
F_{FCF} (FCF|GDPC, POP, TRD, FD)	3	4.2413***	0.009	Cointegration
F_{FD} (FD|GDPC, POP, TRD, FCF)	3	2.795	0.045	Inconclusive

Asymptotic critical value bounds are obtained from Table F in Appendix C, Case II: intercept and no trend for k = 5 (Pesaran and Pesaran 1997, p. 478). Lower bound I(0) = 2.39 and upper bound I(1) = 3.38 at 5 % significance level

Table 4 Results from bounds test for model: II GDP = F (POP, TRD, FCF, M3, PRIVATE, BASSET)

Dep. Var.	SIC Lag	*F* statistic	Probability	Outcome
F_{GDP} (GDP|POP, TRD, FCF, M3, PRIVATE, BASSET)	3	4.189***	0.008	Cointegration
F_{POP} (POP|GDP, TRD, FCF, M3, PRIVATE, BASSET)	3	0.481	0.834	No cointegration
F_{TRD} (TRD|GDP, POP, FCF, M3, PRIVATE, BASSET)	3	1.822	0.151	No cointegration
F_{FCF} (FCF|GDP, POP, TRD, M3, PRIVATE, BASSET)	3	3.227**	0.025	Cointegration
F_{M3} (M3|GDP, POP, TRD, FCF, PRIVATE, BASSET)	3	2.795	0.045	Inconclusive
F_{PRIV} (PRIVATE|GDP, POP, TRD, FCF, M3, BASSET)	3	1.844	0.844	No cointegration
F_{BASS} (BASSET|GDP, POP, TRD, FCF, M3, PRIVATE)	3	2.159	0.096	Inconclusive

Asymptotic critical value bounds are obtained from Table F in Appendix C, Case II: intercept and no trend for k = 5 (Pesaran and Pesaran 1997, p. 478). Lower bound I(0) = 2.39 and upper bound I(1) = 3.38 at 5 % significance level

when FCF and FD are dependent variable. The same procedure has been applied to analyze model 2. The study found cointegration relationship among GDP with all other explanatory variables this is shown in Table 4.

In the first step of the ARDL analysis, we tested for the presence of long-run relationships through estimating the equation for model I and model II respectively. Then we conducted joint *F* test for measuring significance of the parameters of the lagged level variables when added to the first regression. Table 3 reports the results of the calculated *F* statistics when each variable is considered as a dependent variable (normalized) in the ARDL–OLS regressions. The table reports that when GDP and FCF is treated as dependent variables the calculated values of F statistics shows a higher value (3.359 and 4.2413 respectively) which is greater than the upper bounds critical value of 3.00 at 5 and 1 % respectively level of significance this means that cointegration exist in the model. In contrast, when POP and TRD are normalized, the calculated *F* values fell below the lower bound which endorse that they are not cointegrated. However, in the case of FD when considered as dependent variable, then the calculated value of *F* statistics falls in between upper and lower bound hence the result is inconclusive in that case.

With respect to Table 4, it represents the position for when GDP, FCF are normalized, the calculated F statistics fall beyond the upper bounds (4.189 and 3.227) which mean cointegration exists. In contrast, when POP, TRD, and PRIVATE, are normalized, the joint significant test accept the null of no cointegration. However, in the case of M3 and BASSET,

Table 5 Estimated long run coefficients using the ARDL (1, 0, 0, 0, 0) selected based on Schwarz–Bayesian criterion

Regressor	Coefficient	SE	T ratio [prob]
TRADE	0.0031	0.0017	1.7670 [0.090]
LFCF	0.0696	0.0473	1.4703 [0.155]
LPOP	0.6928	0.1595	4.3415 [0.000]
FD	0.0461	0.0198	2.3293 [0.029]
C	−8.882	2.299	−3.8626 [0.001]

Table 6 Estimated long run coefficients using the ARDL (1, 0, 0, 0, 0, 0, 0) selected based on Schwarz–Bayesian criterion

Regressor	Coefficient	SE	T ratio [prob]
TRADE	0.003	0.001	1.953 [0.063]
LFCF	0.034	0.049	0.694 [0.494]
LPOP	0.601	0.179	3.354 [0.003]
M3	0.458	0.706	0.649 [0.522]
PRIVATE	0.285	0.994	0.287 [0.776]
BASSET	0.327	0.166	1.969 [0.061]
C	−6.6163	3.1885	−2.075 [0.049]

the joint significant tests are inconclusive since the F values fall in between upper and lower bound.

Table 5 shows the long-run impact of each independent variable on GDP growth. It shows that the Nigerian economy has benefited only from the impacts of FD since the coefficient is positive and statistically significant. Surprising, to the finding of this study and in a more contrasting view the study further discovered that trade does not have any significant impact on long-run GDP, this may be attributable to the dominance of petroleum resources as the only major product the country export. On the contrary, the large population growth of Nigeria has a positive influence on the long-run GDP growth. Conversely, fixed capital formation has a strong positive but statistically insignificant association with long-run GDP of the country. This finding can be support by the massive industrial winding up in the country, due largely from incessant infrastructural failure, high costs of doing business and other negative macroeconomic vices.

Unlike Table 5, Table 6 shows that trade openness still does not foster the growth of the Nigeria's GDP in the long run, this finding further supported the result in Table 5. On the contrary, population growth, consistently shows positive and statistically significant impacts to the GDP in both the two models. Another consistent finding of this study is that, credit in the private sector has a negative and insignificant impact on GDP. Similarly and most surprising is that the contributory impacts of the other selected factors of FD such as FCF and M3 only has a positive but insignificant influence on GDP. This persistent finding may be attributable to the harsh macroeconomic conditions of the country; due largely from the effects of the recent financial crisis, banking restructuring which has not yet started to yield positive contributions to the GDP. Finally, the study also discovered that bank assets consistently show positive but statistically insignificant impacts to the Nigeria's GDP.

Table 7 reveals the research finding of the error correction representation. In this table it shows trade openness with a positive but insignificant impact on GDP. Similarly, fixed capital formation also has a positive but statistically insignificant impact on GDP. Apart from this development, POP and FD have a positive and statistically significant contribution to

Table 7 Error correction representation for the selected ARDL model (1)

ecm = LGDPC − .0031318 ∗ TRADE − .069672 ∗ LFCF − .69280 ∗ LPOP − .046161 ∗ FD + 8.882 ∗ C

Regressor	Coefficient	SE	T ratio [prob]
dTRADE	0.001	0.538	1.904 [0.069]
dLFCF	0.022	0.015	1.446 [0.161]
dLPOP	0.226	0.077	2.922 [0.008]
dFD	0.015	0.005	2.534 [0.019]
dC	−2.907	0.923	−3.147 [0.005]
ecm(−1)	−.327	0.099	− 3.300 [0.003]

Table 8 Error correction representation for the selected ARDL model (2)

ecm = LGDPC − .0032 ∗ TRADE − .034 ∗ LFCF − .601 ∗ LPOP − .458 ∗ M3 − .28588 ∗ PRIVATE − .327 ∗ BASSET + 6.6163 ∗ C

Regressor	Coefficient	SE	T ratio [prob]
dTRADE	0.001	0.652	1.862 [0.075]
dLFCF	0.012	0.017	0.728 [0.474]
dLPOP	0.227	0.068	3.317 [0.003]
dM3	0.173	0.261	0.662 [0.514]
dPRIVATE	0.108	0.372	0.290 [0.774]
dBASSET	0.123	0.077	1.591 [0.125]
Dc	−2.502	1.011	−2.473 [0.021]
ecm(−1)	−0.378	0.088	−4.260 [0.000]

the GDP in the case of Nigeria. The error correction coefficient has a negative sign and statistically significant which reveals that, after any economic shock, it adjusts 32 % per year towards equilibrium per year. The study of Rafindadi and Yusof (2013b) in the case of Kenya, the authors discovered that the GDP of continents with evidence of the demand-following hypothesis, has the fastest error correction readjustment possibilities despite some prevailing macroeconomic vices in that country. The question of why and how opens up another area of empirical research.

Table 8 reveals that trade openness still has a positive but insignificant impact on GDP. Similarly, fixed capital formation also has a positive impact on GDP but statistically insignificant. in line with this development, other variables likes M3, PRIVATE and BASSET are positive but statistically insignificant this is persistently the same throughout the preceding tables. In Table 8 it is only POP that has a positive and significant impact on short run GDP. The error correction coefficient has a negative sign and statistically significant which reveals that, after any economic shock, it adjusts 37 % per year towards equilibrium. Unlike the case of Nigeria, Rafindadi and Yusof (2013a) found an insignificant contribution of population with respect to the South African GDP, in addition to this, the ratio of commercial bank assets to central bank assets BASSET was also found to have insignificant impacts upon the South African GDP. This finding suggests that, in a trade-based economy, when the population or labor force and the banking industry cannot significantly contribute to growth, this could lead to a persistent weakening of the economy because of significant reductions in productivity.

5.2 CUSUM and CUSUMQ test

The overall goodness of fit of the estimated models is shown in Tables 9 and 10, and the result shows an R^2 values, of 97 and 96 % for the adjusted and the unadjusted R^2 respectively for both model 1 and 2. In order to ensure the accuracy of this, we employed a number

Table 9 ARDL–VECM model diagnostic tests model I

$R^2 = 0.97$, adjusted $R^2 = 0.96$	
Serial correlation $x^2(1) = 0.13\,[0.73]$	Normality $x^2(2) = 0.618\,[0.73]$
Functional form $x^2(1) = 0.11\,[0.735]$	Heteroscedasticity $x^2(1) = 4.83\,[0.028]$

Table 10 ARDL–VECM model diagnostic tests model II

$R^2 = 0.97$, adjusted $R^2 = 0.96$	
Serial correlation $x^2(1) = 0.381\,[0.537]$	Normality $x^2(2) = 0.807\,[0.668]$
Functional form $x^2(2) = 0.235\,[0.628]$	Heteroscedasticity $x^2(2) = 5.376\,[0.020]$

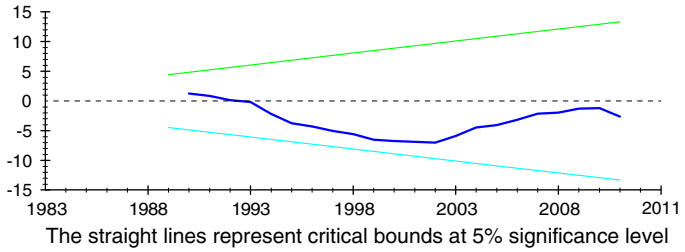

Fig. 2 Plot of cumulative sum of recursive residuals for coefficient stability test for ECM model 1

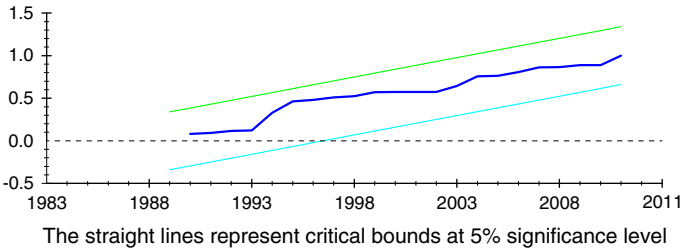

Fig. 3 Plot of cumulative sum of squares of recursive residuals for coefficient stability test for ECM model 1

of diagnostic tests to the ARDL model. The test found no evidence of serial correlation, multicollinearity, and error in functional form but found heteroscedasticity problem in both models (see Tables 9, 10). However, according to Shrestha and Chowdhury (2005) and Fosu and Magnus (2006), it is very natural to detect the conditions of heteroscedasticity in ADRL results since the model used the time series data by mixing the integrated order of I(0) and I(1). Figures 2, 3, 4 and 5 shows the result of the stability test of both the CUSUM and the CUSUMSQ: In those graphs the CUSUM and CUSUMSQ remain within the critical boundaries of the 5 % significance level. These statistics specify that the long run coefficients and all the short–run coefficients in the error correction model are stable and affect economic growth in the in case of Nigeria.

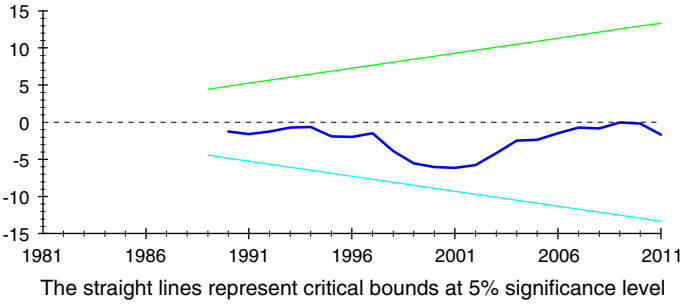

Fig. 4 Plot of cumulative sum of recursive residuals for coefficient stability test for ECM model 2

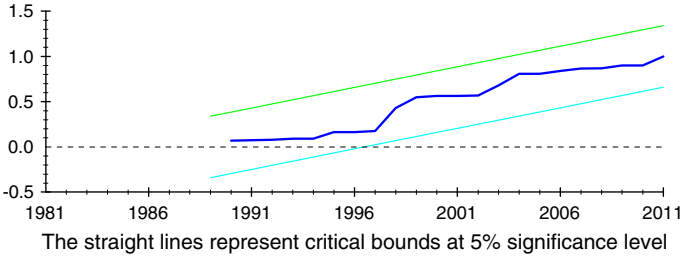

Fig. 5 Plot of cumulative sum of squares of recursive residuals for coefficient stability test for ECM model 2

5.3 Sasabuchi–Lind–Mehlum (SLM) test

From the seminal work of Arcand et al. (2012) the author found a non-monotonic relationship between financial development and economic growth, in view of this, we employ the same line of investigation to the case of Nigeria. The main purpose of this test is to explore whether the marginal impact of FD is positive at a certain point and after the point where FD no longer contributes to boosting economic growth or may have a negative outcome particularly as a result of economic shocks from the recent financial crisis. The conventional procedure is to capture the non-monotonic relation which is executed simply by taking a quadratic form of the concern variable. However, according to Lind and Mehlum (2010) including the quadratic term does not guarantee the existence of non-monotonic association between financial development and economic growth. Such procedure is only confirmed by the necessary condition of existence of inverted U shape relationship but not sufficient condition. Thus in order to make sure of the presence of inverted U shape Lind and Mehlum (2010) developed and modified the Sasabuchi's (1980) likelihood ratio test which is now known as SLM test. To accomplish the test we have to estimate the following model:

$$GDPC_t = aFD + bFD_t^2 + Z_t C + \varepsilon_t,$$

and then it is required to conduct joint hypothesis test: H_0: $(a + b2FD_{\min} \leq 0) \cup (a + b2\mathrm{FD}_{\max} \geq 0)$. Against the alternative hypothesis H_1: $(a + b2FD_{\min} > 0) \cup (a + b2FD_{\max} < 0)$, where $\mathrm{FD}_{\min}$ and $\mathrm{FD}_{\max}$ represents t. Here, $\mathrm{FD}_{\min}$ and $\mathrm{FD}_{\max}$ represent the maximum and minimum value of financial development. If the null hypothesis is rejected, confirms the existence of U shape.

The finding of the U shaped result can be seen in Table 11 where the null hypothesis is accepted, meaning that the relationship between FD and GDP is discovered to have a

Table 11 U-test: the table reports the results of the Sasabuchi–Lind–Mehlum test for inverse U-shaped relationship

Nigeria	
Slope at FD_{min}	−0.0044 (0.099)
Slope at FD_{max}	0.039 (0.77)
SLM test for inverse U shape	0.10
P value	0.461

monotonic relationship in the case of Nigeria. This starling finding contradicts with Arcand et al. (2012) suggesting that too much finance does not prevail in the Nigerian economy this means that the Nigerian economy is not suffering from high inflationary pressure. This fact is attributable to the recent overhaul of Nigeria's banking and financial policies where all the banks in the country were overhauled to contain a very strong financial standing, and tight monetary control to enable the local currency to have a comparable stand with other foreign currency like the dollar. We believe that this prospects work positively good to the Nigerian economy particularly in enhancing the prospects of FD towards the attainment of steady economic growth prospects of the country, this fact will continue to help in galvanizing and mitigating the effects of shocks in the system to a more formidable and stable financial system. This finding is in contrast with the findings of Rafindadi and Yusof (2013a) where the authors found strong monetary dilation in the case of South Africa suggesting that the relationship between financial development and GDP in the South African economy is linear or non-monotonic indicating the prevalence of too much finance in that economy.

6 Conclusion, recommendations, and policy implications

This paper examined the empirical relationship between financial development and economic growth in Nigeria over the period 1980–2011, using Autoregressive Distributed Lag (ARDL) bounds testing approach to cointegration. The study found that among the 3 selected indicators of financial development it is only the variable of FD derived through Principle Component Analysis PCA that has a positive and significant impact in spurring both long run and short run economic growth in Nigeria and then followed by POP. However all other variables like BASSET, M3, FCF, PRIVATE and TRADE all shows an insignificant contribution to the GDP. This is as evidenced in Tables 5, 6, 7, and 8.

Apart from the econometric findings of the preceding tables, we also investigated, the Sasbuchi, Lind–Mehlum model with aim of assessing the monotonic or non monotonic relationship of the respective variables and where FD has no significant contributory impacts to Nigeria's GDP growth. (see Table 11) The result showed the acceptance of the null hypothesis which means that FD and GDP relationship is monotonic and the position where FD no longer have a contributory impacts on Nigerian GDP is inconclusive. This starling finding contradicts with Arcand et al. (2012) suggesting that too much finance does not prevail in Nigerian economy; this means that the Nigerian economy is not suffering from high inflationary pressure, this finding may be attributable to the recent banking and financial system overhaul. Apart from this, the study through the means of graphical representation was also able to show the long run and short run stabilisation of the variables forming the relationship between economic growth and financial development by using the CUSUM and CUSUMSQ stability tests. Unlike Ireland (1994) and Demetriades and Hussein (1996), our findings are consistent with the view that economic growth is an outcome of the financial development and

that financial development in Nigeria spurs economic growth. Based on these findings and considering the insignificant contributory impacts of the remainder of our research variables we can derive some overriding policy guide:

> In this research we were able to discover that M3, BASSET, FCF, TRADE and PRIVATE all have insignificant contribution to the Nigerian GDP. As a result of this development, and going by policy implication, it is most likely that the country may face prolonged macroeconomic volatility due to the absence of strong exogenous risk cushioning effects, chaotic and unfavourable investment climate will lead to high unemployment and persistent exchange rate instability that will open the door for high cost of doing business far more than what the world bank has pointed out. Eventually these could lead to output failure, deterioration in reserve holding which will in turn create another version of currency devaluation apart from the one in existence. As a result, and according to the first second and third theory of currency crisis the country may be plunged in to the direction of a complete failed giant state of Africa and be left with a waxing population without economic senses and economic responsibility. Similar to this, we are of the opinion that any incoming financial crisis, or dwindling oil prices, may lead to the crippling of the Nigerian economy.
>
> A prelude in support of this fact contained in this research paper can be seen from the angle of massive entrepreneurial failure and repatriation to other continents. See for instance the Sun Newspaper of 1 April, 2013 where it contain a report that "Nigerian environment is too harsh for manufacturing" In addition to this, the Nigeria's finance minister open up to tell the world that the Nigerian economy is in "danger". See premium times Newspaper of June 14 2013. See also the Nigerian Vanguard of 13 October 2013 where Governor Adams Oshiomhole was report saying that "The Nigerian economy is in deep financial crisis" In another development Maduka and Onwuka (2013) reported that financial market structure in Nigeria has a negative and significant effect on economic growth this suggests another contributing factor for the existence of low level of economic development in Nigeria's economic system. The authors further argued that the supply of financial assets in the case of Nigeria over the sampled period is far below the level needed to achieve economic growth. This study further compliments the findings of this research.
>
> In reference to this, we recommend supportive and immediate policy action that will revitalise the private sector, provision of credit to intending entrepreneurs and to equally devise all means of putting the huge population of the country in to productive entrepreneurial prospects particularly by the turned around banks. In support to this point, this study has confirmed a significant impact of the population on the long run economic growth of the country (see Tables 5, 6, 7, 8). This finding would be endorsed by the Solow growth model that Nigeria had a capital-labour ratio higher than steady-state point. But despite this, the marginal output from capital is lower when compared to marginal output from labour. In order to ameliorate this problem, we insist on our recommendation for a strong entrepreneurial prospects and a sound internal security that will allow a significant influx of foreign direct investment and to equally reduce the high cost of doing business through (a) the provision of basic infrastructural facilities (b) fight against all corrupt practices that will sway away and derelict business (c) and the implementation of green entreprenology both in practice and in all school curriculum irrespective of the level. Equally relevant in the crusade to save Nigeria is the need for a meaningful, realistic and practicable investment in mechanized agricultural prospect

that will help in economic diversification efficient enough to open doors for a strong, competitive and sustainable export.

In conclusion we support that policy makers should fashion out a synergistic monetary policy model that will not only ensure a sustainable and improved value of the local currency but should also create its foreign demand. This will help in ensuring the quality of domestic and international investment and will at the same time help in avoiding excessive cost of doing business and national reserve drainage Akin to this, is the need for the banks to enlarge their scale of operation to include not only the urban areas but the rural areas with key intents of stimulating rural and urban entrepreneurial prospects. To ensure this, a policy towards efficient and effective banking competition, product diversification, and risk minimization should be part of the strategy. This will also aid in supporting and stimulating the private sector of the economy for a continued productive effort that will synergistically assist in curving out unemployment and raising internal demand through productive work force.

References

Ang, J.B., McKibbin, W.J.: Financial liberalization, financial sector development and growth: evidence from Malaysia. J. Dev. Econ. **84**, 215–233 (2007)

Arcand, J., Berkes, E., Panizza, U.: Too Much Finance? International Monetary Fund, Research Department, Washington, DC (2012)

Arestis, P., Demetriades, H.T.: Financial development and economic growth: assessing the evidence. Econ. J. **107**, 109–121 (1997)

Al-Yousif, Y.K.: Financial development and economic growth: another look at the evidence from developing countries. Rev. Financ. Econ. **11**, 131–150 (2002)

Bagehot, W.: Lombard Street (1962 edn). Richard D. Irwin, Homewood (1873)

Bell, C., Rousseau, P.L.: Post-independence India: a case of finance-led industrialization? J. Dev. Econ. **65**, 153–175 (2001)

Chandavarkar, A.: Of finance and development: neglected and unsettled questions. World Dev. **22**, 133–142 (1992)

Christopoulos, D.K., Efthymios, G.T.: Financial development and economic growth: evidence from panel unit root and cointegration tests. J. Dev. Econ. **73**, 55–74 (2004)

Demetriades, P.O., Hussein, A.K.: Does financial development cause economic growth? Time series evidence from 16 countries. J. Dev. Econ. **51**, 387–411 (1996)

Fosu, O.A.E., Magnus, F.J.: Bounds testing approach to cointegration an examination of foreign direct investment, trade and growth relationships. Am. J. Appl. Sci. **3**, 2079–2085 (2006)

Goldsmith, R.W.: Financial Structure and Development. Yale University Press, New Haven (1969)

Gonzalo, J.: Five alternative methods of estimating long-run equilibrium relationships. J Econometr. **60**, 203–233 (1994)

Greenwood, J., Jovanovic, B.: Financial development, growth, and the distribution of income. J. Polit. Econ. **98**, 1076–1107 (1990)

Hicks, J.: A Theory of Economic History. In: Financial Development and Economic Growth: Time Series Evidence from Pakistan and China, vol. 63. Claredon Press, Oxford (1969)

Hye, Q.M.A., Wizarat, S.: Impact of financial liberalization on economic growth: a case study of Pakistan. Asian Econ. Financ. Rev. **3**(2), 270–282 (2013)

Inder, B.: Estimating longrun relationship in economics: a comparison of different approaches. J Econometr. 57, 53–68 (1993)

Ireland, P.N.: Money and growth: an alternative approach. Am. Econ. Rev. **84**, 47–65 (1994)

Jalil, A., Ma, Y., Naveed, A.: The finance-fluctuation nexus: further evidence from Pakistan and China. Int. Res. J. Financ. Econ. **14**, 212–231 (2008)

Johansen, S.: Statistical analysis of cointegrating vectors. J. Econ. Dyn. Control **12**, 231–254 (1988)

Johansen, S.: Cointegration in partial systems and the efficiency of single-equation analysis. J. Econometr. **52**, 389–402 (1992)

Khan, S.M., Senhadji, A.S.: Financial development and economic growth: an overview. IMF Working Paper 00/209. International Monetary Fund, Washington, DC (2000)

Khan, M.A., Qayyum, A., Saeed, A.S.: Financial development and economic growth: the case of Pakistan. Pakistan Dev. Rev. **44**(2), 819–837 (2005)
King, R.G., Levine, R.: Finance and growth: Schumpeter might be right. Q. J. Econ. **108**, 717–737 (1993)
Levine, R.: Financial development and economic growth: views and agenda. J. Econ. Lit. **35**(2), 688–726 (1997)
Levine, R.: Finance and Growth: Theory and Evidence. NBER Working Paper, No. 10766 (2004)
Lind, J.T., Mehlum, H.: With or without U? The appropriate test for a U-shaped relationship. Oxford Bull. Econ. Stat. **72**(1), 109–118 (2010)
Lucas Jr, R.E.: On the mechanics of economic development. J. Monet. Econ. **22**, 3–42 (1988)
Luintel, K.B., Khan, M.: A quantitative reassessment of the finance growth nexus: evidence from a multivariate VAR. J. Dev. Econ. **60**(2), 381–405 (1999)
Maduka, A.C., Onwuka, K.O.: Financial market structure and economic growth: evidence from Nigeria data. Asian Econ. Financ. Rev. **3**(1), 75–98 (2013)
Majid, M.S.: Does financial development and inflation spur economic growth in Thailand? Chulalongkorn J. Econ. **19**, 161–184 (2007)
McKinnon, R.I.: Money and Capital in Economic Development. The Brookings Institution, Washington, DC (1973)
Meier, G.M., Seers, D.: Pioneers in Development. Oxford University Press, New York (1984)
Pagano, M., Volpin, P.: The political economy of finance. Oxford Rev. Econ. Policy **17**, 502–519 (2001)
Patrick, H.T.: Financial development and economic growth in underdeveloped countries. Econ. Dev. Cult. Change **14**(1), 174–189 (1966)
Pesaran, M.H., Pesaran, B.: Working with Microfit 4.0: Interactive Econometric Analysis. Oxford University Press, Oxford (1997)
Pesaran, M.H., Shin, Y.: Long-run structural modelling. Econometr. Rev. **21**, 49–87 (2002)
Pesaran, M.H., Shin, Y., Smith, R.J.: Bounds testing approaches to the analysis of level relationships. J. Appl. Econometr. **16**, 289–326 (2001)
Rafindadi, A.A., Yusof, Z.: Is financial development a factor to the leading growth profile of the South African economy? Measuring and uncovering the hidden secret. Int. J. Econ. Empirical Res. **1**(9), 99–112 (2013a)
Rafindadi, A.A., Yusof, Z.: A startling new empirical finding on the nexus between financial development and economic growth in Kenya. World Appl. Sci. J. **28**, 147–161 (2013b)
Ram, R.: Financial development and economic growth: aditional evidence. J. Dev. Stud. **35**, 164–174 (1999)
Robinson, J.: The Rate of Interests and Other Easys. Macmillan, London (1952)
Romer, D: Advanced Macroeconomics. The Mcgraw-Hill Series in Economics, 3rd edn (2006)
Rousseau, P. L., Wachtel, P.: Economic growth and financial depth: is the relationship extinct already. Discussion Paper, No. 2005/10. United Nations University (UNU-WIDER) (2005)
Sasabuchi, S.: A test of a multivariate normal mean with composite hypotheses determined by linear inequalities. Biometrika **67**(2), 429–439 (1980)
Schmpeter, J.: The Theory of Economic Development (translated by redevers). Dunker and Humblot, Leipzig (1912)
Shahbaz, M.: A reassessment of finance-growth nexus for Pakistan: under the investigation of FMOLS and DOLS techniques. ICFAI J. Appl. Econ. **8**(1), 65–80 (2009a)
Shahbaz, M., Shamim, S.M.A., Aamir, N.: Macroeconomic environment and financial sector's performance: econometric evidence from three traditional approaches. IUP J. Financ. Econ. **1&2**, 103–123 (2010a)
Shahbaz, M., Afza, T., Shabbir, M.S.: Financial development, domestic savings and poverty reduction in Pakistan: using cointegration and granger causality analysis. Int. J. Econ. Empirical Res. **1**(5), 59–73 (2013)
Shan, J.: Does financial development 'lead' economic growth? A vector auto-regression appraisal. Appl. Econ. **37**, 1353–1367 (2005)
Shaw, E.S.: Financial Deepening in Economic Development. Havard University Press, Cambridge (1973)
Shrestha, M.B., Chowdhury. K.: A sequential procedure for testing unit roots in the presence of structural break in time series data: an application to Nepalese quarterly data. Int. J. Appl. Econometr. Quant. Stud. **2–2**, 1–16 (2005)
Solow, R.M.: A contribution to the theory of economic growth. Q. J. Econ. **70**(1), 65–94 (1956)
Stern, N.: The economics of development: a survey. Econ. J. **99**, 597–685 (1989)
Stiglitz, J.: More instruments and broader goals: moving towards the post-Washington consensus. WIDER Annual Lectures 2. http://time.dufe.edu.cn/wencong/washingtonconsensus/instrumentsbroadergoals.pdf. Accessed 17 March 2012 (1998)
Wurgler, J.: Financial markets and Allocation of Capital. J. Financ. Econ. **58**(1), 187–214 (2000)